WORK PLAN
REMEDIAL INVESTIGATION

Anchor Chemical Site
Hicksville, New York

April 10, 1991

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1.0 INTRODUCTION

The Anchor Chemical Site (Site) is located at 500 W. John Street in Hicksville, Nassau County, New York, and is approximately 1.5 acres in size (Figure 1). The Site includes a building which housed a company (Anchor/Lith Kem-Ko) engaged in the production and mixing of cleaning solvents for the printing industry. A variety of chemicals, including organic solvents used in the manufacturing process, were stored in 17 underground storage tanks beneath the facility (see Section 2.3). The building on the Site is currently used as a furniture warehouse and assembly facility.

The Site is currently owned by K.B. Company, and managed by Spiegel Associates. It is included on the National Priorities List (NPL) of known or threatened releases of hazardous substances. The Remedial Investigation/Feasibility Study (RI/FS) is being conducted by Speigel Associates with oversight by U.S. Environmental Protection Agency (USEPA) Region II. The preparation of this Work Plan is required by the Administrative Order on Consent (Index No. II CERCLA-90208) (USEPA, 1989).

This Work Plan is for a Remedial Investigation only. A separate Work Plan for a Feasibility Study will be prepared upon completion of the RI Report. In addition to this Work Plan, a Projects Operations Plan (POP) has also been prepared as a separate document.

There have been several previous investigations at the Site. In 1977, the Nassau County Department of Health (NCDH) sampled liquid in one of the on-site drywells. In 1981, several underground tanks were found to be leaking and a ground-water monitoring program, utilizing on-site wells, was implemented. Six sets of ground-water samples were collected from the three wells between December 1982 and February 1985 by Lockwood, Kessler and Bartlett, Inc (LKB).

Roux Associates, Inc. (Roux Associates) was first retained by Ruskin, Schlissel, Moscou, Evans, and Faltischek, P.C., then counsel to the Site Manager, in October 1987 to conduct further ground-water sampling at the Site. This sampling was performed to determine whether or not organic contaminants were still present. Roux Associates was subsequently retained by Spiegel Associates to prepare this Work Plan and carry out the RI.

The objectives of the RI are to characterize the Site with regard to the extent of soil and/or ground-water contamination which have resulted from past activities at the Site, to evaluate alternatives for remediation, and to provide the technical basis for choosing a preferred remedial alternative. This Work Plan describes the Site and its history, the tasks that will be accomplished, the procedures to be followed in conducting the investigation, and the personnel who will be involved.

2.0 INITIAL SITE EVALUATION

2.1 Regional Hydrogeology

Nassau County, Long Island is located in the Coastal Plain physiographic province. There are three major water-bearing units underlying Nassau County (from shallow to deep): the upper glacial or water-table aquifer, Magothy aquifer, and Lloyd aquifer. These aquifers are the only source of fresh water for most of Nassau County. The locations of public water supply wells within two miles of the Site are shown in Figure 2.

In general, ground water under Nassau County flows downward from the water-table aquifer into deeper aquifers in the central portion of the County. As the flow migrates deeper, it becomes more horizontal and moves either north or south from the ground-water divide, an imaginary plane where water moves vertically downward to impermeable bedrock (or the bottom of the ground-water reservoir). This divide trends roughly east-west along the center of Long Island. As the water moves toward the north and south shores of the Island, it moves horizontally and then upwards towards discharge areas in Long Island Sound and the Atlantic Ocean. The Lloyd aquifer is the deepest aquifer. It is overlain by a thick confining clay (the Raritan) through which water moves extremely slowly from the overlying Magothy aquifer (Jensen and Soren, 1974).

The Magothy aquifer overlies the Lloyd aquifer/Raritan clay (Raritan Formation) and underlies the Upper Glacial aquifer. The Magothy is not present in northwestern Nassau County and it increases to over 1,000 feet in southern Nassau County. Wells in the Magothy commonly yield greater than 1,000 gallons per minute (gpm). Along the north shore, where the Magothy is absent, it has been replaced by upper glacial deposits. In general, the Upper Glacial aquifer is hydraulically connected to the underlying Magothy aquifer except in areas where clay layers such as the Gardiner's Clay (south shore) are present. The hydraulic connection between the two aquifers allows water to move readily through the Upper Glacial aquifer down into the Magothy aquifer, dependent upon the hydraulic gradient between the two aquifers.

Recharge to the Magothy from the upper glacial (water-table) aquifer occurs in the central portion of the County. Ground water in the water-table aquifer near the ground-water divide has a higher hydraulic head than ground water in the Magothy aquifer. This causes water to move downward toward the base of the Magothy. Water moving from the Upper Glacial aquifer can flow into the middle and upper portions of the Magothy aquifer to the north and south of the divide.

2.2 Site Description

The Anchor Chemical Site includes a building located on 1.5 acres of land. Land use in the area is predominantly commercial and recreational (Plate 1). The Site is bordered to the west by Stokvis Multiton Corp., a manufacturer of materials handling equipment, and to the south by West John Street. The Stokvis Multiton site is owned by Jerry Spiegel. A small parcel directly north of the Anchor Chemical site is owned by K.B. Company. Located on West John Street, across from the Anchor Chemical Site, is Franklin Ribbon & Carbon Co., Inc., a typewriter supply shipping firm; Konig Seats, an automotive seat importing/exporting company; Reliance Utilities, an oil company; and Universal Shellac, a manufacturer of abrasive products. Traversing west along the street are the Fishman Co., housewares, and General Instruments Corp., a large manufacturer of semi-conductors. To the east, Anchor Chemical is bordered by Cantiague Park. The park covers approximately 125 acres and contains various recreational facilities.

A spill of approximately 3,700 gallons of methyl ethyl ketone (MEK) occurred at 530 West John Street in January of 1982, and a recovery program was conducted in 1984. Several monitoring wells were installed at that facility in conjunction with the MEK cleanup (Figures 3 and 4). Monitoring wells were also installed at 600 West John Street in conjunction with a ground-water remediation program to remove volatile organic compounds (VOCs) at that facility (Plate 1). Both of these facilities are located west of Anchor Chemical. To the east of the Site in Cantiague Park there is a ground-water recharge basin (Figures 1 and 2).

The building, which has been used as a manufacturing facility and as a warehouse, has included two solvent blending rooms, a product packaging room, several container and drum storage areas, a testing laboratory and offices (Figure 5). The 17 underground storage tanks,

which are made of steel and vary from 550 to 4,000 gallons in size, are located beneath the former mixing rooms (Figure 6).

Below-grade utilities at the Site include drywells, cesspools (now out of service) and sewer and water lines. The locations of the drywells, the unused cesspools, and the sewer and water lines are shown on Figure 7. The out of service cesspools and the water line are both located under the parking area at the front of the building.

The Site is located just south of Long Island's regional ground-water divide in an area underlain by the Glacial Formation, the Magothy Formation, the Raritan Clay and the Lloyd Aquifer. These units rest on bedrock that dips southward towards the Atlantic Ocean.

The Site lies just west of the center of the large mound of the potentiometric surface of the Magothy aquifer in Nassau County. Mounds in the aquifer potentiometric surface indicate recharge from the Upper Glacial aquifer. The location of the Site with respect to this surface indicates that recharge is occurring to the Magothy from the Upper Glacial aquifer near the Site (Doriski, 1987). The locations of public water supply wells within two miles of the Site are shown in Figure 2. No private wells are known to be located near the Site Myott, 1990) (Appendix A4).

Climatological data is provided for Nassau County as recorded at Mineola. Average temperatures are 33 degrees F and 72 degrees F for winter and summer, respectively. Total annual precipitation averages 42 inches, half of which falls between April and September. The average annual snowfall is 27 inches (Wulforst, 1987).

The soils in the area of the Site are classed by the United States Department of Agriculture (USDA) Soil Conservation Service (SCS) as Urban Land (Wulforst, 1987). This soil association consists mainly of areas covered by man made structures and paving. Very few undisturbed sites are in this unit. Soils of minor extent visible in exposed areas consist of the Hempstead, Enfield, and Riverhead series. These soils consist of loam to sandy loam soils which are generally deep, well drained and have slopes less than 3 percent. The Site itself is mostly paved, but is likely to be underlain by these permeable and well drained soils.

Since most of the Site is paved, most precipitation which occurs will drain as run-off. The run-off is collected in drywells on the Site which drain directly into the soils.

The average depth to water in this area is approximately 50 feet to 60 feet, which puts the water table at approximately 75 feet to 85 feet above mean sea level. County water-table maps (Koszalka, 1975) indicate that the general direction of ground-water flow in the area is from north-northeast to south-southwest. The presence of the ground-water recharge basin just to the east of the Site suggests the possibility that the ground-water flow direction to the Upper Glacial aquifer may be somewhat more to the west than the general county-wide trend. This will be determined in the course of the field investigation. In their 1985 report, LKB estimated the rate of horizontal ground-water flow at the Site, based on water levels measured in the three on-site wells, to be 0.45 feet per day (Lockwood, Kessler, & Bartlett, Inc. 1985).

There is no documented presence of wetlands in the area of the Site (Wulforst, 1987). The southern portions of Nassau County contain wetlands in the tidal flat areas, but these areas are not close to the Site.

2.3 Site History

Information provided in this Site History was obtained from the following sources:

Source	Personnel
Spiegel Associates	P. McGill
Nassau County Department of Health (NCDH) Files	L. Lutzker
Office of the Fire Marshall Files	R. Magee
U.S. Environmental Protection Agency Files	J. Doyle
Long Island Regional Planning Board	A. Kunz
Bogut, Chetkof & O'Brien	J. O'Brien
Anchor/Lith Kem-Ko	W. Lesser

Also, New York State Department of Environmental Conservation (NYSDEC) records reviewed.

A list of the references is provided in Section 6.0 of this Work Plan. As noted, many referenced documents cited in this section or applicable portions thereof are provided in Appendix A. Appendix A has been divided into four sections as follows: A1 is chemical survey and laboratory analyses information; A2 is UST correspondence, A3 is the data supporting request for legal action; and A4 is general property information. Published references and large reports are not included in Appendix A.

Prior to 1964, the block of land situated east of Cantiaque Rock Road and north of West John Street, which includes both the Site and Cantiaque Park, was privately owned farmland left fallow. During the early 1960's, the land which is now the park was deeded to the Town of Oyster Bay, and the adjacent property along West John Street was rezoned for industrial use (Kunz, 1990) (Appendix A4). A history of occupancy of the Site is presented in Table 1.

K.B. Company has owned the Site since September 31, 1964. During 1964, the existing building was constructed for the use of Anchor Chemical Company who occupied/leased the Site until 1978. Anchor Chemical Company operated a facility for the blending and packing of chemicals for the graphic arts industry (NCDH, 1983a) (Appendix A3). A list of the products made and raw materials used is provided in Table 2 (Anchor Chemical Co. 1977). Seventeen underground storage tanks were installed at the Site by the Franklin Company for Anchor Chemical in 1964. The seventeen tanks were used to store the chemicals and solvents listed in Table 3 (Klein, 1981) (Appendix A2). Table 3 also gives the capacities and construction for each of the underground storage tanks at the Site as well as all the available data on the testing and decommissioning of the tanks. The storage tanks are located beneath the former solvent mixing rooms as shown in Figure 5. A diagram of the tank layout is shown in Figure 6 (Klein, 1981).

In addition to the underground storage tanks, there were also seven above-ground storage tanks ranging in size from 550 to 1500 gallons, located in the blending rooms, that were reported to contain the same chemical products listed in Table 3 (NCDH, 1981) (Appendix A2).

A 1977 industrial chemical survey indicated that the company purchased and used 50,000 gallons (g) of methylene chloride, 13,000 g of 1,1,1-trichloroethane; 13,000 g ethylbenzene; 270 g of petroleum tars; 40 g dyes and organic pigment; 50,000 g of petroleum naphthas; 20,000 g of ethylene glycol monoethylether; 2000 g of glycerine glycols and 10,000 g of nonionic ethoxylated alcohol per year (NCDH, 1977) (Appendix A1)

In 1977, NCDH determined that floor drains in the mixing rooms were connected to a storm water drywell in the parking area north of the facility. Water used for washing chemical spills in these rooms was discharged into the drywell (NCDH, 1983a) (Appendix A3). A sampling of the drywell by NCDH in 1977 revealed the presence of the following chemicals and concentrations:

Chemical	Concentrations (parts per billion)
1,1,1 trichloroethane	2500
Trichloroethylene	>15000
Tetrachloroethylene	>20000

Subsequently, a spill prevention plan was submitted to NCDH and all lines leading from the building to the drywell were sealed (NCDH, 1983a and Jasser, 1977) (Appendix A3).

In 1978, Anchor Chemical was purchased by Chessco Industries, Inc. and became known as Anchor/Lith Kem-Ko. The facility operations remained the same until 1985 when Anchor/Lith Kem-Ko ceased operations at the Site (NCDH, 1983a).

According to Mr. Lesser, an employee of Anchor/Lith Kem-Ko during the period that Anchor/Lith Kem-Ko operated the facility (1978-1985), chemicals were blended in the rooms above the underground storage tank area (Figure 5) and packaged by a gravity feed machine. Samples of the mixtures were tested in the adjoining laboratory. The remainder of the building was used for storage and office space. Mr. Lesser also stated that there were no chemical spills during Anchor/Lith Kem-Ko's operation of the facility.

Anchor Chemical Company and later Anchor/Lith Kem-Ko maintained a New York State Certificate to Operate an Air Contamination Source which was first filed for on May 28, 1974 (NYSDEC, 1983a) (Appendix A4). No violations were on file at NCDH.

In May of 1981, Anchor/Lith Kem-Ko received a notice from the Nassau County Fire Marshall that they were in violation of Nassau County Fire Prevention Ordinance No. 51-81 Article III, which requires that all underground storage tanks containing flammable or combustible liquids be registered with the County Fire Marshall. Provisions for registration require that tanks be hydrostatically tested to determine if a leak of flammable or combustible liquid exists. If testing results indicate the presence of a leak, tanks shall either be repaired prior to further use or taken out of service. Anchor/Lith Kem-Ko had neither tested their tanks nor registered them with the County Fire Marshall prior to receipt of the Notice of Violation (Office of the Fire Marshall, 1981a, b, c) (Appendix A2). NCDH records indicate that 5 out of 14 tanks tested in 1981 failed air over product tests (Table 3). These five tanks were:

Tank No.	Contents
5	Naphthol spirits
6	Acetone
8	Mineral spirits*
11	Isopropyl alcohol
15	Textile spirits

*1,1,1-trichloroethane had been reported earlier (1965 and 1975)

These five tanks were taken out of service and decommissioned. (NCDH, 1983b and NCDH, 1983c) (Appendix A2). Three underground storage tanks containing 1,1,1-TCA, diethyl glycol and methylene chloride were not tested by the facility in 1981. NCDH requested that these three tanks be tested and that Anchor/Lith Kem-Ko provide a ground-water clean up plan by December 1, 1982 (NCDH 1982c). Testing of the remaining tanks in 1982 and 1983 indicated that tank No. 3, which contained methylene chloride, was leaking.

In 1982, NCDH informed Anchor/Lith Kem-Ko of a possible violation of Environmental Conservation Laws, Article 17, Section 1720401, concerning point discharges of chemicals, and requested they provide plans for an investigation of the possible contamination of soil and ground water (NCDH, 1982a) (Appendix A2). LKB of Syosset, New York was retained to conduct the investigation (Lockwood, Kessler & Bartlett, 1985).

Three monitoring wells were installed by LKB in September of 1982 (Appendix B). Soil samples collected by NCDH during the LKB investigation contained up to 490 parts per billion (ppb) methylene chloride and 22 ppb 1,1,1-trichloroethane (1,1,1-TCA) (NCDH, 1982b) (Appendix A1). Ground-water samples collected by NCDH and LKB contained up to 24,000 ppb 1,1,1-TCA, 1100 ppb tetrachloroethylene, 350 ppb dichloroethane, 41 ppb methylene chloride, and 55 ppb trichloroethylene (Table 4). Chlorodibromomethane was detected in Well 3 at concentrations up to 170 ppb (Lockwood, Kessler & Bartlett, 1985 and NCDH, 1982b.)

NCDH records indicate that five of the leaking tanks (No. 5, 6, 8, 11 and 15) were abandoned in place and filled with concrete slurry in accordance with county ordinance in 1983 (Nassau County Fire Commissioner, 1984) (Appendix A2).

In January 1983, the Site was included on the NYSDEC list of hazardous waste Sites in Nassau County, and on the National Priorities List (NYSDEC, 1983b) (Appendix A3). A Phase I report was prepared for NYSDEC by Woodward Clyde Consultants, Inc., (Woodward Clyde, 1983) (McGill, 1990).

Continued monitoring of ground water at the Site by LKB through 1984 indicated an apparent decrease in the concentration of contaminants in the ground water sampled (Table 4). In their 1985 report, LKB concluded that the contaminants had moved off site and were not traceable (Lockwood, Kessler & Bartlett, 1985).

NCDH records indicate that the decommissioning of the (12) remaining underground storage tanks by Barlo Equipment Corporation, was halted in August 1985 when Anchor/Lith Kem-Ko was evicted (NCDH, 1985 [Appendix A2]; Lesser, 1990 [Appendix

A4]). Tank decommission/abandonment documents for the twelve tanks were not available from any of the sources listed at the beginning of Section 2.3.

From November 1985 to July/August 1988, the Site was leased to Emery Worldwide, a freight company, and was used as a warehouse (McGill, 1990).

In 1987, Roux Associates was retained by Spiegel Associates to resample the wells previously installed by LKB. Samples were collected on October 27, 1987 from Wells 1 and 2 (Table 5). Well 3 was not sampled due to the presence of a thick, paste-like material lodged in the screen area which prevented proper purging. Four feet to five feet of silt was found at the bottom of Wells 1 and 2, however, this did not prevent the collection of water samples from these two wells. Well 3 was cleaned out so a sample could be collected, and a second round of sampling was conducted by Roux Associates in June 1989. Again, sediments were found in all the wells, although it was possible to obtain water samples. Well 1 and Well 3 showed measurable quantities of 1,1,1-TCA, 59 ppb and 8 ppb, respectively. Well 1 also had 4 ppb of 1,1-dichloroethane (Table 5).

In February 1991, Roux Associates resampled the wells. Only 9 ppb of 1,1,1-TCA was detected in Well MW-3. All remaining wells contained no detectable levels of any volatile organic compounds (Table 5).

In October 1989, the Site was leased to the current occupant, J.D. Brauner, a furniture manufacturer. The building is now used as a warehouse and retail sales room. Although some assembly of previously manufactured furniture components was observed during a Site inspection by Roux Associates, no actual manufacturing activities were observed. Several improvements/renovations were undertaken prior to their occupancy including the installation of new windows, the gutting of offices and repaving the parking area (McGill, 1990).

2.4 Results of Previous Investigations

Samples collected in the previous investigations described below have been analyzed for volatile organics but, to our knowledge, not for semi-volatiles or metals. This is probably because the history of the Site (Section 2.3) indicates that volatile organic solvents were the

principal chemicals stored. However, as discussed in Section 4.4, sediment and water samples to be collected for this RI will be analyzed for the full Target Compound List to determine if semi-volatiles or metals are present at levels that might present a health or environmental threat.

Water samples taken by the NCDH in July 1977 from standing liquid in one of the drywells at the north end of the Site contained 1,1,1-trichloroethane (2,500 ppb), trichloroethylene (>1,500 ppb), and tetrachloroethylene (>20,000 ppb). In response to the finding, Anchor Chemical Company sealed the surface drains in the mixing rooms which had drained to the northern drywell and started drumming drainage from delivery hoses. (Lockwood, Kessler, & Bartlett, 1985).

Ground-water samples were collected between November 1982 and February 1985 by LKB. The ground water was found to contain methylene chloride, 1,1-dichloroethylene, 1,1-dichloroethane, 1,1,1-trichloroethane, trichloroethylene, and tetrachloroethylene at concentrations which ranged from 2 ppb to 24,000 ppb (Table 4). The laboratory reporting forms are given in Appendix B. Based on their sampling results over the three years, LKB concluded in their report that although the chemicals had come from the Site, the contamination had decreased over time (Lockwood, Kessler, and Bartlett, 1985).

A sampling of the water in Wells 1 and Well 2 in October 1987 and in all three wells in June 1989 was performed by Roux Associates. The results are given in Table 5 and the Laboratory reporting forms for these two sampling events are contained in Appendix C.

All the chemicals detected in the ground water to date are VOCs. These consist predominantly of chlorinated hydrocarbons, except for acetone which was detected once, and traces of benzene, toluene, and xylenes which were also detected once.

3.0 PROJECT PLANNING

3.1 RI Tasks

The Remedial Investigation at Anchor Chemical will be divided into six main tasks:

Task 1 - Investigation of Site History
Task 2 - Underground Tank Inspection
Task 3 - Installation of Monitoring Wells
Task 4 - Characterization of Ground Water and Sediment
Task 5 - Survey of Supply Wells
Task 6 - Drilling of Soil Borings and Sampling of Soil and Ground Water

These tasks are described in detail in Section 4.0 of this Work Plan. The tasks have been designated to provide the data necessary to characterize conditions at the Site and to meet the Data Quality Objectives discussed in Section 3.3.

Task 1 is complete, and the Site history is presented in Section 2.3 of this Work Plan. Pertinent information obtained during the historical review of the Site is included in Appendix A. Any additional historical information relevant to environmental conditions at the Site that comes to light during the RI will be included in the RI report.

Task 2, underground tank inspection, will determine the status of underground tanks for which documentation for closure is not available. A review of the available records has been performed and the results are presented in Section 2.3 and Table 3.

Task 3, the installation of the new monitoring wells, both shallow and deep, is necessary to determine the extent and severity of ground-water contamination at the Site. This task is particularly crucial due to the problems encountered in the past with the three existing wells.

Task 4 is the initial characterization of the quality of ground water and sediment at the Site. Ground-water samples will be analyzed for the compounds on the Target Compound List (TCL). Sediment and sludge samples will also be analyzed for TCL compounds. The data generated by this task will be used to develop the analytical program for Task 6.

Task 5, a survey of supply wells, will include contacting the water districts, NYSDEC and Nassau County for information regarding the locations of supply wells or private wells for commercial or residential use.

Task 6 includes the drilling of soil borings and a second round of ground-water samples to further confirm the first round results and evaluate the possibility of seasonal variation. The second round analytical program will be chosen based on the results of Task 4.

3.2 Scoping

The purposes of scoping are to indicate the extent to which the release, or threat of release, may pose a threat to public health or welfare; the type of removal measures and/or remedial measures to abate the threat; and to establish priorities for implementation. A preliminary determination of ARARs is also performed.

3.2.1 Preliminary Risk Assessment

This section presents a preliminary assessment of potential public health risk associated with any contaminants identified in the soil, sediment and ground water at the Site. This is based on Site history, hydrogeology, land use, demography, and potential contaminant type and distribution.

As presented in Sections 2.3 and 2.4, past investigations of this Site have indicated the presence of volatile organic compounds in monitoring wells and leaking underground storage tanks. The identification of migration pathways and exposure routes, which will be evaluated in the RI, indicate the existence of certain health risks. Based on the current knowledge of the site, the various exposure pathways are identified below.

Ground Water

Historical information on the Site indicates varying concentrations of VOCs in ground water. Ground water is used for drinking water in the general vicinity of the Site. For this reason ground-water monitoring wells will be installed and sampled, along with a survey of any existing public supply or private wells in the area, to evaluate the potential exposure routes.

Soil

With the exception of a small grassed area, the Site is completely paved. Because it is located in an industrial area, there are no children playing or engaging in recreational activities on the Site. Therefore, exposure through direct soil contact or soil ingestion is not considered a potential risk.

Sediments

As previously stated, most of the Site is paved so that all precipitation which occurs will drain as run-off. This run-off is collected in drywells on the site. These drywells are not connected to any sewage system, but instead drain directly into the soils. There are no wetlands or surface water bodies on or adjacent to the Site. Therefore, exposure through direct contact of sediments or environmental endangerment from sediment contamination is not considered a potential risk.

Surface Water

There are no surface-water bodies on or close to the site that are likely to serve as conduits for conducting any chemicals identified at the site. Therefore, surface water contamination is not considered a potential risk.

Air

With the exception of a small grassed area, the entire site is paved. This grassed areas is located some distance from the UST locations and thus is not likely to have surface concentrations of chemicals believed to be of concern at this site. Therefore, air contamination is not considered a potential risk at this Site.

3.2.2 Preliminary Scoping of Possible Remedial Alternatives

Preliminary scoping of remedial alternatives is based on the existing data collected on the compounds listed in Section 2.4, which are known to have leaked from the underground tanks at the Site. To date all the chemicals detected in the ground water are VOCs.

Existing information is not sufficient to determine the levels of chemicals in soil and ground water at the Anchor Chemical Site. Based on the previous analytical results, volatile organics are assumed to be the contaminants of concern. However, metals and semi-volatile compounds may also be present.

If ground water is pumped and treated to remove volatile organics, it may also require treatment for metals and semi-volatile organics, in order to comply with the ARARs (see Section 3.2.3).

Tentatively identified remedial alternatives are discussed below.

No Action

The no action alternative will be evaluated to provide a comparative basis for other remedial alternative evaluations. At the Site, the no action alternative means that no remedial actions for soil and ground-water containment or treatment will be designed and implemented. The no action alternative would include public health and environmental evaluations (including risk assessment), long-term ground-water monitoring, and institutional controls (e.g., limit the use of private well water for drinking and irrigation purposes).

Containment

Containment alternatives would include: 1) impermeable barriers and caps to completely isolate the contaminated soil from contact with ground water; and 2) diversion of ground water from contact with contaminated soil.

Ground-Water Treatment and Disposal

Contaminated ground water at the Site can be pumped and treated onsite. The treated ground water would be discharged to on-site/off-site recharge basins or storm or sanitary sewers. If the RI results indicate that organics are of concern, air stripping can be used to remove volatile organics. Other organics can be removed by carbon adsorption, chemical oxidation (e.g., ozonation, hydrogen peroxide, etc.), and aerobic biodegradation. Metals, if of concern, could be removed by chemical precipitation or ion exchange.

Soil Treatment and Disposal

Depending on its location relative to the building, contaminated soil, if any is found at the Site, can be handled by either excavation/onsite treatment/disposal or in-situ treatment. For the former case, onsite treatment would involve aeration to remove volatile organics and/or biodegradation for semi-volatile organics. For the latter case, in-situ vapor recovery would be used to remove volatiles or in-situ solidification/stabilization for semi-volatiles and/or metals.

3.2.3 Preliminary Identification of ARARs

The ARARs preliminarily identified below have been categorized as "applicable", "relevant and appropriate", and "to be considered", based upon EPA guidance in the existing National Contingency Plan (55 Fed Reg 8666-8865, March 8, 1990), as modified by the Superfund Amendment and Reauthorization Act of 1986 (SARA). Primary consideration is given to these remedial alternatives that attain or exceed the criteria presented by those regulations found to be "Applicable" or "Relevant and Appropriate".

SARA defines ARARs as:

- any standard requirement, criteria, or limitation under any federal environmental law; and
- any promulgated standard, requirement, criteria, or limitation under a state environmental or facility siting law that is more stringent than any federal standard, requirement, criteria, or limitation.

The purpose of this definition is to make CERCLA responses consistent with both Federal and state environmental requirements.

Within these jurisdictional boundaries ARARs are further segregated in accordance with the activity they are expected to affect. Three different categories of ARARs will be evaluated.

a. Ambient or Chemical Specific Requirements:
Health- or risk-based numerical values or methodologies which, when applied to site-specific conditions, result in the establishment of numerical values. These

values establish the acceptable amount or concentration of a chemical that may be found in, or discharged to, the ambient environment.

b. Performance, Design, or other Action Specific Requirements:
Technology- or activity-based requirements or limitations taken with respect to hazardous wastes.

c. Location-Specific Requirements:
Restrictions placed on the concentration of hazardous substances or the conduct of activities solely because they occur in special locations.

A preliminary list of potential ARARs is given below.

Federal

- Resource Conservation Recovery Act (RCRA) Groundwater Protection Standards (40 CFR 264, Subpart F).
- Safe Drinking Water Act, National Primary Drinking Water Regulations, Maximum Contaminant Levels (MCLs) (40 CFR 141.11-141.16).
- Occupational Safety and Health Standards (OSHA) (29 CFR Part 1910).
- Clean Water Act (CWA), Ambient Water Quality Criteria.
- Safe Drinking Water Act: Sole-Source Aquifer Requirements (40 CFR 149).

State

- 6 NYCRR Part 703 - NYSDEC Groundwater Quality Regulation.
- 6 NYCRR Part 750-757 - Implementation of NPDES Program in NYS.
- 6 NYCRR Parts 701, 702 - Surface Water Quality Standards and 704.
- Technical and Operations Guidance Series (TOGS)
  (Note: The TOGS currently contain both promulgated standards and criteria and non-promulgated guidelines. During the RI, only promulgated standards and criteria will be considered ARARs. The non-promulgated guidelines will be considered and discussed separately.)
  - 1.1.1; April 1, 1987 - Ambient Water Quality Standards and Guidance Values
  - 1.6.1; April 1, 1987 - Regional Authorization for Temporary Discharges

- 2.1.2; April 1, 1987 - Underground Injection/Recirculation (UIR) at Groundwater Remediation Sites
- 6 NYCRR Part 201 - Permits and Certificates
- 6 NYCRR Part 212 - General Process Emission Sources
- 6 NYCRR Part 257 - Air Quality Standards
- NYSDOH PWS 69 - Organic Chemical Action Steps for Drinking Water
- Part 5 of the State Sanitary Code, Drinking Water Supplies
- Part 170 of Title 10 of the NYCRR, Water Supply Sources
- Five Environmental Health Manual items dealing with chemical contamination of public drinking water supplies
- Draft documentation for the generic organic chemical standards in drinking water
- NYSDOH Interim Report of Point-of-Use Activated Carbon Treatment Systems.

3.3 Data Quality Objectives

The overall objective of the RI/FS is to determine the nature and extent of the threat posed by the past release of hazardous substances at the Site, and ultimately to select a remedial alternative which mitigates the threat to human health and the environment. The data collected during the RI must be sufficiently precise and accurate to be used to accomplish the goals of the RI/FS. Four levels of data quality will be considered as follows:

(1) Screening (Level 1): This provides the lowest data quality but the most rapid results. It is often used for health and safety monitoring at the Site, preliminary comparison to ARARs, initial Site characterization to locate areas for subsequent and more accurate analyses, and for engineering screening of alternatives (bench-scale tests).

(2) Field Analyses (Level 2): This provides rapid results and better quality than in Level 1. Analyses include mobile-lab generated data.

(3) Engineering (Level 3): This provides an intermediate level of data quality and is used for site characterization. Engineering analyses include mobile-lab generated data and CLP analytical lab methods (e.g., CLP-SAS with quick turnaround).

(4) Confirmational (Level 4): This provides the highest level of data quality and is used for purposes of risk assessment, engineering design, and cost recovery documentation. These analyses require full CLP analytical and data validation procedures.

4.0 RI TASKS

The RI tasks (Tasks 1 - 6) have been designed to provide reliable data on the current quality of the soil and ground water at the Site and to determine whether or not suspected source of contamination at the Site, specifically past leaks from the five underground storage tanks and discharge to drywells, represent a continuing source of contamination to the ground water. For this reason, the field tasks (Tasks 3 - 6) have been organized to examine the ground-water quality first, followed by sediment and soil quality.

4.1 Task 1 - Investigation of Site History

A thorough examination of all documented past activities relating to chemical usage and disposal at the Site has been completed (Task 1). All pertinent records at the NYSDEC, NCDH, Fire Marshall and USEPA offices have been reviewed. In addition, all pertinent records in the possession of Anchor/Lith Kem-Ko have been requested and all records which could be obtained from them have been reviewed. In addition, the manufacturer's Material Safety Data Sheets (MSDS) for all solvents known to have been stored at the Site were obtained and reviewed. The information from the MSDS were also be evaluated with regard to the possibility of floating and sinking chemicals (i.e., less or more dense than water but not miscible in water). Soil samples will be collected at the water table in all well borings and analyzed for floating chemicals. The need for additional wells bridging the water table will be based on the results of the soil samples collected during Task 3. These wells, if needed, will be installed as part of Task 6. The MSDS will be appended to the RI report. The results of the investigation of the Site history are given in Section 2.3. Any additional pertinent historical information obtained during the RI will be included in the RI report.

4.2 Task 2 - Underground Tank Inspection

A review of all available records for the underground tanks at the Site has been conducted. From this review, documentation of the proper closure of Tanks 5, 6, 8, 11 and 15 is available. Documentation of closure of the remaining 12 tanks could not be located.

This tasks will be to determine the actual status of Tanks 1-4, 7, 9, 10, 12-14, 16 and 17. To accomplish this, a subcontractor will be retained to conduct the following:

1. saw cut hole (approximately 1 foot by 1 foot or larger) in concrete floor over each tank;
2. remove concrete debris and soil;
3. expose and open each tank;
4. sample and analyze any contents and determine volume;
5. confirm tank location;
6. pump out any remaining contents;
7. temporarily seal holes and concrete floor.

After the results from the soil sampling have been obtained, the decision will be made to 1) perform remediation tasks on the contaminated soils, or 2) fill the empty tanks with concrete slurry then backfill holes and repair the concrete floor.

The tank contractor will be aware of the possible underground tank contents, and will comply with the appropriate requirements presented in the Site Health and Safety Plan. Additional details regarding the tank inspection are given in the Project Operations Plan.

4.3 Task 3 - Installation of Monitoring Wells

A total of seven new monitoring wells will be installed at the Site (Figure 7). Four wells (MW-4, MW-5, MW-6 and MW-7) will be screened in the Upper Glacial aquifer at approximately 70 feet below land surface, and three (MW-1D, MW-5D, and MW-7D) screened in the Magothy aquifer at approximately 140 feet below land surface to form three shallow/deep monitoring well clusters at locations MW-1, MW-5 and MW-7. These clusters will provide data on the vertical ground-water gradient and ground-water quality with depth at the Site.

As per USEPA guidance, the screened intervals of shallow wells will not be across the water table. The depth selected will be based on photoionization readings, or, if all readings for the particular well are the same, the screen will be set at 10 feet below the water table. During well installation, an assessment will be made to determine if floating product exists at the saturated/unsaturated zone interface. The method for accomplishing this is described below.

The monitoring wells will be drilled using a truck mounted hollow stem auger rig. Upon completion of the borehole, a 4-inch diameter stainless steel (type 304) casing with a 10-foot long screen will be installed through the auger. When the screen and casing are in place, a clean, graded silica sand will be used to pack the annular space around the screen. The sand pack will be installed through a tremie pipe to prevent bridging. At the well clusters, the deep well will be installed first. A photoionization meter will be used to scan the split spoon samples for each well. One deep downgradient well will be logged continuously (24 inch intervals). All other wells will be logged at five foot intervals.

Two soil samples from each well (or cluster) location will be selected for TCL analysis. One sample will be from the screen zone and one from the water table. Background soil conditions will be determined by the results of analyses of two soil samples from MW-6. If floating organics are detected in the soil samples from the water table, a discussion with EPA will be held to determine if wells bridging the water table should be installed. These wells would be constructed and sampled in the same manner as the other wells installed for this RI. Samples would be analyzed for the same compounds as the other ground-water samples collected for Task 6.

When the well screen has been properly sand packed, two feet of fine sand will be placed immediately over the filter pack and a five foot thick layer of clean, certified 100% bentonite high solids grout will be tremied onto the top of the fine sand to seal the annular space. The remainder of the annular space will then be grouted with a cement/bentonite slurry to two feet below grade. Well MW-6 will be finished above grade as shown on Figure 8. The other wells will be finished flush with grade, have locking caps installed, and protective meter boxes cemented in place over each well (Figure 9). USEPA guidelines will be followed for all steps of well drilling and construction; drill cuttings will be stored on site and samples analyzed for storage and disposal requirements prior to disposal. RCRA regulations will be followed (e.g., closed dumpster).

Upon completion, each well will be developed by surging and pumping to remove any fine sediment from around the screen zone and to establish a good hydraulic connection between the aquifer and well. Development will continue until the water is less than 50 nephelometric turbidity units (NTUs), as required by the NYSDEC.

The monitoring well locations and elevations will be surveyed by a New York State Licensed Land Surveyor to the nearest 0.01 feet with a closure of ± 0.05 feet for the Site. The elevation measuring point will be marked on each well casing and all water level measurements will be referenced to this point. All elevations and depths, including well casings, will be referenced to mean sea level.

Water levels in all the wells will be measured using a steel tape at least three times; once after development and prior to each of the two ground-water sampling events. The initial water-level measurements will be taken at least two days after development. Information on the vertical hydraulic gradient will be provided from the three monitoring well clusters. The responsiveness of each well to water-level fluctuations in the aquifer will be tested by measuring recovery rates after pumping.

Specific capacity tests will also be performed to determine hydraulic conductivity. Specific capacity tests will be run in at least one shallow and, if necessary based on water quality data, one deep well. If the geology is not homogeneous across the site, more than one well will be tested. The specific capacity tests will be analyzed to estimate hydraulic conductivity at the Site. The specific capacity of a well is its yield per unit of drawdown after a given time has elapsed. Dividing the yield of the well by the drawdown gives the specific capacity (Driscoll, 1986). Several undisturbed (Shelby tube) samples will be collected for porosity measurements.

An attempt will be made to redevelop the three presently existing wells (MW-1, MW-2 and MW-3). If these three wells can be redeveloped, they will be fitted with locking caps, and sampled during the first round of ground-water sampling. If MW-1 and MW-2 cannot be used they will be replaced by new wells located within 10 feet of their present position and these replacement wells will be sampled during round one. If MW-3 cannot be developed it will not be replaced since MW-4 can be considered a suitable replacement.

4.4 Task 4 - Characterization of Ground Water and Sediment Based on Target Compound Analysis

Two weeks after the monitoring wells have been installed and developed, ground water will be sampled and analyzed following USEPA approved protocols to determine the quality of the ground water at the Site. The ground-water samples will be analyzed for the compounds on the Target Compound List (TCL) plus the thirty highest peaks of a forward library search. Analyses for Target Analyte List (TAL) parameters will be performed on unfiltered samples.

The initial characterization will also include the collection and analysis of sediment and sludges in the nine original drywells and in one of the non-operational cesspools.

The nine original drywells were constructed of concrete rings with holes in the sides and no bottoms. Thus, sediment samples can be collected directly through the bottom of each drywell. The five new drywells (Figure 7) are constructed the same way except that they have concrete bottoms. Thus, water drains through the sides only. Sediment samples cannot be collected directly through the bottoms of these drywells.

Nine sediment samples from the original drywells and one from the cesspool will be collected with a stainless steel hand auger. The hand auger will be advanced to a depth of approximately two feet below the upper surface of sediments in the bottom of the drywell or cesspool. A sample will then be collected of the sediments between one and two feet below the surface. This depth is deep enough that volatile organics will be present and shallow enough to be potentially the most contaminated with metals and semi-volatiles if any are present. A deep boring and additional sampling will be performed in DW-1. Two additional drywells will be selected for additional sampling from a deep boring based on laboratory results from the sediment samples. The deep boring in DW-1 and two additional drywells will be sampled as part of Task 6.

The ten sediment samples will be analyzed for TCL compounds. A USEPA Contract Laboratory Program (CLP) laboratory will be retained for all analyses, and all analytical data will be validated by an independent validator (other than the laboratory which performed the analyses). A summary of the proposed analytical RI program is given in

Table 6. Since the results of Task 4 must be obtained before starting Task 6, there will be an approximate ten week period between these two tasks.

4.5 Task 5 - Survey of Supply Wells

The area immediately around the Site is served by the Hicksville Water District. The area to the west of the Site is served by the Westbury Water District. The locations of public supply wells within 2 miles of the Site are shown on Figure 2. Based on a phone conservation with a representative of the Nassau County Department of Health, there are no known private residential wells in the vicinity of the Site.

Task 5 will include contacting the water districts for all current well locations, well status and any other pertinent information they have regarding the supply wells within two miles of the Site. The appropriate divisions and offices within NYSDEC and Nassau County will also be contacted for information regarding the locations of any private wells for commercial or residential use known to them. A map will then be prepared showing all well locations and all available well data (logs, analyses, etc.) will be included in an appendix.

4.6 Task 6 - Drilling of Soil Borings and Sampling of Soil and Ground Water

Nine soil borings will be drilled at possible contamination source areas and the locations will be surveyed by a licensed surveyor. This includes borings in three of the nine original earth bottom old drywells (Figure 7) and six borings near the underground chemical storage tank area as shown on Figure 6. The most northerly drywell, DW-1, (Figure 7) will have a boring drilled since a spill of organic liquid was reported at this location. Two other drywells with the highest levels of VOCs in the sediment samples (Task 4.4) will also be selected, with EPA approval, for borings.

Based on the results of the tank inspection conducted in Task 2, and the results of ground-water sample analyses (Task 4), a determination will be made regarding the number and locations of soil borings to be drilled at the Site. A minimum of six borings will be drilled adjacent to tanks in each tank group. Three groups are shown on Figure 6. The boring will be a straight-down boring from inside the building, near the tank. The boring will be as deep as feasible with the drilling equipment available, but will under any circumstances

extend at least ten feet below the bottom of the tanks. The maximum depth of the boring will be the water table.

Drilling will be accomplished using a skid-mounted auger rig. Split-spoon soil samples will be collected at five-foot intervals from land surface to the bottom of the borings. A hydrogeologist will log each core sample in detail and will include any qualitative signs of contamination (odor, staining, etc.). All split-spoon samples taken during the drilling of soil borings will be screened at five foot intervals using a portable photoionization meter to assess relative concentrations of VOCs in each sample. Two soil samples will be collected from each boring based on the PID readings.

A total of 18 soil samples and 10 ground-water samples will be analyzed for round two (Task 6). Data from the first round of ground-water and sediment sampling (Task 4) will be evaluated and an appropriate analytical suite for the second round will be selected. The selected suite of analytical parameters will be those compounds on the TCL that were detected above instrument detection limits. If a compound is detected anywhere and for any matrix, it must remain as an analyte for all Round 2 samples in all matrices. Also, if historical information indicates the use or presence of a compound at the Site, this compound shall remain an analyte for all Round 2 samples in all matrices regardless of Round 1 results. To exclude a whole category of compounds, such as metals, VOCs, semi-volatile organics or pesticides, no compounds in the category will be detected above the instrument detection limits. EPA will approve all analytical exclusions applied to the Round 2 sampling. If, however, data validation indicates questionable Round 1 results, then all Round 2 samples will be analyzed for the full TCL. A USEPA CLP Laboratory will be used for all analyses, and all data will be validated by an independent validator acceptable to EPA.

4.7 Data Analysis and RI Report

All data obtained during the RI, along with any pertinent data from previous investigations, will be compiled, analyzed, interpreted and presented as a draft report. The report will, at a minimum, include the following:

- an executive summary;
- an introduction;
- a detailed Site description and history, including the history of each storage tank indicating the chemicals contained and if and when the tank leaked;
- a detailed description of all work accomplished;
- a site plan showing locations of all wells and borings with the surveyor's reference points;
- a detailed description of regional and site-specific geology;
- geologic logs of all borings, including surveyed location of the boring and elevation of the top of the casing and the ground surface, OVA readings, depth to ground water, casing specifications, screened interval, and types of material used;
- geologic cross-sections compiled from the boring logs;
- well installation diagrams;
- a table of well construction details;
- results of all aquifer tests;
- a description of ground-water flow;
- a table of all water-level data;
- hydrogeologic cross-sections;
- a discussion of ground-water quality and contaminant transport;
- tables of all analytical results including detection limits with differentiation between compounds detected below detection limits and those not detected, with ground-water analyses reported in ppb and soil analyses reported in parts per million (ppm);
- maps to show the extent of organic compounds in soil;
- a detailed map (1" = 10') of the Site showing locations of tanks and associated piping, sampling locations and levels of any detected compounds in the soil;
- a detailed map of the Site indicating the uses of various areas of the Site and building including the locations of surface drains and sewer pipes;
- piezometric surface contour maps (1" = 50') for the shallow and deep wells for each of two rounds of water-level measurements;
- isoconcentration maps (1" = 50') for total volatile organics and for any single contaminant consistently detected in the shallow or deep wells;

- a surveyor's report listing ground elevations, locations, elevations of top of casings and ground-water level reference point elevations for sampling locations;
- a discussion of the results, findings and conclusions of the investigation; and
- recommendations for additional investigative work or bench studies, if any are warranted.

To facilitate USEPA personnel review and approval of the RI, the recommended USEPA RI Report Format will be followed to the extent appropriate for this program. An outline of the report format is presented in Table 7.

After review and comment on the draft report by agency representatives, a final RI report will be prepared and distributed appropriately.

5.0 PROJECT MANAGEMENT AND SCHEDULE

5.1 Organization and Staffing

The RI for the Anchor Chemical Site will be managed by Roux Associates, as the prime contractor. The overall project staffing and organization is shown in Figure 10. Resumes of Key Personnel are given in Appendix D. The duties of the Roux Associates personnel to be assigned to this project are as follows:

Project Principal - Paul Roux will have overall responsibility for the project. He will plan the project, review all data collected and assist with interpretations and report preparation. Mr. Roux will work on remedial alternative screening and will be available for meetings as requested.

Project Manager - Joanne Yeary will have overall responsibility for all aspects of the RI portion of the project and will be the contact for USEPA on all RI project matters. Ms. Yeary will plan and direct the field investigation, be present on Site to observe major activities, review all data generated, write reports and meet with USEPA and others as requested.

Field Manager - Harry Gregory will be responsible for the drilling and sampling program, including inspection of drilling equipment and supplies prior to start of job, inspection of existing wells, decisions regarding necessary changes in well construction to meet actual field conditions, supervision of all drilling, logging of all samples, inspection of well construction activities, preparation of detailed logs, measurement of water levels when no drilling is in progress, coordination of drilling and sampling activities with other Site activities, and implementation and enforcement of health and safety programs. A technician will be available to assist Mr. Gregory with the health and safety program as needed.

Quality Assurance Officer - Michael DeCillis will be the Quality Assurance Officer for this project. Mr. DeCillis will inspect each major phase of the field work to ensure that all protocols are followed, and will prepare QA reports to be submitted to the Project Manager.

Principal Engineer - James Worrall will review chemical and hydrogeologic data and assist the Project and Task Managers in interpretations and report preparation where appropriate during the Remedial Investigation. Mr. Worrall will assist in the screening and selection of remedial alternatives, and will be available for meetings as requested.

Health and Safety Officer - Linda Wilson will be the Health and Safety Officer for this project. Ms. Wilson will prepare the Health and Safety Plan (HASP) which provides specific procedures to be implemented for personal protection. The HASP will be approved by EPA as part of the Project Operations Plan (POP) submittal. Ms. Wilson will revise the Health and Safety Plan, if required, based on the findings of preliminary Site investigation. Any necessary revisions to the HASP will be submitted to EPA for approval.

Geologist/Technician - Roux Associates' geologists and technicians will assist where necessary with water-level measurements, photoionization measurements, sampling, pick-up and delivery of equipment and samples to facilitate field operations, and decontamination of core barrels and other equipment.

Data Validator - All data will be validated by an independent validator according to the USEPA Region II CERCLA Quality Assurance Manual.

5.2 Project Schedule

The proposed schedule for the Site Characterization portion of the project is shown on Figure 11. A schedule for the Feasibility Study and any Post Screening Field Investigations that may be necessary will be prepared as part of the RI final report.

Any unavoidable delays under conditions specified in the Consent Order (weather, equipment failure) will be offset by working extra time and weekends, if necessary. Oral and/or written reports to the client's representative and the USEPA will explain schedule problems, if any occur, and detailed steps taken to stay within the overall schedule.

Respectfully Submitted,

ROUX ASSOCIATES, INC.

James Worrall
Principal Engineer

Paul Roux
President

6.0 REFERENCES

Anchor Chemical Company, 1977. Production Data (Source: NCDH Files)

Doriski, T. 1987 "Potentiometric Surface of the Water-Table, Magothy, and Lloyd Aquifers on Long Island, New York in 1984." U.S.G.S. Water-Resources Investigations Report 86-4189.

Driscoll, F.G., 1986. Ground Water and Wells. Johnson Division, Minnesota. p. 207.

Jasser, A.A., 1977, Letter to M. Mangino, NCDH. (Source: Rosenman & Colin Files)

Jensen, H.M. and J. Soren, 1974. "Hydrogeology of Suffolk County, Long Island, New York", U.S.G.S. HA-501

Klein, W.T., 1981. The Franklin Company Contractors, Inc. Letter to D. Larsen, Anchor/Lith Kem-Ko. dated August 20, 1981. (Source: Rosenman & Colin Files)

Koszalka, E.J., 1975. "The Water Table on Long Island, New York in March 1974", Suffolk County Water Authority, Long Island Resources Bulletin LIWR-5.

Kunz, A., 1990. Long Island Regional Planning Board. Telephone conversation with E. Beacon, Roux Associates, Inc. January 5, 1990.

Lesser, W.C. Anchor/Lith Kem-Ko, 1990, Meeting with Roux Associates, Inc. on April 19, 1990

Lockwood Kessler & Bartlett, Inc., 1985 "Engineering Investigation of the Premises of Anchor/Lith Kem-Ko, Hicksville, Nassau County, New York."

McGill, P. 1990. Telephone Conversation with E. Beacon, Roux Associates, Inc., January, 1990.

Myott, D. 1990. Meeting with E. Beacon of Roux Associates on April 5, 1990.

Nassau County Fire Commission Office of the Fire Marshall, 1984. Letter to R. Pelino, Lockwood, Kessler & Bartlett dated January 19, 1984. (Source: Rosenman & Colin Files)

NCDH, 1977. Industrial Chemical Survey, Anchor Chemical Company (Source: NCDH Files)

NCDH, 1981. Environmental Health Continuation Sheet (Source: NCDH Files)

NCDH, 1982a. Letter from L. Sama to K. Leeds, Chessco Industries, Inc. dated January 26, 1982. (Source: USEPA Region II Files)

NCDH, 1982b. Division of Laboratories & Research, Environmental Health Laboratories. Soil and Ground-Water Analytical Data from Anchor/Lith Kem-Ko (Source: NCDH Files)

NCDH, 1982c. Letter to A. Angiola of Lockwood, Kessler & Bartlett dated November 16, 1982. (Source: USEPA Region II Files)

NCDH, 1983a. Data Supporting Request for Legal Action (Source: Rosenman & Colin files)

NCDH, 1983b. Memorandum from L. Sama to G.E. Donohue (Source: USEPA Region II files)

NCDH, 1983c. Data Supporting Request for Legal Action dated January 26, 1983. (Source: Rosenman & Colin Files)

NCDH, 1985. Environmental Health Continuation Sheet (Source: NCDH files).

NYSDEC, 1983a. Certificate to Operate an Air Contamination Source (Source: NCDH Files)

NYSDEC, 1983b. Letter to R. Olazagasti NYSDEC Division of Solid Waste dated January 4, 1983. (Source: Rosenman & Colin Files)

Office of the Fire Marshall, 1981a. Notice of Violation (Source: Rosenman & Colin Files)

Office of the Fire Marshall, 1981b. Order to Remove Violations Forthwith (Source: Rosenman & Colin Files)

Office of the Fire Marshall, 1981c. Application for Underground Flammable/Combustible Liquid Tank Registration (Source: Rosenman & Colin Files)

USEPA, Region II, 1989. Administrative Order on Consent, Index No. II CERCLA-90208.

Woodward-Clyde Consultants, Inc., 1983. Engineering Investigations at Inactive Hazardous Waste Sites in the State of New York, Phase I - Preliminary Investigation Anchor Chemicals Site dated September 30, 1983. (Source: Rosenman & Colin Files)

Wulforst, J.P. 1987. "Soil Survey of Nassau County, New York," U.S. Department of Agriculture, Soil Conservation Service.

Table 1. History of Occupancy, Anchor Chemical Site
500 West John Street, Hicksville, New York

Years	Name	Type of Business
Prior To 1964	----	Farmland left fallow
1964 - 1978	Anchor Chemical Company	Blend & package chemicals for the graphic arts industry
1978 - 1985	Anchor/Lith Kem-Ko	Blend & package chemicals for the graphic arts industry
1985 - 1988	Emery Worldwide Freight	Shipping company
1989 - Present	J.D. Brauner	Furniture Manufacturer

Source: Spiegel Associates (McGill, 1990)

TABLE 2. List of Principal Products Made and Raw Materials Consumed by Anchor Chemical Company in 1977. (Source: NCDH Files).

PRINCIPAL PRODUCTS		RAW MATERIALS
Fountain Mix #18		Water; gum arabic 14° baume solution; chrome alum 50% zinc nitrate solution; ethyloxilated alcohol surfactant 6
Maxi Kleen		Water; citric acid; 62% solution chromium chloride; 70% solution hydroxyacetic acid; glycerine.
On the Press		Isopropyl alcohol; ethylene glycol; cuprous chloride; HCL.
PD Gum		Water; gum arabic 14% baume solution; phosphoric acid.
P.P.C. #1	100 Gal.	Water; monosodium phosphate; isopropyl alcohol; buty cellosolve; ethylene glycol; glycerine; phosphoric acid.
Velvee		Water; SL-62 (biodegradable surfactant); isopropyl alcohol; ionol concentrate.
TAME		Water; sodium citrate; citric acid; gum arabic 14° baume solution; ethylene glycol; butyl cellosolve; IPA Union Carbide emulsion L7001.
		Textile Spirits Napthol Spirits Mineral Spirits Methylene Chloride Acetone Solvatone V.M. & P Naptha 1,1,1 Trichloroethane Diethyl Glycol Ethyl Acetate

Table 3. Underground Storage Tank Data, Anchor Chemical, Hicksville, New York.

Tank Number	Capacity (gallons)	Construction	Product(s)	Date Installed	Date Tested	Test Results	Abandoned/ Decommissioned
1	3,000	steel	Napthol Spirits (1)	1964	1981	passed	
2	3,000	steel	Mineral Spirits (2) Aromatic 100 (3)	1964	1981	passed	
3	3,000	steel	Methylene Chloride	1964	1982	failed	
4	3,000	steel	Textile Spirits (Hexane)	1964	1981	passed	
5	4,000	steel	Napthol Spirits	1964	1981	failed	1983
6	2,000	steel	Acetone Solvatone	1964	1981	failed	1983
7	2,000	steel	Cellosolve (2-Ethoxyethanol)	1964	1981	passed	
8	1,500	steel	1,1,1-Trichloroethane Mineral Spirits	1964	1981	failed	1983
9	1,500	steel	Diethyl Glycol	1964	1983	passed	
10	1,500	steel	Mineral Spirits 66 Cellosolve	1964	1981	passed	
11	1,500	steel	Isopropyl alcohol	1964	1981	failed	1983
12	1,500	steel	1,1,1-Trichloroethane	1964	1983	passed	
13	1,500	steel	Ethyl acetate Isopropanol	1964	1981	passed	
14	1,000	steel	Butyl cellosolve (2-Butoxyethanol)	1964	1981	passed	
15	4,000	steel	Textile Spirits	1964	1981	failed	1983
16	1,000	steel	VM&P Naptha (2)	1964	1981	passed	
17	550	steel	Acetone	1964	1981	passed	

(1) Hydrocarbon mixture; also called petroleum naphtha
(2) Mix of hydrocarbons of the methane series, also called VM&P Naptha
(3) Mix of aromatic hydrocarbons, C8-C10

Table 4. Volatile Organic Compounds Detected at Quantifiable Concentrations in Ground-Water Samples at the Anchor Chemical Site by Lockwood, Kessler & Bartlett, Inc.

Parameter (Concentrations in ug/L)	Date Sampled: 12/14/82	6/15/83	1/30/84	7/10/84	11/1/84	2/28/85
Well No. 1						
Methylene chloride	9	<5	<5	<5	<2	<2
1,1-Dichloroethane	12	<5	8	<5	4	<2
1,1,1-Trichloroethane	800	180	1000	400	65	26
Trichloroethylene	19	2	3	<1	<1	<1
Tetrachloroethylene	48	5	2	<1	<1	<1
Chloroform	<1	<1	<1	10	<1	<1
Well No. 2						
1,1,1-Trichloroethane	6	<1	3	<1	<1	<1
Well No. 3						
Methylene chloride	<5	<5	<1	<5	<2	<2
1,1-Dichloroethylene	800	250	*	*	*	*
1,1-Dichloroethane	350	50	5	<5	<2	<2
1,1,1-Trichloroethane	24000	7000	80	60	7	4
Trichloroethylene	55	10	<1	<1	<1	<1
Tetrachloroethylene	1100	410	3	<1	<1	<1
Chlorodibromomethane	170	9	<1	<1	<1	<1
1,2-Dichloroethylene	100	17	<5	<5	<2	<2
Chloroform	12	2	<1	<1	<1	<1
1,2-Dichloroethane	31	<5	<5	<5	<2	<2
Benzene	*	3	<1	<1	<1	<1
Toluene	*	2	<2	<2	<2	<2
Acetone	*	110	<20	<10	<10	<10

* Not analyzed for

The less than symbol (<) indicates that the parameter of interest is present at a concentration less than the stated value and possibly not present at all. The value is a function of the limitations of the analytical instrumentation and the physical and chemical testing procedures.

Table 5. Volatile Organic Compounds Detected at Quantifiable Concentrations in Ground-Water Samples at the Anchor Chemical Site by Roux Associates, Inc.

Compund (Concentrations in ug/L)	Well 1	Well 2	Well 3
October 27, 1987			
1,1,1-Trichloroethane	21.2	1.5	*
Xylene	<1	1.5	*
June 22, 1989			
1,1-Dichloroethane	4	<2	<2
1,1,1-Trichloroethane	59	<1	8
February 1, 1991			
1,1,1-Trichloroethane	<1	<1	9

* Not sampled

Table 6. Summary of Sampling Program, Anchor Chemical Site, Hicksville, New York.

Sample Matrix - Ground Water [1]				
No. of Samples	Analyte	Holding Times	Analytical Method	Preservation
Round 1				
10 ground water [2] 1 field blank 1 trip blank/day 1 environmental duplicate 1 matrix spike 1 matrix spike duplicate	VOC	10 days	Method 624 (CLP-SOW 2/88)	low/med conc. HCl to pH <2, then cool to 4°C
	Extractable Organics	7 days to extraction 40 days to analysis	Method 625 (CLP-SOW 2/88)	low/med conc.: cool to 4°C
	Metals	180 days	CLP-SOW 7/88	low/med conc. HNO_3 to pH <2 then cool to 4°C
	Mercury	28 days	CLP-SOW 7/88	
	Cyanide	14 days	CLP-SOW 7/88	
	Pest/PCB	7 days to extraction 40 days to analysis	Method 608 (CLP-SOW 2/88)	low/med conc.: cool to 4°C
Round 2:				
10 ground water [3] 1 field blank 1 trip blank/day 1 environmental duplicate 1 matrix spike 1 matrix spike duplicate	Parameters of concern as determined during Round 1. Wells with no detected VOCs in Round 1 will be analyzed for low level organics.		CLP-SOW 2/88 CLP-SOW 7/88 SOW-OLC 01.1 Draft (4/90)	

Table 6. Summary of Sampling Program, Anchor Chemical Site, Hicksville, New York.

Sample Matrix: Soil/Sediment				
No. of Samples	Analyte	Holding Times	Analytical Methods	Preservation
Round 1:				
9 drywell (sediment) 10 wells (soil) 1 cesspool (sediment) 1 field blank 1 environmental duplicate 1 matrix spike 1 matrix spike duplicate	VOC Extractable Organics Pesticides/PCBs Metals Mercury Cyanide	10 days 7 days to extraction 40 days to analysis 7 days to extraction 40 days to analysis 180 days 28 days 14 days	USEPA Method 624 USEPA Method 625 CLP-SOW 7/88 CLP-SOW 7/88 CLP-SOW 7/88	low/medium conc.: cool to 4°C low/medium conc.: cool to 4°C low/medium conc.: cool to 4°C
4 wells (soil)	TOC (in screen zones of shallow wells)	14 days	USEPA Region II 7/88	4°C
Round 2:				
18 borings (soil) 1 field blank 1 environmental duplicate 1 matrix spike 1 matrix spike duplicate	to be determined by Round 1 results			
Tank Contents: Unknown [4]	RCRA toxicity characteristic constituents, ignitibility, corrosivity and reactivity	10 days	TCLP	4°C ± 2°C; store in dark

1) Field analyses performed for pH, conductivity, temperature & turbidity.
2) Nine samples if MW-3 cannot be developed and sampled.
3) If water-table bridging wells are needed (Section 4.3) additional samples will be required.
4) All tanks that contain liquids or solid sludges will be sampled.

Table 7 Proposed RI Format

Executive Summary

1. Introduction
   - 1.1 Purpose of Report
   - 1.2 Site Background
     - 1.2.1 Site Description
     - 1.2.2 Site History
     - 1.2.3 Previous Investigations

2. Study Area Investigation
   - 2.1 Surface Features (topographic mapping, etc.) (natural and manmade features
   - 2.2 Contaminant Source Investigation
   - 2.3 Geological Investigation
   - 2.4 Soil and Vadose Zone Investigation
   - 2.5 Ground-Water Investigation

3. Physical Characteristics of the Study Area
   - 3.1 Surface Features
   - 3.2 Geology
   - 3.3 Soils
   - 3.4 Hydrogeology
   - 3.5 Demography and Land Use

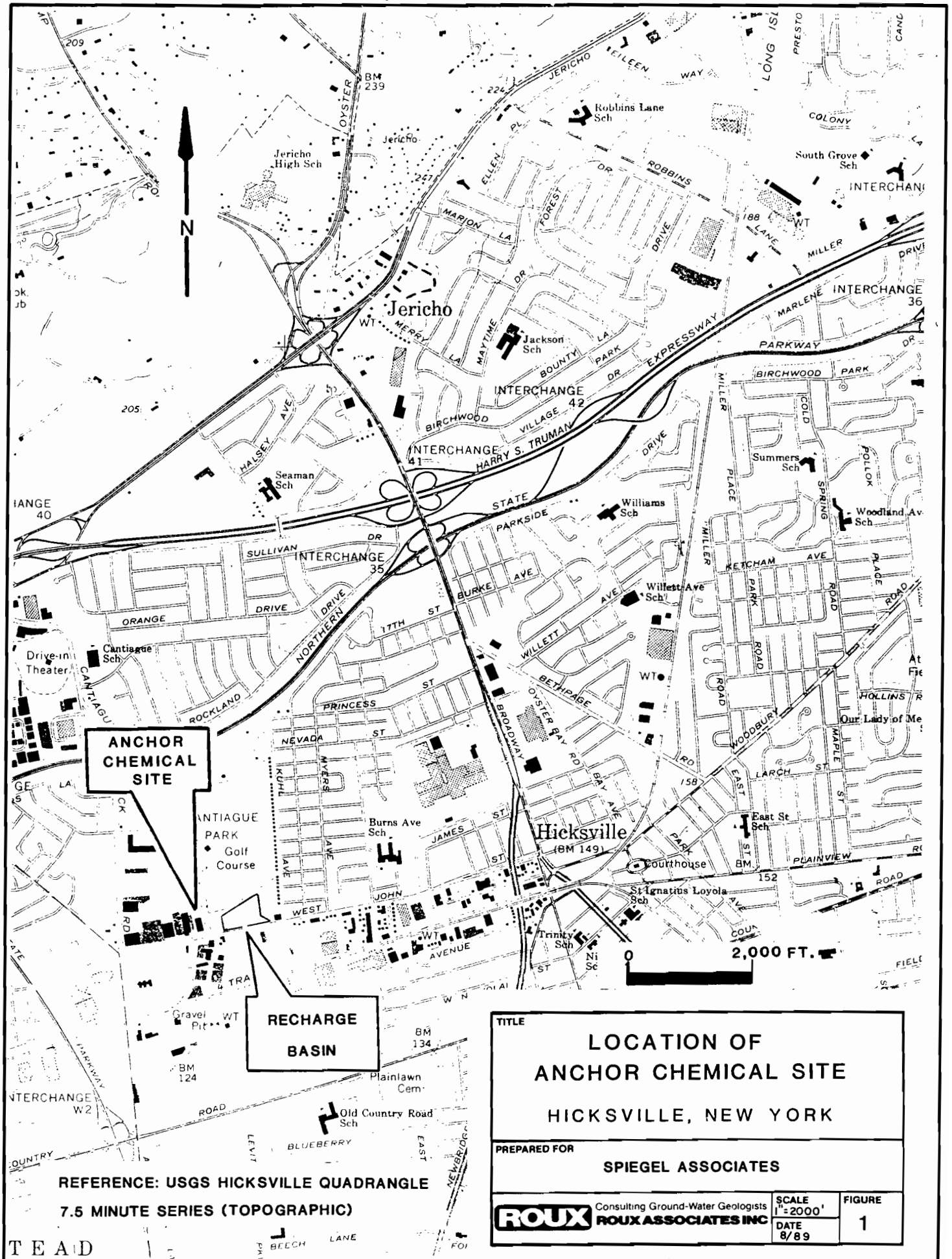
4. Nature and Extent of Contamination
   - 4.1 Sources
   - 4.2 Soils and Vadose Zone
   - 4.3 Ground Water

5. Contaminant Fate and Transport
   - 5.1 Potential Routes of Migration (i.e., air, ground water, etc.)
   - 5.2 Contaminant Persistence
   - 5.3 Contaminant Migration

6. Summary and Conclusions
   - 6.1 Summary
     - 6.1.1 Nature and Extent of Contamination
     - 6.1.2 Fate and Transport
   - 6.2 Conclusions
     - 6.2.1 Data Limitations and Recommendations for Future Work
     - 6.2.2 Recommended Remedial Action Objectives

Appendices

A. Technical Memoranda on Field Activities (if available)
B. Analytical Data and QA/QC Evaluation Results



REFERENCE: USGS HICKSVILLE QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE

LOCATION OF ANCHOR CHEMICAL SITE

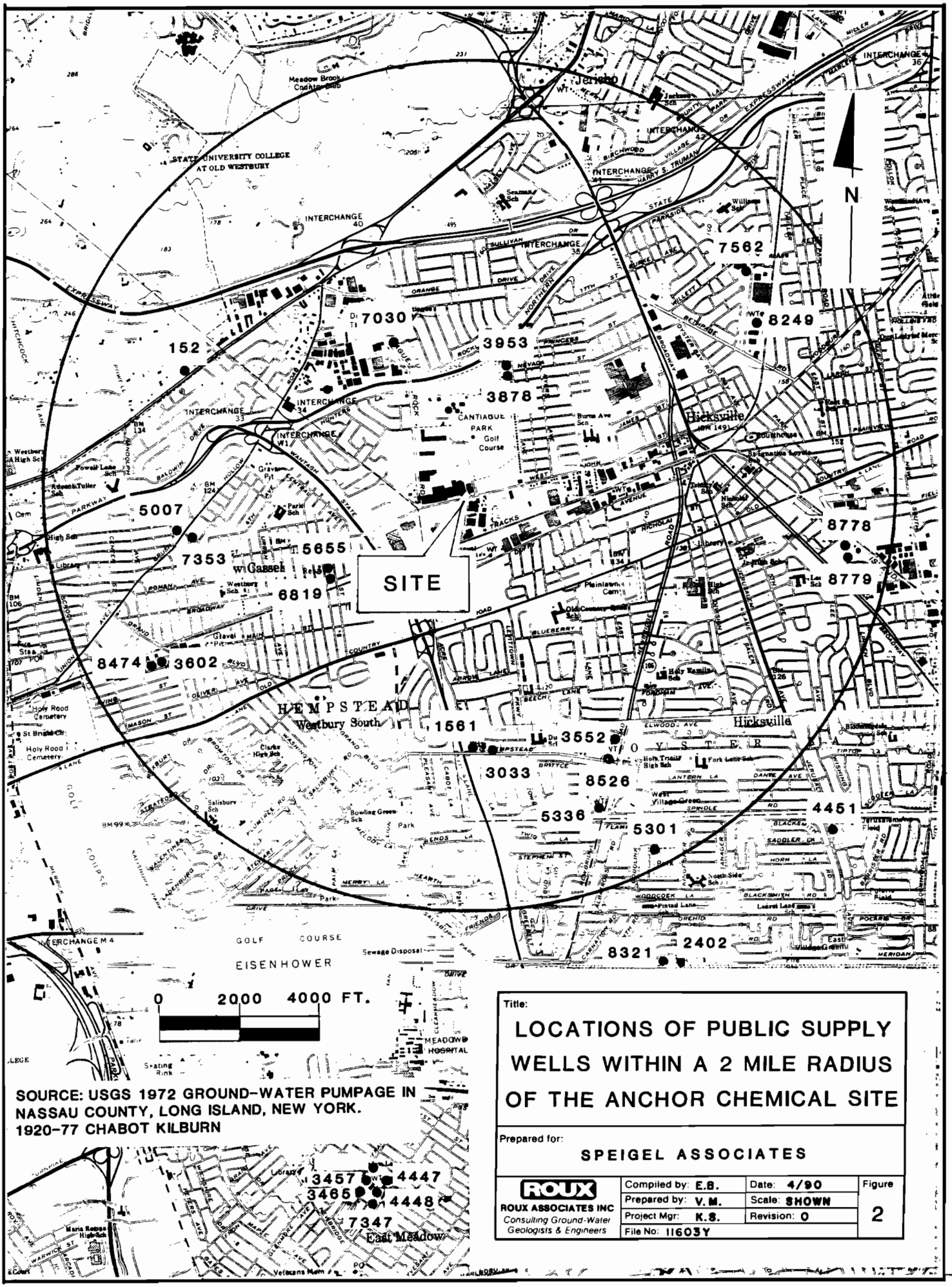
HICKSVILLE, NEW YORK

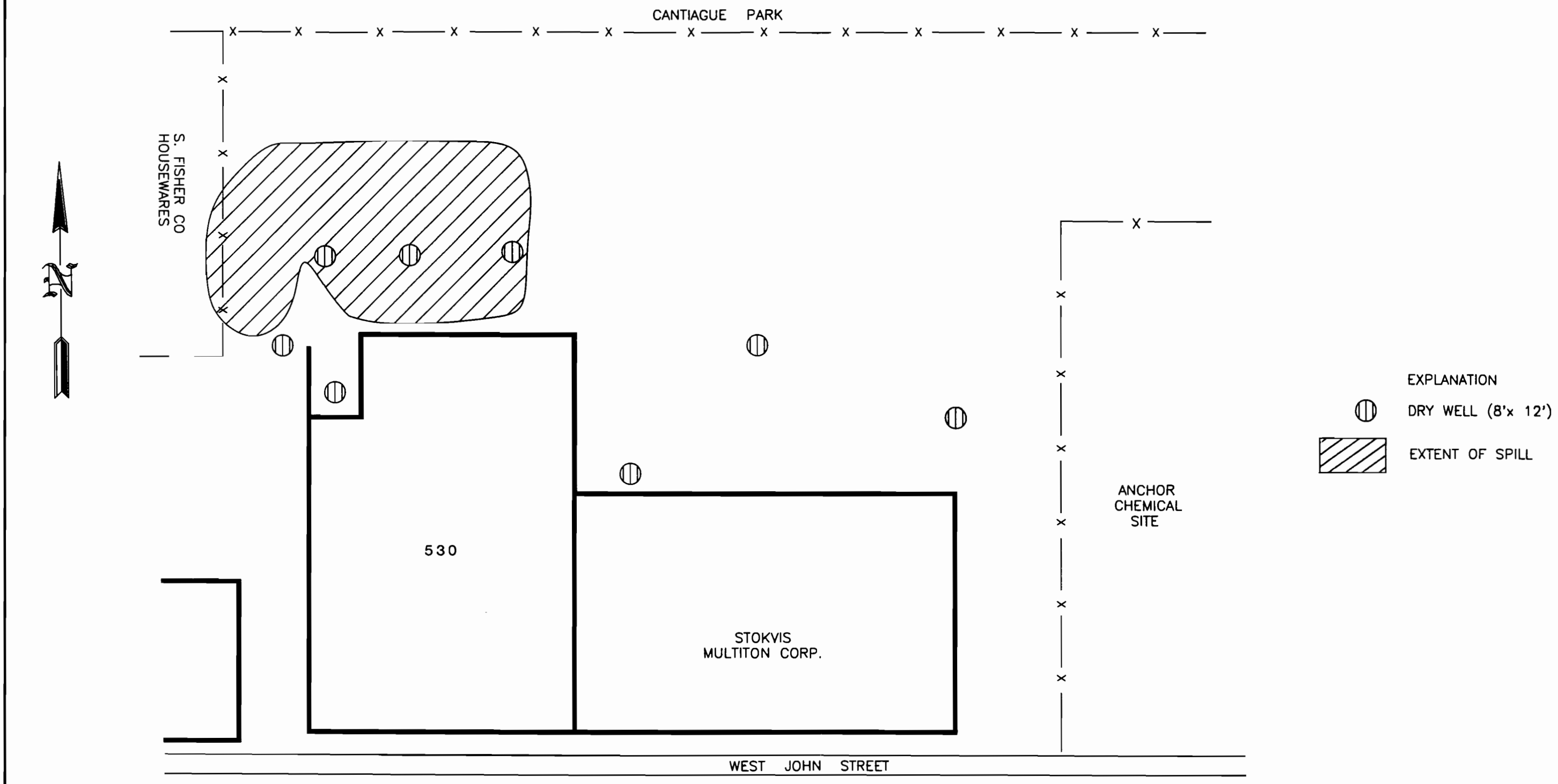
PREPARED FOR

SPIEGEL ASSOCIATES

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

SCALE	FIGURE
1"=2000'	1
DATE 8/89	


SITE
N
0 2000 4000 FT.
SOURCE: USGS 1972 GROUND-WATER PUMPAGE IN NASSAU COUNTY, LONG ISLAND, NEW YORK. 1920-77 CHABOT KILBURN
Title:
LOCATIONS OF PUBLIC SUPPLY WELLS WITHIN A 2 MILE RADIUS OF THE ANCHOR CHEMICAL SITE
Prepared for:
SPEIGEL ASSOCIATES
ROUX
ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers
Compiled by: E.B.
Prepared by: V.M.
Project Mgr: K.S.
File No: 11603Y
Date: 4/90
Scale: SHOWN
Revision: 0
Figure 2



SOURCE: ROY F. WESTON, INC.
(NO SCALE GIVEN)

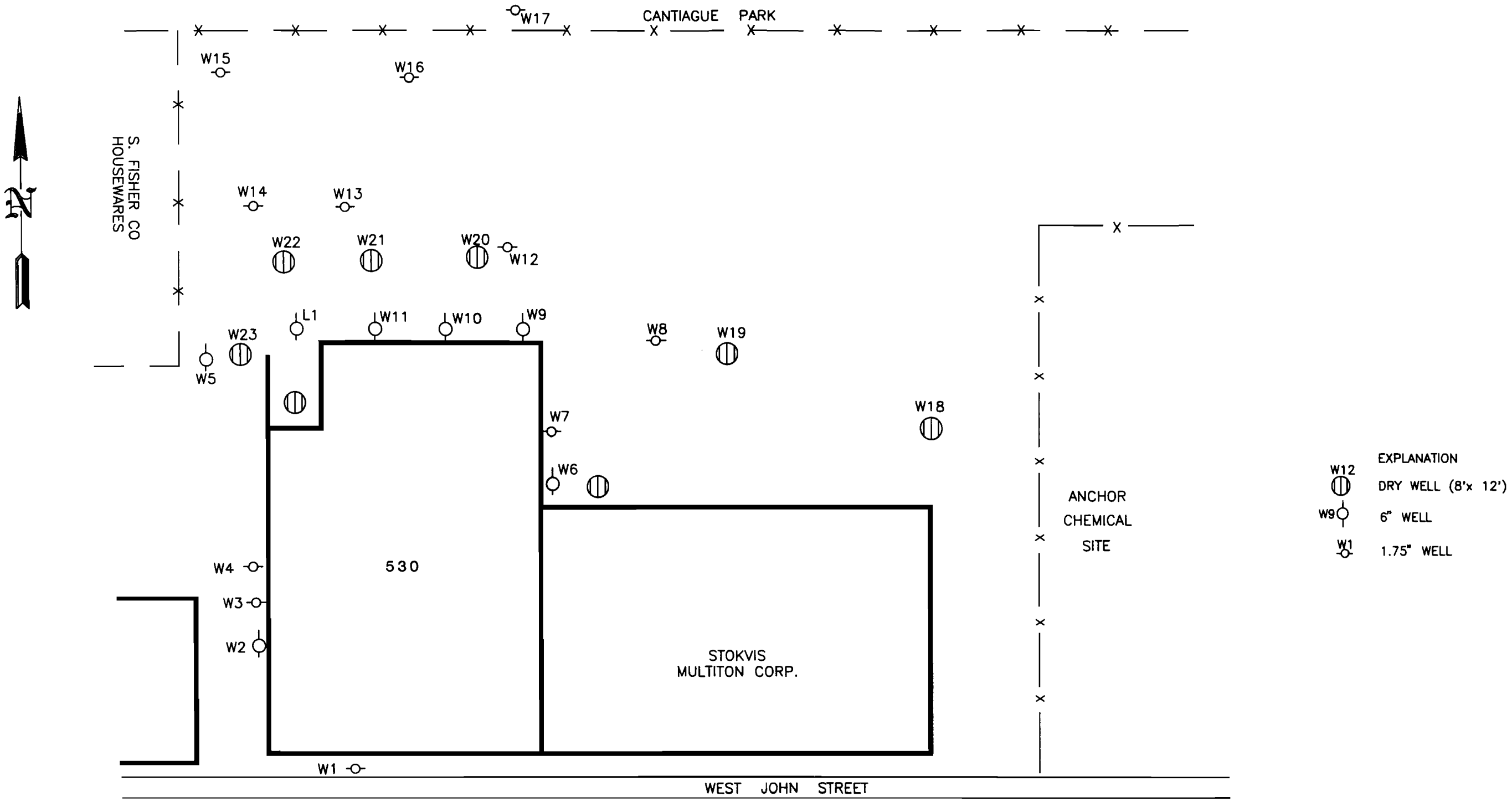
Title:

LOCATION OF MEK SPILL

Prepared for:
SPIEGEL ASSOCIATES

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by K.S.	Date: 4/90	Figure 3
Prepared by S.W.	Scale	
Project Mgr: K.S.	Revision: 0	
File No: 11603Y		



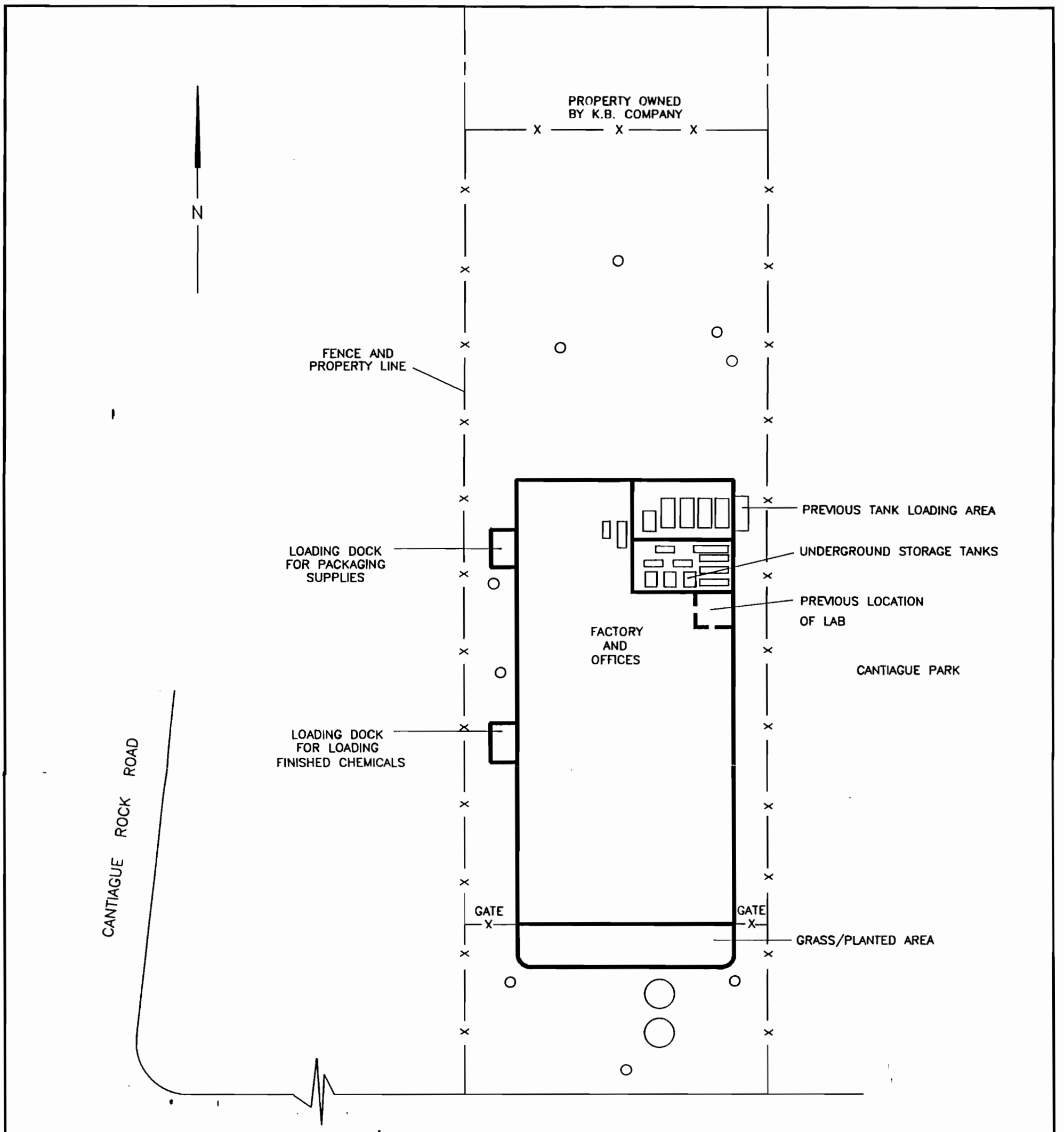
SOURCE: ROY F. WESTRON, INC.
(NO SCALE GIVEN)

Title:
LOCATION OF GROUND-WATER MONITORING WELLS INSTALLED TO MONITOR MEK SPILL

Prepared for:
SPIEGEL ASSOCIATES

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by: K.S.	Date: 4/90	Figure 4.
Prepared by: S.W.	Scale:	
Project Mgr: K.S.	Revision: 0	
File No: 11603:Y		



Title

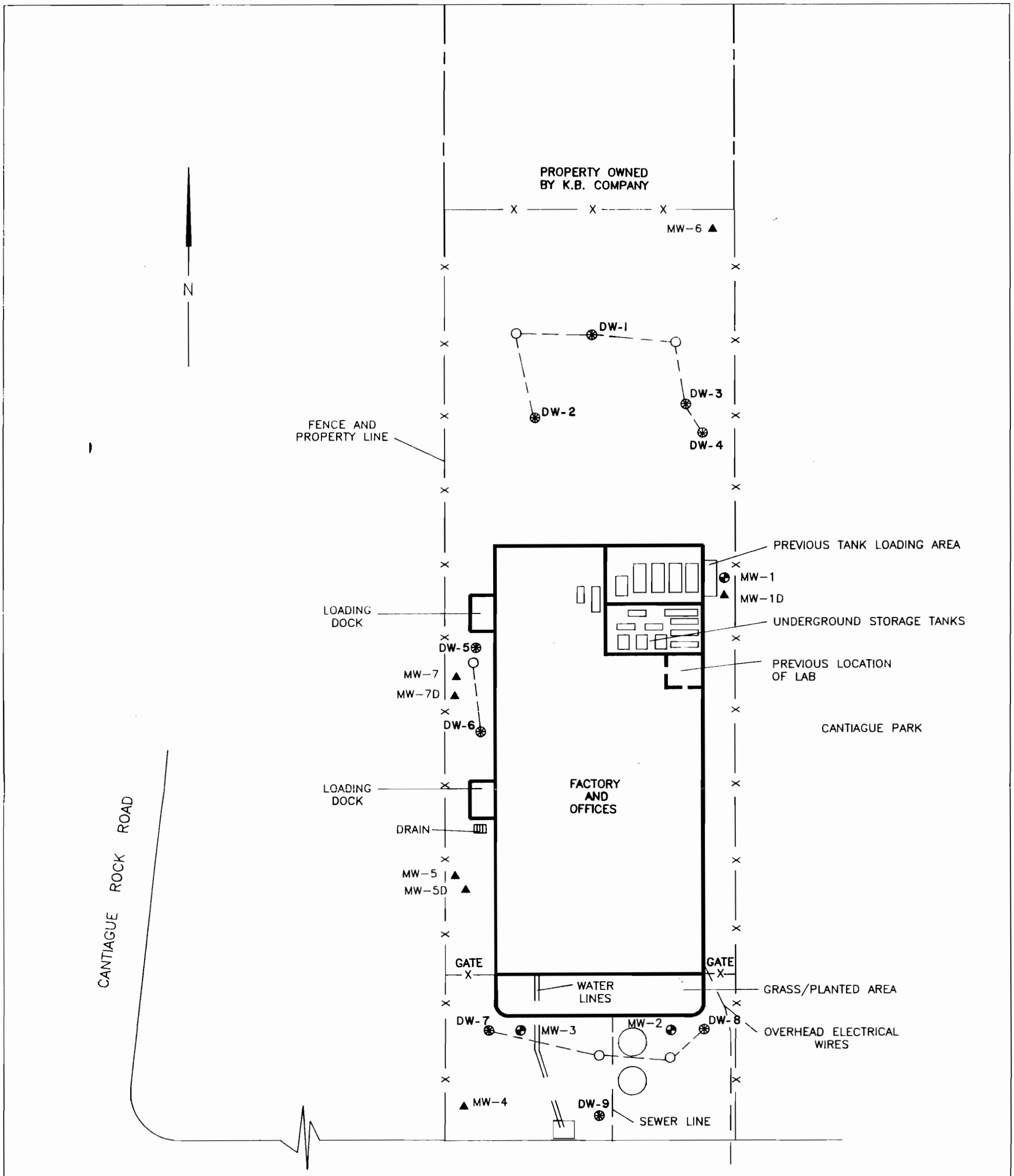
PAST FACILITY USE AT ANCHOR CHEMICAL SITE

HICKSVILLE, NEW YORK

Prepared for

SPIEGEL ASSOCIATES

ROUX ASSOCIATES INC Consulting Ground Water Geologists & Engineers	Compiled by K.S.	Date 10/90	Figure 5
	Prepared by C.L.	Scale SHOWN	
	Project Mgr K.S.	Revision 0	
	File No. 11603Y		



EXPLANATION

- ○ NEW DRYWELL, INSTALLED IN 1989 (NOT TO BE SAMPLED)
- ◯ LOCATION OF UNUSED CESSPOOLS
- MW-3 ◕ EXISTING WELL LOCATION AND DESIGNATION
- MW-4 ▲ PROPOSED WELL LOCATION AND DESIGNATION
- DW-1 ⊛ EXISTING (OLD) DRYWELL PROPOSED FOR SEDIMENT SAMPLE
- — — — — PVC DRAIN LINES

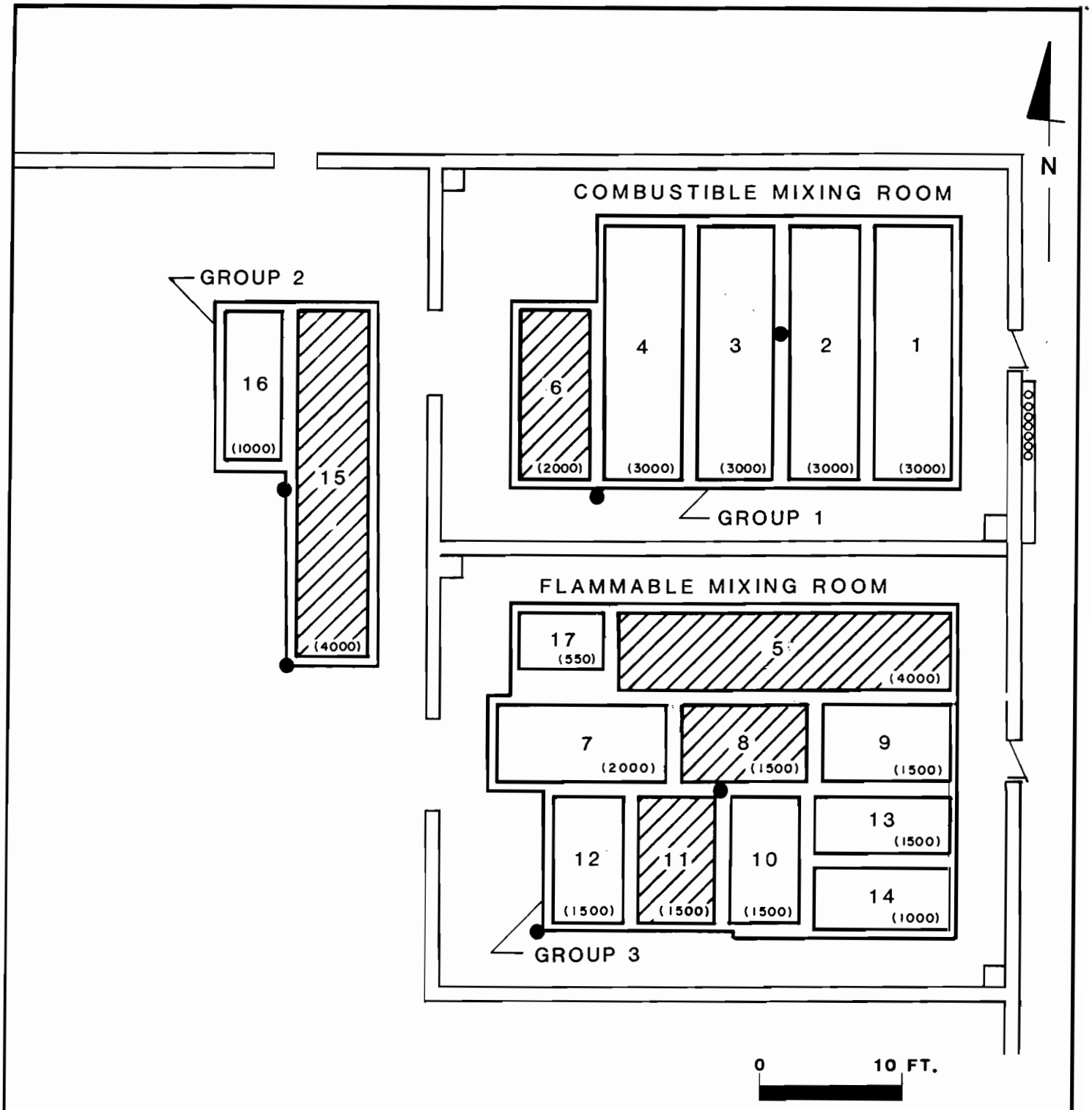
0 50 100 FT.

Title: PROPOSED LOCATIONS OF WELLS AND BORINGS AT ANCHOR CHEMICAL SITE
HICKVILLE, NEW YORK

Prepared for SPIEGEL ASSOCIATES

ROUX ASSOCIATES INC
Consulting Ground Water Geologists & Engineers

Compiled by K S	Date 10/90	Figure 7
Prepared by C L	Scale SHOWN	
Project Mgr K.S	Revision 0	
File No 1160315		



EXPLANATION

- ● PROBABLE BORING LOCATION (MAY BE MOVED BASED ON ACCESS)
- (2000) TANK FILLED WITH AN INERT SOLID MATERIAL
  - TANK CAPACITY IN GALLONS

Title:

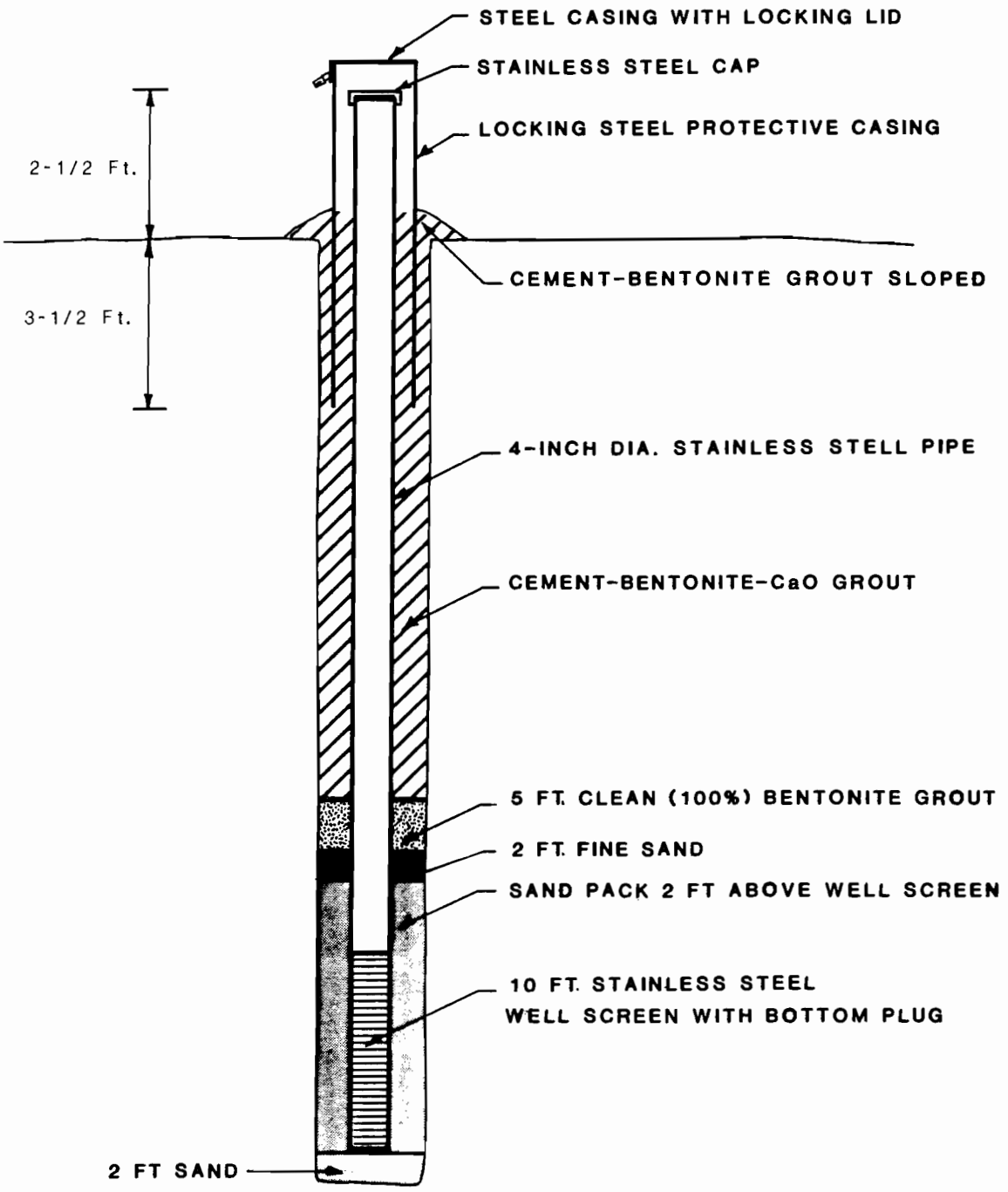
ARRANGEMENT OF UNDERGROUND STORAGE TANKS AT ANCHOR CHEMICAL SITE

HICKSVILLE, NEW YORK

Prepared for:

SPIEGEL ASSOCIATES

ROUX ASSOCIATES INC Consulting Ground-Water Geologists & Engineers	Compiled by: E. B.	Date: 4/90	Figure 6
	Prepared by: V. M.	Scale: SHOWN	
	Project Mgr: K. S.	Revision: 0	
	File No: 11603Y		



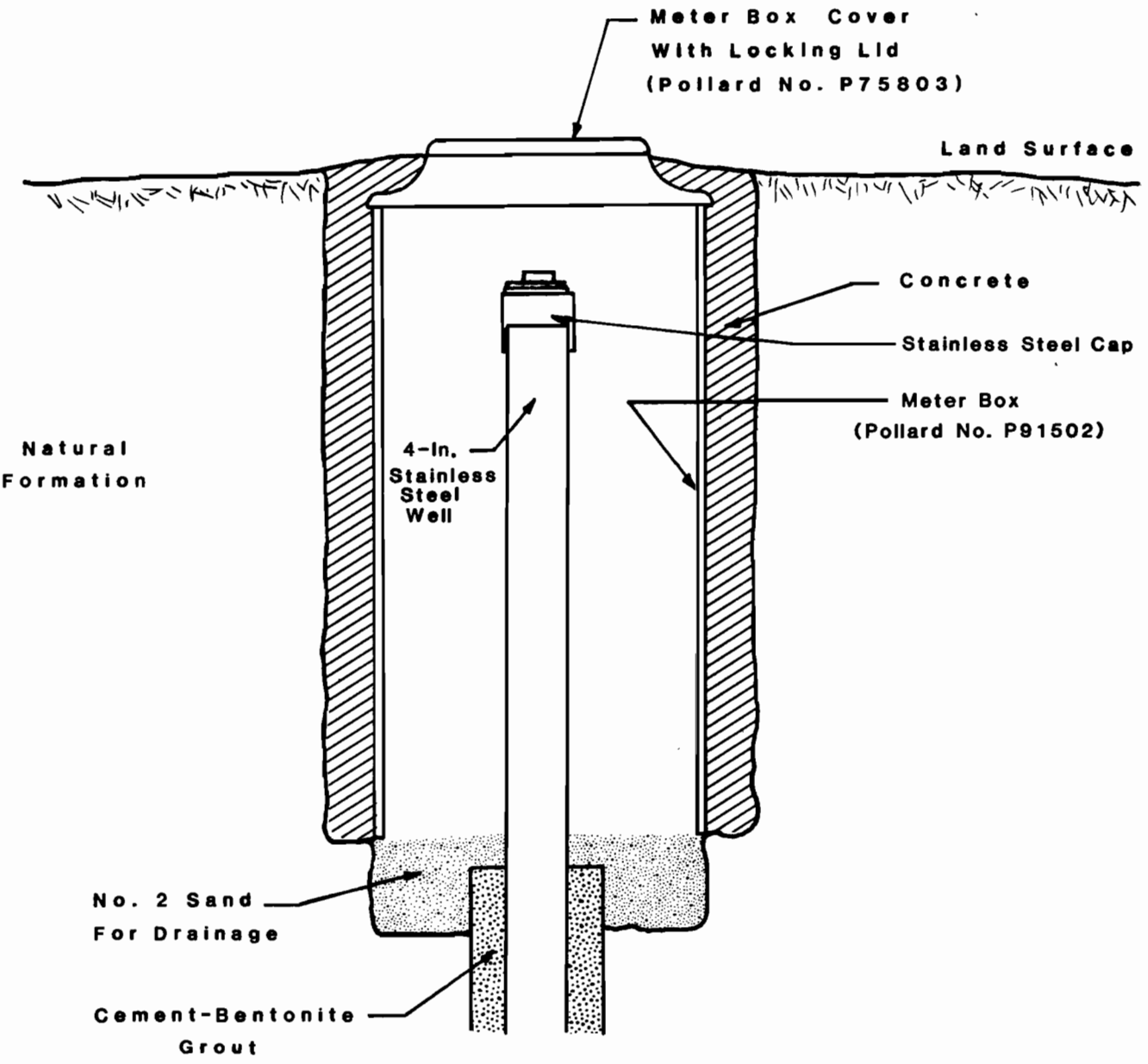
Title:

USEPA MONITORING WELL SPECIFICATIONS

Prepared for: SPIEGEL ASSOCIATES

ROUX ASSOCIATES INC
Consulting Ground-Water Geologists & Engineers

Compiled by: P R	Date: 10/90	Figure: 8
Prepared by: S W	Scale: NONE	
Project Mgr: P R	Revision: 0	
File No: 11603Y		



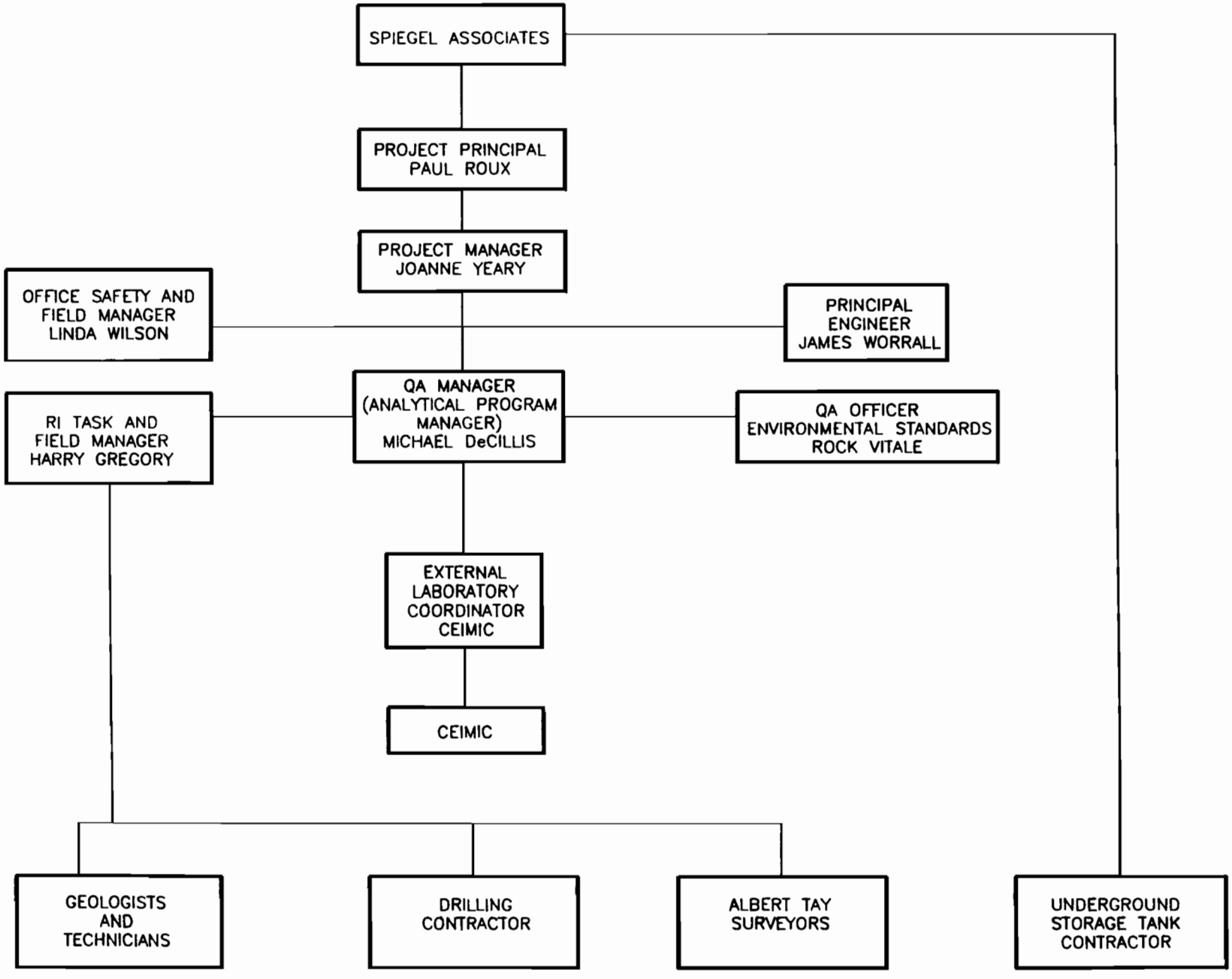
Title:

PROPOSED METER BOX CONFIGURATION FOR MONITORING WELLS

Prepared for:

SPEIGEL ASSOCIATES

ROUX ASSOCIATES INC Consulting Ground-Water Geologists & Engineers	Compiled by: P. R.	Date: 10/90	Figure 9
	Prepared by: C. R.	Scale: SHOWN	
	Project Mgr: P. R.	Revision: 0	
	File No: 11603Y		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MANAGER)
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FIELD MANAGER
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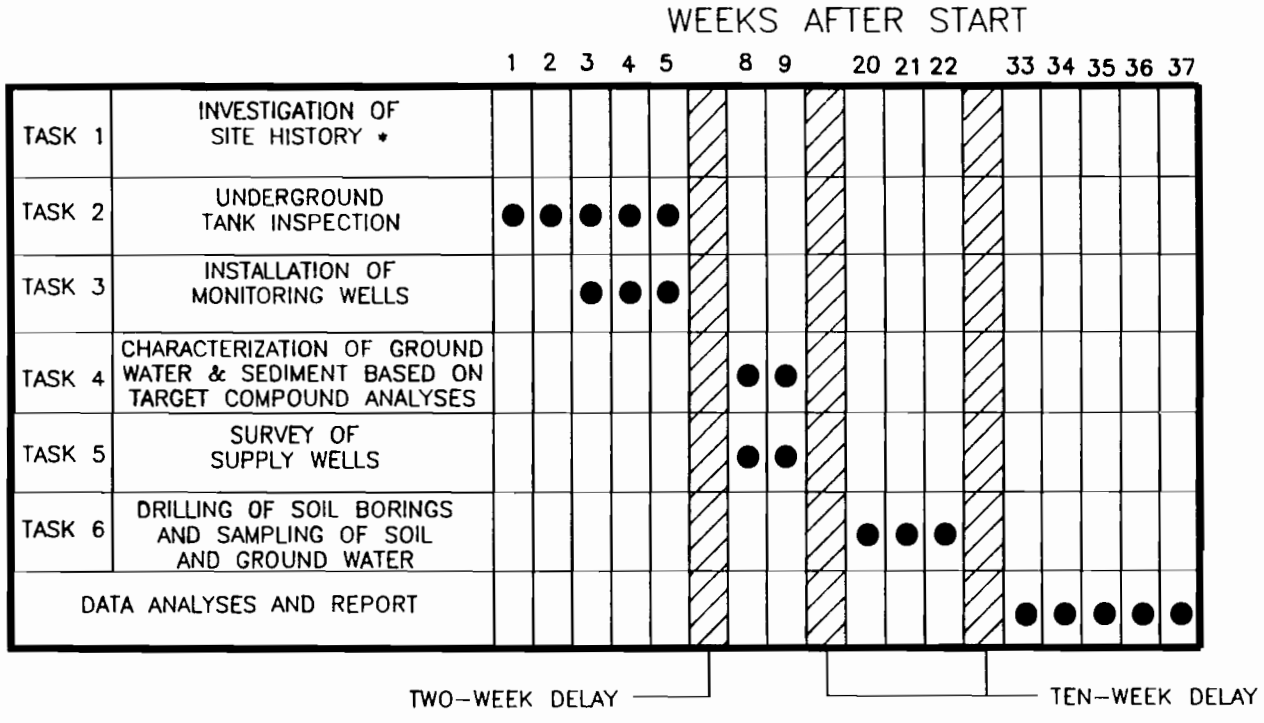
ROCK VITALE
EXTERNAL
LABORATORY
COORDINATOR
CEIMIC
CEIMIC
GEOLOGISTS
AND
TECHNICIANS
DRILLING
CONTRACTOR
ALBERT TAY
SURVEYORS
UNDERGROUND
STORAGE TANK
CONTRACTOR

FIGURE 10

FIGURE 11 – REMEDIAL INVESTIGATION SCHEDULE
ANCHOR CHEMICAL SITE
HICKSVILLE, NEW YORK



NOTE: (1) A SCHEDULE FOR THE FS WILL BE PREPARED AND SUBMITTED AS PART OF THE RI REPORT.

(2) THERE IS A TWO–WEEK DELAY INCLUDED AFTER TASK 3 TO ALLOW WELL RECOVERY AND A TEN–WEEK DELAY INCLUDED AFTER EACH OF TASKS 5 AND 6 TO ALLOW FOR SAMPLE ANALYSES AND DATA VALIDATION.

(3) THERE IS A TWO TO FOUR WEEK PERIOD REQUIRED TO CONTRACT AND MOBILIZE SUBCONTRACTORS

* TASK 1 IS COMPLETED

A1. Chemical Survey and Laboratory Analyses Information

Anchor Chemical Company, 1977. Production Data (Source: NCDH Files)

June 1, 1977

ANCHOR
CHEMICAL CO., INC.

CONFIDENTIAL ANSWER

3. PRODUCTION DATA

CONFIDENTIAL - PROPRIETARY FORMULAE

Principal Products Made Per Month		Raw Materials Consumer Per Month
Fountain Mix #18	246 Gal.	Water 155 gal; gum arabic 14° baume solution 75 gal; chrome alum 100 lb; 50% zinc nitrate solution 6 lb; ethyloxilated alcohol surfactant 6 l
Maxi Kleen	37 Gal.	Water 29 gal; citric acid 21.6 lb; 62% solution chromium chloride 1 lb; 70% solution hydroxyacetic acid 1.5 glycerine 2.6 gal.
On the Press	32 Gal.	Isopropyl alcohol 15 gal; ethylene glycol 15 gal; cuprous chloride 8.5 HCL 1.5 gal.
PD Gum	9 1/4 Gal.	Water 6 gal; gum arabic 14° baume solution 3 gal; phosphoric acid 3/4
P.P.C. #1	100 Gal.	Water 74 gal; monosodium phosphate 2 isopropyl alcohol 10 1/4 gal; butyl cellosolve 8 gal; ethylene glycol 3 glycerine 2.7 gal; phosphoric acid 1
Velvee	560 Gal.	Water 386 gal; SL-62 (biodegradeable surfactant)120.7 gal; isopropyl alcohol 50 gal; ionol concentrate 6
TAME	664 Gal.	Water 385 gal; sodium citrate 527 lb citric acid 136 lb; gum arabic 14° b solution 132 gal; ethylene glycol 11 butyl cellosolve 19 gal; IPA - 9 1/4 Union Carbide emulsion L7001- 20 lb.

DANGEROUS CHEMICALS | SAFE CHEMICALS

DON'T USE products containing	Why you should not use	What it is commonly used for	DO USE these safer Anchor replacements to reduce the hazard	
BENZENE (Benzol)	Highly poisonous. Flammable and explosive. Highly toxic coal tar solvent. Damages blood. Can cause cancer. Inhalation of concentrated vapors can lead to death. Contact with skin must be avoided. Swells rubber. Personnel and plant hazard.	Hard Dried Ink Remover	Solv-A-Ton Rx A	Cleaner 909
		Type cleaner	Aled Plate Wash Anchor Type Wash Anc-Sol Rx 81	Solvent #95 Typosol Fotopoly
		Glaze Removers (Rollers & Blankets)	Wash R228 Randisolv	A-60 Solvent Velvee
		Cleaning film	Film-Klean	Robinol
		Press Wash (Rollers & Blankets)	Kendu Litho Solvent ZEV A-60 Solvent	Wash R228 Murolene Ronolene Blanco
		Type Wash (non-flammable)	Solvent #95	Robinol
		Degreaser	Robinol	D.R.D.
		Blanket Tack Remover	Wash R228 Kendu	Velvee
		Type Wash	Aled Plate Wash Anchor Type Wash Anc-Sol Rx 81 Fotopoly	Solvent #95 Typosol Robinol
		Press Wash (Rollers & Blankets)	Litho Solvent Pressolv Anc-Sol Rx 81 Kendu	Wash R228 Murolene Ronolene A-60 Solvent
		Degreaser	Robinol	D.R.D.
		Roller Wash	Pressolv	Wash R228
		Press Wash	ZEV Litho Solvent Anc-Sol Rx 81	A-60 Solvent Wash R228 Ronolene
		Litho Plate Wash	Ancotine	
		Type Wash	Aled Plate Wash Anchor Type Wash	Typosol Solvent #95
		Type Wash	Aled Plate Wash Anchor Type Wash	Typosol Solvent #95
		Press Wash (Rollers & Blankets)	Pressolv Litho Solvent Anc-Sol Rx 81 A-60 Solvent	Wash R228 Ronolene Murolene ZEV
		Press Wash (Rollers & Blankets)	Pressolv Litho Solvent Anc-Sol Rx 81 A-60 Solvent	Wash R228 Ronolene Murolene ZEV
		Type Wash (non-flammable)	Solvent #95	Robinol
		Press Wash (Rollers & Blankets)	Pressolv Litho Solvent Anc-Sol Rx 81 A-60 Solvent	Wash R228 Ronolene Murolene ZEV
		Glaze Remover (Rollers & Blankets)	Wash R228 Solv-A-Ton RxA	Randisolv Velvee
		Blanket Wash	A-60 Solvent Litho Solvent Anc-Sol Rx 81 Wash R228	ZEV Murolene Ronolene Kendu
CARBON TETRACHLORIDE	Highly poisonous. Deadly vapors. Produces phosgene gas in heat. Contact with skin should be avoided. May be fatal if inhaled or swallowed. Fair solvent. Swells rubber. Personnel hazard.			
CARBON DISULFIDE	Highly flammable and explosive. Highly poisonous. Extremely disagreeable odor. Personnel and plant hazard.			
GASOLINE	Highly flammable. Explosive. Can cause lead poisoning. Poor solvency. Can cause dermatitis. Personnel and plant hazard.			
KEROSENE TURPENTINE	Causes dermatitis. Poor solvent. Dries slow. Causes rust. Swells natural rubber and most synthetics. Personnel hazard.			
METHANOL (Wood alcohol)	Highly poisonous. Affects optic nerves. Causes dermatitis. Corrodes lead and type. Warps wood blocks. Personnel hazard.			
TOLUENE (Toluol)	Flammable and highly toxic coal tar solvent. Dissolves and swells rubber. Can cause dermatitis. Personnel and plant hazard.			
XYLENE (Xylol)	Flammable and highly toxic coal tar solvent. Dissolves and swells rubber. Can cause dermatitis. Personnel and plant hazard.			
TRICHLORETHYLENE PERCHLORETHYLENE	Poisonous. Can cause dermatitis. Prolonged inhalation of excessive amounts of toxic vapor can cause irritation of eyes and mucuous membranes. Can break down when exposed to open flame to phosgene gas and hydrogen chloride. Swells rubber.			
LYE	Extremely caustic. Contact with skin causes serious burns. Splash in eyes causes blindness. Requires special protective clothing. Personnel hazard.			
NAPHTHA BENZINE	Petroleum solvents. Highly flammable and explosive. Causes dermatitis. Poor solvency. Swells natural rubber. Personnel and plant hazard.			

Distributed as a service by

EXXON COMPANY, U.S.A.
A DIVISION OF EXXON CORPORATION

DATE ISSUED: 11/07/88
SUPERSEDES DATE: 05/02/88

MATERIAL SAFETY DATA SHEET

EXXON COMPANY, U.S.A. P.O. BOX 2180 HOUSTON, TX 77252-2180

A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME
AROMATIC 100 Comb

PRODUCT CODE

APPENDIX A

Reference Documentation

INGESTION
If ingested, DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM)
COMBUSTIBLE - Per DOT 49 CFR 173.115
41°C (106°F)
ASTM D 56, Tag Closed Cup

AUTOIGNITION TEMPERATURE
Approximately 471°C (880°F)
ASTM D 2155

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health	Flammability	Reactivity	BASIS
1	2	0	Recommended by Exxon

HANDLING PRECAUTIONS
This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

Keep product away from ignition sources, such as heat, sparks, pilot lights, static electricity, and open flames.

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)
Estimated values: Lower Flammable Limit 0.9% Upper Flammable Limit 7%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use dry chemical, foam or carbon dioxide. Water may be ineffective, but water should be used to keep fire-exposed containers cool. If a leak or spill has ignited, use water spray to disperse the vapors and to protect men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

NOTE: The inclusion of the phrase "water may be ineffective" is to indicate that although water can be used to cool and protect exposed material, water may not extinguish the fire unless used under favorable conditions by experienced fire fighters trained in fighting all types of flammable liquid fires.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
Fumes, smoke, carbon monoxide, aldehydes and other decomposition products, in the case of incomplete combustion.

"EMPTY" CONTAINER WARNING
"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)
High vapor concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic, and may have other central nervous system effects including death.

NATURE OF HAZARD AND TOXICITY INFORMATION
Product contacting the eyes may cause eye irritation.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than 5 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE
Petroleum Solvents/Petroleum Hydrocarbons - Skin contact may aggravate an existing dermatitis.

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE
Approximately 152-168°C (306-335°F)

SPECIFIC GRAVITY (15.6 C/15.6 C)
0.872

MOLECULAR WEIGHT
120

pH
Essentially neutral

POUR, CONGEALING OR MELTING POINT
Less than -18°C (0°F)
Pour Point by ASTM D 97

VISCOSITY
0.78 cP @ 25°C ASTM D 445

VAPOR PRESSURE
Less than 10 mm Hg @ 25°C
ASTM D 2879

VAPOR DENSITY (AIR = 1)
Approximately 4.1

PERCENT VOLATILE BY VOLUME
100 @ 1 atm. and 25°C (77°F)

EVAPORATION RATE @ 1 ATM. AND 25 C (77 F)
(n-BUTYL ACETATE = 1)
0.2

SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F)
Negligible; less than 0.1%

G. REACTIVITY

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite.

H. ENVIRONMENTAL INFORMATION

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.
Assure conformity with applicable governmental regulations. Continue to observe precautions for volatile, combustible vapors from absorbed material.

THE FOLLOWING INFORMATION MAY BE USEFUL IN COMPLYING WITH VARIOUS STATE AND FEDERAL REGULATIONS UNDER VARIOUS ENVIRONMENTAL STATUES:

REPORTABLE QUANTITY (RQ), EPA REGULATION 40 CFR 302 (CERCLA Section 102)
The RQ for cumene is 1 pound. This product contains approximately 5% cumene.

The RQ for ethylbenzene is 1,000 pounds. This product contains approximately 1.5% ethylbenzene.

The RQ for xylene is 1,000 pounds. This product contains approximately 5% xylene.

THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355 (SARA Sections 301-304)
Not applicable

TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372 (SARA Sections 311-313)
This product contains approximately 5% cumene.

This product contains approximately 1.5% ethylbenzene.

This product contains approximately 5% xylene.

This product contains approximately 21% 1,2,4-Trimethyl benzene.

EPA HAZARD CLASSIFICATION CODE:	Acute Hazard	Chronic Hazard	Fire Hazard	Pressure Hazard	Reactive Hazard	Not Applicable
	XXX		XXX			

I. PROTECTION AND PRECAUTIONS

VENTILATION
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. Use explosion-proof equipment. No smoking or open lights.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
Keep containers and storage containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Protection Association standard for petroleum products.

PERSONAL HYGIENE
Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION AND OSHA RELATED LABEL INFORMATION

TRANSPORTATION INCIDENT INFORMATION
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

DOT IDENTIFICATION NUMBER
UN 1255

OSHA REQUIRED LABEL INFORMATION
In compliance with hazard and right-to-know requirements, the following OSHA Hazard Warnings should be found on a label, bill of lading or invoice accompanying this shipment.

DANGER!

COMBUSTIBLE

Note: Product label will contain additional non-OSHA related information.

The information and recommendations contained herein are, to the best of Exxon's knowledge and belief, accurate and reliable as of the date issued. Exxon does not warrant or guarantee their accuracy or reliability, and Exxon shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal council should be consulted to insure proper health, safety and other necessary information is included on the container.

The Environmental Information included under Section H hereof as well as the Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by Exxon Company, U.S.A. in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with Exxon's interpretation of the available data.

FOR ADDITIONAL INFORMATION ON HEALTH EFFECTS CONTACT:
DIRECTOR OF INDUSTRIAL HYGIENE
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 3157
HOUSTON, TX 77252-2180
(713) 656-2443

FOR OTHER PRODUCT INFORMATION CONTACT:

MANAGER, MARKETING TECHNICAL SERVICES
EXXON COMPANY, U.S.A.
P. O. BOX 2180 ROOM 2355
HOUSTON, TX 77252-2180
(713) 656-5949

UNOCAL CHEMICALS DIVISION
PETROCHEMICALS GROUP

Product Name: NAPHTHOL SPIRITS 66/3
Product Code No: 11103

Page 1 of
Issue Date: 3/11/

MANUFACTURER:

UNOCAL CHEMICALS DIVISION
UNION OIL COMPANY OF CALIFORNIA
1345 N. MEACHAM
SCHAUMBURG, ILLINOIS 60196

CONTACT FOR FURTHER INFORMATION:
MSDS COORDINATOR (312) 490-2500

Transportation Emergencies:
Call CHEMTREC
(800) 424-9300 Cont. U.S
(202) 483-7616 (Collect)
from Alaska & Hawaii
Health Emergencies:
CALL LOS ANGELES POISON
INFORMATION CENTER (24 hrs.
(213) 664-2121

PRODUCT IDENTIFICATION

PRODUCT NAME: NAPHTHOL SPIRITS 66/3

SYNONYMS: AMSCO SOLV 1103

GENERIC NAME: VOLATILE SOLVENT

CHEMICAL FAMILY: HYDROCARBON MIXTURE

DOT PROPER SHIPPING NAME: PETROLEUM NAPHTHA

ID NUMBER: UN1255

DOT HAZARD CLASSIFICATION: COMBUSTIBLE LIQUID

CAS NUMBER: 64742-48-9

SECTION I - HAZARDOUS INGREDIENTS/EXPOSURE LIMITS		LIMITS	UNITS	AGENCY	TYPE
STODDARD SOLVENT	8052-41-3	100.0000	PPM	ACGIH	TWA
		200.0000	PPM	ACGIH	STEL
		500.0000	PPM	OSHA	TWA

SECTION II - EMERGENCY AND FIRST AID PROCEDURES

EMERGENCY
Have physician call LOS ANGELES POISON INFORMATION CENTER (24 hrs.) (213) 664-2121

EYE CONTACT:

IF IRRITATION OR REDNESS FROM EXPOSURE TO VAPORS DEVELOPS, MOVE VICTIM AWAY FROM EXPOSURE AND INTO FRESH AIR. IF IRRITATION OR REDNESS PERSISTS, SEEK MEDICAL ATTENTION. FOR DIRECT CONTACT, HOLD EYELIDS APART AND FLUSH THE AFFECTED EYE(S) WITH CLEAN WATER. SEEK MEDICAL ATTENTION.

SKIN CONTACT:

REMOVE CONTAMINATED CLOTHING. CLEANSE AFFECTED AREA(S) THOROUGHLY BY WASHING WITH MILD SOAP AND WATER. IF IRRITATION OR REDNESS DEVELOPS AND PERSISTS, SEEK MEDICAL ATTENTION.

SECTION II - EMERGENCY AND FIRST AID PROCEDURES

EMERGENCY
Have physician call LOS ANGELES POISON INFORMATION CENTER (24 hrs.) (213) 664-2121

INHALATION (BREATHING):

IF IRRITATION OF NOSE OR THROAT DEVELOPS, MOVE VICTIM AWAY FROM SOURCE OF EXPOSURE AND INTO FRESH AIR. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. IF VICTIM IS NOT BREATHING, ARTIFICIAL RESPIRATION SHOULD BE ADMINISTERED. IF BREATHING DIFFICULTIES DEVELOP, OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL. SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION (SWALLOWING):

ASPIRATION HAZARD: DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE. IF VICTIM IS DROWSY OR UNCONSCIOUS, PLACE ON THE LEFT SIDE WITH THE HEAD DOWN. IF POSSIBLE, DO NOT LEAVE VICTIM UNATTENDED. SEEK MEDICAL ATTENTION.

SECTION III - HEALTH HAZARDS/ROUTES OF ENTRY

EYE CONTACT:

THIS MATERIAL MAY CAUSE EYE IRRITATION. DIRECT CONTACT WITH THE LIQUID OR EXPOSURE TO VAPORS OR MISTS MAY CAUSE BURNING, TEARING AND REDNESS.

SKIN CONTACT:

THIS MATERIAL MAY CAUSE SKIN IRRITATION. PROLONGED OR REPEATED EXPOSURE TO THIS MATERIAL MAY CAUSE REDNESS, BURNING, AND DRYING AND CRACKING OF THE SKIN. NO HARMFUL EFFECTS HAVE BEEN DEMONSTRATED IN SKIN ABSORPTION STUDIES. PERSONS WITH PRE-EXISTING SKIN DISORDERS MAY BE MORE SUSCEPTIBLE TO THE EFFECTS OF THIS MATERIAL.

INHALATION (BREATHING):

BREATHING HIGH CONCENTRATIONS OF VAPORS OR MISTS MAY CAUSE IRRITATION OF THE NOSE AND THROAT. SIGNS OF NERVOUS SYSTEM DEPRESSION (E.G., DROWSINESS, DIZZINESS, LOSS OF COORDINATION, AND FATIGUE). RESPIRATORY SYMPTOMS ASSOCIATED WITH PRE-EXISTING LUNG DISORDERS (E.G., ASTHMA-LIKE CONDITIONS) MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL.

INGESTION (SWALLOWING):

INGESTION OF EXCESSIVE QUANTITIES MAY CAUSE IRRITATION OF THE DIGESTIVE TRACT. SIGNS OF NERVOUS SYSTEM DEPRESSION (E.G., DROWSINESS, DIZZINESS, LOSS OF COORDINATION, AND FATIGUE). ASPIRATION HAZARD - THIS MATERIAL CAN ENTER LUNGS DURING SWALLOWING OR VOMITING AND CAUSE LUNG INFLAMMATION AND DAMAGE.

COMMENTS:

THIS SUBSTANCE HAS NOT BEEN IDENTIFIED AS A CARCINOGEN OR PROBABLE CARCINOGEN BY NTP, IARC OR OSHA.
REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE (SOMETIMES REFERRED TO AS SOLVENT OR PAINTERS' SYNDROME). INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THIS PRODUCT MAY BE HARMFUL OR FATAL.

SECTION IV - SPECIAL PROTECTION INFORMATION

VENTILATION:

IF CURRENT VENTILATION PRACTICES ARE NOT ADEQUATE FOR MINIMIZING EXPOSURES, ADDITIONAL VENTILATION OR EXHAUST SYSTEMS MAY BE REQUIRED. WHERE EXPLOSIVE MIXTURES MAY BE PRESENT, SYSTEMS SAFE FOR SUCH LOCATIONS SHOULD BE USED.

SECTION IV - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:

THE USE OF RESPIRATORY PROTECTION IS ADVISED WHEN CONCENTRATIONS EXCEED THE ESTABLISHED EXPOSURE LIMITS (SEE SECTION I). DEPENDING ON THE AIRBORNE CONCENTRATION, USE A RESPIRATOR OR GAS MASK WITH APPROPRIATE CARTRIDGES AND CANNISTERS (NIOSH APPROVED, IF AVAILABLE) OR SUPPLIED AIR EQUIPMENT.

PROTECTIVE GLOVES:

THE USE OF GLOVES IMPERMEABLE TO THE SPECIFIC MATERIAL HANDLED IS ADVISED TO PREVENT SKIN CONTACT AND POSSIBLE IRRITATION.

EYE PROTECTION:

APPROVED EYE PROTECTION TO SAFEGUARD AGAINST POTENTIAL EYE CONTACT, IRRITATION OR INJURY IS RECOMMENDED.

OTHER PROTECTIVE EQUIPMENT:

IT IS SUGGESTED THAT A SOURCE OF CLEAN WATER BE AVAILABLE IN WORK AREA FOR FLUSHING EYES AND SKIN. IMPERVIOUS CLOTHING SHOULD BE WORN AS NEEDED.

SECTION V - REACTIVITY DATA

STABILITY:

STABLE

INCOMPATIBILITY (MATERIALS TO AVOID):

THIS PRODUCT IS INCOMPATIBLE WITH STRONG ACIDS OR BASES, OXIDIZING AGENTS AND SELECTED AMINES.

HAZARDOUS DECOMPOSITION PRODUCTS:

COMBUSTION MAY YIELD CARBON MONOXIDE AND/OR CARBON DIOXIDE.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR

SECTION VI - SPILL OR LEAK PROCEDURES

HIGHWAY OR RAILWAY SPILLS
Call CHEMTREC (800) 424-9300 Cont. U.S.
(Collect) (202) 483-7616 from Alaska & Hawai

PRECAUTIONS IN CASE OF RELEASE OR SPILL:

STAY UPWIND AND AWAY FROM SPILL. KEEP ALL SOURCES OF IGNITION AND HOT METAL SURFACES AWAY FROM SPILL. IF SPILL IS INDOORS, VENTILATE AREA OF SPILL. KEEP OUT OF DRAINS, SEWERS OR WATERWAYS. USE SAND OR OTHER INERT MATERIAL TO DAM AND CONTAIN SPILL. DO NOT FLUSH AREA WITH WATER. FOR SMALL SPILLS, DO NOT FLUSH WITH WATER; USE ABSORBANT PADS. CALL SPILL RESPONSE TEAM IF LARGE SPILL. CONTACT FIRE AUTHORITIES AND APPROPRIATE STATE/LOCAL AGENCIES.

WASTE DISPOSAL METHOD:

DISPOSE OF PRODUCT IN ACCORDANCE WITH LOCAL, COUNTY, STATE, AND FEDERAL REGULATIONS.

SECTION VII - STORAGE AND SPECIAL PRECAUTIONS

HANDLING AND STORAGE PRECAUTIONS:

KEEP CONTAINERS TIGHTLY CLOSED. KEEP CONTAINERS COOL, DRY, AND AWAY FROM SOURCES OF IGNITION. USE AND STORE THIS PRODUCT WITH ADEQUATE VENTILATION. AVOID INHALATION OF VAPORS AND PERSONAL CONTACT WITH THE PRODUCT. USE GOOD PERSONAL HYGIENE PRACTICE. "EMPTY" CONTAINERS RETAIN RESIDUE (LIQUID AND/OR VAPOR) AND CAN BE DANGEROUS. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. "EMPTY" DRUMS SHOULD BE COMPLETELY DRAINED, PROPERLY BUNGED AND PROMPTLY SHIPPED TO THE SUPPLIER OR A DRUM RECONDITIONER. ALL OTHER CONTAINERS SHOULD BE DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER AND IN ACCORDANCE WITH GOVERNMENTAL REGULATIONS. BEFORE WORKING ON OR IN TANKS WHICH CONTAIN OR HAVE CONTAINED THIS PRODUCT, REFER TO OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS, ANSI Z49.1, AND OTHER GOVERNMENTAL AND INDUSTRIAL REFERENCES PERTAINING TO CLEANING, REPAIRING, WELDING, OR OTHER CONTEMPLATED OPERATIONS.

SECTION VIII - FIRE AND EXPLOSION HAZARD DATA

HAZARD RANKING

NFPA HAZARD CLASS	HEALTH HAZARD: 1	0 = LEAST	HMIS HAZARD CLASS	HEALTH:	1
	FLAMMABILITY: 2	1 = SLIGHT		FLAM:	2
	REACTIVITY: 0	2 = MODERATE		REACT:	0
	OTHER: -	3 = HIGH		P.P.E.:	-
		4 = EXTREME			

LOWER EXPLOSIVE LIMIT (% VOL.)	UPPER EXPLOSIVE LIMIT (% VOL.)
1.0	6.0

FLASH POINT

104, TCC F

EXTINGUISHING MEDIA:

EXTINGUISH WITH DRY CHEMICAL, CO2, WATER SPRAY OR FOAM.

FIRE & EXPLOSION HAZARDS:

THIS MATERIAL IS COMBUSTIBLE AND MAY BE IGNITED BY HEAT OR FLAME. THIS MATERIAL WILL BURN, BUT WILL NOT IGNITE READILY.

FIRE FIGHTING PROCEDURES:

THE USE OF A SCBA IS RECOMMENDED FOR FIRE FIGHTERS. WATER SPRAY MAY BE USEFUL IN MINIMIZING VAPORS AND COOLING CONTAINERS EXPOSED TO HEAT AND FLAME. AVOID SPREADING BURNING LIQUID WITH WATER USED FOR COOLING PURPOSES.

SECTION IX - PHYSICAL DATA

APPROX. BOILING POINT	VAPOR DENSITY (AIR = 1)	VAPOR PRESSURE
316 TO 360 F	4.9	2.9 MM HG @ 20C

EVAPORATION RATE (N-BUTYL ACETATE = 1)	% VOLATILE	% SOLUBILITY IN WATER
0.21	100%	NEGLIGIBLE (< 5%)

SPECIFIC GRAVITY (TEMP/TEMP)	APPEARANCE	ODOR
0.772 (60F/60F)	CLEAR, LITTLE IF ANY COLOR	CHARACTERISTIC

SECTION XI - DOCUMENTARY INFORMATION

ISSUE DATE: 3/11/88 PRODUCT CODE NO. 11103

PREV. DATE: 6/16/87 PREV. PROD. CODE NO. 1103

MSDS NO: 6289 PREV. MSDS NO: 856

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ASHLAND CHEMICAL, INC.
P.O. BOX 2219
COLUMBUS, OHIO 43216
(614) 889 3333

24-hour Emergency Telephone
1 (800) 274-5263 or
1-800-ASHLAND

008589

HEXANE

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

****

Product Name: HEXANE TCX
CAS NUMBER: 110-54-3

ANCHOR LITHKEMKO
50 INDUSTRIAL LOOP N
ORANGE PARK FL 32073

05 50 087 0472620-

PRODUCT: 2448000
INVOICE: 663040
INVOICE DATE: 10/26/89
TO: SAME

Data Sheet No: 0004344-004
Prepared: 05/31/89
Supersedes: 03/04/86

Rec'd 11/9/89

ATTN: PLANT MGR./SAFETY DIR.

SECTION I - PRODUCT IDENTIFICATION

General or Generic ID: ALIPHATIC HYDROCARBON

DOT Hazard Classification: FLAMMABLE LIQUID (173.115)

SECTION II - COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION.
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
HEXANE CAS #: 110-54-3	>95	50 PPM	50 PPM	(1)

Notes:

(1) NIOSH RECOMMENDS A LIMIT OF 100 PPM - 8 HOUR TIME WEIGHTED AVERAGE, 510 PPM CEILING. THESE LIMITS ARE FOR N-HEXANE. THE OSHA PEL AND THE ACGIH TLV FOR OTHER ISOMERS OF HEXANE IS 500 PPM, TWA; 1000 PPM SHORT TERM EXPOSURE LIMIT (STEL).

SECTION III - PHYSICAL DATA

Boiling Point	for PRODUCT	149.00 - 159.00 Deg F (65.00 - 70.55 Deg C) @ 760.00 mm Hg
Vapor Pressure	for PRODUCT	125.00 mm Hg @ 68.00 Deg F (20.00 Deg C)
Specific Vapor Density	AIR = 1	3.0
Specific Gravity		.672 - .684 @ 60.00 Deg F (15.55 Deg C)
Percent Volatiles		100.00%
Evaporation Rate	(N-BUTYL ACETATE = 1)	9.00

SECTION IV - FIRE AND EXPLOSION INFORMATION

FLASH POINT(TCC) -25.0 Deg F (-31.7 Deg C)

EXPLOSIVE LIMIT (PRODUCT) LOWER - 1.0%

EXTINGUISHING MEDIA: REGULAR FOAM OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: MATERIAL IS HIGHLY VOLATILE AND READILY GIVES OFF VAPORS WHICH MAY TRAVEL ALONG THE GROUND OR BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

NFPA CODES: HEALTH- 1 FLAMMABILITY- 3 REACTIVITY- 0

SECTION V - HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL 50 PPM

THRESHOLD LIMIT VALUE 50 PPM

SEE SECTION II

CONTINUED ON PAGE: 2

SECTION V - HEALTH HAZARD DATA (Continued)

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

EYES - CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION.
SKIN - PROLONGED OR REPEATED CONTACT CAN CAUSE MODERATE IRRITATION, DEFATTING, DERMATITIS.
BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, CENTRAL NERVOUS SYSTEM EFFECTS INCLUDING DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE AND POSSIBLE UNCONSCIOUSNESS, AND EVEN DEATH.
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY, GET MEDICAL ATTENTION.

IF SWALLOWED: DO NOT INDUCE VOMITING, KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION, SKIN CONTACT

EFFECTS OF CHRONIC OVEREXPOSURE: FOR PRODUCT

PROLONGED AND REPEATED EXPOSURE TO N-HEXANE MAY DAMAGE PERIPHERAL NERVE TISSUE (THAT OF THE ARMS AND LEGS) AND RESULT IN MUSCULAR WEAKNESS AND LOSS OF SENSATION IN THE EXTREMITIES (PERIPHERAL NEUROPATHY).METHYL ETHYL KETONE MAY POTENTIATE (SHORTEN THE TIME OF ONSET) PERIPHERAL NEUROPATHY CAUSED BY N-HEXANE.

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN HUMANS:, CENTRAL NERVOUS SYSTEM EFFECTS

SECTION VI - REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPORS TO COMPLETELY CLEAR HOOD DUCT WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL: DESTROY BY LIQUID INCINERATION.

CONTAMINATED ABSORBENT MAY BE DEPOSITED IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION II), A NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS:, NITRILE RUBBER

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SECTION IX - SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED.SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

 LAST PAGE--SEE ATTACHMENT PAGE ENCLOSED--LAST PAGE

ASHLAND CHEMICAL, INC.
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COLUMBUS, OHIO 43216
(614) 889-3333

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Emergency
Telephone
1 (800) 274-5263 or
1-800-ASHLAND

 LAST PAGE--SEE ATTACHMENT PAGE ENCLOSED--LAST PAGE

DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

SECTION I
PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

SECTION II
COMPONENTS

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnotes in this section, along with typical percentages. Other components may be listed if deemed appropriate.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

SECTION III
PHYSICAL DATA

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

SECTION IV
FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

EXPLOSION LIMITS: For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

SECTION IV (cont.)

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

SECTION V
HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

SECTION VI
REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

SECTION VII
SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

SECTION VIII
PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

SECTION IX
SPECIAL PRECAUTIONS OR OTHER COMMENTS

Covers any relevant points not previously mentioned.

ADDITIONAL COMMENTS

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.

NCDH, 1977. Industrial Chemical Survey, Anchor Chemical Company (Source: NCDH Files)

FEB 18 1977

DIVISION OF PURE WATERS
BUREAU OF [illegible]

INDUSTRIAL CHEMICAL SURVEY

(A)

PART I

PLEASE COMPLETE AND RETURN TO THE ABOVE ADDRESS, ATTENTION: INDUSTRIAL CHEMICAL SURVEY.

COMPANY NAME	SIC CODE (If known)	OFFICE USE
AIDOR CHEMICAL CO., INC.	2842	28 7731

COMPANY MAILING ADDRESS	CITY	STATE	ZIP CODE
500 West John St.	Hicksville	New York	11801

PLANT NAME (If different)	CONTACT NAME	TELEPHONE
	Alfred A. Jasser	Area 516-433-080

PLANT ADDRESS (If different) Street	CITY	STATE	ZIP CODE

PRINCIPAL BUSINESS OF PLANT
Blend and pack chemical specialties for Graphic Arts Industries

NOTE: (If parent company, give name and addresses of all divisions, subsidiaries, etc. located in New York State. A separate questionnaire is to be completed and submitted for each.)

PART II
Discharge Information

WATER

1. Does your plant discharge liquid wastes to a municipally owned sanitary sewer system? ☐ Yes ☒
   Name of System _____
2. Is your facility permitted to discharge liquid wastes under a State (SPDES) or Federal (NPDES) permit? Permit Number _____ ☐ Yes ☒
3. Do you discharge liquid wastes in any other manner? ☐ Yes ☒
   Explain _____

If any of the above are "Yes":

a. Do you discharge process or chemical wastes — (i.e. water used in manufacturing including direct contact cooling water and scrubber water)? ☐ Yes ☐
b. Do you discharge non-contact cooling water? ☐ Yes ☐
c. Do you discharge collected storm drainage only? ☐ Yes ☒
d. Do you discharge sanitary wastes only? ☒ Yes ☐

AIR

1. Does your facility have sources of possible emissions to the atmosphere? ☒ Yes ☐
2. Enter Location and Facility Code as shown on your Air Pollution Control Application for Permits and Certification (If applicable) 2 8 2 4 0 0 0 1 7 2

SOLID & CONCENTRATED LIQUID WASTES

1. List Name and Address of Firm (Including yourself) removing wastes other than office and cafeteria refuse.

Name	Master Sanitation Co.			
Address	P.O. Box 625	Huntington	NY	11743 Zip Code
Name				
Address		City	State	Zip Code

2. List Location(s) of Landfill(s) owned and used by your facility.

		Active	Inactive
1	NONE	☐	☐
2	NONE	☐	☐

PESTICIDES

1. Does this facility:
   Manufacture Pesticides or Pesticide Product Ingredients? ☐ Yes ☒
   Produce Pesticides or Pesticide Product Ingredients? ☐ Yes ☒
   Formulate Pesticides? ☐ Yes ☒
   Repackage Pesticides? ☐ Yes ☒
2. EPA Establishment Number _____ – _____ – _____

PART III

SUBSTANCES OF CONCERN
(Refer to attached TABLE I)

Complete all information for those substances your facility has used, produced, stored, distributed or otherwise disposed of since January 1, 1971. Do n include chemicals used only in analytical laboratory work. Enter the name and code from Table I. If facility uses a substance in any of the Classes A – which is not specified in the list, enter it as code class plus 99, e.g. 899 with name, usage, etc.

NAME OF SUBSTANCE	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL.	(✓) LB.	PURPOSE OF USE (State whether produced, reacted, blend packaged, distributed, no longer used, e
Methylene chloride	A02	50,000	1,500	x		blended with other mate
						and packaged
1,1,1 trichlorethane	A07	13,000	180	x		blended and packaged wi
						other materials
ethylbenzene	D06	13,000	760	x		blended and packaged wi
						other materials
petroleum tars (Napthalene	E02	270	50		x	blended and packaged wi
Anthracene)						other materials
dyes and organic pigments	F24	40	20		x	blended with other mate
6/79- Ron Josser relocated to Conn. (203) 644-2577 - He is the only one who can give information on Chemicals						

Do use chemicals of unknown composition, list trade name or other identification, name of supplier and complete information.

NAME OF SUBSTANCE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL.	(✓) LB.	SUPPLIER	PURPOSE OF USE (State whether produced, reacte blended, packaged, distributec no longer used, etc.)

I hereby affirm under penalty of perjury that information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

SIGNATURE (Owner, Partner, or Officer) Alfred Josser — DATE February 10, 1977

NAME (Printed or Typed) ALFRED A. JOSSER — TITLE President

(Include gases and waste oils)

all information for those substances your facili... used, produced, stored, distributed or otherwis... used since January 1, 1971. Do not ... chemicals used only in analytical laboratory work.

Of Substance/Trade Name pplier and Address	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(✓) GAL	(✓) LB	PURPOSE OF USE (State whether produced, reacted, blended, packaged, distributed, no longer used, etc.)
THYLENE CHLORIDE	402	30,000	1500	✓		BLENDED WITH OTHER MATERIAL
11 - TRICHLOROETHANE	407	19,000	160	✓		PACKAGE BLENDED PACKAGED WITH OTHER MATERIAL
HYBENZENE	806	13,000	760	✓		BLENDED PACKAGED WITH OTHE MATERIAL
TROLEUM TAR	602	240	50	✓		HEATED PACKAGED WITH OTHE MATERIAL
AS ORGANIC PIGMENTS	P24	40	20	✓	✓	BLENDED WITH OTHER MATER.
ADDITION TO THE	ABOVE	SUBSTANCES	NOT	INCLUDED	ABOVE	
PETROLEUM NAPHTHAS DISTILLATE		50,000 gal		✓		
THYLENE GLYCOL MONOETHYLETHER		20,000 gals		✓		
-HEXANE, ALKYLS		2000 gals		✓		
IONIC ~~ETHOXYLATED~~ ALCOHOL ETHOXYLATED		10,000 gals		✓		

Final Discharge Point

- ☐ Sewers
- ☒ Cesspools
- ☐ Sumps or basins
- ☐ Drums
- ☐ Landfills
- ☐ Other

Recommended Action

- ☐ Immediate abatement
- ☑ Sample
- ☑ SPDES Appication
- ☐ Reinspection
- ☐ Referred to _____
- ☐ No Action

STATIONARY COMBUSTION AND INCINERATION

A. Heating System	☐None	☒Boiler	☐Space Heaters	
B. Fuel	☐Electric	☒Gas	☐Oil	
C. Incinerator	☐Yes	☐No		

I hereby affirm under penalty of perjury that information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

SIGNATURE (Owner, Partner, or Officer) Alfred A Jasser DATE 2/9/77

(Printed or Typed) NAME Alfred A. Jasser TITLE Pres.

Inspectors Name

NCDH, 1981. Environmental Health Continuation Sheet (Source: NCDH Files)

MBF 1490 SJ -7 File → Litt Kem Co

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent : (Anchor Chemical)
Address: Hicksville

Inspector

DATE	COMMENTS

On 8/11/71 Walter Parrish of DEC called regarding tests on tanks ordered by NCFM for above facility.

There are 17 tanks, allegedly in vaults, under the building. The tanks were installed in 1964 and are used to hold fresh chemicals (solvents).

Mallinckrodt Petrochemical is reported the supplier. According to our records the solvents are mixed and repackaged and supplied as cleaning materials to the printing trades.

16 of the tanks were hydrostatically tested (not Kent-Moore test) and 6 did not pass the test. However, the meaning of the test results is not clear. The 17th tank, which was not tested, contained Methylene Chloride.

On 8/17/71 called Leah Kellner of NCFM office. Although tests showed something wrong, could be a vent failed or piping leaked (used 5 psi pressure). No drop in petrometers. If anything may have had slight products losses. Some tanks passed retest. Failed systems will be emptied; will have 1 year to decide to remove or permanently abandon. Tank sizes are 1000 - 4000 gal. Also 7 tanks in mixing room elevated off floor — 550 to 1500 gal.

Have me a plan drawing on some of the

(cont.)

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent : LIT - Rem Co (Anchor Chemical)
Address: Hicksville

Inspector

DATE 6/84

COMMENTS

materials in the tanks. These are listed below:

111 Trichloroethane
Xylene Mixture
Isopropanol 100%
Methyl Acetate
Varsol 3
Acetone
Methylene Chloride
Methanol 100
Mineral Spirits
Ethylene Glycol
Glycol Ether
2 Butoxyethanol
Isopropyl Alcohol

Parent Corp will have to decide on disposition of tanks. Complicated by location of tanks under building. Building was constructed for Anchor chemical and tanks designed in. Facility was described as very cooperative.

J.L.

CHEMICAL TANKS

February 4, 1975

TANK	DIM.	CAP.	PRODUCT
1	64"D 18'L	3000	(1) N.S. 663 napthenl spirits
2	64"D 18'L	3000	(2) AROM 100
3	64"D 18'L	3000	(3) MC methylene chloride
4	64"D 18'L	3000	(2) AROM 100
5	64"D 24'L	4000	(1) NS 663
6	64"D 12'L	2000	(12) Acetone
7	64"D 12'L	2000	(4) EE Cello
8	64"D 9'L	1500	(5) Chloro NU
9	64"D 9'L	1500	~~AROM 100~~ DEG.
10	64"D 9'L	1500	(6) EC
11	64"D 9'L	1500	(7) Iso. #99
12	64"D 9'L	1500	(8) Varsol 3
13	48"D 10'4"L	1000	(9) EA ethyl Acetate
14	48"D 10'4"L	1000	EE Acetate not used
15	64"D 24'L	4000	(11) TEX
16	48"D 10'4"L	1000	(10) SP NAPH VM & P
17	48"D 6'L	550	EE CELLO

OIL TANKS

ABOVE ground

TANK #	CAP.	GRADE
L-1	550	M30+
L-2	550	M40+
L-3	1500	M 650
L-4	1500	A. O. 502
L-5	1000	M20+
L-6	1000	A.O. 302
L-7	550	M 157

NCDH, 1982b. Division of Laboratories & Research, Environmental Health Laboratories. Soil and Ground-Water Analytical Data from Anchor Lith Kem-Ko (Source: NCDH Files)

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES & RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

RESULTS OF EXAMINATION

REPORTING LAB: TRACE ORGANICS

LAB ACCESS NO.: 201473

SOURCE: ANCHOR LITHKEMKO - 500 W.JOHN ST., HICKSVILLE WELL# 1 50FT

MATRIX: SOIL

DATE SAMPLED: 09/13/82

[illegible] CONCENTRATION

NA - NOT ANALYZED

NR - NO RESULT DUE TO TECHNICAL REASONS-RESAMPLE SUGGESTED

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES & RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

RESULTS OF EXAMINATION

REPORTING LAB: TRACE ORGANICS

LAB NEELS NO.: 201472

SOURCE: ANCHOR LITHEMPO - 500 W.JOHN ST., HICKSVILLE WELL# 1 65FT

MATRIX: SOIL

DATE SAMPLED: 09/13/82

- ... EXEMPTABLE CONCENTRATION

NA - NOT ANALYZED

NR - NO RESULT DUE TO TECHNICAL REASONS-NEW SAMPLE SUGGESTED

VOLATILE HALOGENATED - GASES	MKC (ppb)	RESULTS (ppb)
CHLOROMETHANE	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA
[illegible]	NA	NA
[illegible]	10	NA
CHLOROETHANE	NA	NA

VOLATILE HALOGENATED		
METHYLENE CHLORIDE	120	410
TRICHLOROFLUOROMETHANE	20	< 20
1,1-DICHLOROETHYLENE	20	< 20
1,1-DICHLOROETHANE	200	< 200
c & t-1,2-DICHLOROETHYLENE	140	< 140
CHLOROFORM	20	< 20
1,2-DICHLOROETHANE	100	< 100
1,1,1-TRICHLOROETHANE	20	22
CARBONTETRACHLORIDE	20	< 20
1,2-DICHLOROPROPANE	NA	NA
BROMODICHLOROMETHANE	20	< 20
TRICHLOROETHYLENE	20	< 20
c-1,3-DICHLOROPROPENE		
DIBROMOCHLOROMETHANE		
1,1,2-TRICHLOROETHANE		
t-1,3-DICHLOROPROPENE	NA	NA
BROMOFORM	20	< 20
TETRACHLOROETHYLENE	20	< 20
1,1,2,2-TETRACHLOROETHANE	NA	NA

VOLATILE NON-HALOGENATED		
BENZENE	80	< 80
TOLUENE	80	< 80
CHLOROBENZENE	100	< 100
ETHYLBENZENE	60	< 60
XYLENE	80	< 80
DICHLOROBENZENE	200	< 200

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES & RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

RESULTS OF EXAMINATION

REPORTING LAB: TRACE ORGANICS

LAB ACCESS NO.: 201551

SOURCE: ANCHOR LITHKEMKO, HICKSVILLE - WELL# 1

MATRIX: WATER

DATE SAMPLED: 09/21/82

MRL - MINIMUM REPORTABLE CONCENTRATION

NA - NOT ANALYZED

NR - NO RESULT DUE TO TECHNICAL REASONS-RESAMPLE SUGGESTED

VOLATILE HALOGENATED - GASES	MDC (ppb)	RESULTS (ppb)
[illegible] METHANE	NA	[illegible]
DICHLORODIFLUOROMETHANE	NA	[illegible]
BROMOMETHANE	NA	[illegible]
VINYL CHLORIDE	10	NA
CHLOROETHANE	NA	NA

VOLATILE HALOGENATED

METHYLENE CHLORIDE	6	31
TRICHLOROFLUOROMETHANE	1	< [illegible]
1,1-DICHLOROETHYLENE	1	[illegible]
1,1-DICHLOROETHANE	10	[illegible]
c & t-1,2-DICHLOROETHYLENE	7	< 7
CHLOROFORM	1	1
1,2-DICHLOROETHANE	5	< 5
1,1,1-TRICHLOROETHANE	1	440
CARBONTETRACHLORIDE	1	< 1
1,2-DICHLOROPROPANE	NA	NA
BROMODICHLOROMETHANE	1	< 1
TRICHLOROETHYLENE	1	17
c-1,3-DICHLOROPROPENE / DIBROMOCHLOROMETHANE / 1,1,2-TRICHLOROETHANE	1	< 1
t-1,3-DICHLOROPROPENE	NA	NA
BROMOFORM	1	< 1
TETRACHLOROETHYLENE	1	43
1,1,2,2-TETRACHLOROETHANE	NA	NA

VOLATILE NON-HALOGENATED

BENZENE	4	< 4
TOLUENE	4	< 4
CHLOROBENZENE	5	< 5
ETHYLBENZENE	3	< 3
XYLENE	4	< 4
DICHLOROBENZENE	10	< 10

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES & RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

RESULTS OF EXAMINATION

REPORTING LAB: TRACE ORGANICS

LAB ACCESS NO.: 201552

SOURCE: ANCHOR LITHKEMKO, HICKSVILLE - WELL# 2

MATRIX: WATER

DATE SAMPLED: 09/21/82

201552

MRC - MINIMUM REPORTABLE CONCENTRATION

NA - NOT ANALYZED

NR - NO RESULT DUE TO TECHNICAL REASONS-RESAMPLE SUGGESTED

[illegible] No.: 201552

	MRC (ppb)	RESULTS (ppb)
VOLATILE HALOGENATED - GASES		
[illegible]	NA	NA
[illegible]	NA	NA
[illegible]	NA	NA
[illegible] CHLORIDE	10	NA
CHLOROETHANE	NA	NA
VOLATILE HALOGENATED		
METHYLENE CHLORIDE	6	41
TRICHLOROFLUOROMETHANE	1	< 1
1,1-DICHLOROETHYLENE	1	15
1,1-DICHLOROETHANE	10	27
c & t-1,2-DICHLOROETHYLENE	7	< 7
CHLOROFORM	1	1
1,2-DICHLOROETHANE	5	< 5
1,1,1-TRICHLOROETHANE	1	440
CARBONTETRACHLORIDE	1	< 1
1,2-DICHLOROPROPANE	NA	NA
BROMODICHLOROMETHANE	1	< 1
TRICHLOROETHYLENE	1	18
c-1,3-DICHLOROPROPENE	[illegible]	
DIBROMOCHLOROMETHANE	1	< 1
1,1,2-TRICHLOROETHANE	[illegible]	
t-1,3-DICHLOROPROPENE	NA	NA
BROMOFORM	1	< 1
TETRACHLOROETHYLENE	1	42
1,1,2,2-TETRACHLOROETHANE	NA	NA
VOLATILE NON-HALOGENATED		
BENZENE	4	< 4
TOLUENE	4	< 4
CHLOROBENZENE	5	< 5
ETHYLBENZENE	3	< 3
XYLENE	4	< 4
DICHLOROBENZENE	10	< 10

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES & RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

RESULTS OF EXAMINATION

REPORTING LAB: TRACE ORGANICS

LAB ACCESS NO.: 201553

SOURCE: ANCHOR LITHAEMIO, HICKSVILLE - WELL# 3

MATRIX: WATER

DATE SAMPLED: 09/21/82

201553

MRC - MINIMUM REPORTABLE CONCENTRATION

NA - NOT ANALYZED

NR - NO RESULT DUE TO TECHNICAL REASONS-RESAMPLE SUGGESTED

VOLATILE HALOGENATED - GASES	MRC (ppb)	RESULTS (ppb)
CHLOROMETHANE	NA	NA
[illegible]	NA	[illegible]
[illegible]	[illegible]	[illegible]
VINYL CHLORIDE	.5	[illegible]
CHLOROETHANE	NA	NA

VOLATILE HALOGENATED		
METHYLENE CHLORIDE	5	7
TRICHLOROFLUOROMETHANE	1	< 1
1,1-DICHLOROETHYLENE	1	920
1,1-DICHLOROETHANE	10	330
c & t-1,2-DICHLOROETHYLENE	7	28
CHLOROFORM	1	6
1,2-DICHLOROETHANE	5	5
1,1,1-TRICHLOROETHANE	1	110001
CARBONTETRACHLORIDE	1	< 1
1,2-DICHLOROPROPANE	NA	NA
BROMODICHLOROMETHANE	1	< 1
TRICHLOROETHYLENE	1	139
c-1,3-DICHLOROPROPENE / DIBROMOCHLOROMETHANE / 1,1,2-TRICHLOROETHANE	1	2
t-1,3-DICHLOROPROPENE	NA	NA
BROMOFORM	1	< 1
TETRACHLOROETHYLENE	1	470
1,1,2,2-TETRACHLOROETHANE	NA	NA

VOLATILE NON-HALOGENATED		
BENZENE	4	NR
TOLUENE	4	< 4
CHLOROBENZENE	5	< 5
ETHYLBENZENE	3	< 3
XYLENE	4	< 4
DICHLOROBENZENE	10	< 10

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES & RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

RESULTS OF EXAMINATION

REPORTING LAB: TRACE ORGANICS

LAB ACCESS NO.: 202018

SOURCE: WELL# 3 - ANCHOR LITHKEMKO 500 W. JOHN ST., HICKSVILLE

MATRIX: WATER

DATE SAMPLED: 12/14/82

MRL - MINIMUM REPORTABLE CONCENTRATION

ND - NOT ANALYZED

NR - NO RESULT DUE TO TECHNICAL REASONS-RESAMPLE SUGGESTED

HEMICAL EXAMINATION FOR TRACE ORGANIC CONSTITUENTS IN WATER, HAZARDOUS WASTES AND SOLID WASTES

ivision of Laboratories and Research

ent of Health

J3

2 ☐ Resample
3 ☒ Special
4 ☐ Complaint
5 ☐ Other

Field No.

N No. (Public Water Supply Only)

Source Information (Please Print)

Premises: Anchor Lithkemko

Address: 500 W. John St.

Town: Hicksville

Collection Point: Well #2 Well No.

Sampler's Comments:
-sample transported on ice.

	Month	
Date Collected	12	14
Date Received	12	14
Date Reported		
Collection Time	11 : 29 a	
Collected By:	V. Nigro	

Bureau
1 ☒ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS				NON-AQUEOUS	
1	Community Well	6	Surface Water	1	Soil
2	Non-Community Well	7	Waste Water	2	Sludge
3	Private Well	8	Industrial Effluent	3	Waste Solvent
(4)	Monitoring Well	9	Raw Supply Water	4	Oil
5	Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

(A)	Purgeable halogenated hydrocarbons	I	Phthalates
B	Purgeable halogenated hydrocarbons - gases	J	Herbicides
(C)	Purgeable nonhalogenated hydrocarbons	K	Nitrosamines
D	Halogenated pesticides	L	Benzidines
E	Polychlorinated biphenyls	M	Nitroaromatic hydrocarbons
F	Polycyclic aromatic hydrocarbons	N	Haloethers
G	Aldehydes + ketones	O	Chlorinated hydrocarbons
H	Phenols	P	Other (specify)

Examiner's Comments:

	MRC (ppb)	RESULTS (ppb)
[illegible] HALOGENATED - GASES		
[illegible]	NA	NA
[illegible]	NA	NA
[illegible]	NA	NA
[illegible] CHLORIDE	10	NA
CHLOROETHANE	NA	NA
VOLATILE HALOGENATED		
METHYLENE CHLORIDE	5	NR
TRICHLOROFLUOROMETHANE	1	1
1,1-DICHLOROETHYLENE	1	NR
1,1-DICHLOROETHANE	4	230
c,t 1,2-DICHLOROETHYLENE	1	64
CHLOROFORM	1	10
1,1,2-TRICHLOROTRIFLUOROETHANE	1	< 1
1,2-DICHLOROETHANE	4	28
1,1,1-TRICHLOROETHANE	1	11000
CARBONTETRACHLORIDE	1	< 1
1,2-DICHLOROPROPANE	2	< 2
BROMODICHLOROMETHANE	1	< 1
TRICHLOROETHYLENE	1	43
c-1,3-DICHLOROPROPENE	1	< 1
DIBROMOCHLOROMETHANE / 1,1,2-TRICHLOROETHANE		
t-1,3-DICHLOROPROPENE	NA	NA
BROMOFORM	1	< 1
TETRACHLOROETHYLENE	1	470
1,1,2,2-TETRACHLOROETHANE	NA	NA
VOLATILE NON-HALOGENATED		
BENZENE	4	NR
TOLUENE	4	< 4
CHLOROBENZENE	5	< 5
ETHYLBENZENE	3	< 3
XYLENE (o,m,p)	4	< 4
DICHLOROBENZENE (o,m,p)	10	< 10

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES & RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

RESULTS OF EXAMINATION

REPORTING LAB: TRACE ORGANICS

LAB ACCESS NO.: 202019

SOURCE: WELL# 2 - ANCHOR LITHKEMKO 500 W. JOHN ST., HICKSVILLE

MATRIX: WATER

DATE SAMPLED: 12/14/82

MRC - MINIMUM REPORTABLE CONCENTRATION

NA - NOT ANALYZED

NR - NO RESULT DUE TO TECHNICAL REASONS-RESAMPLE SUGGESTED

VOLATILE HALOGENATED - GASES	MRC (ppb)	RESULTS (ppb)
[illegible]	[illegible]	[illegible]
BROMOMETHANE	[illegible]	
VINYL CHLORIDE	10	NA
CHLOROETHANE	NA	NA
VOLATILE HALOGENATED		
METHYLENE CHLORIDE	5	< 5
TRICHLOROFLUOROMETHANE	1	< 1
1,1-DICHLOROETHYLENE	1	< 1
1,1-DICHLOROETHANE	4	< 4
c & t-1,2-DICHLOROETHYLENE	1	< 1
CHLOROFORM	1	< 1
1,1,2-TRICHLOROTRIFLUOROETHANE	1	< 1
1,2-DICHLOROETHANE	4	< 4
1,1,1-TRICHLOROETHANE	1	5
CARBONTETRACHLORIDE	1	< 1
1,2-DICHLOROPROPANE	2	< 2
BROMODICHLOROMETHANE	1	< 1
TRICHLOROETHYLENE	1	< 1
c-1,3-DICHLOROPROPENE / DIBROMOCHLOROMETHANE / 1,1,2-TRICHLOROETHANE	1	< 1
t-1,3-DICHLOROPROPENE	NA	NA
BROMOFORM	1	< 1
TETRACHLOROETHYLENE	1	< 1
1,1,2,2-TETRACHLOROETHANE	NA	NA
VOLATILE NON-HALOGENATED		
BENZENE	4	< 4
TOLUENE	4	< 4
CHLOROBENZENE	5	< 5
ETHYLBENZENE	3	< 3
XYLENE (o,m,p)	4	< 4
DICHLOROBENZENE (o,m,p)	10	< 10

Table I

Nassau County Department of Health
Summary of Results of NCHD Sampling of
Anchor/Lith Kem-Ko
500 W. John Street, Hicksville, New York

A. Results of Soil Analyses* - September 13, 1982 Samples

Parameter	Well #1 Depth of Sample=50'	Well #1 Depth of Sample=65'
(1)	(2)	(3)
Methylene Chloride	490	410
1,1,1-Trichloroethane	< 20	22
Trichloroethylene	< 20	< 20
Tetrachloroethylene	< 20	< 20

* All results in parts per billion

B. Results of Groundwater Analyses**

Parameter	Well #1		Well #2			Well #3		
	9-21-82	6-8-83	9-21-82	12-14-82	6-8-83	9-21-82	12-14-82	6-8-
(1)	(2)		(3)			(4)		
Methylene Chloride	31	NR	41	< 5	NR	7	NR	NR
Trichlorofluoromethane	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1
1,1-Dichloroethylene	5	< 1	5	< 1	< 1	270	NR	180
1,1-Dichloroethane	27	11	27	< 4	< 6	220	230	100
c&t-1,2-Dichloroethylene	< 7	< 4	< 7	< 1	< 4	28	64	16
Chloroform	1	< 1	1	< 1	< 1	7	10	2
1,2-Dichloroethane	< 5	< 12	< 5	< 4	< 12	25	28	< 12
1,1,1-Trichloroethane	440	160	440	5	< 1	11000	11000	1500
Trichloroethylene	17	8	18	< 1	< 1	39	43	14
c-1,3-Dichloropropene) dibromochloromethane) 1,1,2-Trichloroethane)	< 1	< 1	1	< 1	< 1	2	< 1	< 1
Tetrachloroethylene	43	7	42	< 1	< 1	470	470	280

** All results in parts per billion

NR - No result due to technical reasons - Resample suggested

A2. UST Correspondence

Klein. W.T. 1981. The Franklin Company Contractors, Inc. Letter to D. Larsen, Anchor/Lith Kem-Ko. 8/20/81. (Source: Rosenman & Colin Files)

THE FRANKLIN COMPANY CONTRACTORS, INC.

52-09 58TH STREET
WOODSIDE, N.Y. 11377

GASOLINE TANK AND PUMP INSTALLATIONS

INDUSTRIAL LIQUID STORAGE SYSTEMS

Mr. Duane Larsen
Anchor/Lith Chemco
46 Harriet Place
Lynbrook, N.Y. 11563

Aug. 20, 1981

Re: 500 West John Street
Hicksville, N.Y.

Dear Mr. Larsen:

Responding to our recent telephone conversation and a search of our files we have found and copied our record of the final invoice to Anchor Chemical for the tank installation.

Apparently the tanks were purchased by Anchor as we have no record of being invoiced for them. We did receive and set the tanks.

There is no record of a building permit in our files

We have also located a drawing used during installation. My recollection is that changes were made during construction to suite the conditions and desires of the customer.

We have attached the items mentioned above and hope they prove helpful.

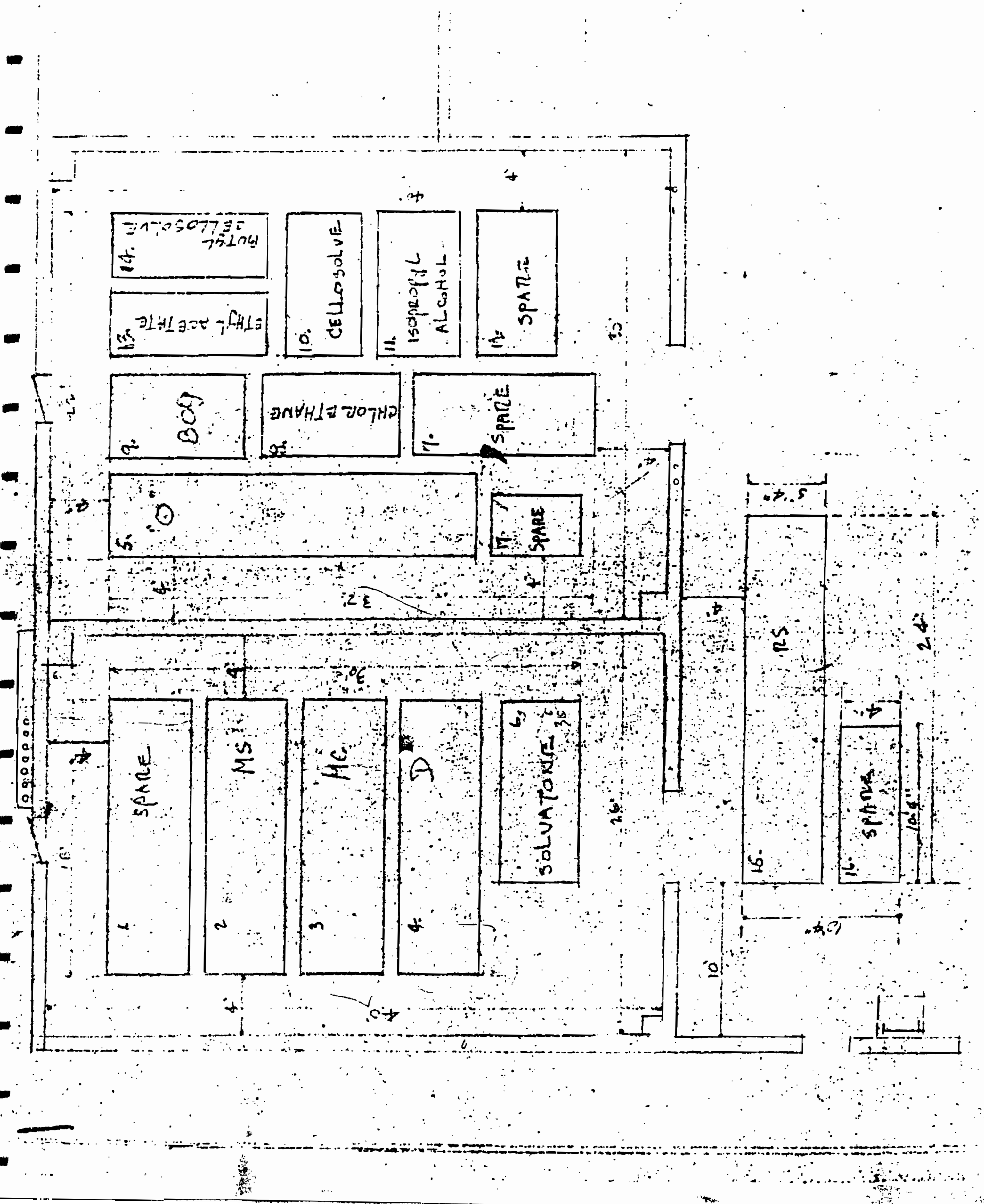
Very truly yours,

The Franklin Comp. Cont. Inc.

William T Klein, Pres.

WTK:cd
Enc.(3) 2 drawings,
1 copy of our billing record.

C


14. BUTYL CELLOSOLVE
13. ETHYL ACETATE
10. CELLOSOLVE
11. ISOPROPYL ALCOHOL
12. SPARE
9. BCD
8. CHLOROETHANE
7. SPARE
5.
17. SPARE
1 SPARE
2 MS
3 HC
4 D
6 SOLVATONE
15. RS
16. SPARE
32'
30'
40'
26'
24'
10'

Nassau County Fire Commission Office of the Fire Marshall, 1984. Letter to R. Pelino, Lockwood, Kessler & Bartlett dated January, 19, 1984. (Source: Rosenman & Colin Files)

FRANCIS T. PURCELL
COUNTY EXECUTIVE

JOSEPH G. BOSLET, JR.
FIRE MARSHAL

BUREAU OF FIRE PREVENTION
SCHOOL 663-5824
INDUSTRIAL 663-5815
INSTITUTIONAL 663-5820
GENERAL INSPECTION 663-5826

NASSAU COUNTY FIRE COMMISSION
OFFICE OF FIRE MARSHAL
899 JERUSALEM AVENUE
P.O.BOX 128
UNIONDALE, NEW YORK 11553

January 19, 1984
Inspection #GS-93-26

Ms. Rose Pelino
LKB Engineers
1 Aerial Way
Syosset, N. Y. 11791

Dear Ms. Pelino:

In answer to your request, this letter is to confirm that this office is in receipt of a statement submitted to this office by the Barlo Equipment Co. attesting to work performed in order to permanently abandon five(s) underground flammable liquid storage tanks at Anchor Lith Kem-Ko, 500 W. John Street, Hicksville. There were reportedly, two, 1,5000 gallon tanks abandoned in place by filling the tanks with a concrete slurry (NOTE: one, 1,500 gallon tank could only be filled to 65% capacity, the remaining tanks were filled to 100% capacity). This method of abandonment was done in accordance with the method previous approved by this office.

Very truly yours,

Richard J. Kelner
Fire Inspector
Industrial Division

David M. Bartow
Supervising Fire Inspector

RJK:emf

BARLO EQUIPMENT CORPORATION

91 COMMERCIAL AVENUE
GARDEN CITY
LONG ISLAND, N.Y. 11533
PHONE 516-248-8484

October 14th, 1983

Office of the Fire Marshal
899 Jerusalem Avenue
P.O. Box 128
Uniondale, New York 11553

Attention: Mr. Dave Bartow

Dear Sir:

This is to inform you that the Tanks at Anchor Lith Kem-Ko have been filled with concrete Slurry as in accordance with your recommendations.

All tanks have been filled to 100% capacity. Only one tank; a 4,000 gallon, has been filled to 65% capacity due to a piping of check valve arrangement in tank.

Hoping this meets with your approval; I remain

Very Truly Yours,

John B. LoRusso

JBL/gl

NASSAU COUNTY FIRE COMMISSION

OFFICE OF FIRE MARSHAL

Bureau of Fire Prevention
Industrial 516-292-4826
Institutional 516-292-4829
General Inspection 516-292-4824
& 4831

JOSEPH G. BOSLET, JR.
FIRE MARSHAL

899 JERUSALEM AVENUE
P.O. BOX 128
UNIONDALE, NEW YORK 11553

TO: NASSAU COUNTY FIRE MARSHAL

INSP. NO. _____

FROM: BARLO EQUIPMENT CORPORATION
91 COMMERCIAL AVENUE
GARDEN CITY, NEW YORK 11530

RE: ANCHOR-LITH KEM-KO
500 WEST JOHN STREET
HICKSVILLE, NEW YORK 11801

The following underground bulk storage tanks, at the above-named location, have been: (CHECK THE ONE THAT APPLIES)

_____ A - Placed Temporarily out-of-service (filled with water)

X B - Abandoned in place (filled with an inert solid material)

_____ c - Removed from the premises

NO.	SIZE	CONST.	P	DATE	NO.	SIZE	CONST.	P	DATE
1	4,000 Gal	Steel		10/12/83	5	1,500 Gal	Steel		10/13/83
2	4,000 Gal	Steel		10/12/83	6				
3	2,000 Gal	Steel		10/13/83	7				
4	1,500 Gal	Steel		10/13/83	8				

All work has been done in accordance with the Nassau County Fire Prevention Ordinance, and Appendix C, of the National Fire Protection Association - N.F.P.A. - 30-1977.

JOHN B. LORUSSO
Name

John B. LoRusso
Signature

HELEN M. SULLIVAN
NOTARY PUBLIC, State of New York
No. 01SU4757295
Qualified in Nassau County
Commission Expires March 30, 19 84
Notary Stamp

County of NASSAU,

State of NEW YORK,

personally appeared before me this

14th day of October 19 83.

Helen M Sullivan
Notary Signature

NCDH, 1982a. Letter from L. Sama to K. Leeds, Chessco Industries, Inc. dated January 26, 1982. (Source: USEPA Region II Files)

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501

JOHN J. BOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. RADAR, P.E., M.C.E.
Deputy Commissioner
Division of Environmental Health

FRANCIS T. PURCELL
County Executive

January 26, 1982

Mr. Kenneth W. Leeds, V.P.
Chessco Industries, Inc.
2425 Post Road
Southport, Conn. 06490

Re: Anchor/Lith-Kem-Ko
Hicksville, N.Y.

Dear Mr. Leeds:

This is in response to your letter of January 13, 1982 to our Mr. H. Welch regarding the status of the underground chemical storage tanks at your above-referenced facility. You should be made aware that the leaking tanks referenced in your letter and in the order from the Nassau County Fire Marshal's office of July 22, 1981, constitute point discharges of chemicals and may be in violation of the Environmental Conservation Law, Article 17, Section 17-0501.

The primary requirements of this office are to: (1) determine the extent of any contamination of the environment as a consequence of the discharges from the leaking tanks and (2) clean up the contamination.

Accordingly, please submit to this office by February 28, 1982, a plan to meet the foregoing requirements. We would strongly suggest you obtain the services of a professional engineer, licensed by the State of New York, to assist you with the plan submission. He should also be helpful to you in determining approximate costs.

This office will cooperate with you and your representatives in preparing your plans. Perhaps it would be of help to you to meet with us here to further discuss the situation. Please let met know.

Meanwhile, answers to the following questions would be helpful:

(1) What products were formerly stored in the tanks which did not pass the hydrostatic tests?

(2) Was tank #2 repaired? The Fire Marshal's order of July 22, 1981 indicates it failed, but it is registered as being in use.

If you have any questions, please call this office at 516-535-2406.

Very truly yours,

L. Sama
Public Health Engineer
Bureau of Land Resources Management

LS:cep
cc: Gerald Robin, NYSDEC

NASSAU COUNTY DEPARTMENT OF HEALTH

TABLE I

Summary of Results of NCHD Sampling of
Anchor/Lith Kem-Ko
500 W. John Street, Hicksville, New York

A. Results of Soil Analyses* - September 13, 1982 Samples

Parameter	Well #1 Depth of Sample=50'	Well #2 Depth of Sample=65'
(1)	(2)	(3)
Methylene Chloride	490	410
1,1,1-Trichloroethane	<20	22
Trichloroethylene	<20	<20
Tetrachloroethylene	<20	<20

* All results in parts per billion

B. Results of Groundwater Analyses**

Parameter	Well #1 9-21-82	Well #2 9-21-82/12-14-82	Well #3 9-21-82/12-14-82
(1)	(2)	(3)	(4)
Methylene Chloride	31	41/ < 5	7/NR***
Trichlorofluoromethane	< 1	< 1/ < 1	<1/ 1
1,1-Dichloroethylene	5	5/ < 1	270/NR
1,1-Dichloroethane	27	27/ < 4	220/230
c&t-1,2-Dichloroethylene	< 7	< 7/ < 1	28/64
Chloroform	1	1/ < 1	7/10
1,2-Dichloroethane	< 5	< 5/ < 4	25/28
1,1,1-Trichloroethane	440	440/ 5	11000/11000
Trichloroethylene	17	18/ < 1	39/43
c-1,3-Dichloropropene dibromochloromethane 1,1,2-Trichloroethane	<1	1/ < 1	2/
Tetrachloroethylene	43	42/ < 1	470/470

** All results in parts per billion
*** No Result due to technical reasons - Resample Suggested

JS:sp
1-26-83

NCDH, 1982c. Letter to A. Angiola of Lockwood, Kessler & Bartlett dated November 16, 1982 (Source: USEPA Region II Files)

NASSAU COUNTY DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501
JOHN J. DOW, M.S., M.D., M.P.H.
Commissioner
FRANCES V. [illegible], P.E., M.C.P.
Deputy Commissioner
Division of Environmental Health
FRANCIS T. PURCELL
County Executive

November 16, 1982

Mr. Alfred Angiola
Lockwood, Kessler & Bartlett, Inc.
One Aerial Way
Syosset, N.Y. 11791

Re: Groundwater Monitoring Program
at Anchor/Lith Kem Ko in Hicksville

Dear Mr. Angiola:

This is in reference to the water samples we collected from the three monitoring wells at the above referenced facility on September 21, 1982. Copies of the results of these analyses are enclosed. Also enclosed are analytical results for the soil samples taken from well #1 at two depths during the well-boring operation.

All three well water samples appear to be contaminated with halogenated hydrocarbons, the most significant of which is 1,1,1 trichloroethane. The downstream well #3 in particular, has very high levels of this contaminant. The 50 ft. deep soil sample was found to be contaminated with methylene chloride only, whereas the 65 foot deep soil sample also contained 1,1,1 trichloroethane in addition to methylene chloride.

Your listing of the storage tanks and chemicals for the above facility dated May 27, 1982, indicates that methylene chloride is stored in tank #3 and 1,1,1 trichloroethane is stored in tank #12. Records at the Nassau County Fire Marshal's office indicate these tanks were not tested at the time testing was done and where other tanks were noted to be leaking. Consequently, it is imperative that leak tests be conducted immediately on the tanks containing methylene chloride and 1,1,1 trichloroethane.

If the tanks do not pass the tests, verify then the chemical products must be removed from them and the tanks taken out of service or replaced.

Since the groundwater appears to be heavily contaminated, as noted with well #3 in particular, it will be necessary for you to isolate and remove all the sources of the contamination and provide a means for removing the contaminants from the groundwater. Accordingly, we will expect to receive an approvable plan from you by December 1, 1982 for performing the above-mentioned cleanup.

NCDH, 1983b. Memorandum from L. Sama to G.E. Donohue (Source: USEPA Region II files)

MEMORANDUM

NASSAU COUNTY DEPARTMENT OF HEALTH

240 Old Country Road - Mineola, New York 11501

To : G.E. Donohue

Date April 26, 1983

From : L. Sama

Subject : Information on Anchor/Lith-Kem-Ko, Hicksville requested by J. Scherb in letter to you of April 5, 1983

J.Scherb's Item #	Our Comments
1.	Information has been requested of the Fire Marshal's office 4/26/83.
2.	See attachments A & B for diagrams of property.
	A. Properties in area, including Anchor.
	B. Anchor property showing well locations.
3.	Proof of leaking tanks is contained in following attachments (C, D, E, F):
	C. Letter of January 13, 1982 from Chessco Industries, owner of Anchor/Lith-Kem-Ko, with enclosures from Fire Marshal's office. Shows tanks #3, 5, 6, 8 and #15 to be leaking.
	D. Letter of April 14, 1983 from Barlo Equip. Corp. to NCDH shows tank #5 to be leaking.
	E. Internal memo at NCDH of February 10, 1983 regarding a meeting here on January 21, 1983 with Anchor/Lith-Kem-Ko and LKB. Reference was
	F. made to a schematic diagram provided by LKB representing tank storage conditions in 1965 and showed 111 Trichloroethane stored in tank #5, which later was shown to be leaking.

In summary, the following tanks were shown to be leaking or defective:

Tank #	Contents**
3	Methylene Chloride
5	Napthol Spirits
6	Acetone
8*	Mineral Spirits
11	Isopropyl Alcohol
15	Textile Spirits

* 1965 Diagram shows 111 Trichloroethane storage. Noted as Chlorothene Nu
** Presently empty. Not used because of leaks.

J. Scherb's Item # | Our Comments

4. The contents of leaking tank were confirmed by Attachment G as follows:

G. Internal file memo of meeting at NCDH of June 4, 1982 with admission by Anchor and LKB that leaking tanks 5, 6, 8, 11 and 15 contained chemicals listed in 3E above. Tank registration of October 6, 1981 from Fire Marshal's office (see 3C above) shows tank #5 to contain Methylene chloride. Table of May 27, 1982 by LKB also shows Methylene chloride listed for tank 5. Schematic diagram referred to in 3E above shows 111 Trichloroethane to have been stored in tank #5 at one time.

5. Groundwater Sampling - An affidavit has been forwarded to J. Scherb to obtain a warrant.

6. Tank registration copies are attached in 3C above, having been forwarded by Chessco with their letter of January 13, 1983 to NCDH.

7. Tanks 5, 6, 8, 11 and 15 are shown to be empty on the October 6, 1981 registration listing. Counsel for Anchor at a meeting at NCDH on January 21, 1983 reported that product was being removed from Tank 5 and it was capped (to prevent refilling). See February 10, 1983 memo referenced in 3E above. No other verification has been made of status of Tank 5.

8. Methylene chloride was listed in Tank 3 in a 1963 listing provided by LKB as referenced in 3E above and as referenced in 4G above.

9. The owners of the property and principal officer are:

Owner: Bancroft Construction Corp.
P.O. Box 6
Hicksville, N.Y. 11801

Principal Officer: Jerry Spiegel, Pres.

As per our telephone conversation with Mr. Grayson of Jerry Spiegel Associates. County records show Pence Construction Corp. as last owner with Jerry Spiegel, President and also that Jerry Spiegel paid the 1982 taxes on the property.

10. Upstream well data are presented in attachment H. There are three drinking water wells from approximately 1 mile N-NE and NW of the site. They are all deep wells, 419 to 535 ft. The only organic contaminant detected was 111 trichloroethane in one well, N3876, at a concentration of 3 ppb.

A shallow monitoring well N1195, 116 ft. deep is 0.3 miles N-NW and contained only 1 ppb trichloroethylene.

Item #10 Attach. H — Well Sampling Upstream (North of Anchor site

3 Public Water Wells

Well N7030 located approximately one mile NW at the intersection of Cantiague Rock Road and Saratoga Drive, Jericho Water District. Depth 535 ft. Last sampled 7/82, no organics noted. The well has a history of no organics in sample.

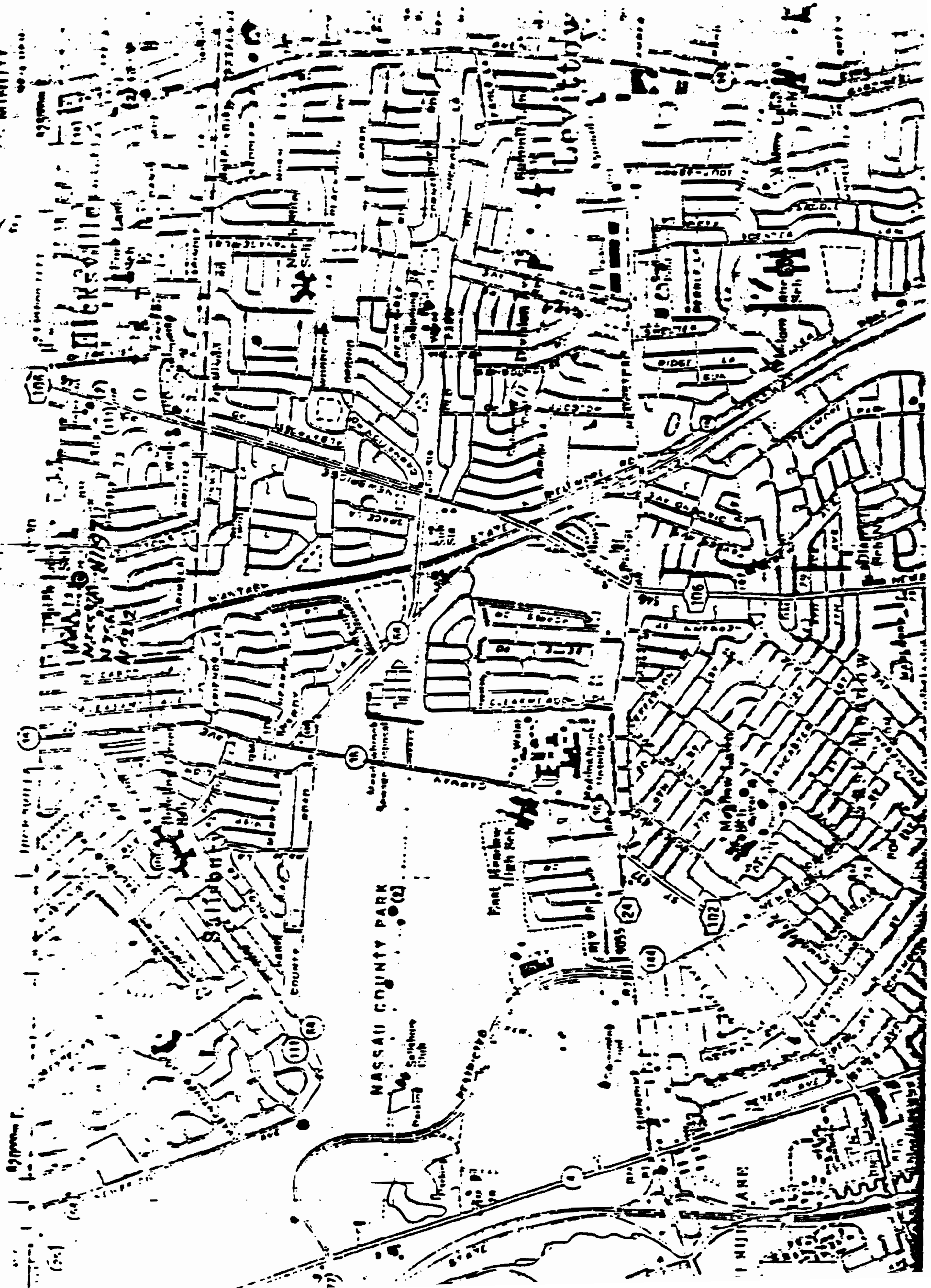
Two wells located approximately 0.8 miles north east of West of Wohl Ave. and Ohio Ave. intersection. Well N3953 (6-1) is located north of N3956 (6-2). Both Hicksville Water District. Well 6-1 last sampled 6/82. Depth 419 ft. ~3 ppb of 1,1,1 trichloroethane noted. Well 6-2 last sampled 3/83. No organics noted. depth 428 ft.

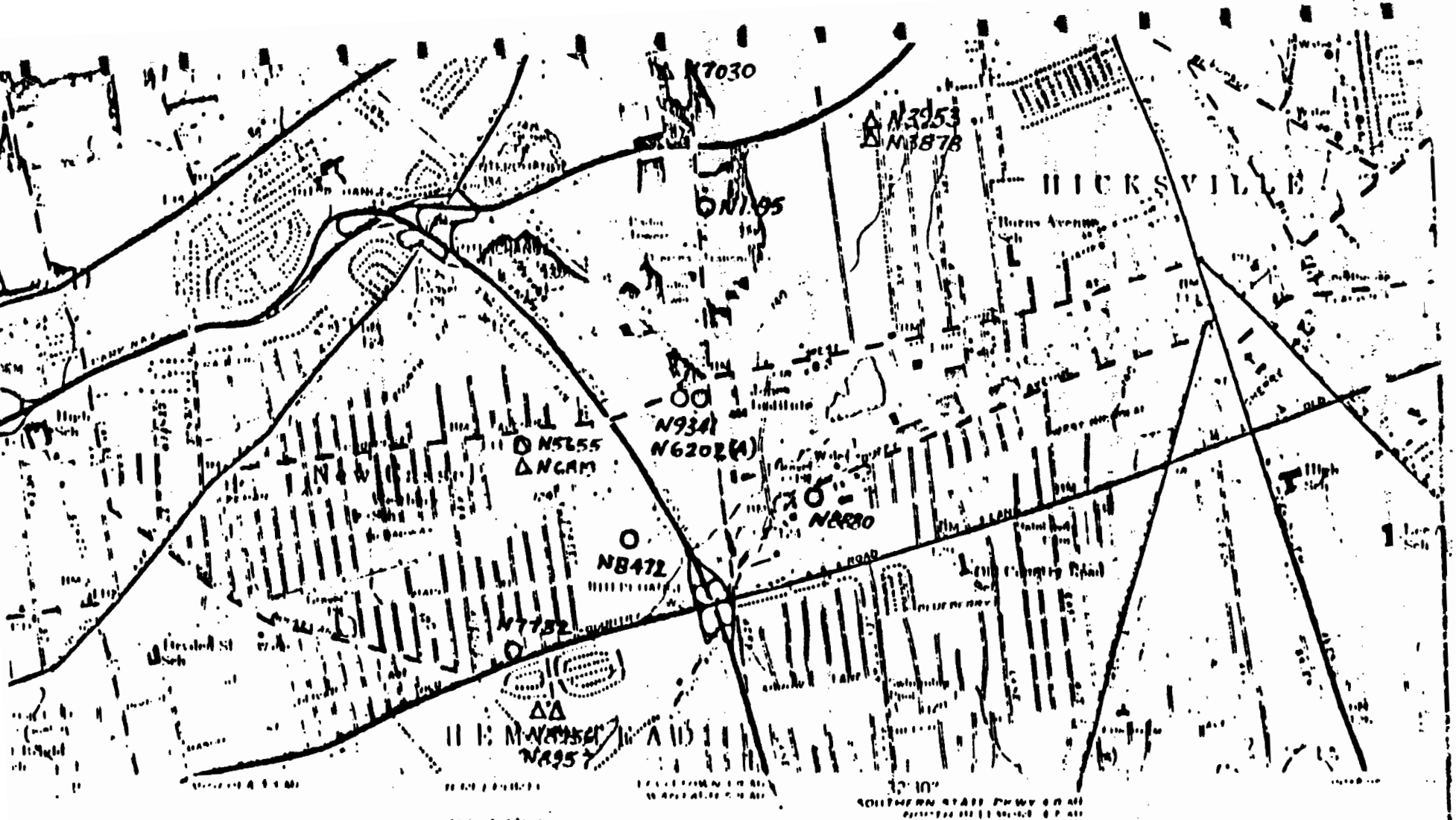
2 Monitoring Wells

One well (N1195) located approximately 0.5 mile north-northwest, East of Barry Drive and Cantiague Rock Road intersection. Last sampled 11-82. 1 ppb Trichloroethylene noted, depth 116 ft.

A groundwater sample was obtained by the Nassau County Department of Health on September 9 1982 from a well at 530 W. John Street, Hicksville approximately 280 ft. west of Anchor site. The well depth is 70.36 feet. The sample was taken at a depth of 64 ft. 11 in. Analysis of the sample by the Nassau County Department of Health Division of Laboratories and Research showed it to contain 13 ppb of tetrachloroethylene, 3 ppb of trichloroethylene and greater than 100 ppm of Methyl Ethyl Ketone. No 111 trichloroethane or methylene chloride were detected.

LS:ceg


NASSAU COUNTY PARK



FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON 25, D. C.

NCDH, 1985. Environmental Health Continuation Sheet (Source: NCDH files).

ENVIRONMENTAL HEALTH
Continuation Sheet
Nassau County Health Department

Owner or Agent : Ancho/LiTHkemko
Address: Hicksville

Inspector

DATE | COMMENTS

8-26-85 | C/- 8-23-85 at 9:00 AM Brian Henewelb of LKB phoned This office. He advised me That on Friday 8-23-85 The 4" concrete floor had been broken up & The vent line To Tank #1 had been exposed. IT was filled with concrete. The Tank shell was exposed at The vent line, but showed no signs of a break. The Tank did show signs of stress & appeared To have been filled with concrete. Near The Tank wall was a puddle of concrete slurry which had risen To The Top of The sand fill. The Origen of This ~~floor~~ concrete was not visible and is surmised To come from a break IN The Tank wall That is not exposed. I agreed to meet Mr. Henewelb at 10:00 AM To inspect The excavation.

AT 9:50AM I met with Mr. Henewelb at The site. The door was locked & The gates To The rear of The site were also locked. Mr. Henewelb was surprised as it was expected That The contractor would be present To break The concrete floor To expose The remaining Tanks So They could be filled with concrete slurry by cutting a hole in The shell. (The fill lines are blocked) Mr. Henewelb agreed To call when he discovered what The problem was. He also confirmed The LiTHkemko was moving Their operation but still had chemicals stored in The building. A sign in front of The property indicated The site was for rent.

ENVIRONMENTAL HEALTH Continuation Sheet Nassau County Health Department	Owner or Agent: Anchor/LiTHKenko Address: Hicksville	Inspector

DATE	COMMENTS
[illegible]	AT [illegible] am Brian [illegible] phoned To inform me That
	LiTHKenko had been evicted by Jerry Spiegel Associates.
	He does not expect work To continue for aT least a
	month on The filling of The Tanks. He will notify The
	N.C. Fire Marshal's office.

J. Acheshka [signature]

Office of the Fire Marshall, 1981a. Notice of Violation (Source: Rosenman & Colin Files)

OFFICE OF FIRE MARSHAL

890 JERUSALEM AVENUE
P.O. BOX 128
UNIONDALE, NEW YORK 11553

NOTICE OF VIOLATION

#2,3,4

BUREAU OF FIRE PREVENTION

Insp. No. GS-93-26

May 21, 1981
(Date)

TO Mr. Walter Lesser

Anchor/Lithkemko

NOTICE is hereby given of certain violations of the Nassau County Fire Prevention Ordinance existing on the premises located at:

500 West John Street

Hicksville, New York 11801

Request is hereby made that said violations consisting of:

UNDERGROUND FLAMMABLE AND COMBUSTIBLE LIQUID TANKS

1. THE TANKS ARE NOT REGISTERED WITH THIS OFFICE. Flammable and combustible tanks shall be registered with the Fire Marshal, on forms provided.

2. OUR RECORDS INDICATE THAT THE UNDERGROUND BULK STORAGE TANKS HAVE NEVER BEEN HYDROSTATICALLY TESTED. Perform a hydrostatic test on all underground tanks in accordance with the requirements of this office. A FIRE MARSHAL MUST BE PRESENT WHEN THE TEST IS CONDUCTE

3. THE VENT PIPES ARE EQUIPPED WITH THE WRONG TYPE OF VENT CAPS. Vent pipes shall be equipped with updraft type vent caps, or they shall be left open and uncapped.

C

be corrected or removed forthwith. Failure to do so may subject you to the penalties as provided in the Nassau County Fire Prevention Ordinance.

David M. Bartow
Supervising Fire Inspector

JOSEPH G. BOSLET, JR.
FIRE MARSHAL
COUNTY OF NASSAU

Michael J. Affrunti
By Fire Inspector

0023

Office of the Fire Marshall, 1981b. Order to Remove Violations Forthwith (Source: Rosenman & Colin Files)

P.O. Box 128
Uniondale, New York 11553

ORDER TO REMOVE VIOLATIONS FORTHWITH

July 22, 1981
(Date)

Insp. No. GS-93-26

TO Mr. James Meister, V.P.
Anchor/Lithkemko

Inspection of the premises at: 500 West John St. Hicksville NY

discloses the existance of certain violations of Article III of the Nassau County Fire Prevention Ordinances, No. 56-1962. As Amended November 19, 1979, consisting of the following.

Tank No. 15 (4,000 gal.) failed a hydrostatic test THIS DATE THE PRODUCT IN THIS TANK WILL BE ALLOWED TO BE USED UNTIL TUESDAY 7/28/81 OR UNTIL THE TANK IS EMPTY. THIS TANK IS NOT TO BE REFILLED UNTIL THE SYSTEM HAS BEEN REPAIRED AND RETESTED

Tank No. 6 (2,000 gal.) failed a hydrostatic test this date All product is to be removed from this tank forthwith and this system is not to be used until the system has been repaired and RETESTED

Tanks No. 2 (ACR 100) & No. 5 (NS) failed a hydrostatic test this date All product is to be removed from the tanks and these systems are not to be used until they have been repaired and retested

Received by [signature]

10 - [illegible]
7 - [illegible] } passed

Pursant to the authority given the undersigned under the provisions of the Nassau County Fire Prevention Ordinance, #56-1962, as Amended November 19, 1979.

YOU ARE HEREBY ORDERED TO REMOVE SAID VIOLATIONS FORTHWITH.

Failure to obey this written order may result in punishment as provided in Article III, Section 3.11 of the Nassau County Fire Prevention Ordinance # 56-1962 which is as follows:

Any person, firm or corporation violating any provisions of this Article, or failing to comply with any order or regulation made thereunder, shall upon conviction be guilty of a misdemeanor punishable by a fine not exceeding five thousand dollars ($5,000) or, by imprisonment for not more than thirty (30) days, or both, for each and every such violation. The imposition of the penalty for any violation of this Article shall not excuse the violation or permit it to continue, and each fifteen (15) days that the prohibition conditions are maintained shall constitute a separate offense.

7/22/81
Date

[signature] # 45

[illegible] 4-79 Rev. 5/80

Vies: LR, JFM, PSI. T. [illegible]
[illegible]

Office of the Fire Marshall, 1981c. Application for Underground Flammable/Combustible Liquid Tank Registration (Source: Rosenman & Colin Files)

JOSEPH G. BOSLET
FIRE MARSHAL

OFFICE OF THE FIRE MARSHAL
899 JERUSALEM AVENUE
P.O. BOX 128
UNIONDALE, NEW YORK 11553
516 292-4826

APPLICATION FOR UNDERGROUND FLAMMABLE/COMBUSTIBLE LIQUID TANK REGISTRATION

DATE ISSUED 10-7-81 PERMIT NO. _____ INSP.NO. Gs-93-2

NAME OF APPLICANT Anchor/Lith-Kem-Ko, Inc.

ADDRESS 500 West John Street, Hicksville, N.Y. 11801 TEL.NO. (516) 433-0800

TANK LOCATION 500 West John Street, Hicksville, N.Y. 11801

D/B/A: NAME _____

ADDRESS _____ TEL.NO. _____

TANK NO.	SIZE	PRODUCT	DATE INSTALLED	DATE TESTED	CONSTRUCTION
1	3000	Naphthol Spirits	1964	7/22/81	~~Milled~~ Steel
2	3000	Aromatic 100	1964	8/6/81	~~Milled~~ Steel
3	3000	Methylene Chloride	1964	NO TEST	~~Milled~~ Steel
4	3000	Textile Spirits	1964	7/22/81	~~Milled~~ Steel
5	4000	EMPTY	1964	8/6/81	~~Milled~~ Steel
6	2000	EMPTY	1964	7/22/81	~~Milled~~ Steel
7	2000	Cellosolve	1964	7/22/81	~~Milled~~ Steel
8	1500	EMPTY	1964	8/6/81	~~Milled~~ Steel
9	1500	Diethylene Glycol	1964	NO TEST	~~Milled~~ Steel
10	1500	Mineral Spirits 66	1964	7/22/81	~~Milled~~ Steel

ANCHOR/LITH-KEM-KO, INC.
NAME OF APPLICANT

Kenneth W. Leeds, Vice Pres., Adm.
TITLE

SIGNATURE OF APPLICANT Kenneth W. Leeds

ROBERT W. CAM[illegible]L
NOTARY PUBLIC State of New York
No. 30-0549231
Qualified in Nassau County
Commission Expires March 30, 1983

NOTARY [illegible]

DATE 9-10-81

FC-3329. 2/80 Rev. 7/80

A4. General Property Information

Kunz, A. 1990. Long Island Regional Planning Board. Telephone conversation with E. Beacon, Roux Associates, Inc. January 5, 1990

ROUX

TELEPHONE CONVERSATION RECORD

DATE: 1/5/90 TIME: 11:30 PROJECT: 11603Y

FROM: Ellen Beacon TO: Arthur Kunz

COMPANY: Roux Associates, Inc. COMPANY: LI Regional Planning Board

TEL. NO: 673-7200 TEL. NO: 360-5190

RE: 500 W. John Street, Hicksville (Y11603)

I asked Mr. Kunz if he knew when the industrial park was built and what previously occupied the site. Mr. Kunz explained that the land was owned privately until 1960-196[illegible] when the town was deeded the land for Cantique Park. At this time the remaining land was rezoned for industrial use. Prior to the erection of the facility in 1964, the land was farmland that was left fallow.

Lesser, W.C. Anchor/LithKemKo, 1990, Meeting with Roux Associates, Inc. April 19, 1990.

FRANCIS T. PURCELL
COUNTY EXECUTIVE

THOMAS J. VARELAS
SHERIFF

JOSEPH J. SANTACROCE
UNDER SHERIFF

COUNTY OF NASSAU
SHERIFF'S DEPARTMENT
240 OLD COUNTRY ROAD
MINEOLA, N. Y. 11501
TELEPHONE 516 535-2186

DISTRICT COURT - COUNTY OF NASSAU

KOBAR CONSTRUCTION CORP

File No. 8560899

Petitioner,

-against-

CHESSCO INDUSTRIES INC
ANCHOR/LITHKEMKO
Respondent,
Respondent Undertenant

NOTICE TO VACATE

TAKE NOTICE that a final judgment has been entered in the above proceeding awarding the Petitioner possession of the real property which you now occupy, and that a warrant has been issued directing that the Petitioner be put in possession. Please be advised that if you have not vacated the premises after seventy-two hours have elapsed from the date of the service of this notice, your possessions will be removed to the curb in compliance with the Court Order.

Thomas J. Varelas
Sheriff of Nassau County

DATED: Aug 22 1985
MINEOLA, N.Y.

By _____
Deputy Sheriff

DISTRICT COURT OF THE COUNTY OF NASSAU

State of New York, FIRST *District* MINEOLA *Part*

Index No. L & T SP3162/85

KOBAR CONSTRUCTION CORP.
270 North Broadway
Hicksville, NY 11802
Petitioner Landlord Address

against

CHESSCO INDUSTRIES, INC.
500 W. John Street, Hicksville, NY
Respondent Tenant Address

ANCHOR/LITHKEMKO
500 W. John Street, Hicksville, NY
Respondent Undertenant Address

First name of Tenant and/or Undertenant being fictitious and unknown to petitioner, Person intended being in possession of the premises herein described

WARRANT
Non-Payment

TO THE SHERIFF OF THE ABOVE DISTRICT COURT, GREETING:

WHEREAS a petition in the above entitled proceeding was presented to this court on behalf of KOBAR CONSTRUCTION CORP. landlord of the premises described herein, for a final judgment to recover possession of said premises and for a warrant to remove CHESSCO INDUSTRIES, INC. respondent tenant, and ANCHOR/LITHKEMKO respondent undertenant from the building and premises known as No. 500 West John Street, Hicksville, New York, county of Nassau, upon the ground that the rent of said premises was then past due and although duly demanded remained unpaid in violation of the agreement under which the premises were held and that said respondents did hold over and continue in possession of said premises after default in payment of said rent and without the permission of the landlord or the petitioner and a notice of petition was duly issued out of this court directed to the respondents specifying the time and place of the hearing of the petition, and proof of service of the notice of petition and petition was presented, and the respondents having failed to interpose or establish any defense, the court did thereupon render final judgment awarding to the petitioner landlord, among other things, the delivery of the possession of the said property,

THEREFORE, in the name of the People of the State of New York you are hereby commanded to remove said respondent tenant

and all other persons from said premises and put petitioner landlord in said petition named in full possession thereof.

WITNESS, Hon. JOSEPH C. CALABRESE one of the judges of our said court at the county of Nassau dated the 19 day of August 19 85.

J. D. C.

Salvatore Benisatto
935-1903

1985 AUG 22 AM 11:56

8560899

Index No. L & T SP3162/85

District Court of the County of Nassau

State of New York, First Mineola *District Part*

KOBAR CONSTRUCTION CORP.,

PETITIONER
LANDLORD

against

CHESSCO INDUSTRIES, INC.

RESPONDENT
TENANT

ANCHOR/LITHKEMKO,

RESPONDENT
UNDERTENANT

Warrant - Non - Payment

Issued 19

RETURN

Pursuant to the command of the within warrant, I have this day put the petitioner landlord in said petition named into full possession of the premises within mentioned.

.....19.....

.....
Sheriff

NOTICE

This warrant can only be executed between the hours of sunrise and sunset.

Myott, D. 1990. Meeting with E. Beacon of Roux Associates, Inc. on April 5, 1990.

ROUX Consulting Ground-Water Geologists
ROUX ASSOCIATES INC

MEETING NOTES

PROJECT NAME/NUMBER: ANCHOR CHEMICAL 11603Y

SUBJECT: Water Supply and domestic Well locations Near the Site

SHEET 1 OF 1

DATE: 4/5/90

INITIALS:

LOCATION: Nassau County Department of Health

ATTENDANCE:

NAME	AFFILIATION	TELEPHONE NO.
Ellen Beacon	Roux Associates, Inc.	673-7200
Donald Myott	NCOH	535-2201

TOPICS DISCUSSED	ACTION REQUIRED
Mr. Myott said there are no domestic wells near the site. He provided copies of maps showing the locations of public supply wells. I requested water quality data and well construction data for several wells. He said he should be able to get it together in two weeks.	

NYSDEC, 1983a. Certificate to Operate an Air Contamination Source (Source: NCDH Files)

N.Y.S. DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NASSAU COUNTY DEPARTMENT OF HEALTH

02/07

282400 0172 00002 W I
LOCATION FAC EP

CERTIFICATE TO OPERATE AN AIR CONTAMINATION SOURCE
PROCESS, EXHAUST OR VENTILATION SYSTEM UNIT
RENEWAL APPLICATION

OWNER	FACILITY	
(1) ANCHOR/~~CHEMICAL CO INC~~ LITHKEMKO	(6) ANCHOR/~~CHEMICAL CO INC~~ LITHKEMKO	(11) CONFIDENTIAL STATUS: NON-CONFIDN
(2) 500 W JOHN ST	(7) 500 W JOHN ST	(12) COMPLIANCE STATUS: IN COMPLIAN
(3) HICKSVILLE (4) NY	(8) HICKSVILLE (9) 11801	DATE OF LAST CHANGE: 07/19/82
(5) 11801	(10) REP: A ~~JASSER~~ 433-0800	(13) PRIOR CO ISSUE DATE: 05/28/80
		(14) PRIOR CO EXPIRATION DATE: 05/27/83

EMISSION POINT 00002
(41)UTM-E: 622.7 KM. (42)STACK HEIGHT: 28 FT. (43)EXIT VELOCITY: 37.00 FT/SEC (44)SIC: 2842 (45)AGENCY-CODE-1: C (COUN
(46)UTM-N: 513.6 KM. (47)HT ABV STRUC: 10 FT. (48)EXIT FLOW: 1500.00 ACFM (49)CO FEE: (50)AGENCY-CODE-2: C (COUN
(51)GRND ELEV: 30 FT. (52)STK DIAM: 9X11 IN. (53)EXIT TEMP: 8 DEGR F (54)CO CONDITIONS: 1

UNIT I
(55)HOURS/DAY: 4.0 (56)DAYS/YEAR: 250 (57)% OP BY SEASON: 25 25 25 25 (58)SOURCE CODE: A2101 MIXING OR BLENDING -
(59)BLDG: (60)FLOOR NAME: (61)RULE 1: 205.00 (62)RULE 2:

PROCESS/UNIT DESCRIPTION
(72)DESCRIPTION 1. BLENDING IN SEALED TANKS &
2. FILL SMALL CONTAINERS FROM TANK

CONTROL EQUIPMENT
(73)TYPE: 001 FAN (74)MFG: UNKNOWN (75)ID: 01 (76)DATE INSTALLED: 09/64
(77)DISPOSAL METHOD: (78)USEFUL LIFE: 30 YEARS

AIR CONTAMINANTS	CAS NUMBER	ENV RATING	EMISSIONS ACTUAL	UNIT	HOW DET	PERMISSIBLE	% CONTROL EFFICIENCY	HRLY ACTUAL LBS/HOUR	ANNUAL EMISSIONS (LBS/YEAR) ACTUAL	10^x	PERMISSI
ORGANIC SOLVENTS	(085) NY930-00-0	(086) D	(087) .090	(088) 01	(089) 06	(090) .090	(091)	(092) .090	(093) 90.000	(094) 0	(095) 90.

(15)PRIOR COMMENTS (16)BY (17)DATE
1.
2.
3.
4.
5.

(18)CURRENT COMMENTS (19)BY MGI AT (20)DATE 04/21/85
1. SATIS (010) R CAMPBELL 433-0800
2. (053)70
3. (001) ANCHOR/LITHKEMKO
4. (006) ANCHOR/LITHKEMKO
5. (051) 140
(511) AGI Compliance

(21)COMPLIANCE 5
(22)DATE OF NEXT ACTION / /
CERTIFICATE TO OPERATE
(23)ISSUE DATE 05/28/8
(24)EXPIRATION DATE 05/15/8
(25)CO FEE 215

FIRM REP'S SIGNATURE: Arthur Caplan
DATE: 4-21-83
~~ISSUING~~ OFFICER'S SIGNATURE: Robert McDevitt
DATE: 5-5-83

NYSDEC, 1983b. Letter to R. Olazagasti NYSDEC Division of Solid Waste dated January 4, 1983. (Source: Rosenman & Colin Files)

New York State Department of Environmental Conservation
Building 40
State University of New York
Stony Brook, NY 11794
(516) 751-7900

Robert F. Flacke
Commissioner

File → MF-NH8
LS
JS
Return to Manis for filing

January 4, 1983

Mr. Robert Olazagasti
Site Investigation Section
Division of Solid Waste
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233

Dear Bob:

As a result of the public meeting of December 7, 1982 and subsequent discussions with Stan Juczak and Joe Schechter of the Nassau County Department of Health, we have revised and expanded the Region I hazardous waste sites which are located in Nassau County. Revisions resulting from the on-going discussions with James Pim of the Suffolk County Department of Health Services will be sent before the January 7, 1983 deadline.

NAME	CODE NO.	SCORE
Hooker Chemicals & Plastics	1-30004	90
Claremont Polychemical	NEW	90
*Old Bethpage Landfill	-------	86
Purex-Mitchel Field Area	1-30014	80
*Syosset Landfill	1-30011	78.5
Pasley Solvents	NEW	68
Mattiace Petrochemicals Glen Cove	NEW	68
Mattiace Petrochemicals (MEK) Hicksville	NEW	68
Applied Environmental Services	NEW	63
Liberty Industrial	1-30005	62
Genzale Plating	NEW	62
Simkins Industries	NEW	59
General Instrument Corp.	NEW	58
Anchor Chemical Corp.	NEW	58
Cerro Wire & Cable	1-30002	44.5
Denton Avenue Landfill	1-30008	29.5
Servo Corp. of America	1-30010	(DELETE)

*ON FEDERAL SUPERFUND

The individual scoring sheets for these sites will be forwarded to Albany via regular mail.

In addition to the above sites, there are two other major areas of environmental concern which have not been addressed in this evaluation. These two areas impact our sole source aquifer. The first category includes gasoline and oil spills, of which we have documented over 50 in Nassau County. The second category includes known existing contaminated leachate plumes emanating from unknown sources. There are approximately a half dozen of these plumes in Nassau County alone. Please indicate how these sites are to be factored into the State Superfund methodology.

I hope that this submittal satisfies your requirements relative to a comprehensive list of known hazardous waste sites within Nassau County. Similar information on Suffolk County will be forthcoming shortly.

Very truly yours,

Theodore M. Sanford

THEODORE M. SANFORD, P.E.
Senior Sanitary Engineer
Solid Waste Program

TMS:ebp
cc: A. Machlin
S. Juczak, NCDH ✓

JOSEPH G. BOSLET, JR
FIRE MARSHAL

OFFICE OF THE FIRE MARSHAL
899 JERUSALEM AVENUE
P.O. BOX 128
UNIONDALE, NEW YORK 11553
516 292-4826

APPLICATION FOR UNDERGROUND FLAMMABLE/COMBUSTIBLE LIQUID TANK REGISTRATION

DATE ISSUED 10-7-81 PERMIT NO. _____ INSP.NO. CS-93-26

NAME OF APPLICANT Anchor/Lith-Kem-Ko, Inc.

ADDRESS 500 West John Street, Hicksville, N.Y. 11801 TEL.NO. (516) 433-0800

TANK LOCATION 500 West John Street, Hicksville, N.Y. 11801

D/B/A: NAME _____

ADDRESS _____ TEL.NO. _____

TANK NO.	SIZE	PRODUCT	DATE INSTALLED	DATE TESTED	CONSTRUCTION
11	1500	EMPTY	1964	7/22/81	[illegible] Steel
12	1500	1,1,1 Trichloro-ethane	1964	NO TEST	[illegible] Steel
13	1500	Isopropanol	1964	7/22/81	[illegible] Steel
14	1000	Butyl Cellosolve	1964	7/22/81	[illegible] Steel
15	4000	EMPTY	1964	7/22/81	[illegible] Steel
16	1000	VM&P Naphtha	1964	7/22/81	[illegible] Steel
17	550	Acetone	1964	7/22/81	[illegible] Steel

ROBERT W. CAM[illegible]
NOTARY PUBLIC [illegible]tate of New York
No. 30-8549231
Qualified in Nassau County
Commission Expires March 30, 1983

ANCHOR/LITH-KEM-KO, INC.
NAME OF APPLICANT

Kenneth W. Leeds, Vice Pres., Adm.
TITLE

✓ [illegible]
NOTARY

SIGNATURE OF APPLICANT Kenneth W. Leeds DATE 9-10-81

FC-3329. 2/80 Rev. 7/80

A3. Data Supporting Request for Legal Action

Jasser, A.A., 1977, Letter to M. Mangino, NCDH. (Source: Rosenman & Colin Files)

ANCHOR
CHEMICAL CO., INC.

October 5, 1977

Mr. Michael Mangino,
Abatement Officer
Nassau County Department of Health
Water Pollution Division
240 Old Country Road
Mineola, New York 11501

Dear Mr. Mangino:

This will confirm our conversation of Wednesday, September 28, held in my office. Mr. Sama of your office was present.

After an inspection of the premises, a discussion was held as to the suggested means of preventing run-off of solvent from the tank wagons making a delivery to us and a means of sealing the surface of the drains in each of our mixing rooms. After you left, I took the following steps to comply with your suggestions:

1) I arranged for a contractor to be hired to seal the surface of each of the drains - one in our combustible mixing room and the other in the flammable mixing room. We expect that the work will be completed before the end of October.

2) I talked to our staff to caution them about spillage and how to avoid it. They are to see that any drainage from hoses is caught into pails and then put into drums. Very small spillage will be picked-up with an oil-absorbant.

3) Our Production Manager is to talk to each of the drivers who make deliveries to point out to them the danger of spillage and to set up a program of avoidance each time a delivery is made.

This means that a pail will be placed on each connection point so that any drops that fall from the connection will be caught in a container and not allowed to run on the ground. Mr. Stein, our Production Manager, intends to talk to the drivers every time there is a delivery.

ANCHOR
CHEMICAL CO., INC.

Mr. Michael Mangino,
Abatement Officer
Nassau County Department of Health October 5, 1977

I want to assure you, Mr. Mangino, that we at Anchor are aware of the water pollution problems that the County has endured and that we shall do everything in our power to prevent any occurrence at Anchor which could contribute to this water pollution. I appreciated your coming in and discussing the matter with me in an objective manner. You can be sure that the steps I have outlined above will be completed before the end of this month.

Yours very truly,

ANCHOR CHEMICAL CO., INC.

Alfred A. Jasser
President

AAJ/lo

NCDH, 1983a. Data Supporting Request for Legal Action August 29, 1983 (Source: Rosenman & Colin files)

Nassau County Department of Health
Data Supporting Request for Legal Action
Office of Industrial & Hazardous Wastes Management

Date of Request August 29, 1983 Regulatory Personnel: J. Schechter
L. Sama

Owner's Name Kobar Construction Corporation

Owner's Address: 270 North Broadway, Hicksville, N.Y.

Facility Name: Anchor/Lith Kem Ko, Inc.

Facility Address: 500 West John Street, Hicksville, N.Y.

Responsible Officer: J. Spiegel, Box 6, Hicksville, N.Y. 11801

1. Specific Violations: ECL Article 27, Section 0913 - Operating a hazardous waste disposal site without a permit.

2. Background Information: On February 2, 1983, a request for legal action against Anchor/Lith Kem-Ko was referred to Albert Machlin, P.E. Regional Engineer for Environmental Quality of the NYSDEC by F. V. Padar, P.E., M.C.E., Deputy Commissioner of the Division of Environmental Health of the Nassau County Department of Health.

   Background information is provided below concerning the history of ownership of the property, previous operations at the site and summary of all sampling at the site.

3. History of Ownership: Records of this department indicate that the owner of site since September 31, 1964 (copy of deed enclosed) has been:

   Kobar Construction Corporation
   270 North Broadway
   Hicksville, New York

   The 1982 taxes for the site were paid by J. Spiegel, Box 6, Hicksville, New York 11801.

4. History of Operations at the site: Records of this department indicate that from 1964 through 1977, the operator at the site was Anchor Chemical Co., Inc. In 1977, the president of the company was Alfred A. Jasser.

Anchor Chemical Co., Inc. blended and packed chemical specialties for the graphic arts industries. In 1964, seventeen underground storage tanks were purchased by Anchor Chemical Company and installed by the Franklin Company Contractors, Inc., 52-09 58th Street, Woodside, New York 11377. These tanks were used to store mineral spirits, methylene chloride, solvent D (120°F), napthol spirits, alcohol and acetone mixture, chlorothene (1,1,1-trichloroethane), petroleum solvent, cellosolve, isopropyl alcohol, ethylacetate and butyl acetate.

Industrial chemical surveys provided by the facility in 1977 (copies enclosed) revealed that the company purchased and used 50,000 gallons of methylene chloride per year, 13,000 gallons of 1,1,1-trichloroethane, 13,000 gallons of ethylbenzene, 270 gallons of petroleum tars, 40 gallons of dyes and organic pigments, 50,000 gallons of petroleum napthas, 20,000 gallons of ethylene glycol monoethylether, 2,000 gallons of glycerine glycols and 10,000 gallons of nonionic ethoxylated linear alcohol.

In June 1977, this department determined that floor drains in the combustible and flammable mixing rooms were connected to a stormwater drywell in the parking area north of the facility. Water from washing of spills in these rooms entered the drains and discharged into the drywell.

A sample of water in the drywell was obtained by this department on July 26, 1977 and analyzed by the New York State Department of Health, Division of Laboratories and Research. The results (copy enclosed) revealed the following chemicals present:

Parameter	Results (ug/l)
1,1,1-trichloroethane	2500
Trichloroethylene	> 15000
Tetrachloroethylene	> 20000

After meeting with representatives of this department in September 1977, the facility implemented a spill prevention plan and by November 1977 had sealed all lines leading from the building to the drywell (see attached letter of October 5, 1977 A.A. Jasser to M. Mangino).

In 1978, Anchor Chemical Co., Inc. was purchased by Anchor/Lith Kem Ko, Inc. who is the present operator at the site.

Anchor/Lith Kem Ko's involvement in this matter has already been detailed in the case report submitted February 2, 1983 as mentioned above.

A summary of this department's sampling of Anchor/Lith Kem Ko as provided in the February 2, 1983 case report is attached and includes the most

recent samples obtained from monitoring wells on site on June 8, 1983. (see Table I)

5. Listing as a Hazardous Waste Site This site has been listed as a hazardous waste site in Region I. First notification of inclusion of this site in the list of hazardous waste sites in Nassau County was given in the attached letter of January 4, 1983 from T.M. Sanford, P.E., Senior Sanitary Engineer, Solid Waste Program, NYSDEC-Region I to R. Olzagasti, Division of Solid Waste, Site Investigation Section, NYSDEC-Central Office. The individual scoring sheet for this site is included with the letter and indicates a total score of 58 under the Superfund Ranking System.

   A January 5, 1983 letter (copy enclosed) from F.V. Padar, Deputy Commissioner of NCDH to A. Machlin, NYSDEC confirms this department's request to include this site in the list of hazardous sites in Nassau County.

   Enclosed is an article from the February 16, 1983 issue of Newsday that indicates this site was named as one of thirteen hazardous waste sites on Long Island that will be investigated under the State's special funding project (Superfund).

6. Additional Information - This site is located over the primary recharge area of Nassau County. Groundwater is located approximately sixty-five feet below grade and is contaminated with chlorinated hydrocarbons above New York State drinking water guidelines.

   Spilled chlorinated hydrocarbons, such as those found contaminating the groundwater below this site (i.e. 1,1,1-trichloroethane, tetrachloroethylene, 1,1-dichloroethylene, and 1,1-dichloroethane) are categorized by the United States Environmental Protection Agency and the New York State Department of Environmental Conservation as hazardous wastes.

   There are four public drinking water wells belonging to the Hicksville Water District located approximately one and one half miles in the direction of groundwater flow from this site.

   Therefore this site represents a substantial present and potential hazard to the public health and the environment.

7. Recommendations

   As required by Article 27, Section 1313, the owner of the site should develop and implement an inactive hazardous waste site remedial program to detail the extent of contamination at the site, and to provide a plan for cleanup and implementation schedule for the cleanup.

Table I

Nassau County Department of Health
Summary of Results of NCHD Sampling of
Anchor/Lith Kem-Ko
500 W. John Street, Hicksville, New York

A. Results of Soil Analyses* - September 13, 1982 Samples

Parameter	Well #1 Depth of Sample=50'	Well #1 Depth of Sample=65'
(1)	(2)	(3)
Methylene Chloride	490	410
1,1,1-Trichloroethane	< 20	22
Trichloroethylene	< 20	< 20
Tetrachloroethylene	< 20	< 20

* All results in parts per billion

B. Results of Groundwater Analyses**

Parameter	Well #1		Well #2			Well #3		
	9-21-82	6-8-83	9-21-82	12-14-82	6-8-83	9-21-82	12-14-82	6-8-
(1)	(2)		(3)			(4)		
Methylene Chloride	31	NR	41	< 5	NR	7	NR	NR
Trichlorofluoromethane	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1
1,1-Dichloroethylene	5	< 1	5	< 1	< 1	270	NR	180
1,1-Dichloroethane	27	11	27	< 4	< 6	220	230	100
c&t-1,2-Dichloroethylene	< 7	< 4	< 7	< 1	< 4	28	64	16
Chloroform	1	< 1	1	< 1	< 1	7	10	2
1,2-Dichloroethane	< 5	< 12	< 5	< 4	< 12	25	28	< 12
1,1,1-Trichloroethane	440	160	440	5	< 1	11000	11000	1500
Trichloroethylene	17	8	18	< 1	< 1	39	43	14
c-1,3-Dichloropropene) dibromochloromethane) 1,1,2-Trichloroethane)	< 1	< 1	1	< 1	< 1	2	< 1	< 1
Tetrachloroethylene	43	7	42	< 1	< 1	470	470	280

** All results in parts per billion

NR - No result due to technical reasons - Resample suggested

NCDH, 1983c. Data Supporting Request for Legal Action, January 26, 1983. (Source: Rosenman & Colin Files)

FRANCIS T. PURCELL
County Executive

NASSAU COUNTY DEPARTMENT OF HEALTH

240 OLD COUNTRY ROAD, MINEOLA, N.Y. 11501

JOHN J. DOWLING, M.D., M.P.H.
Commissioner

FRANCIS V. PADAR, P.E., M.C.E.
Deputy Commissioner
Division of Environmental Health

Data Supporting Request for Legal Action
Office of Industrial & Hazardous Wastes Management

Date of Request: January 26, 1983

Regulatory Personnel:
L. Sama
J. Schechter

Owner's Name : Chessco Industries, Inc.

Owner's Address: 2425 Post Road, Southport, Conn. 06490

Facility Name : Anchor/Lith Kem-Ko

Facility Address: 500 West John Street, Hicksville, N.Y. 11801

Responsible Officer: Walter C. Lesser, Director of Manufacturing

1. Specific Violations:

ECL 17-0501 - Leaks from underground storage tanks containing halogenated and non-halogenated hydrocarbons have contaminated the groundwater below the facility which is located at 500 W. John Street, Hicksville, New York.

The groundwater is contaminated with methylene chloride, 1,1,1-trichloroethane, tetrachloroethylene, and various other chlorinated hydrocarbons in contravention of the New York State Department of Enviornmental Conservation (NYSDEC) Standards.

2. Background Information:

The facility blends and packs chemicals for graphic arts industries. Seventeen underground storage tanks are located below the concrete floor of the building.

In August 1981, NYSDEC notified the Nassau County Department of Health NCHD) that the Nassau County Fire Marshal's (NCFM) office had conducted tank tests at the facility in July and August of 1981. The results of the "air over product" tests indicated five tanks were leaking. These were taken out of service by the facility. They contained napthol spirits (C_8-C_{11}), acetone, mineral spirits (C_7-C_{12}), isopropyl alcohol, and textile spirits (C_6,C_7). Nine other tanks passed the tests.

Three other tanks containing methylene chloride, diethylene glycol, and 1,1,1-trichloroethane were not tested because they are not flammable and thus do not fall under the jurisdiction of the NCFM.

On January 16, 1982 the facility informed the NCHD of the results of the tank testing and their subsequent actions. On January 26, 1982 the NCHD notified the facility of a possible violation of the Environmental Conservation Laws and requested they provide plans for an investigation of the extent of contamination and to clean up any contamination of the environment. The plan was to have been submitted by February 28, 1982 (See attached letter of January 26, 1982).

In March 1982, the attorney for the facility, John F. Bogut of Saltzman, Bogut and Chetkof, 120 West Old Country Road, Hicksville, N.Y., notified NCHD that a consulting engineering firm had been retained by the facility.

On June 4, 1982 the consulting engineer, Lockwood, Kessler and Bartlett (LKB), Inc. of Syosset, New York met with NCHD and agreed to submit a plan for investigating the extent of contamination within two weeks.

On July 8, 1982 a groundwater monitoring plan was submitted by LKB and subsequently disapproved by NCHD on July 13, 1982.

On August 16, 1982 LKB submitted an approvable plan for a groundwater monitoring program, and subsequently installed three monitoring wells on September 13-15, 1982. Soil samples were taken by NCHD from one well on September 13, 1982. Samples of groundwater were obtained from the monitoring wells on September 21, 1982 by LKB, NCHD and the Hicksville Water District. Results of testing by NCHD indicated soil samples and groundwater samples to be contaminated with chlorinated hydrocarbons at levels up to 11 mg/l (ppm). The primary contaminants were 1,1,1 Trichloroethane, methylene chloride, and tetrachloroethylene (See attached letters of November 16, 1982 and January 11, 1983).

Since 1,1,1-Trichloroethene and methylene chloride are stored in underground storage tanks by the facility, NCHD requested on November 16, 1982 that the facility leak test the three storage tanks not previously tested by the NCFM (See Attached Letter). NCHD also requested that the facility provide a plan for cleaning up the groundwater by December 1, 1982. On November 24, 1982 the facility requested time to retest the wells, and agreed to test the tanks. On December 14, 1982 the wells were resampled. Analyses by NCHD confirmed the previous testing results (See Table I).

On December 12 and 14, 1982 the three tanks in question were tested for leaks by an "air over product" procedure. The methylene chloride tank was found to be leaking. The facility was requested and agreed to take the leaking tank out of service.

On January 21, 1983 a meeting was held with the facility to discuss the results of their consultant's monitoring program. Although the consultant agreed that the results of testing were essentially the same as NCHD's, the attorney for the facility refused to release the results to NCHD.

The attorney advised NCHD that the facility was not convinced that they were responsible for the groundwater contamination, and requested additional time to pursue the investigation of the sources of contamination. The consultant agreed to provide a schedule and plan for the continued investigation by January 28, 1983.

3. Facts Describing Respondent's Cooperation or Lack Thereof:

The respondent has been cooperative in that they hired a consulting engineer to determine the extent of contamination, installed three monitoring wells for sampling groundwater, and leak tested three underground storage tanks at the request of this department. However, they have failed to submit the results of their investigation to this department as requested on December 3, 1982 (see attached letter), on January 5, 1983 (see response dated January 6, 1983), and at the meeting of January 21, 1983.

4. Other Proceedings, If Any, Involving Respondent:

None

5. Recommendations

It is recommended that the facility be required to provide an engineering report detailing the extent of contamination at the site, including a plan for cleanup and an implementation schedule for the cleanup.

Attempts to gain voluntary compliance have failed, therefore we recommend you go directly to a hearing with a high priority, since this is adjacent to the MEK spill in Hicksville. It is further recommended that this matter be brought to the attention of the EPA. Since there may be significant contamination of the groundwater we request an expeditious remedy.

APPENDIX B

Analytical Results of Sampling Done
by Lockwood, Kessler and Bartlett, Inc.

ECOTEST LABORATORIES, INC.

170 CENTRAL AVE. • UNIT 1 • FARMINGDALE, N.Y. 11735 • (516) 752-9055

Nov. 10, 1982

Lockwood Kessler & Bartlett, Inc.
1 Aerial Ways
Syosset, New York

SOURCE OF SAMPLE Same

COLLECTED BY: Client, 11/1/82 RECEIVED: 11/1/82

SAMPLE#1: Well# 1 Anchor/Lith Kem Rd. LAB# C321489/1
SAMPLE#2: Well# 2 Anchor/Lith Kem Rd. LAB# C321489/2

ANALYTICAL PARAMETERS	#1	#2
Total Hydrocarbons (Aliphatic, C5 to C10) µg/L	<10	<10
Benzene, µg/L	<1	<1
Toluene, µg/L	<2	<2
Ethyl Benzene, µg/L	<2	<2
P-xylene, µg/L	<2	<2
M-xylene, µg/L	<2	<2
O-xylene, µg/L	<2	<2

REMARKS Sample #1 had 3 unknown peaks, possibly volatile halogenated hydrocarbons in the ppb range. Sample #2 had 1 unknown peak, possibly a volatile halogenated hydrocarbon in the low ppb range.

DIRECTOR

ECOTEST LABORATORIES, INC.

170 CENTRAL AVE. • UNIT 1 • FARMINGDALE, N.Y. 11735 • (516) 752-9055

Jan. 3, 1983

Lockwood Kessler & Bartlett
1 Aerial Ways
Syosset, New York

SOURCE OF SAMPLE: Anchor/Lith Kemco
COLLECTED BY: Client RECEIVED: 12/14/82

SAMPLE#1: Well #1 LAB# C821684

ANALYTICAL PARAMETERS	#1
1,1,2-Trichloro-1,2,2 Trifluoroethane, µg/L	<1
Methylene Chloride, µg/L	9
1,1-Dichloroethene, µg/L	<5
1,1-Dichloroethane, µg/L	12
1,2-Dichloroethene, µg/L	<5
Chloroform, µg/L	<1
1,1,1-Trichloroethane, µg/L	800
Carbon Tetrachloride, µg/L	<1
1,2-Dichloroethane, µg/L	<5
Trichloroethylene, µg/L	19
1,2-Dichloropropane, µg/L	<5
Bromodichloromethane, µg/L	<1
Tetrachloroethylene, µg/L	48.
Chlorodibromomethane, µg/L	<1
Bromoform, µg/L	<2

REMARKS:

DIRECTOR Thomas R. Gentile

ECOTEST LABORATORIES, INC.

170 CENTRAL AVE. • UNIT 1 • FARMINGDALE, N.Y. 11735 • (516) 752-9055

Jan. 3, 1983

Lockwood Kessler & Bartlett
1 Aerial Ways
Syosset, New York

SOURCE OF SAMPLE: Anchor/Lith Kem Co.
COLLECTED BY: Client RECEIVED: 12/14/82

SAMPLE#1: Well #2 LAB# C821675/1
SAMPLE#2: Well #3 LAB# C821675/2

ANALYTICAL PARAMETERS	#1	#2
1,1,2-Trichloro-1,2,2 Trifluoroethane, µg/L	<1	<2
Methylene Chloride, µg/L	<5	<5
1,1-Dichloroethene, µg/L	<5	800
1,1-Dichloroethane, µg/L	<5	350
1,2-Dichloroethene, µg/L	<5	100
Chloroform, µg/L	<1	12
1,1,1-Trichloroethane, µg/L	6	24000
Carbon Tetrachloride, µg/L	<1	<20
1,2-Dichloroethane, µg/L	<5	31
Trichloroethylene, µg/L	<1	55
1,2-Dichloropropane, µg/L	<5	<5
Bromodichloromethane, µg/L	<1	<20
Tetrachloroethylene, µg/L	<1	1100
Chlorodibromomethane, µg/L	<1	170
Bromoform, µg/L	<1	<5

REMARKS:

DIRECTOR Thomas R. Smith

ECOTEST LABORATORIES, INC.

170 CENTRAL AVE. • UNIT 1 • FARMINGDALE, N.Y. 11735 • (516) 752-9055

June 23, 1983

Lockwood, Kessler & Bartlett
1 Aerial Ways
Syosset, NY 11791

COLLECTED BY: Client RECEIVED: 6/15/83

SAMPLE#1: Well #1 LAB#C830890/1
SAMPLE#2: Well #2 LAB#C830890/2
SAMPLE#3: WELL #3 LAB#C830890/3

ANALYTICAL PARAMETERS	#1	#2	#3
1,1,2-Trichloro-1,2,2 Trifluoroethane, µg/L	<1	<1	<1
Methylene Chloride, µg/L	<5	<5	<5
1,1-Dichloroethene, µg/L	<5	<5	250
1,1-Dichloroethane, µg/L	<5	<5	50
1,2-Dichloroethene, µg/L	<5	<5	17
Chloroform, µg/L	<1	<1	2
1,1,1-Trichloroethane, µg/L	180	<1	7000
Carbon Tetrachloride, µg/L	<1	<1	<1
1,2-Dichloroethane, µg/L	<5	<5	<5
Trichloroethylene, µg/L	2	<1	10
1,2-Dichloropropane, µg/L	<5	<5	<5
Bromodichloromethane, µg/L	<1	<1	<1
Tetrachloroethylene, µg/L	5	<1	410
Chlorodibromomethane, µg/L	<1	<1	9
Bromoform, µg/L	<2	<2	<2
Benzene, µg/L	<1	<1	3
Toluene, µg/L	<2	<2	2
Ethyl Benzene, µg/L	<1	<1	<1
m-xylene, µg/L	<2	<2	<2
o+p-xylene, µg/L	<4	<4	<4
m-Dichlorobenzene, µg/L	<2	<2	<2
o-Dichlorobenzene, µg/L	<2	<2	<2
p-Dichlorobenzene, µg/L	<2	<2	<2
Acetone, µg/L	<50	<50	110
Methyl Ethyl Ketone, µg/L	<20	<20	<20
Methyl Isobutyl Ketone, µg/L	<20	<20	<20
Pentane, µg/L	<2	<2	<2
Hexane, µg/L	<2	<2	<2
Heptane, µg/L	<2	<2	<2
Octane, µg/L	<2	<2	<2
Nonane, µg/L	<2	<2	<2
Decane, µg/L	<2	<2	<2

DIRECTOR T. Amell

ECOTEST LABORATORIES, INC.

170 CENTRAL AVE. • UNIT 1 • FARMINGDALE, N.Y. 11735 • (516) 752-9055

Feb. 15, 1984

Lockwood, Kessler & Bartlett
1 Aerial Way
Syosset, NY 11791

SOURCE OF SAMPLE: Anchor/Lith Kem-Ko, Hicksville
COLLECTED: 1/30/84 BY: Client RECEIVED: 1/30/84

SAMPLE#1: Well #1 LAB#C840140/1
SAMPLE#2: Well #2 LAB#C840140/2
SAMPLE#3: Well #3 LAB#C840140/3

ANALYTICAL PARAMETERS	#1	#2	#3
Vinyl Chloride, µg/L	<1	<1	<1
1,1,2-Trichloro-1,2,2 Trifluoroethane, µg/L	<1	<1	<1
Methylene Chloride, µg/L	<5	<5	<5
1,1-Dichloroethane, µg/L	8	<5	5
1,2-dichloroethene, µg/L	<5	<5	<5
Chloroform, µg/L	<1	<1	<1
1,1,1-Trichloroethane, µg/L	1000	3	80
Carbon Tetrachloride, µg/L	<1	<1	<1
1,2-Dichloroethane, µg/L	<5	<5	<5
Trichloroethylene, µg/L	3	<1	<1
1,2-Dichloropropane, µg/L	<5	<5	<5
Bromodichloromethane, µg/L	<1	<1	<1
Tetrachloroethylene, µg/L	2	<1	3
Chlorodibromomethane, µg/L	<1	<1	<1
Bromoform, µg/L	<2	<2	<2
Benzene, µg/L	<1	<1	<1
Toluene, µg/L	<2	<2	<2
Ethyl Benzene, µg/L	<1	<1	<1
m-xylene, µg/L	<2	<2	<2
o+p-xylene, µg/L	<4	<4	<4
m-Dichlorobenzene, µg/L	<2	<2	<2
o-Dichlorobenzene, µg/L	<2	<2	<2
p-Dichlorobenzene, µg/L	<2	<2	<2
Acetane, µg/L	<20	<20	<20
Methyl Ethyl Ketone, µg/L	<20	<20	<20
Methyl Iso Butyl Ketone, µg/L	<20	<20	<20

DIRECTOR

ECOTEST LABORATORIES, INC.

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

July 18, 1984

Lockwood, Kessler & Bartlett
One Aerial Ways
Syosset, NY 11791

SOURCE OF SAMPLE: Anchor/Lith kem-ko
COLLECTED: 7/10/84 BY: RP/LKB RECEIVED: 7/10/84

SAMPLE#1: Well #1 LAB#C841139/1
SAMPLE#2: Well #2 LAB#C841139/2
SAMPLE#3: Well #3 LAB#C841139/3

ANALYTICAL PARAMETERS	#1	#2	#3
Vinyl Chloride, µg/L	<1	<1	<1
1,1,2-Trichloro-1,2,2 Trifluoroethane, µg/L	<1	<1	<1
Methylene Chloride, µg/L	<5	<5	<5
1,1-Dichloroethane, µg/L	<5	<5	<5
1,2-dichloroethene, µg/L	<5	<5	<5
Chloroform, µg/L	10	<1	<1
1,1,1-Trichloroethane, µg/L	400	<1	60
Carbon Tetrachloride, µg/L	<1	<1	<1
1,2-Dichloroethane, µg/L	<5	<5	<5
Trichloroethylene, µg/L	<1	<1	<1
1,2-Dichloropropane, µg/L	<5	<5	<5
Bromodichloromethane, µg/L	<1	<1	<1
Tetrachloroethylene, µg/L	<1	<1	<1
Chlorodibromomethane, µg/L	<1	<1	<1
Bromoform, µg/L	<2	<2	<2
Benzene, µg/L	<1	<1	<1
Toluene, µg/L	<2	<2	<2
Ethyl Benzene, µg/L	<1	<1	<1
m-xylene, µg/L	<2	<2	<2
o+p-xylene, µg/L	<4	<4	<4
m-Dichlorobenzene, µg/L	<2	<2	<2
o-Dichlorobenzene, µg/L	<2	<2	<2
p-Dichlorobenzene, µg/L	<2	<2	<2
Acetone, µg/L	<10	<10	<10
Methyl Ethyl Ketone, µg/L	<10	<10	<10
Methyl Iso Butyl Ketone, µg/L	<10	<10	<10

DIRECTOR

KT

ECOTEST LABORATORIES, INC. — **ENVIRONMENTAL TEST**

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

Lockwood, Kessler & Bartlett,

RECEIVED NOV 20 1984

Nov. 15, 1984

Lockwood, Kessler & Bartlett
1 Aerial Ways
Syosset, NY 11791

SOURCE OF SAMPLE: Anchlor/Lith
COLLECTED: 11/1/84 BY: RP/LKB RECEIVED: 11/1/84

SAMPLE#1: Well #1 LAB#C842148/1
SAMPLE#2: Well #2 LAB#C842148/2
SAMPLE#3: Well #3 LAB#C842148/3

ANALYTICAL PARAMETERS	#1	#2	#3
Vinyl Chloride, µg/L	<1	<1	<1
1,1,2-Trichloro-1,2,2 Trifluoroethane, µg/L	<1	<1	<1
Methylene Chloride, µg/L	<2	<2	<2
1,1-Dichloroethane, µg/L	4	<2	<2
1,2-dichloroethene, µg/L	<2	<2	<2
Chloroform, µg/L	<1	<1	<1
1,1,1-Trichloroethane, µg/L	65	<1	7
Carbon Tetrachloride, µg/L	<1	<1	<1
1,2-Dichloroethane, µg/L	<2	<2	<2
Trichloroethylene, µg/L	<1	<1	<1
1,2-Dichloropropane, µg/L	<2	<2	<2
Bromodichloromethane, µg/L	<1	<1	<1
Tetrachloroethylene, µg/L	<1	<1	<1
Chlorodibromomethane, µg/L	<1	<1	<1
Bromoform, µg/L	<2	<2	<2
Benzene, µg/L	<1	<1	<1
Toluene, µg/L	<2	<2	<2
Ethyl Benzene, µg/L	<1	<1	<1
m-Xylene, µg/L	<2	<2	<2
o+p-Xyene, µg/L	<4	<4	<4
m-Dichlorobenzene, µg/L	<2	<2	<2
o-Dichlorobenzene, µg/L	<2	<2	<2
p-Dichlorobenzene, µg/L	<2	<2	<2
Acetone, µg/L	<10	<10	<10
Methyl Ethyl Ketone, µg/L	<10	<10	<10
Methyl Iso Buthyl Ketone, µg/L	<10	<10	<10

DIRECTOR

ECOTEST LABORATORIES, INC.

ENVIRONMENTAL TESTI

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

March 18, 1985

Lockwood, Kessler and Bartlett
1 Aerial Ways
Syosset, NY 11791

SOURCE OF SAMPLE: Anchor/Lith Wells
COLLECTED: 2/28/85 BY: Client RECEIVED: 2/28/85

SAMPLE#1: Well #1 LAB#C850456/1
SAMPLE#2: Well #2 LAB#C850456/2
SAMPLE#3: Well #3 LAB#C850456/3

ANALYTICAL PARAMETERS	#1	#2	#3
Vinyl Chloride,µg/L	<1	<1	<1
1,1,2-Trichloro-1,2,2 Trifluoroethane, µg/L	<1	<1	<1
Methylene Chloride, µg/L	<2	<2	<2
1,1-Dichloroethane, µg/L	<2	<2	<2
1,2-dichloroethene, µg/L	<2	<2	<2
Chloroform, µg/L	<1	<1	<1
1,1,1-Trichloroethane, µg/L	26	<1	4
Carbon Tetrachloride, µg/L	<1	<1	<1
1,2-Dichloroethane, µg/L	<2	<2	<2
Trichloroethylene, µg/L	<1	<1	<1
1,2-Dichloropropane, µg/L	<2	<2	<2
Bromodichloromethane, µg/L	<1	<1	<1
Tetrachloroethylene, µg/L	<1	<1	<1
Chlorodibromomethane, µg/L	<1	<1	<1
Bromoform, µg/L	<2	<2	<2
Benzene, µg/L	<1	<1	<1
Toluene, µg/L	<2	<2	<2
Ethyl Benzene, µg/L	<1	<1	<1
m-xylene, µg/L	<2	<2	<2
o+p-xylene, µg/L	<4	<4	<4
m-dichlorobenzene,µg/L	<2	<2	<2
o-dichlorobenzene,µg/L	<2	<2	<2
p-dichlorobenzene,µg/L	<2	<2	<2
Acetone, µg/L	<10	<10	<10
Methyl Ethyl Ketone, µg/L	<10	<10	<10
Methyl Iso Butyl Ketone, µg/L	<10	<10	<10

DIRECTOR

APPENDIX C

Analytical Results of Sampling Done
by Roux Associates, Inc.

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE P O BOX 205 · BOHEMIA, N Y 11716 · (516)467-8477
AFTER 5 P.M (516)567-5579

November 18, 1987

TO: Roux Associates
11 Stewart Avenue
Huntington, NY 11743

Date: Collected 10/28/87 **Analyzed** 10/28-11/17/87 **Report** 11/18/87

Sampling Point

1. Anchor/Litho - Well #1
2. Anchor/Litho - Well #2
3.
4.
5.

Parameters		1	2	3	4	5
Trifluorotrichloroethane	ug/l	< 1.0	< 1.0			
Chloroform	ug/l	< 1.0	< 1.0			
1,1,1 Trichloroethane	ug/l	21.2	1.5			
Carbon Tetrachloride	ug/l	< 1.0	< 1.0			
1,1,2 Trichloroethylene	ug/l	< 1.0	< 1.0			
Bromodichloromethane	ug/l	< 5.0	< 5.0			
Dibromochloromethane	ug/l	< 5.0	< 5.0			
Tetrachloroethylene	ug/l	< 1.0	< 1.0			
Bromoform	ug/l	< 10	< 10			
Acetone	mg/l	< 1.0	< 1.0			
Methyl Ethyl Ketone	mg/l	< 1.0	< 1.0			
Methyl Isobutyl Ketone	mg/l	< 1.0	< 1.0			

JOHN PEDNEAULT
Lab Director

Lab Number 43481

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE P O BOX 205 BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

November 18, 1987

TO: Roux Associates
11 Stewart Avenue
Huntington, NY 11743

Date: Collected 10/28/87 Analyzed 10/28-11/17/87 Report 11/18/87

Sampling Point

1. Anchor/Litho - Well #1
2. Anchor/Litho - Well #2
3.
4.
5.

Parameters		1	2	3	4	5
Benzene	ug/l	<1.0	<1.0			
Toluene	ug/l	<1.0	<1.0			
Xylene	ug/l	<1.0	1.5			
Ethylbenzene	ug/l	<1.0	<1.0			
Chlorobenzene	ug/l	<1.0	<1.0			
Dichlorobenzene	ug/l	<1.0	<1.0			

JOHN PEDNEAULT
Lab Director

Lab Number 43481

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C891828/1 06/26/89

Roux Associates, Inc.
775 Park Ave., Suite 255
Huntington, NY 11743
ATTN: Paul Roux

SOURCE OF SAMPLE: 500 W. St. John Street, Project #14001
COLLECTED BY: Client DATE COL'D:06/22/89 RECEIVED:06/22/89

SAMPLE: Water sample, MW-1, 1300

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<2
Trichlorofluomethane	ug/L	<2
11 Dichloroethene	ug/L	<2
11 Dichloroethane	ug/L	4
12 Dichloroethene	ug/L	<2
Chloroform	ug/L	<1
12 Dichloroethane	ug/L	<2
111 Trichloroethane	ug/L	59
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
12 Dichloropropane	ug/L	<2
t 13 Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<1
13 Dichlorobenzene	ug/L	<2
12 Dichlorobenzene	ug/L	<2
14 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:

REMARKS:

DIRECTOR _____

rn= 7942

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C891828/2 06/26/89

Roux Associates, Inc.
775 Park Ave., Suite 255
Huntington, NY 11743
ATTN: Paul Roux

SOURCE OF SAMPLE: 500 W. St. John Street, Project #14001
COLLECTED BY: Client DATE COL'D:06/22/89 RECEIVED:06/22/89

SAMPLE: Water sample, MW-2, 1200

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<2
Trichlorofluomethane	ug/L	<2
11 Dichloroethene	ug/L	<2
11 Dichloroethane	ug/L	<2
12 Dichloroethene	ug/L	<2
Chloroform	ug/L	<1
12 Dichloroethane	ug/L	<2
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
12 Dichloropropane	ug/L	<2
t 13 Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<1
13 Dichlorobenzene	ug/L	<2
12 Dichlorobenzene	ug/L	<2
14 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:

REMARKS:

DIRECTOR

rn= 7943

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777

LAB NO. C891828/3 06/26/89

Roux Associates, Inc.
775 Park Ave., Suite 255
Huntington, NY 11743
ATTN: Paul Roux

SOURCE OF SAMPLE: 500 W. St. John Street, Project #14001
COLLECTED BY: Client DATE COL'D:06/22/89 RECEIVED:06/22/89

SAMPLE: Water sample, MW-3, 1205

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<2
Trichlorofluomethane	ug/L	<2
11 Dichloroethene	ug/L	<2
11 Dichloroethane	ug/L	<2
12 Dichloroethene	ug/L	<2
Chloroform	ug/L	<1
12 Dichloroethane	ug/L	<2
111 Trichloroethane	ug/L	8
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
12 Dichloropropane	ug/L	<2
t 13 Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<1
13 Dichlorobenzene	ug/L	<2
12 Dichlorobenzene	ug/L	<2
14 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:

REMARKS:

DIRECTOR Thomas R. Stucki

rn= 7944

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C910410/1 02/07/91

Roux Associates, Inc.
775 Park Ave., Suite 255
Huntington, NY 11743
ATTN: John Sheehan

SOURCE OF SAMPLE: Speigel Assoc., 500 West John St.*
COLLECTED BY: Client DATE COL'D:02/01/91 RECEIVED:02/01/91

SAMPLE: Water sample, MW-1, 1:45 pm

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Chlorobenzene	ug/L	<2
Bromomethane	ug/L	<1	13 Dichlorobenzene	ug/L	<2
Dichlordifluomethane	ug/L	<2	12 Dichlorobenzene	ug/L	<2
Vinyl Chloride	ug/L	<1	14 Dichlorobenzene	ug/L	<2
Chloroethane	ug/L	<1	Benzene	ug/L	<1
Methylene Chloride	ug/L	<1	Toluene	ug/L	<2
Trichlorofluomethane	ug/L	<2	Ethyl Benzene	ug/L	<1
11 Dichloroethene	ug/L	<1	m Xylene	ug/L	<2
11 Dichloroethane	ug/L	<1	o+p Xylene	ug/L	<4
12 Dichloroethene	ug/L	<1			
Chloroform	ug/L	<1			
12 Dichloroethane	ug/L	<1			
111 Trichloroethane	ug/L	<1			
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
12 Dichloropropane	ug/L	<1			
t 13 Dichloropropene	ug/L	<2			
Trichloroethylene	ug/L	<1			
Chlorodibromomethane	ug/L	<2			
112 Trichloroethane	ug/L	<2			
c 13 Dichloropropene	ug/L	<2			
2chloroethvinylether	ug/L	<2			
Bromoform	ug/L	<2			
1122Tetrachloroethan	ug/L	<2			
Tetrachloroethene	ug/L	<1			

cc:

REMARKS:

* Hicksville.

DIRECTOR _____

rn= 1661 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C910410/2 02/07/91

Roux Associates, Inc.
775 Park Ave., Suite 255
Huntington, NY 11743
ATTN: John Sheehan

SOURCE OF SAMPLE: Speigel Assoc., 500 West John St.*
COLLECTED BY: Client DATE COL'D:02/01/91 RECEIVED:02/01/91

SAMPLE: Water sample, MW-2, 2:30 pm

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Chlorobenzene	ug/L	<2
Bromomethane	ug/L	<1	13 Dichlorobenzene	ug/L	<2
Dichlordifluomethane	ug/L	<2	12 Dichlorobenzene	ug/L	<2
Vinyl Chloride	ug/L	<1	14 Dichlorobenzene	ug/L	<2
Chloroethane	ug/L	<1	Benzene	ug/L	<1
Methylene Chloride	ug/L	<1	Toluene	ug/L	<2
Trichlorofluomethane	ug/L	<2	Ethyl Benzene	ug/L	<1
11 Dichloroethene	ug/L	<1	m Xylene	ug/L	<2
11 Dichloroethane	ug/L	<1	o+p Xylene	ug/L	<4
12 Dichloroethene	ug/L	<1			
Chloroform	ug/L	<1			
12 Dichloroethane	ug/L	<1			
111 Trichloroethane	ug/L	<1			
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
12 Dichloropropane	ug/L	<1			
t 13 Dichloropropene	ug/L	<2			
Trichloroethylene	ug/L	<1			
Chlorodibromomethane	ug/L	<2			
112 Trichloroethane	ug/L	<2			
c 13 Dichloropropene	ug/L	<2			
2chloroethvinylether	ug/L	<2			
Bromoform	ug/L	<2			
1122Tetrachloroethan	ug/L	<2			
Tetrachloroethene	ug/L	<1			

cc:

REMARKS:

* Hicksville.

DIRECTOR_____

rn= 1662 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C910410/3 02/07/91

Roux Associates, Inc.
775 Park Ave., Suite 255
Huntington, NY 11743
ATTN: John Sheehan

SOURCE OF SAMPLE: Speigel Assoc., 500 West John St.*
COLLECTED BY: Client DATE COL'D:02/01/91 RECEIVED:02/01/91

SAMPLE: Water sample, MW-3, 3:00 pm

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<2
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Trichlorofluomethane	ug/L	<2
11 Dichloroethene	ug/L	<1
11 Dichloroethane	ug/L	<1
12 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
12 Dichloroethane	ug/L	<1
111 Trichloroethane	ug/L	9
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
12 Dichloropropane	ug/L	<1
t 13 Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<2
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<2
13 Dichlorobenzene	ug/L	<2
12 Dichlorobenzene	ug/L	<2
14 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:

REMARKS:

* Hicksville.

DIRECTOR _____

rn= 1663 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C910410/4 02/07/91

Roux Associates, Inc.
775 Park Ave., Suite 255
Huntington, NY 11743
ATTN: John Sheehan

SOURCE OF SAMPLE: Speigel Assoc., 500 West John St.*
COLLECTED BY: Client DATE COL'D:02/01/91 RECEIVED:02/01/91

SAMPLE: Water sample, Field Blank, 1:00 pm

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<2
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Trichlorofluomethane	ug/L	<2
11 Dichloroethene	ug/L	<1
11 Dichloroethane	ug/L	<1
12 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
12 Dichloroethane	ug/L	<1
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
12 Dichloropropane	ug/L	<1
t 13 Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<2
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<2
13 Dichlorobenzene	ug/L	<2
12 Dichlorobenzene	ug/L	<2
14 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:

REMARKS:

* Hicksville.

DIRECTOR _____

rn= 1664 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO. C910410/5 02/07/91

Roux Associates, Inc.
775 Park Ave., Suite 255
Huntington, NY 11743
ATTN: John Sheehan

SOURCE OF SAMPLE: Speigel Assoc., 500 West John St.*
COLLECTED BY: Client DATE COL'D:02/01/91 RECEIVED:02/01/91

SAMPLE: Water sample, Trip Blank, 12:00 pm

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Chlorobenzene	ug/L	<2
Bromomethane	ug/L	<1	13 Dichlorobenzene	ug/L	<2
Dichlordifluomethane	ug/L	<2	12 Dichlorobenzene	ug/L	<2
Vinyl Chloride	ug/L	<1	14 Dichlorobenzene	ug/L	<2
Chloroethane	ug/L	<1	Benzene	ug/L	<1
Methylene Chloride	ug/L	<1	Toluene	ug/L	<2
Trichlorofluomethane	ug/L	<2	Ethyl Benzene	ug/L	<1
11 Dichloroethene	ug/L	<1	m Xylene	ug/L	<2
11 Dichloroethane	ug/L	<1	o+p Xylene	ug/L	<4
12 Dichloroethene	ug/L	<1			
Chloroform	ug/L	<1			
12 Dichloroethane	ug/L	<1			
111 Trichloroethane	ug/L	<1			
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
12 Dichloropropane	ug/L	<1			
t 13 Dichloropropene	ug/L	<2			
Trichloroethylene	ug/L	<1			
Chlorodibromomethane	ug/L	<2			
112 Trichloroethane	ug/L	<2			
c 13 Dichloropropene	ug/L	<2			
2chloroethvinylether	ug/L	<2			
Bromoform	ug/L	<2			
1122Tetrachloroethan	ug/L	<2			
Tetrachloroethene	ug/L	<1			

cc:

REMARKS:

* Hicksville.

DIRECTOR_____

rn= 1665 NYSDOH ID# 10320

APPENDIX D

Resumes of Key Personnel

Paul Roux
President

Technical Specialties:
Ground-water/soil contamination investigation and remediation. Environmental site assessment. Water resources management.

Experience Summary:
18 years of experience: President of Roux Associates, Senior Hydrogeologist at Stauffer Chemical Co., and various hydrogeological positions at Geraghty & Miller. Directed and participated in RI/FS studies, environmental impact statements, water quality and contaminant mobility studies, ground-water assessments, technical support for legal counsel, expert witness, regulatory agency negotiations.

Credentials:
M.A. Geology, Queens College, City University of New York, 1978.
B.S. Engineering Science, C.W. Post College, Long Island University, 1968.

Certified Professional Hydrogeologist, A.I.H.
Certified Professional Geologist, A.I.P.G.
Certified Professional Geologist, Indiana, North Carolina, Florida, Delaware, Arkansas, and Tennessee.

Professional Affiliations:
National Water Well Association
American Institute of Professional Geologists (Northeast Executive Committee, '80-82)
American Institute of Hydrology

Publications:
14 papers for GSA, Ground Water, US EPA, Pollution Equipment News, Various Seminars (Columbia University, National Water Well Association, Hazpro Conference). Topics include ground-water contamination and monitoring, leachate migration, aquifer decontamination, waste disposal impacts on groundwater, resistivity and conductivity surveys, procedures manuals, site assessments, in-situ remediation, sensitivity analysis for pesticides.

Key Projects:
- Principal-in-charge of remedial investigation feasibility studies for several hazardous waste sites listed on the National Priorities List, and for several state Superfund sites.
- Principal-in-charge of several studies to define areas vulnerable to ground water contamination from pesticide application. Planned and supervised a major herbicide leaching study in eight states, and testified on the results to the EPA Science Advisory Panel.
- Principal-in-charge of a large-scale well sampling program to determine the potential for pesticide leaching under various soil and hydrogeologic conditions.
- Evaluated ground-water conditions at over 100 industrial plant sites throughout the U.S. to determine existing and potential problems.
- Developed ground-water contamination abatement systems and monitoring programs at numerous industrial sites.
- Advised client management on corporate responses to ground-water portions of RCRA, SDWA (UIC), and CERCLA.
- Negotiated ground-water and hazardous waste matters with EPA and state regulatory personnel in ten states.
- Served on Chemical Manufacturers Association's Ground-water Management and Superfund Task Groups.
- Determined the effectiveness of an emergency cleanup of a 7,000 gal. PCB spill near a NJ public supply well field.
- For US EPA, evaluated impact of waste disposal facilities on ground-water resources of Gloucester and Camden counties, New Jersey. Conducted a similar project for Westchester County, New York.
- Implemented numerous water supply development projects. Clients included Shell Oil, Union Carbide, Puerto Rico Water Resources Authority, East Orange and Fairlawn townships in New Jersey, and Middletown and Weston townships in Connecticut.
- Designed ground-water removal and re-injection system for in-situ bioreclamation programs at several locations.

ROUX

Professional Profile

Joanne Yeary

Project Hydrogeologist

Technical Specialties:

Ground-water/surface-water investigation of hazardous materials and agricultural chemical residues in the environment. Oversee Quality Assurance for compliance with Good Laboratory Practices.

Experience Summary

3 years of experience: Project Hydrogeologist and Geologist with Roux Associates. Participated in several ground-water, soil and surface-water sampling programs. Quality Assurance Officer for several pesticide projects.

Credentials:

B.S. Geology, State University of New York at Stony Brook, 1986.

Professional Affiliations:

National Water Well Association

Key Projects:

- Supervised well installations, ground-water sampling, soil sampling and surface-water sampling at a CERCLA hazardous waste site in Massachusetts which is ranked #5 on the NPL.
- Participated in a ground-water sampling program for pesticides in domestic ground-water sources.
- Participated in a surface-water sampling program for pesticides in rivers and streams.
- Participated in a research program to evaluate the findings of state monitoring programs for pesticides in ground water.
- Supervised soil borings and well installations at several sites in New York and New Jersey.
- Purged and sampled monitoring wells at sites in New York, Massachusetts and Wisconsin.
- Logged soil borings and assisted in supervision of well installation at a site in Massachusetts. Developed, purged and sampled wells for organic compounds.
- Assisted in vapor probe installation at a hazardous waste site in New York.
- Conducted pumping test at hazardous waste site in Massachusetts as part of a program to evaluate an in site remedial program.
- Quality Assurance Officer for several pesticide projects. Assure that data, reports and archives adhere to EPA Good Laboratory Practice standards.
- Edited pesticide surface-water and ground-water sampling final reports following EPA Good Laboratory Practice standards and report format.
- Evaluated several hazardous waste sites for potential impact to the environment, calculated HRS scores and prepared Phase I reports for NYSDEC.
- Participated in slug tests at a hazardous waste site as part of a Phase II investigation for the NYSDEC.
- Assisted in writing summary report of environmental studies at a hazardous waste site in Massachusetts.
- Supervised soil borings at a site in Massachusetts and defined extent of buried hazardous waste.
- Installed piezometers and defined extent of a free product plume at a site in New York.
- Participated in follow-up investigations of farms with pesticide detections in on-site wells.
- Installed and sampled lysimeters at a site in Wisconsin as part of a pesticide follow-up study.
- Sampled 26 irrigation wells in Wisconsin as part of a pesticide follow-up study.

ROUX

Professional Profile

Michael A. DeCillis

Corporate Director of Ground-Water Modeling/Principal Hydrogeologist

Technical Specialties:

Quantitative analyses of hydrogeologic systems. Modeling of hydrogeologic environments. Investigation and remediation of ground-water and soil contamination. Management of water resources.

Experience Summary

14 years of experience: Corporate Director, Ground-Water Modeling Group of Roux Associates; previously Corporate QA/QC Officer of Roux Associates; Associate/Principal Hydrogeologist with Geraghty & Miller; Hydrogeologist with Environmental Associates. Modeling of ground-water flow and solute transport in unconsolidated and consolidated flow systems. Participated in resource development and soil/ground-water projects. Provided technical support for legal counsel. Involved in negotiations with regulatory agencies.

Credentials:

M.S. Hydrogeology and Earth Science,
Adelphi University, 1980
B.S. Earth Science and Biology,
Adelphi University, 1976

Certified Professional Geologist: A.I.P.G.
Certified Professional Geologist: TN, AK

Prepared and presented modeling section at Geraghty & Miller's Ground-Water Contamination seminars.
Assisted in preparation of Dr. Robert Cleary's IBM PC Applications in Ground Water Pollution and Hydrology course.

Professional Affiliations:

American Geophysical Union
Assoc. of Ground Water Scientists and Engineers
American Assoc. for the Advancement of Science
The New York Academy of Sciences

Publications:

EOS and Master Thesis on ground-water flow and solute transport models.

Key Projects:

- Principal Modeler, ground-water flow and solute transport modeling at Superfund, industrial, muncipal, and federal sites in numerous states and Puerto Rico for litigation and compliance issues (e.g., development of remediation programs, formulation of monitoring programs, support and representation of PRPs concerning COs, development of RI/FS Work Plans). Modeling also used for directing field investigations, and resource management and development.
- Quality Assurance/Quality Control (QA/QC) officer, providing technical oversight and guidance in hydrogeologic investigations involving resource development, hazardous waste contamination, pesticides, modeling, proposal and work plan preparation.
- Project Manager, hydrogeologic field investigations of landfills in New York to develop flow-system and water-quality data in support of NYS Part 360 permit application for site closure. Models were also used to evaluate potential migration pathways for contaminants and capture zones for hypothetical remedial wells.
- Project Manager, ground-water flow modeling of a coastal plain aquifer at a NJ RCRA investigation site. Modeling helped to identify the most effective remedial alternative to control off-site migration of contaminated ground water following closure of a series of waste-water lagoons and provide direction to additional field investigations.
- Designed, implemented, and analyzed aquifer tests for numerous sites throughout the United States and Puerto Rico.
- Principal Developer and Modeler, ground-water solute transport modeling for "generic" and area-specific hydrogeologic environments as in-house guidance tools to evaluate potential migration and plume configurations for organic and inorganic compounds in various hydrogeologic systems. Most often, modeling was undertaken to evaluate impacts on potential downgradient receptors.
- Principal Modeler, ground-water flow model of a fractured bedrock aquifer at a NJ industrial site. The model was part of a consent decree with state regulatory agencies to establish a buffer zone to exclude additional pumpage around the site and surrounding area to maintain a hydraulic barrier to the flow of contaminated ground water.
- Principal Modeler, ground-water flow and solute transport modeling at numerous industrial sites impacted by organics, hydrocarbons, PCBs, and metals. Strategies were developed to contain and/or clean-up aquifers, protect water supply wells, and prohibit impact on surface-water bodies.
- Principal Modeler, ground-water flow modeling for resource development in several states. Projects prompted by site contamination, expansion of water supply needs, nearby well field impacts, aquifer yield, artificial recharge and recovery.

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Professional Profile

James V. Worrall

Manager of Danbury Office/Principal Engineer

Technical Specialties:
Hazardous materials management. Waste treatment and disposal. In-situ remediation. Underground storage tank management. Plant closures and decontamination. Regulatory compliance strategies.

Experience Summary:
35 years in the chemical industry, 12 years exclusively in environmental work: Environmental and technical management positions at Roux Associates, Stauffer Chemical Company and Allied Corporation. Managed and participated in RI/FS and remediation projects, corporate disposal and UST programs, regulatory agency negotiations and technical support for legal counsel.

Credentials:
B.S. Chemical Engineering, Purdue University

Certified Hazardous Materials Manager - Master Level, No. 984, IHMM.
OSHA - 40 Hour Health & Safety Operations at Hazardous Materials Sites.

Professional Affiliations:
American Assoc. of Ground-Water Scientists and Engineers
American Institute of Chemical Engineers

Presentations:
New Jersey Environmental Exposition, 1986:
"Underground Storage Tank Management Program for Industry".
Water and Wastewater Operations Center, Westford, MA:
"Management of Underground Tanks".

Key Projects:

- Managed several remedial investigations, feasibility studies, and remediation projects for hazardous waste sites on the National Priorities List and state Superfund sites.
- Managed in-situ chemical and biological remediation of a coal tar impoundment site. Responsible for design, procurement, construction, operation and training.
- Managed or directed projects for plant closures, decontamination, waste disposal, PCB-transformer disposal, dismantlement and demolition at five chemical plants.
- Directed RI/FS, remedial design, installation, and start-up of a project to protect a metropolitan drinking water supply from ground-water contamination. Remediation included the installation of a 2,000 ft. wide interception barrier, precipitation and clarification of silica compounds, air stripping, and downgradient re-infiltration. System was designed to treat 180 gpm.
- Designed and established a program for the management of risks, costs and RCRA compliance associated with underground storage tanks (UST) for a major chemical company.
- Managed several environmental site assessments and remediation projects for property transfers under state Superlien laws.
- Negotiated environmental investigations, remedial measures and waste disposal alternatives with state and federal agencies in CA, CT, DE, MA, NV, NJ, NY, PA and VA.
- Established and directed a hazardous waste treatment and disposal program for a chemical company with 70-plants. Audited all major commercial facilities nationwide and negotiated contracts to ensure compliance with RCRA and DOT regulations.
- Chaired technical committee and coordinated consultants for industry-sponsored remedial investigations/feasibility studies at NPL Superfund-listed site and related state-listed abandoned waste site: Proposed multi-level ground-water intercept, air stripping column and reinfiltration/soil flushing system.
- Conducted a plant decontamination survey for a major chemical company in preparation for possible sale of buildings and facilities. The survey covered six plants across the country, and required inspections of all buildings and facilities to provide company management with decontamination methods and costs of decontamination and hazardous waste disposal.
- Directed PCB-waste impoundment removal and closure in compliance with RCRA and TSCA. Researched PCB treatment options.

ROUX

Professional Profile

Harrison Gregory

Staff Geologist

Technical Specialties:

Collection of environmental samples including: ground-water, surface water, soil pore water and soil. Preparation for field investigation.

Experience Summary

1 year practical experience in preparation for the collection of environmental samples at field studies in Georgia, Illinois, Iowa, Wisconsin, and New York.

Credentials:

A.A.S. in Animal Science, SUNY Farmingdale, 1965.
B.S. in Geology expected in August 1990.

Water Resources and Contamination Evaluation Workshop, Ohio University, June 1990.,

Professional Affiliations:

National Water Well Association

Key Projects:

- Field technician on small-scale prospective ground-water study for newly formulated insecticide. Collected, preserved, and shipped ground water, soil pore water, and soil samples.
- Maintain automated data logging equipment for climetological and hydrological data.
- Maintain and calibrate field meters for measurement of pH, conductivity, and temperature.
- Tabulate and enter data into computerized data base system.

ROUX

Professional Profile

Linda M. Wilson
Project Scientist

Technical Specialties:

Audits for compliance with Good Laboratory Practices; quality assurance; industrial hygiene & asbestos abatement programs.

Experience Summary:

4 years of experience: Project Scientist with Roux Associates; Senior Environmental Scientist with TRC Environmental Consultants; Operations Manager with Hygienetics.

Credentials:

M.S. Toxicology, St. John's University, 1984.
B.S. Environmental Science, Cornell University, 1978.

Certifications:

NYC Department of Environmental Protection Asbestos Investigator
NIOSH 582 Airborne Asbestos Sampling and Evaluation Techniques

Key Projects:

Quality Assurance

- Conducted audits for compliance with Good Laboratory Practice (GLP) standards for USEPA, Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and Toxic Substance Control Act (TOSCA).

- Project manager responsible for quality assurance for asbestos investigations within 800 NYC Transit Authority facilities.

- Conducted in-house training seminars on NYC Local Law 76/85 and NYS Industrial Code 56.

Project Management

- Managed industrial hygiene and asbestos abatement projects from contract administration through design, technical specifications, field work, and final reports.

- Performed research to update Material Safety Data Sheets to ensure compliance with OSHA regulations for an industrial client.

- Conducted tenant awareness meetings sponsored by real estate management agents. Meetings answered tenant's questions and concerns regarding asbestos removal in their building.

- Implemented operations and maintenance programs for high-rise buildings in NYC, in response to Public Law 76/85.