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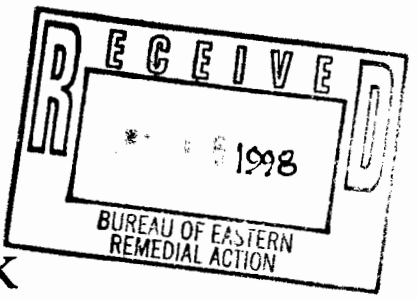
ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

REMEDIAL INVESTIGATION/FEASIBILITY STUDY



FIELD ACTIVITIES PLAN

MACKENZIE CHEMICAL CENTRAL ISLIP, NEW YORK

NYSDEC SITE NO.: 1-52-017
JULY 1998

Prepared For:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

50 Wolf Road, Albany, New York 12233-7010
John P. Cahill, Commissioner

Division of Environmental Remediation
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H2M GROUP

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

FIELD ACTIVITIES PLAN

FOR

MACKENZIE CHEMICAL
ONE CORDELLO AVENUE
CENTRAL ISLIP, NEW YORK

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TABLE OF CONTENTS

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

FIELD ACTIVITIES PLAN

FOR

MACKENZIE CHEMICAL
ONE CORDELLO AVENUE
CENTRAL ISLIP, NEW YORK

NYSDEC SITE NO.: 1-52-017

JULY 1998

TABLE OF CONTENTS (cont'd.)

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

FIELD ACTIVITIES PLAN

FOR

MACKENZIE CHEMICAL
ONE CORDELLO AVENUE
CENTRAL ISLIP, NEW YORK

NYSDEC SITE NO.: 1-52-017

JULY 1998

TABLE OF CONTENTS (cont'd.)

LIST OF FIGURES

LIST OF TABLES

H2M GROUP

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

FIELD ACTIVITIES PLAN

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ONE CORDELLO AVENUE
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1.0 – INTRODUCTION

1.1 – SITE DESCRIPTION

The Mackenzie Chemical site is located at One Cordello Avenue, Central Islip, New York. The site is located within the Town of Islip, in Suffolk County. See Figure 1.1, Location Map. The property, which contains a manufacturing building, storage warehouse and a warehouse/laboratory, is approximately 1.4 acres in size. The property is currently owned by Asish and Sarita Sen and Azad and Nutan Amand. Originally owned by Ian Mackenzie, the site was used for the manufacture of various chemical products by Mackenzie Chemical Works, Inc. (MCW) from 1948 through 1987.

1.2 – SITE HISTORY

In 1983, a Potential Hazardous Waste Site Preliminary Assessment was completed by NUS Corporation (under contract with the USEPA). NUS recommended that the ongoing cleanup of the site be completed and the threat to the groundwater defined. In 1986, an attempt by NYSDEC to negotiate a Consent Order for the site was unsuccessful.

In 1991, NYSDEC contracted Lawler, Matusky & Skelly Engineers (LMS) to perform a Phase II investigation of the site. The Phase II was completed by LMS in 1993 and included a

literature search, site reconnaissance, geophysical survey, soil gas survey, drilling of soil borings and monitoring wells, site survey and the sampling of the groundwater and shallow soils. The findings and recommendations of the Phase II were documented in LMS's Phase II Investigation Report Dated April 1993.

The results of the 1993 Phase II Investigation completed by LMS indicated the presence of moderate levels of tetrachloroethylene (PCE), polycyclic aromatic hydrocarbons (PAHs), phthalatic acid esters (PAEs), N-nitrosodiphenylamine (NNDPA), mercury and lead in the soils on the site. Scattered areas of the site are also contaminated with gasoline related compounds, phenol, dichlorobenzenes, trichlorobenzene, diesel fuel compounds, 2-nitroaniline (2NA), fluorenone, cobalt, copper, silver and zinc. LMS provided the following conclusions:

- Most of the compounds found in the soils appear to be related to manufacturing activities that occurred on the site.

- The PAH contamination is probably related to the railroad tracks and/or the asphalt company that operated on the site.

- The gasoline contamination is most likely a result of the auto repair business that also operated on site in the past in the vicinity of the former laboratory.

- The highest amount of contamination, which was found in the area behind the manufacturing building, appears to be the result of illegal dumping of waste materials.

- The four soil borings completed on site indicate that contamination tended to decrease with depth.

As part of the Phase II Investigation, a total of five (5) groundwater monitoring wells were installed and sampled. The groundwater results indicated exceedances of groundwater

standards for tetrachloroethylene, gamma-BHC, chromium, zinc, sodium, iron and manganese. The metals contamination in the groundwater appears to be associated with particulate matter, and the iron, manganese and sodium contamination is not associated with the site. An underground storage tank that had been excavated and placed in a debris pile at the site was also sampled and found to contain a fuel-related product.

In July 1993, the Suffolk County Department of Health Services (SCDHS) completed nine hollow stem auger profile wells downgradient of the Mackenzie Chemical site. The major constituents found in the off-site profile wells were 1,2,3-trichloropropane, tetrachloroethene, and trichloroethene.

The 1,2,3-trichloropropane concentrations ranged from non-detect to 7,600 parts per billion (ppb) in Profile Well No. MW-5, a distance of 600 feet downgradient of the Mackenzie property line. Trichloropropane was also detected in Profile Well Nos. MW-1, MW-2, MW-3 and MW-4 as high as 1,300 ppb. Profile Well Nos. MW-1 through MW-4 are located just downgradient of the Mackenzie site. According to the SCDHS, trichloropropane was used and stored (in three 10,000 gallon tanks) at the site.

Tetrachloroethene was also detected in Profile Well Nos. MW-1, MW-2, MW-3 and MW-4 at concentrations ranging from non-detect to 47 ppb. Trichloroethene was detected at 7 ppb in the upper part of the aquifer in Profile Well Nos. MW-1 through MW-4. However, higher concentrations ranging from 21 to 330 ppb were detected in Profile Well No. MW-8, 50 feet and 110 feet below the water table. Profile Well No. MW-8 is located 2,700 feet downgradient of the Mackenzie Chemical.

During a limited inspection (windshield survey) by NYSDEC on October 29, 1997, it appeared that a car repair business and an asphalt paving company had and/or were using the eastern end of the site for some activity. Several large containers draped with black tarps were located at the southwestern end of the site. An elevated material bin/hopper was also located near the western end of the site. None of the buildings were entered to determine if they were being used.

1.3 – OBJECTIVES OF THE SAMPLING EFFORT

This Field Activities Plan (FAP) establishes policies and procedures as they relate to the Remedial Investigation field work, and is intended to ensure that the data obtained or derived from field sampling programs is as true and accurate as possible.

The primary focus of the FAP is to establish standard policies and procedures to be followed by all field personnel when conducting the Remedial Investigation and Field Sampling Programs.

1.4 – REGIONAL AND LOCAL HYDROGEOLOGY

During the glacial retreat, the area was covered with outwash deposits that constitute most of the upper glacial aquifer of Long Island. Because these sand and gravel deposits contain virtually no interstitial clay and silt, the upper glacial aquifer is the most permeable aquifer on Long Island. The estimated average horizontal hydraulic conductivity of the outwash is from 1,000 to 1,500 gpd/ft^2. The direction of groundwater movement through Long Island's aquifers is horizontal, and is generally more rapid than the movement in the vertical direction. This arises because of an anisotropic effect: the largest dimensions of particles in the interbedded fine- and coarse-grained layers tend to be oriented horizontally. Based on slug tests performed at the site, the actual horizontal hydraulic conductivity (permeability in gpd/ft^2 or m/day) and transmissivity (in gpd/ft or m^2/day) values of the upper glacial aquifer range from 500 to 700 gpd/ft^2 (20 to 28.7 m/day) and 75,800 to 105,500 gpd/ft (941 to 1310 m^3/day), respectively.

Groundwater in the upper glacial aquifer flows away from two major highs on the main water table divide on Long Island. The general directions of groundwater flow of the Island are north toward Long Island Sound and south toward Great South Bay. Based on previous investigations, local groundwater flow at the site moves south to southeast toward Great South Bay.

The upper glacial aquifer is underlain by the Cretaceous unconsolidated deposits of the Magothy aquifer. The Magothy aquifer consists of beds and lenses of gray fine to coarse sand that contains traces to large amounts of interstitial clay and silt. During Tertiary and most likely in Pleistocene times, the surface of the Magothy aquifer was deeply eroded. The average of vertical and horizontal permeabilities of the Magothy aquifer is about 5 gpd/ft^2 and 380 gpd/ft^2, respectively. The average transmissivity value is 150,000 gpd/ft.

The Magothy aquifer is underlain by the clay member of the Raritan formation. This formation completely covers the underlying Lloyd aquifer in the area. The relatively low permeability of the Raritan clay creates a slow movement of water into the Lloyd aquifer. The hydraulic head loss is much larger across this unit than across a comparable thickness of the Magothy and upper glacial aquifers. Thick, areally persistent Raritan clay that lies between Magothy and Lloyd aquifers impedes but does not prevent downward movement of groundwater into the Lloyd aquifer. The water in the Lloyd aquifer is confined between the clay member and bedrock. The Lloyd aquifer is moderately permeable, with an average horizontal permeability ranging from 300 to 400 gpd/ft. Downward leakage into the bedrock is negligible. Bedrock is poorly permeable to virtually impermeable. Some hard fresh water is contained in joints and fractures, but is impractical to develop at most places.

2.0 – FIELD INVESTIGATION PROCEDURES

This section of the Field Activities Plan outlines the procedures and methodologies to be followed in conducting soil/sediment sampling, well drilling and construction, probing methods, groundwater sampling and surficial soil sampling.

2.1 – WELL DRILLING AND CONSTRUCTION

The contractor for drilling and related well installation activities will be a licensed New York State monitoring well driller. The driller will be made aware of the nature of the drilling activities and will be experienced in soil/groundwater investigations of this nature. The monitoring wells will be installed by use of a hollow stem drill rig under the direction of a qualified H2M hydrogeologist.

Prior to commencement of drilling, site specific underground structures, overhead structures and other surface features which may impede drilling will be identified. Appropriate utilities will be contacted for mark outs. Drill cuttings (soil) generated during the installation of the wells will be placed in 55 gallon drums or roll-off bins, pending analytical characterization. Off-site monitoring well drill cuttings will be contained in 55 gallon drums and stored on site. Upon characterization of the soils, they will be disposed of at an approved facility.

All drilling equipment will be steam cleaned prior to work and in between boring locations at a designated on-site decon area. An on-site potable water supply will be available for steam cleaning and other purposes as necessary. All decontamination water will be containerized and characterized for disposal. The well screen and casing will be decontaminated by steam cleaning unless the well materials have been cleaned and sealed at the factory.

One shallow and deep monitoring well couplet will be installed north of the LIRR to evaluate upgradient conditions. Two shallow and deep monitoring well couplets will be installed on-site, along the southern perimeter to "fill the gaps" of the existing monitoring wells. An additional two shallow and deep monitoring well couplets will be installed downgradient of the

site. The downgradient monitoring wells will be located at the middle and forward edge of any plume identified during the vertical profile well installations.

The proposed shallow groundwater monitoring wells will be constructed with 2-inch ID PVC flush-joint risers with a 15 foot section of 0.010 inch (#10) slot-size PVC well screen, 5 feet above the water table and 10 feet below. The proposed deep wells will be completed to a targeted depth of 120 feet bgs and be constructed with a 4-inch ID PVC flush-joint riser with a 10 foot section of 0.010 inch slot-size PVC. If a confining unit is encountered prior to reaching 120 feet, the monitoring well will be installed just above the confining unit. A hollow stem auger rig will be utilized to drill these wells in accordance with NYSDEC specifications for wells in unconsolidated formations. Split-spoon samples will be collected at nominal intervals according to the procedures described in Section 2.1.2.

The annular space around the well screens will be filled with a sand filter pack extending from 6-inches below the bottom of the screen to a height of 2 feet above the top of screen. A 3 foot thick seal of bentonite pellets will be placed above the filter pack. The bentonite pellets will be continuously hydrated for sixty minutes prior to installation of the cement/bentonite grout. The depth to the bottom and top of each seal will be measured in the borehole to the nearest 0.1 foot using a weighted tape. The remaining annular space will be grouted with a bentonite/cement slurry using the tremie method. The tremie pipe will be fitted with an elbow to deflect the grout towards the sidewall. A cement/bentonite surface seal will be constructed by filling the annular space of the borehole and will extend from approximately three feet below grade to grade where a flush mounted well manhole will be installed. A water tight locking cap will be attached to the top of the PVC casing. A 6-inch diameter protective steel casing in a cement collar will be installed over each well. A flush to grade steel cover assembly will be set around the well casing. This steel cover will be set into a sloped concrete pad, after the grout has been allowed to set.

2.1.1 – Well Development

Wells will be developed by pumping or bailing. The development water will be contained in 55 gallon drums pending analytical results. Discussions with the Suffolk County Department of Public Works (SCDPW) are underway to obtain permission for disposal of development waters in the municipal sewer system. Specific conductivity and pH measurements will be taken of the discharge until both parameters stabilize to confirm adequate development. Stabilization will be established when two consecutive well volume readings are within 10% of one another. Turbidity will also be monitored and the well will be developed until a measurement of less than 50 nephelometric turbidity units (NTU) is achieved or until turbidity stabilizes. Depth to groundwater measurements will be made before and after well development. Field data will be recorded on pre-printed field forms.

2.1.2 – Split Spoon Sampling

Split spoon samples are used to obtain representative soil samples for identification purposes and laboratory tests. Split spoon samples will also be measured for the resistance of the soil to penetration of the sampler by counting blow counts. ASTM procedures D1586-67 will be used for the collection of split spoon samples. Samples will be contained in laboratory prepared sample jars and labeled. Samples will be tested for TCL VOCs by the on-site mobile lab. Pending the mobile lab results, select samples will be submitted to Accredited Labs for TCL/TAL analysis. Care will be taken to not exceed sample holding times.

A summary of the ASTM 1586-67 procedures is listed below:

1. Clear out hole to sampling elevation using equipment that will ensure that the material is not disturbed by the operation.

2. With the decontaminated split spoon sampler resting on the bottom, drive the sampler with blows from a 180 pound hammer falling 30-inches until either 18-inches has been penetrated or 100 blows have been applied.

3. This operation will be repeated at select intervals during boring or well installation.

4. Record the number of blows required to effect each 6-inches of penetration or fractions thereof.

5. Bring the sampler to the surface and open. Scan with a FID. Record the FID response, collect typical samples of soils recovered with respect to composition, structure, consistency, color and soil condition; fill the appropriate sample jars and seal to prevent evaporation of soil moisture.

6. Collect and retain in appropriate glassware the soil samples selected for chemical analyses.

2.2 – GEOPROBE DRILLING

2.2.1 – Groundwater Sampling Using Geoprobe Unit

Temporary off-site vertical profile wells will be conducted using the Geoprobe drilling method. In order to collect groundwater samples, a decontaminated Geoprobe screen sampler will be driven to maximum target depth and then retracted approximately 2 feet upwards. The decontaminated stainless steel screen will then be extended using decontaminated chase rods from the surface into the resulting void. The design of the groundwater sampler allows the stainless steel screen to remain retracted within the probe rods until it is driven to the selected sampling depth. The screen is held in place by the expendable point fitted with a watertight "O" ring seal. Once the desired depth is reached, chase rods are inserted down the inside of the probe rod and the screen is pushed out of the protective sheath. Once the screen has been exposed and the chase rods have been removed, a one-time-use factory-decontaminated section of 3/8-inch polyethylene tubing is fitted with a decontaminated stainless steel bottom check valve and inserted down the probe rod to the desired sampling depth. The polyethylene tubing is then oscillated up and down to drive the column of water to the surface. Approximately one gallon of groundwater will be purged prior to sampling to ensure that a representative sample is collected.

Once a deepest groundwater sample has been collected, the polyethylene tubing will be removed and disposed. The screen will then be withdrawn to the next shallower sampling depth (due to the design of the sampling system, the deepest sample must be collected first). Another factory-decontaminated section of poly tubing will be inserted into the rods, one gallon of groundwater will be purged, and a groundwater sample will be collected. The procedure will be repeated for the remaining sample intervals. The approximately 1¼-inch bore holes will be backfilled with sand and the surface repaired with appropriate material (i.e., asphalt patch, concrete, etc.).

A total of 16 vertical profile wells will be completed using a probing unit. Each Profile Well will be completed to a total depth of 120 feet bgs. if no confining units (clay layers) are encountered. If no confining unit is encountered. A total of four groundwater samples will be obtained from each profile well (120′, 100′, 80′ and 60′ bgs.).

2.2.2 – Drainage Structure Soil Sampling

A Geoprobe unit and hand auger will be utilized to collect soil samples from existing drainage structures and potential source areas.

The probing drilling system consists of 1-inch outside diameter (OD) drill rods, which are installed to a 1½-inch OD, 2-foot long core barrel with a 1.1-inch inside diameter (ID). Before drilling, the core barrel is lined with a thin-walled 1.1-inch diameter, 2-foot long polyethylene sleeve. A 1.1-inch OD drive point attached to a 2-foot long rod is then inserted into the sleeve-lined core barrel and locked in place with a reverse threaded plug. The core barrel (with drive point) is advanced with a pneumatic drive hammer into the ground to the desired sampling depth. Soil samples are not collected because the drive point is locked into place at the front of the core barrel. Once the desired sampling depth is reached, a thin rod is run down and the reverse threaded plug is removed. The sampler is again advanced with the drive hammer for 2-feet and soil is pushed into the sleeve-lined core barrel (the drive point is also driven up into the sampler). The core barrel is then removed from the borehole, and the polyethylene soil-filled sleeve is removed for lithologic logging and/or chemical analysis.

It is estimated that a total of 12 soil borings will be completed through the drainage structures and potential source areas. A probing unit will be utilized to complete a soil boring in eight of the twelve locations. At each of the eight locations, a total of three soil samples (bottom of structure, 25-foot bgs. and 40-foot bgs.) will be retained for analysis. Four additional drainage structure borings will be completed inside facility buildings and on LIRR property . At these locations, a hand auger will be utilized to collect soil samples at 5-foot and 10-foot bgs.

2.3 – WELL ELEVATION SURVEY

Following installation of the groundwater monitoring wells, a well survey will be performed. It will include all wells to be utilized as part of the RI/FS. The horizontal distance between each well will be surveyed. Also, the elevation of the top of the riser pipe of the wells will be measured to the nearest 0.01-foot as well as the ground elevation to the nearest 0.1-foot. The survey points will be tied into the closest U.S. Coast and Geodetic survey datum point in relation to the site.

2.4 – GROUNDWATER ELEVATION MEASUREMENTS

Depth to water measurements will be taken at each of the wells at appropriate intervals during the RI/FS. These measurements will be taken using a electronic water level indicator. The depth to water will be measured to the nearest 0.01-foot and referenced to the top of the well pipe. After use in each well, the measuring device will be decontaminated to prevent cross contamination between wells. The probe will be cleaned with a phosphate-free detergent and rinsed with distilled water in between each measurement point.

2.5 – POTENTIOMETRIC SURFACE MAP PREPARATION

Groundwater elevation data will be used to generate groundwater contour maps. Potentiometric surface maps will depict the water table elevations and will be used to study flow direction and gradient variation.

2.6 – FIELD REPORTING

Data obtained from soil and groundwater sampling will be recorded in the boring log and include the following:

- Name, location and job number
- Date of boring (start, finish)
- Name of driller
- Boring number
- Sample number and depth
- Method of advancing sampler, penetration, recovery and blow count
- Type and size of sampler
- FID reading during field screening
- Description of soil
- Thickness of observed layer
- Depth to water surface
- Type and make of equipment (drill rig, etc.) used

3.0 – SAMPLING AND ANALYTICAL PROCEDURES

3.1 – SOIL SAMPLING AND ANALYSIS

3.1.1 – Surface Soils

A total of 21 surface soil samples will be collected to investigate potential source areas at the site and to be used during the human health baseline risk assessment. Direct push technology (probing) will be used to collect soil samples (0 to 4 feet) at 17 of the 21 locations. The remaining four surface soil samples will be collected using a hand auger, due to limited space inside the manufacturing building. All 21 soil samples will be analyzed for TCL VOCs plus trichloropropane by the on-site mobile lab.

3.1.2 – Drainage Structures

An estimated total of 12 drainage structures will be investigated. At eight of the drainage structures, a Geoprobe unit will be utilized to conduct a soil boring through the center. A total of three soil samples (bottom of structure, 25-feet bgs. and 40-feet bgs.) will be retained for analysis. Two of the three soil samples (bottom of structure and 25-feet bgs.) will be submitted for TCL VOCs plus trichloropropane analysis by the mobile laboratory. The deepest soil sample (40-feet bgs.) will be sent to the analytical laboratory for TCL/Target Analyte List (TAL) analyses by CLP procedures. The TCL/TAL analyses include TCL VOCs, TCL semi-volatile organics (SVOCs), pesticides/PCBs and TAL metals plus cyanide.

The remaining four drainage structure borings will be completed inside facility buildings on LIRR property. At these locations, a hand auger will be utilized to collect soil samples, continuously, to a depth of 10-feet bgs. A total of two soil samples (5 and 10-feet bgs.) will be retained for analysis. The 5-foot sampling interval will be submitted to the mobile lab and analyzed for TCL VOCs, plus trichloropropane. The 10-foot sampling interval will be submitted to the analytical laboratory for full CLP TCL/TAL analyses.

3.2 – GROUNDWATER SAMPLING AND ANALYSIS

3.2.1 – Groundwater Monitoring Well Sampling Procedures

Following well construction, development and an equilibrium period of one week, groundwater samples will be collected from the existing and new monitoring wells. Prior to sampling the wells, a 4′ x 4′ plastic sheet will be placed at the foot of the well. This will be the designated work zone for the sampling event. All sampling equipment will be placed on this sheet to minimize the possibility of cross contaminating sampling equipment from the surrounding soils. Upon opening the monitoring wells, a FID will be used to screen for total VOCs in the ambient atmosphere and in the headspace of the well. FID values will be recorded and compared to ambient background readings. The following procedure will be followed for groundwater sampling:

1. Prior to purging of the wells for sample collection, a synoptic static water level measurement to the nearest hundredth (0.01) foot will be recorded in each monitoring well from the monitoring well network.

2. To ensure a representative sample from the monitoring well, purging of the well is required.

   A volume of water equal to three or more times the standing in the casing will be purged from the well before taking the sample. If the monitoring well has a low yield, standing water will be fully evacuated and a sample collected upon recovery to 80 percent of static water level. Wells with high yield can be sampled immediately after evacuation of three well volumes. A decontaminated stainless steel submersible pump shall be used to remove the required well volumes. The purged water and decontamination liquids will be containerized and appropriately disposed of.

3. A dedicated, laboratory cleaned, polyethylene, disposable bailer will be attached to dedicated polypropylene rope or nylon line. The first full bailer will be removed and the water disposed. The appropriate laboratory-supplied, pre-cleaned sample bottles will then be filled directly from the bailer as soon as it is removed from the well. The field measurements (i.e., pH, turbidity, conductivity and temperature) will be recorded in pre-printed field form. All field instruments shall be calibrated daily prior to the sampling events and cleaned between each sampling point.

4. The well cap shall be secured and the above process shall be repeated at the next monitoring well.

The pH probe will first be field calibrated with a No. 7 buffer solution and then with either a No. 10 or No. 4 buffer solution, depending on the anticipated pH of the groundwater sample. The specific conductivity probe will be calibrated with an ionic solution that is closest in conductivity to that anticipated in the groundwater sample. The thermometer will be used to measure temperature of the groundwater during purging. The thermometer will be tested to ensure its calibration in the laboratory prior to sampling.

All groundwater samples will be submitted to the analytical laboratory for full CLP TCL/TAL analysis.

3.2.2 – Geoprobe Groundwater Sampling

In order to determine both the horizontal and vertical extent of groundwater contamination downgradient of the Mackenzie Chemical site, 16 vertical profile wells will be completed. At each location, groundwater samples will be collected from 60, 80, 100 and 120-feet bgs. (total of 64 samples) and analyzed for TCL VOCs, plus trichloropropane by the on-site mobile laboratory. In addition, approximately 10 percent of the samples will be submitted to the analytical laboratory for full CLP TCL/TAL analyses.

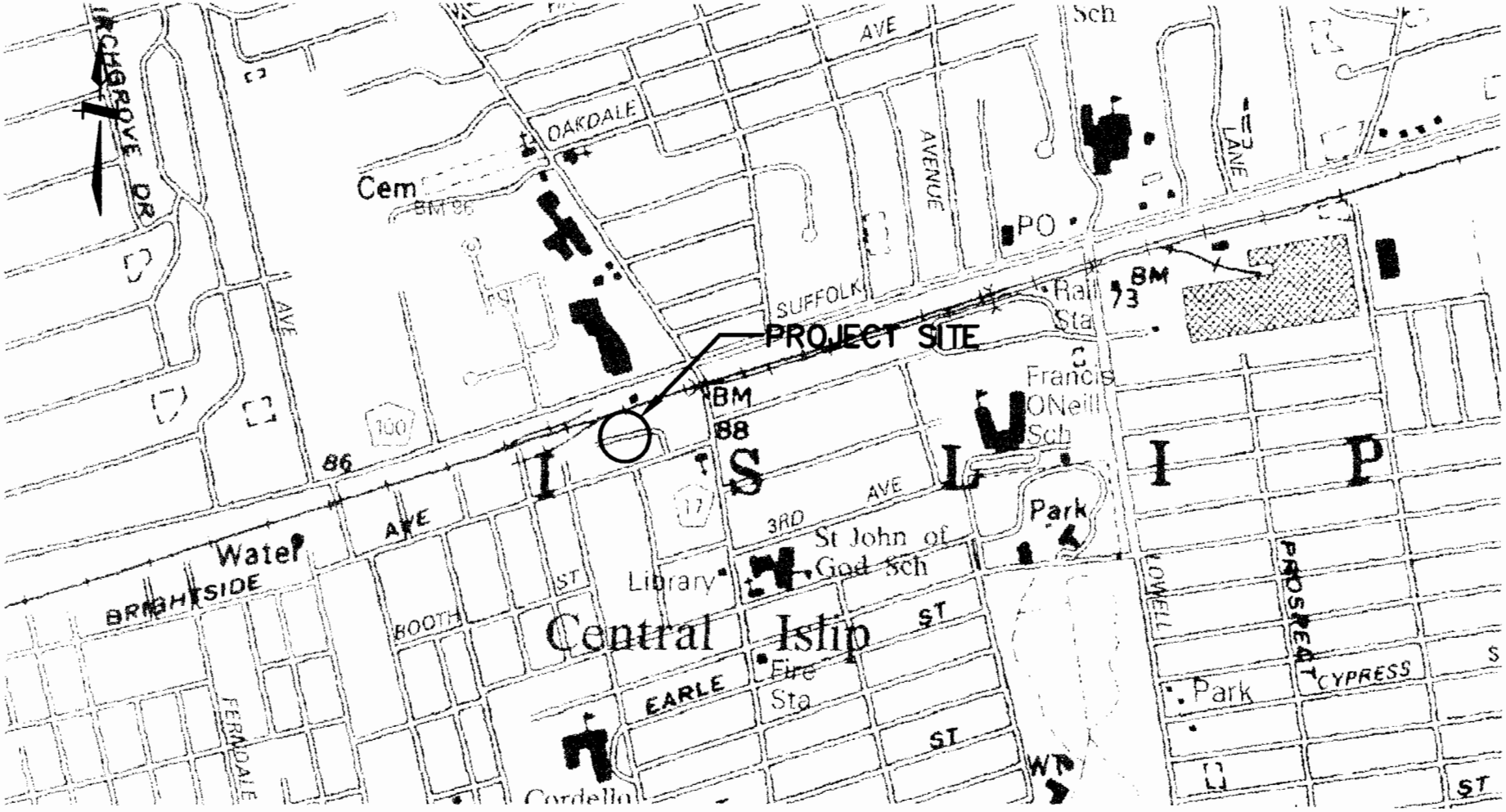
3.3 – QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) SAMPLES

The overall QA/QC plan objective is to produce data at the highest level to provide direct support for additional remedial actions should they be deemed warranted. All sampling activities used directly to support the field investigation will use Level IV Data Quality Objectives. These activities include groundwater sampling, Geoprobe groundwater sampling, soil/sediment sampling and drainage structure sampling.

To verify the quality of the field sampling results, a series of blanks and duplicates will be collected. A summary of all QA/QC samples to be collected from both Severn Trent Envirotest and Accredited Laboratories during each task is outlined in Table 3.3.

FIGURES

FIG_1.DWG 6-30-98 12:56:23 pm EST



0 500 1000ft

SCALE
1 in. = 1000ft

FIGURE 1.1
SITE LOCATION MAP
MACKENZIE CHEMICAL
CENTRAL ISLIP, NEW YORK
NYSDEC SITE No. 1-52-017

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TABLES

TABLE 3.3

MACKENZIE CHEMICAL
QA/QC SAMPLE SUMMARY

TASK ID	MOBILE LAB			CLP LAB - FULL QA/QC					
	NUMBER OF SAMPLES	BLIND DUPLICATE	FIELD BLANK	NUMBER OF SAMPLES	BLIND DUPLICATE	TRIP BLANK	FIELD BLANK	MS	MSD
Surface Soil Sampling	21 - VOCs - Soil	2	1						
Drainage Structure Sampling	20 - VOCs - Soil	1	5	12 - TCL/TAL - Soil	1	3	4	1	1
Off-Site Vertical Profile Wells	64 - VOCs - GW	3	9	6 - TCL/TAL - GW	1	1	1	1	1
Groundwater Sampling				15 - TCL/TAL - GW	1	2	2	1	1