NUS CORPORATION
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36752
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FINAL DRAFT
SITE INSPECTION REPORT
LI TUNGSTEN
GLEN COVE, NEW YORK
VOLUME 1 OF 5

# FIELD INVESTIGATION TEAM ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCES FACILITIES — ZONE I

NUS CORPORATION
SUPERFUND DIVISION

100001

02-9003-01-SI
REV. NO. 0

# FINAL DRAFT
# SITE INSPECTION REPORT
# LI TUNGSTEN
# GLEN COVE, NEW YORK
# VOLUME 1 OF 5

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-9003-01
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 28, 1990

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

RICHARD FEINBERG
PROJECT MANAGER

STEVEN OKULEWICZ
SITE MANAGER

REVIEWED/APPROVED BY:

RONALD M. NAMAN
FIT OFFICE MANAGER

# SITE INSPECTION REPORT: LEVEL III

## PART I: SITE INFORMATION

1. **Site Name/Alias** Li Tungsten/ LI Tungsten/ Wah Chang Smelting and Refining Company of America Inc./Wah Chang Teledyne Inc./National Reconditioning Company

   **Street** 63 Herb Hill Road

   **City** Glen Cove **State** New York **Zip** 11542

2. **County** Nassau **County Code** 059 **Cong. Dist.** 3

3 **EPA ID No.** NYD986882660

4. **Block No.** 21A and 31G **Lot Nos.** 21-A-14, 15, 16-1, 16-2, 142, 431, 495, 544, 545; 31-G-311

5. **Latitude** 40° 51' 36" N **Longitude** 73° 38' 25" W

   **USGS Quad.** Sea Cliff, New York

6. **Owner** Glen Cove Development Company **Tel. No.** Unavailable

   **Street** 34 Market Street

   **City** Baltimore **State** Maryland **Zip** 21202

7. **Operator** Li Tungsten **Tel. No.** (516) 676-1313

   **Street** 63 Herb Hill Road

   **City** Glen Cove **State** New York **Zip** 11542

8. **Type of Ownership**

   ☒ Private ☐ Federal ☐ State
   ☐ County ☐ Municipal ☐ Unknown ☐ Other NA

9. **Owner/Operator Notification on File**

   ☐ RCRA 3001 **Date** NA ☐ CERCLA 103c **Date** NA
   ☒ None ☐ Unknown

10. **Permit Information**

| Permit | Permit No. | Date Issued | Expiration Date | Comments |
|---|---|---|---|---|
| SPDES | NYD008249 | Unknown | 1987 | Cooling Water Discharge |
| Radiation Source Material License | 743-0464 | 3/19/64 | Cancelled 1971 | License to store, transport, and deliver radioactive compounds |

| | | | | |
|---|---|---|---|---|
| Air Permit | Unknown | Unknown | Unknown | Air Discharges from smelting operation |

11. Site Status

☐ Active ☒ Inactive ☐ Unknown

12. Years of Operation 1941 to June 1985

13. Identify the types of waste sources (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.

(a) Waste Sources

| Waste Unit No. | Waste Unit Type | Facility Name for Unit |
|---|---|---|
| 1 | Drums | 55- and 30-Gallon Drums |
| 2 | Piles | Waste Piles/Mounds |
| 3 | Crates | Wooden Crates |
| 4 | Tanks | Tanks |
| 5 | Surface Impoundments | Mud Pond/Mud Holes/Oil Recovery Sumps |
| 6 | Landfill | Landfill |
| 7 | Stained Soil | Stained Soil |
| 8 | Buried Surface Impoundment | 500,000-Gallon Fuel Oil Tanks |

(b) Other Areas of Concern

Identify any miscellaneous spills, dumping, etc. on site; describe the materials and identify their locations on site.

There are five other areas or items of concern at this site. First, there is a radiation hazard. The facility smelted monazite sand and tungsten ore (scheelite/wolframite), which contain naturally radioactive thorium-, uranium-, and radium-bearing compounds, to produce tungsten carbide powder and other tungsten-containing products. In addition, commercially prepared thorium oxide, thorium nitrate, and uranium (uranyl) acetate were used during ore processing. These radioactive compounds are present in the crates, piles, drums, and landfill areas on the site in various concentrations. A previous radiation survey of the facility conducted by Enviropact Services in 1988 determined gross alpha radiation of three samples of unknown media from various waste containers to range from 64 to 251 nanocuries per gram (nCi/g). Another survey, conducted by the NDL Organization in 1989 for the entire site, detected various levels of radiation, with the highest level detected at 1,000 picocuries per gram (pCi/g) in tungsten waste products. Background radiation levels in soil for New York State are 55 pCi/g for thorium and 180 pCi/g for uranium. Some of the large process solution vats and equipment in the facility are also radioactive. Soil by the fence along the southern boundary of Herb Hill Road is also radioactive, with levels of 160 microRoentgen per hour (uR/hr) to 300 uR/hr from material either on the other side of the fence or buried below the fence (Ref. Nos. 2, 3, 13, 29, 33, 37).

The second area of concern is the Dice and East Buildings. Both buildings contain many crates and stacks of 55-gallon drums and wooden barrels of raw and reprocessed ore material. Rainwater has flooded both of these buildings to a depth of approximately 1 foot; this water may also contain dissolved heavy metals and be slightly radioactive from contact with the ore material (Ref. Nos. 4, 13, 31, 34, 35, 37, 49, 51, 52).

The third item of concern is asbestos. This material is found in siding shingles, roofing tiles, tank covers, and pipe wrapping. All of these items are in a state of decay and pieces of asbestos-containing materials have been found on the ground (Ref. Nos. 4, 13, 25, 26, 48, 52).

The fourth item of concern is the empty 55- and 30-gallon drums. Many of these drums are found scattered in disordered piles and stacks throughout the site; some of these drums, though empty, may be radioactive and create both a chemical and physical hazard on the site (Ref. No. 25).

The fifth and last area of concern is the Glen Cove Landfill, located on the south side of Garvies Point Road near the Li Tungsten facility. According to the City Historian for Glen Cove, this area (Section 21, Block 259, Lot 1) served as a municipal landfill and may have received waste ore and other waste materials from the Li Tungsten facility. Analyses of soil samples collected from this area by the Nassau County Department of Health revealed above background levels of radiation. The construction of a condominium project was halted due to the discovery of radiation and hazardous waste in the area. This area should be inspected and sampled for radioactive and other hazardous waste (Ref. Nos. 30, 36).

**14. Information available from**

**Contact** Amy Brochu **Agency** U.S. EPA **Tel. No.** (201) 906-6802

**Preparer** Steven Okulewicz **Agency** NUS Corp. Region 2 FIT **Date** Sept. 28, 1990

## PART II: WASTE SOURCE INFORMATION

Drums

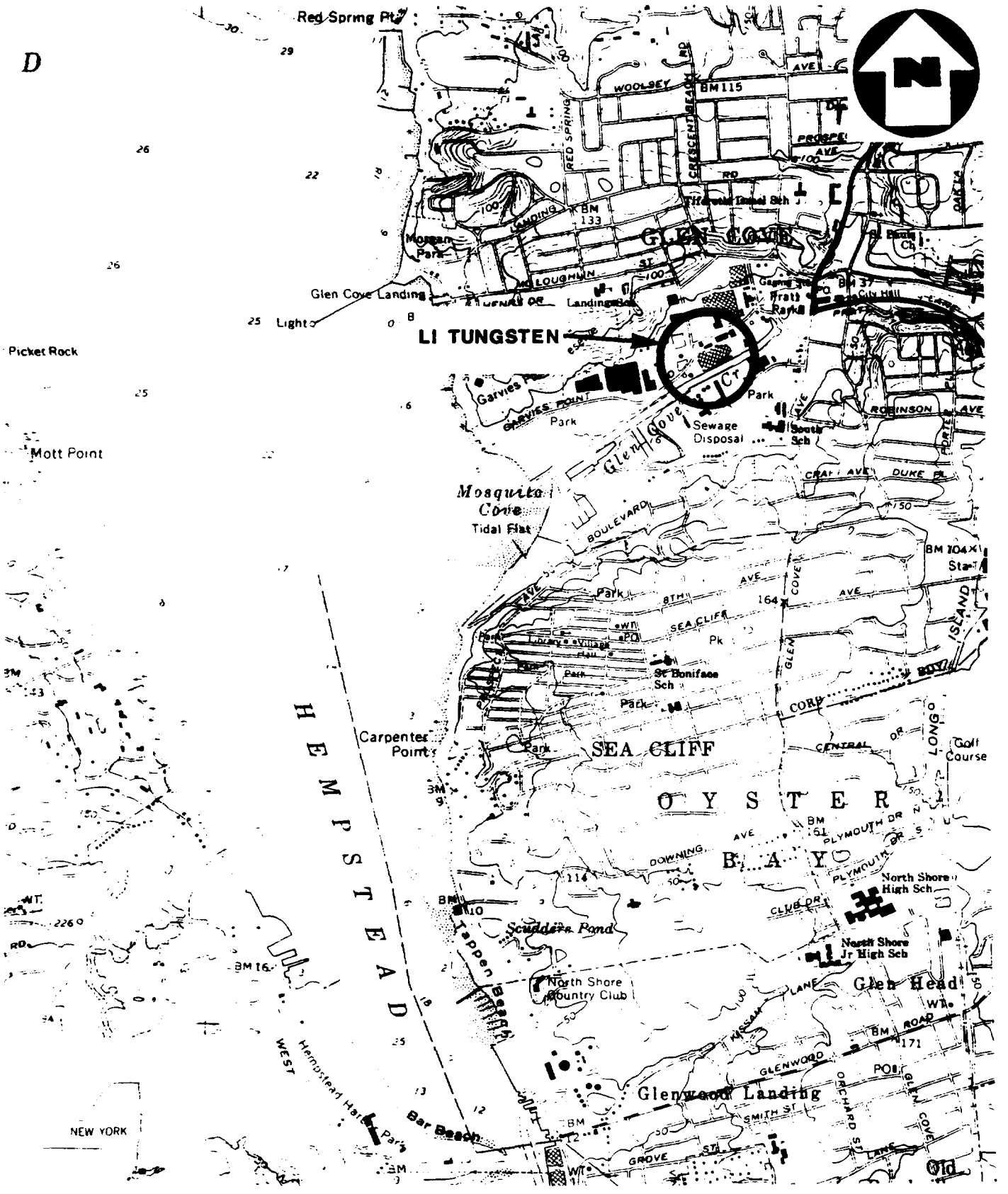
There are 3,850 55-gallon drums and 4,333 30-gallon drums on site that contain solid, sludge, and liquid materials; some drums contain raw and processed tungsten ores and residues. The total number of drums containing solid waste is 8,052; another 131 drums contain liquids. The total capacity of these drums is approximately 341,740 gallons. The majority of the drums on site are known to contain radioactive ores and residues including uranium, thorium, radium, organics such as carbon tetrachloride, perchloroethylene, and PCBs, and inorganic materials which include lead, tungsten, chromium, cadmium, arsenic, copper, nickel, zinc, barium, hydrochloric acid, hydrofluoric acid, nitric acid, and cyanide. The drums are scattered around the site and some are clustered in several buildings. Some are suspected to be buried within the landfill area, while others are stacked within or around the Dice Building, the Dickson Warehouse, the north and south sides of the Carbide Building, and at the southern corner of Herb Hill Road and Garvies Point Road. Some of these drums are overstacked, some have toppled, some are badly corroded, and some are leaking their contents upon the ground either within or around many of the buildings on site. The condition of the drums suspected to buried within the landfill area is unknown (Ref. Nos. 2, 4, 22, 26, 49, 50, 52). Figures 1 and 2 provide a site location map and a site map, respectively. Figure 3 provides a monitoring well location map.

Waste Piles

There are nine waste piles located on the site. Seven black and grey waste piles are located around the natural pond in the landfill area between Herb Hill Road and The Place. One mound of waste is located behind and to the west of the Reduction Building and another waste pile is located north of the Dickson Warehouse. All of these piles are uncovered and there is no containment. The total volume of these piles is estimated to be greater than 325 $yds^3$; the quantity of hazardous waste within these piles is unknown. The physical states of the waste within these piles are solids, powders, and sludges. The specific substances known to be present in these piles are the ores and residues of tungsten processing. These substances include lead, chromium, barium, copper, zinc, arsenic, cadmium, nickel, uranium, radium, thorium, and cyanide. All of the piles are known to contain radioactive compounds of uranium, thorium, and radium. The piles adjacent to the Dickson Warehouse and to the west of the Reduction Building have been roped off and marked with placards that indicate hazardous radiation; the seven other waste piles are unmarked and are not roped off (Ref. Nos. 2, 4, 22, 29, 37, 49, 52).

Crates

There are 719 wooden crates on site whose volume is estimated to be 705 cubic yards. These wooden crates are found in various areas of the site, but are located mainly within the Dickson Warehouse Building, on the north side of the Carbide Building, and within the Dice/ Warehouse Building. Some




(QUAD) SEA CLIFF, N.Y.

**SITE LOCATION MAP**

**FIGURE 1**

**LI TUNGSTEN, GLEN COVE, N.Y.**

**SCALE: 1" = 2000'**

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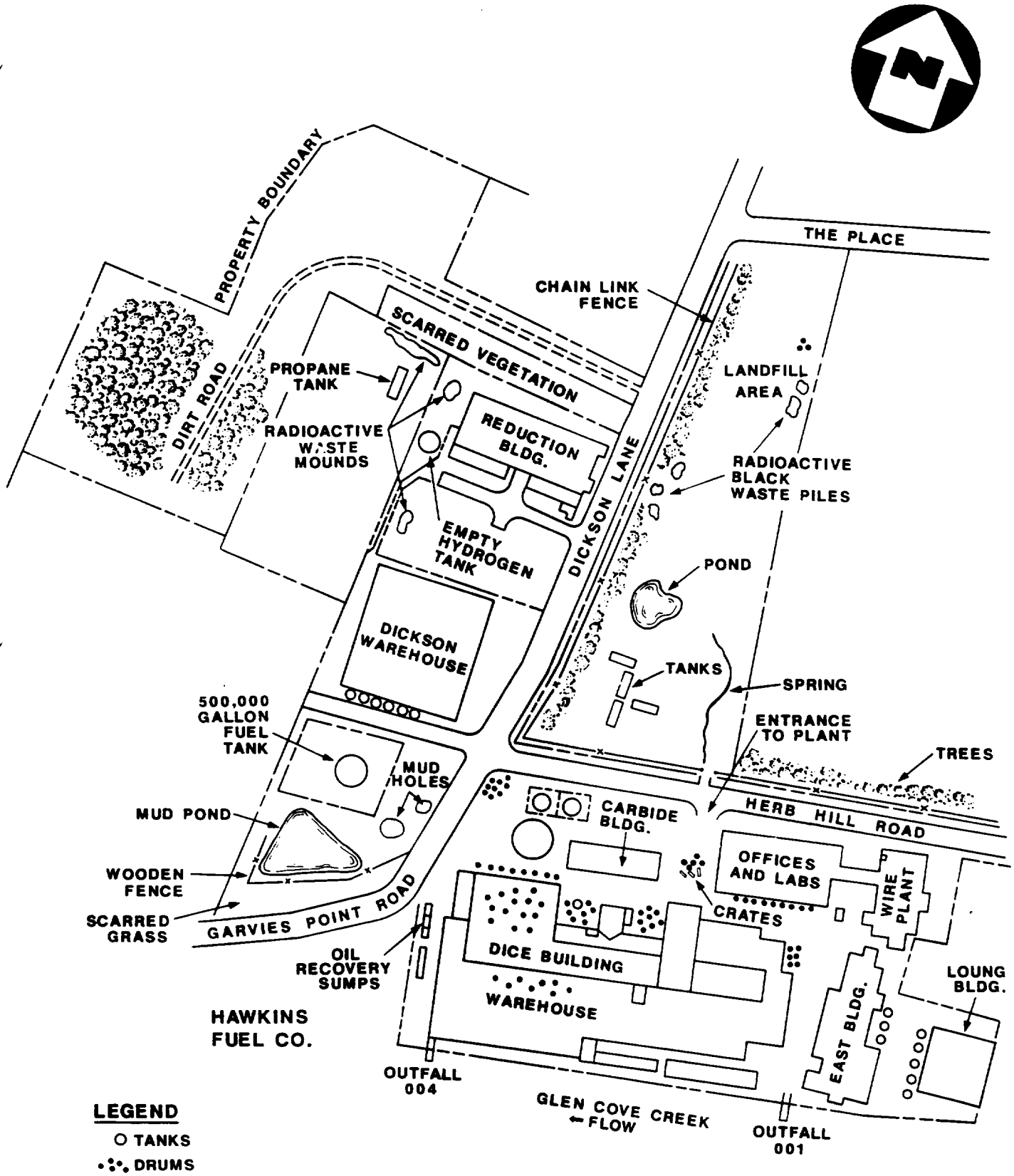


FIGURE 2

**SITE MAP**

**LI TUNGSTEN, GLEN COVE, LONG ISLAND, N.Y.**

NOT TO SCALE

NUS CORPORATION

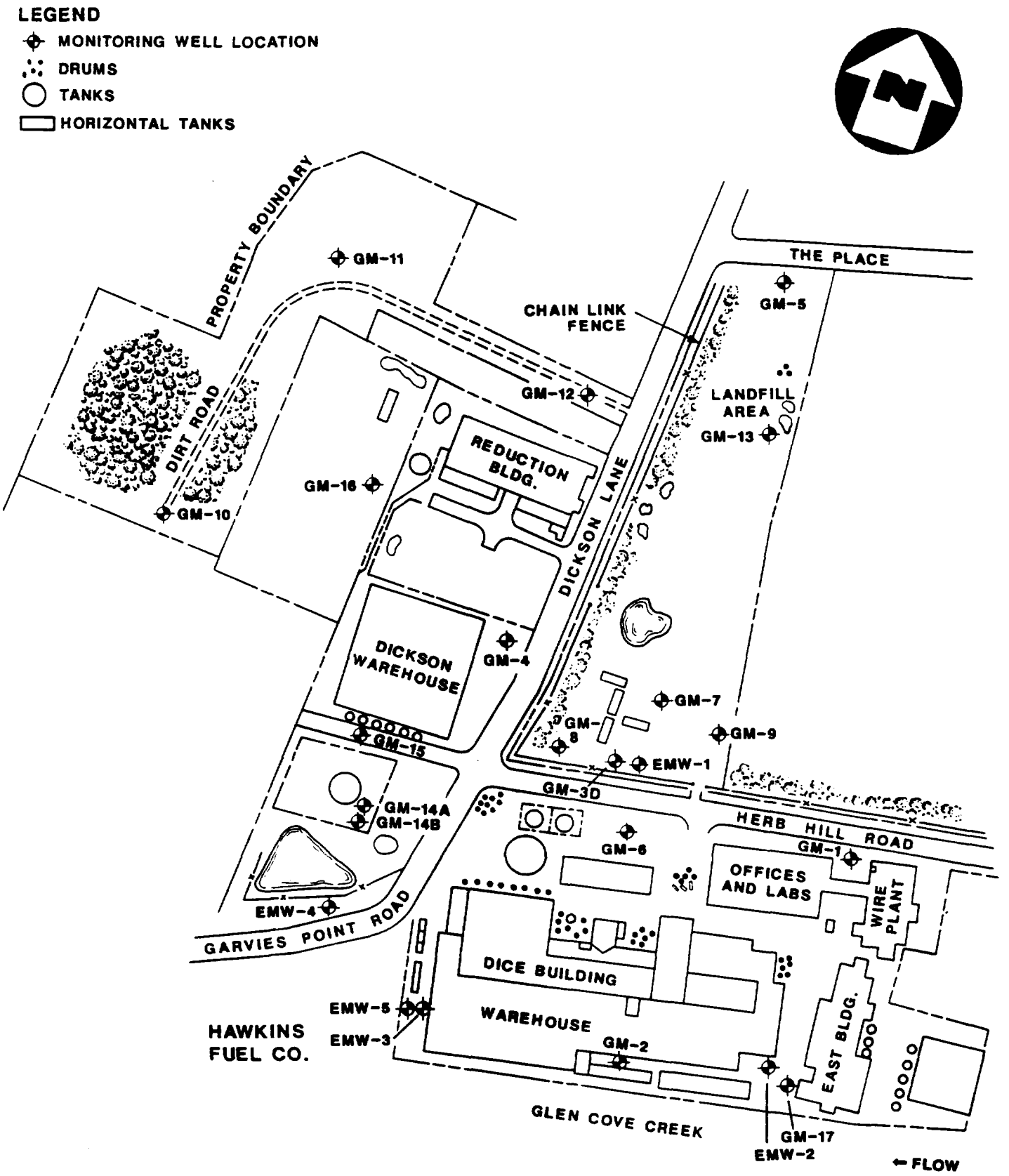


**FIGURE 3**

**MONITORING WELL LOCATION MAP**

**LI TUNGSTEN, GLEN COVE, LONG ISLAND, N.Y.**

NOT TO SCALE

NUS CORPORATION

of these crates are located in open, uncovered areas outside of the buildings; these crates have been observed to be badly weathered or collapsed and spilling their contents upon the ground. Specific hazardous substances known to be present in these wooden crates are raw and processed tungsten ores that contain heavy metals including uranium, thorium, radium, lead, cadmium, chromium, copper, arsenic, zinc, nickel, and barium (Ref. Nos. 4, 13, 26, 37, 49, 52).

Tanks

There are 224 tanks made of wood, metal, or fiberglass on site. The majority of these tanks are located in the Dice Building, the Warehouse Building, the East Building, the Loung Building, to the west of the Dice Building, at the southern end of the landfill area, and to the northwest of the Carbide Building. A large aboveground 500,000-gallon fuel oil tank is located to the north of the Mud Pond. There are also two 275-gallon fuel oil tanks and one 200-gallon fuel oil tank present on site. The total capacities of 86 other tanks found to have contained liquids was estimated to be 518,131 gallons. The volume of liquids actually present in these tanks is unknown; the volume contained in 51 tanks from which samples were collected was estimated at 373,000 gallons. Two pressurized tanks also remain on site; one contains aqueous ammonia and the other contains propane gas. The volume of gas remaining in these tanks is unknown. The remaining 132 tanks either contain residual solids or are empty. The physical condition of some of these tanks is unknown. Many of the tanks are corroded or have collapsed linings. Fifty tanks have been inspected internally and externally for leaks or rupture. The contents of two tanks determined not to be secure have been sampled, drained, and drummed for disposal by Hart Environmental Consultants. None of these tanks are diked or have any secondary containment structures. The specific hazardous substances known to be present within these tanks include ammonium paratungstate (APT), ammonium hydroxide, spent hydrochloric acid, hydrochloric acid, aqueous ammonia, sodium hydroxide, tungsten acid, calcium chloride, cobalt chloride solution, sodium tungstate solution, and process solutions containing heavy metals that include arsenic, chromium, lead, thorium, tungsten, and radium. There are also approximately eight underground tanks at unspecified locations and of unknown integrity on site (Ref. Nos. 4, 13, 25, 26, 41, 49, 52).

Surface Impoundments

There are six surface impoundments on the site: two unlined settling ponds, referred to as the Mud Holes, a lined settling pond known as the Mud Pond, and three concrete oil recovery sumps. The former three impoundments are located immediately south and southeast of the 500,000-gallon fuel oil tank along Garvies Point Road. The exact volumes of the Mud Pond and Mud Holes are unknown; the quantity of waste in them is also unknown. The Mud Pond was lined with a plastic/rubber liner, but has been leaking into the groundwater and surface soil, causing scarred vegetation. A plume of waste/process water which contains heavy metals has been detected in the vicinity of the Mud Pond and the Mud Holes.

The three concrete oil recovery sumps are located west of the Dice/Warehouse Building and are connected via pipes to the Mud Pond/Mud Holes. None of these impoundments are covered. The total area of these impoundments is estimated to be 11,760 $ft^2$. The hazardous substances known to be present include sludges, fines, slurries, and liquids that contain lead, chromium, cadmium, arsenic, beryllium, antimony, cobalt, copper, manganese, nickel, zinc, sulfate compounds, chloride compounds, and PCBs (Ref. Nos. 4, 21, 22, 26, 46, 49, 50, 52).

Buried Surface Impoundment

A buried surface impoundment was located in the vicinity of and under the present location of the 500,000-gallon fuel oil tank on Garvies Point Road. The only documentation of this impoundment is in an aerial photograph of the site from 1950 (Ref. No. 46). This impoundment is suspected to have received waste/process waters from the Li Tungsten facility prior to the construction of the Mud Pond, Mud Holes, and fuel oil tank. The area of this impoundment, as measured from the aerial photograph, is approximately 5,100 $ft^2$. This impoundment is suspected to have contained contaminants similar to those presently found in the Mud Pond/ Mud Holes.

Landfill

The unlined landfill is located in an open, uncovered, partially wooded lot between the north side of Herb Hill Road and The Place. Most of the landfill is located to the northern end of the lot closest to The Place. The estimated volume of the landfill area is approximately 6,000 $yds^3$. The actual quantity of hazardous waste within the landfill is unknown. The specific hazardous substances suspected to present in the landfill are the residues from the tungsten ore extraction process. Buried drums of unknown structural integrity were reported to be present in the area (Ref. Nos. 4, 36, 49).

Stained Soil

Stained soil is found along the perimeter of the Mud Pond/ Mud Holes and extends under and beyond the wooden fence to the edge of Garvies Point Road. Stained soil is also found around the nine radioactive waste piles. The quantity of hazardous substances present within the stained soil is unknown. The volume of material to be removed from the Mud Pond/ Mud Holes area is estimated to be greater than 5,000 $yds^3$. The substances known to be present in the stained soil around the Mud Pond/Mud Holes include chloride compounds, sulfate compounds, No. 2 fuel oil, and heavy metals such as lead, chromium, cadmium, arsenic, and tungsten. The stained soil in the aforementioned area also has an organic odor.

Ref. Nos. 2, 4, 5, 8, 21, 26, 30, 31, 32, 37, 40, 41, 42, 49, 50, 52

## PART III: SITE INSPECTION SAMPLE RESULTS

NUS Corporation Region 2 FIT conducted a site inspection at the Li Tungsten facility on April 18-19, 1990 and on May 15, 1990, during which a total of 9 groundwater, 13 surface water, 9 sediment, and 11 soil samples were collected. These samples were collected to determine whether any CERCLA-eligible compounds are present in the groundwater, surface water, sediment, or soil that can be attributed to the waste units present on the site. All sample locations are shown on Figure 4 of this report. These samples were analyzed under the Contract Laboratory Program (CLP) for Target Compound List ( TCL) organic and inorganic compounds, including cyanide. Refer to Table 1 in Part III of this report for a summary of the significant organic and inorganic compounds that were detected on the site. All CLP analytical data sheets are provided in Reference No. 50 of this report. Eleven surface water, 8 sediment, and 10 soil samples that had been collected by NUS Corporation Region 2 FIT in April and May 1990 were received by the National Enforcement Investigations Center (NEIC) on June 18, 1990. These samples were analyzed quantitatively for tungsten and qualititatively for copper, zinc, arsenic, molybdenum, antimony, lead, bismuth, thorium, and uranium, using inductively coupled plasma mass spectrometry (ICP/MS). Analysis for tungsten is not part of the routine analytical services performed under the CLP. Refer to Reference No. 31 for a summary of the NEIC analytical results.

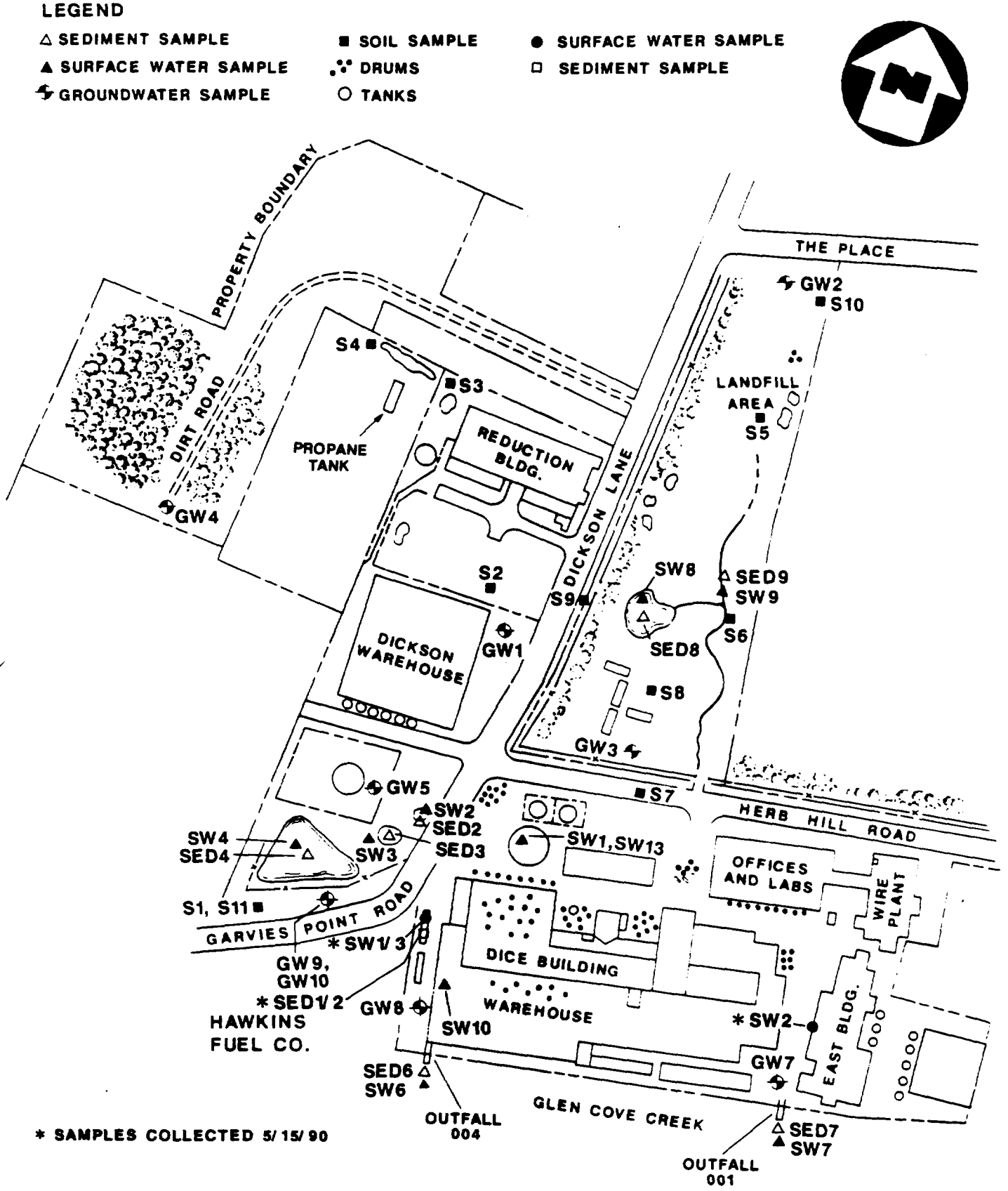


FIGURE 4

## SAMPLE LOCATION MAP

LI TUNGSTEN, GLEN COVE, LONG ISLAND, N.Y.

NOT TO SCALE

NUS CORPORATION

E 1

# SUMMARY OF SITE INSPECTION ALYTICAL DATA

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13706 LAB: COMPUCHEM

| VOLATILES | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW1 | NYJL-GW4 | NYJL-GW5 | NYJL-GW9 | NYJL-GW10(DUP) | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3 | NYJL-SW4 | NYJL-SW6 | NYJL-SW13(DUP) | NYJL-SED2 | NYJL-SED3 | NYJL-SED4 | NYJL-SED6 |
| Traffic Report No. | BEB18 | BEB21 | BEB22 | BEB26 | BEB27 | BEB28 | BEB29 | BEB30 | BEB31 | BEB33 | BEB40 | BEB42 | BEB43 | BEB44 | BEB46 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SEDIMENT |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/kg | ug/kg |
| Dilution Factor | 1 | 2.78 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Percent Moisture | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 24 | 45 | 40 | 40 |
| Chloromethane | | | | | | | | | | | | | | | |
| Bromomethane | | | | | | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | | | | | |
| Acetone | | | 600 | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | J | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | J | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene (total) | | 87 | | | | | | | | J | | | | | |
| Chloroform | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | |
| 2-Butanone | | | 84 | | | | | | | | | | | | 44 E |
| 1,1,1-Trichloroethane | | 450 | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| Trichloroethene | | 93 | | | | | | | | J | | | | | J |
| Dibromochloromethane | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | |
| trans-1,3-Dichloropropene | | | | | | | | | | | | | | | |
| Bromoform | | | | | | | | | | | | | | | |
| 4-Methyl-2 Pentanone | | | | | | | | | | | | | | | |
| -Hexanone | | | | | | | | | | | | | | | |
| etrachloroethene | | | | | | | | | | 14 | | | | | |
| oluene | | | | | | | | | | | | | | | |
| ,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | |
| hlorobenzene | | | | | | | | | | | | | | | |
| thylbenzene | | | | | | | | | | | | | | | |
| tyrene | | | | | | | | | | | | | | | |
| ylenes (Total) | | | | | | | | | | | | | | | |

OTES:
lank space - compound analyzed for but not detected
- compound found in lab blank as well as sample, indicates possible/probable blank contamination
- estimated value
- estimated value, compound present below CRQL but above IDL
- analysis did not pass EPA QA/QC
- Presumptive evidence of the presence of the material
- analysis not required
tection limits elevated if Dilution

100014

Rev. No. 0

SIT. [illegible]
TDDB: 02-9003-01
SAMPLING DATES: 04/18/9[illegible]/19/90
EPA CASE NO.: 17909 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| VOLATILES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-S1 | NYJL-S2(MS/MSD) | NYJL-S3 | NYJL-S4 | NYJL-S9 | NYJL-S11(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-TRBK1 |
| Traffic Report No. | BEB50 | BEB51 | BEB52 | BEB53 | BEB58 | BEB60 | BEB61 | BEB62 | BEB63 | BEB64 | BEB69 |
| Matrix | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | WATER | WATER | WATER | WATER | WATER |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Dilution Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Percent Moisture | 27 | 52 | 18 | 12 | 12 | 24 | -- | -- | -- | -- | -- |
| Chloromethane | | | | | | | | | | | |
| Bromomethane | | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | |
| Methylene Chloride | | | | | | | B | | | | |
| Acetone | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | |
| trans-1,2-Dichloroethene (total) | | | | | | | | | | | |
| Chloroform | | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | | |
| 2-Butanone | | | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | |
| Trichloroethene | | | | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | |
| Benzene | | | | | | | | | | | |
| trans-1,3-Dichloropropene | | | | | | | | | | | |
| Bromoform | | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | | | | | | | | | | |
| 2-Hexanone | | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | | |
| Toluene | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | |
| Styrene | | | | | | | | | | | |
| Xylenes (Total) | | | | | | | | | | | |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
J - estimated value
J - estimated value, compound present below CRQL but above IDL
* - analysis did not pass EPA QA/QC
P - Presumptive evidence of the presence of the material
-- - analysis not required
Detection limits elevated if Dilution [illegible]

100015

[illegible]
Rev. No. 0

Site Name: [illegible]
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE No.: 12706 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| VOLATILES | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW2 | NYJL-GW3 | NYJL-GW7 | NYJL-GW8 | NYJL-SW7 | NYJL-SW8 | NYJL-SW9 | NYJL-SW10 | NYJL-SED7 | NYJL-SED8 | NYJL-SED9 | NYJL-S5 | NYJL-S6 | NYJL-S7 | NYJL-S9 | NYJL-S10 | NYJL-RINS | NYJL-RINS |
| Traffic Report No | BEB19 | BEB20 | BEB24 | BEB25 | BEB34 | BEB35 | BEB36 | BEB37 | BEB47 | BEB48 | BEB49 | BEB54 | BEB55 | BEB56 | BEB57 | BEB59 | BEB65 | BEB66 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SOIL | SOIL | SOIL | SOIL | SOIL | WATER | WATER |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/L | ug/L |
| Dilution Factor | 1 | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Percent Moisture | -- | -- | -- | -- | - | -- | - | -- | 56 | 46 | 52 | 18 | 23 | 13 | 18 | 35 | -- | -- |
| Chloromethane | | | | | | | | | | | | | | | | | | |
| Bromomethane | | | | | | | | | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | | | | | | | | | |
| Chloroethane | | | | | | | | | | | | | | | | | | |
| Methylene Chloride | | | | | | | | | | | | | | | | | | |
| Acetone | | | | | | 15 | | | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | | | | | | | | | |
| Trans-1,2-Dichloroethene (total) | | 110 | | | J | J | | | | | | | | | | | | |
| Chloroform | | | | J | | | | | | | | | | | | | | J |
| 1,2-Dichloroethane | | | | | | | | | | | | | | | | | | |
| 2-Butanone | | | | | | | | | J | | | | | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | |
| Trichloroethene | | 120 | | 5 | J | J | | | | | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | | | | | | | | | |
| 1,1,2-Trichloroethane | | | | | | | | | | | | | | | | | | |
| Benzene | | | | | | | | | | | | | | | | | | |
| Trans-1,3-Dichloropropene | | | | | | | | | | | | | | | | | | |
| Bromoform | | | | | | | | | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | | | | | | | | | | | | | | | | | |
| 2-Hexanone | | | | | | | | | | | | | | | | | | |
| Tetrachloroethene | | 1100 | | | 19 | J | | | | | | | | | | | | |
| Toluene | | | | | | | | | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | | | | | | | | | |
| Styrene | | | | | | | | | | | | | | | | | | |
| Xylenes (total) | | | | | | | | | | | | | | | | | | |

NOTES:
Blank space - compound analyzed for but not detected
- compound found in lab blank as well as sample, indicates possible/probable blank contamination
- estimated value
- estimated value, compound present below CRQL but above IDL
- analysis did not pass EPA QA/QC
- Presumptive evidence of the presence of the material
- analysis not required
Detection limits elevated if dilution

100016

02-9003-01
Rev. No. 0

SITE Name: [illegible]
IDDB: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE No.: 15906 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| VOLATILES | | | |
|---|---|---|---|
| Sample ID No. | NYJL-RIN7 | NYJL-RIN8 | NYJL-TRBK2 |
| Traffic Report No. | BEB67 | BEB68 | BEB70 |
| Matrix | WATER | WATER | WATER |
| Units | ug/L | ug/L | ug/L |
| Dilution Factor | 1 | 1 | 1 |
| Percent Moisture | -- | -- | -- |
| Chloromethane | | | |
| Bromomethane | | | |
| Vinyl Chloride | | | |
| Chloroethane | | | |
| Methylene Chloride | | | J |
| Acetone | | | |
| Carbon Disulfide | | | |
| 1,1-Dichloroethene | | | |
| 1,1-Dichloroethane | | | |
| Trans-1,2-Dichloroethene (total) | | | |
| Chloroform | | | |
| 1,2-Dichloroethane | | | |
| 2-Butanone | | | |
| 1,1,1-Trichloroethane | | | |
| Carbon Tetrachloride | | | |
| Vinyl Acetate | | | |
| Bromodichloromethane | | | |
| 1,2-Dichloropropane | | | |
| cis-1,3-Dichloropropene | | | |
| Trichloroethene | | | |
| Dibromochloromethane | | | |
| 1,1,2-Trichloroethane | | | |
| Benzene | | | |
| trans-1,3-Dichloropropene | | | |
| Bromoform | | | |
| 4-Methyl-2-Pentanone | | | |
| 2-Hexanone | | | |
| Tetrachloroethene | | | |
| Toluene | | | |
| 1,1,2,2-Tetrachloroethane | | | |
| Chlorobenzene | | | |
| Ethylbenzene | | | |
| Styrene | | | |
| Xylenes (Total) | | | |

NOTES:
Blank space - compound analyzed for but not detected
- compound found in lab blank as well as sample, indicates possible/probable blank contamination
- estimated value
- estimated value, compound present below CRQL but above IDL
- analysis did not pass EPA-QA/QC
- Presumptive evidence of the presence of the material
- analysis not required
Detection limits elevated if dilution [illegible]

100017

02-9003-01-[illegible]
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDDB: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13906 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| SEMI-VOLATILES | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW1 | NYJL-GW4 | NYJL-GW5 | NYJL-GW9 | NYJL-GW10(DUP) | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3 | NYJL-SW4 | NYJL-SW6 | NYJL-SW13(DUP) | NYJL-SED2 | NYJL-SED3 | NYJL-SED4 | NYJL-SED6 |
| Traffic Report No. | BEB18 | BEB21 | BEB22 | BEB26 | BEB27 | BEB28 | BEB29 | BEB30 | BEB31 | BEB33 | BEB40 | BEB42 | BEB43 | BEB44 | BEB46 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SEDIMENT |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/kg | ug/kg |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | .99 | 1 |
| Percent Moisture | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 24 | 45 | 40 | 40 |
| Phenol | | | LAB DID | R | R | | | | | | | | | | |
| bis(2-Chloroethyl)ether | | | NOT RUN | R | R | | | | | | | | | | |
| 2-Chlorophenol | | | ANALYSIS | R | R | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | ON THIS | R | R | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | SAMPLE | R | R | | | | | | | | | | |
| Benzyl alcohol | | | | R | R | | | | | | | | | | |
| 1,2-Dichlorobenzene | | | | R | R | | | | | | | | | | |
| 2-Methylphenol | | | | R | R | | | | | | | | | | |
| bis(2-Chloroisopropyl)ether | | | | R | R | | | | | | | | | | |
| 4-Methylphenol | | | | R | R | | | | | | | | | | |
| N-Nitroso-di-n-dipropylamine | | | | R | R | | | | | | | | | | |
| Hexachloroethane | | | | R | R | | | | | | | | | | |
| Nitrobenzene | | | | R | R | | | | | | | | | | |
| Isophorone | | | | R | R | | | | | | | | | | |
| 2-Nitrophenol | | | | R | R | | | | | | | | | | |
| 2,4-Dimethylphenol | | | | R | R | | | | | | | | | | |
| Benzoic acid | | | | R | R | | | | | | | J | J | | J |
| bis(2-Chloroethoxy)methane | | | | R | R | | | | | | | | | | |
| 2,4-Dichlorophenol | | | | R | R | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | R | R | | | | | | | | | | |
| Naphthalene | | | | R | R | | | | | | | | | | |
| 4-Chloroaniline | | | | R | R | | | | | | | | | | |
| Hexachlorobutadiene | | | | R | R | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | | | R | R | | | | | | | | | | |
| 2-Methylnaphthalene | | | | R | R | | | | | | | | | | |
| Hexachlorocyclopentadiene | | | | R | R | | | | | | | | | | |
| 2,4,6-Trichlorophenol | | | | R | R | | | | | | | | | | |
| 2,4,5-Trichlorophenol | | | | R | R | | | | | | | | | | |
| 2-Chloronaphthalene | | | | R | R | | | | | | | | | | |
| 2-Nitroaniline | | | | R | R | | | | | | | | | | |
| Dimethylphthalate | | | | R | R | | | | | | | | | | |
| Acenaphthylene | | | | R | R | | | | | | | | | | J |
| 2,6-Dinitrotoluene | | | | R | R | | | | | | | | | | |
| 3-Nitroaniline | | | | R | R | | | | | | | | | | |
| Acenaphthene | | | | R | R | | | | | | | | | | J |
| 2,4-Dinitrophenol | | | | R | R | | | | | | | | | | |
| 4-Nitrophenol | | | | R | R | | | | | | | | J | | |
| Dibenzofuran | | | | R | R | | | | | | | | | | |
| 2,4-Dinitrotoluene | | | | R | R | | | | | | | | | | |
| Diethylphthalate | | | | R | R | | | | | | | | | | |
| 4-Chlorophenyl-phenyl ether | | | | R | R | | | | | | | | | | |
| Fluorene | | | | R | R | | | | | | | | | | J |
| 4-Nitroaniline | | | | R | R | | | | | | | | | | |
| 4,6-Dinitro-2-methylphenol | | | | R | R | | | | | | | | | | |
| N-Nitrosodiphenylamine | | | | R | R | | | | | | | | | | |
| 4-Bromophenyl-phenyl ether | | | | R | R | | | | | | | | | | |
| Hexachlorobenzene | | | | R | R | | | | | | | | | | |

100018

02-9003-01-SI
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13906 LAB: COMFUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| SEMI-VOLATILES | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW1 | NYJL-GW4 | NYJL-GW5 | NYJL-GW9 | NYJL-GW10(DUP) | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3 | NYJL-SW4 | NYJL-SW6 | NYJL-SW13(DUP) | NYJL-SED2 | NYJL-SED3 | NYJL-SED4 | NYJL-SED6 |
| Traffic Report No. | BEB18 | BEB21 | BEB22 | BEB26 | BEB27 | BEB28 | BEB29 | BEB30 | BEB31 | BEB33 | BEB40 | BEB42 | BEB43 | BEB44 | BEB46 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SEDIMENT |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/kg | ug/kg |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | .99 | 1 |
| Percent Moisture | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 24 | 45 | 40 | 40 |
| Pentachlorophenol | | | | R | R | | | | | | | | | | |
| Phenanthrene | | | | R | R | | | | | | | | | | J |
| Anthracene | | | | R | R | | | | | | | | | | J |
| Di-n-butylphthalate | | | | R | R | | | | | | | | | | J |
| Fluoranthene | | | | R | R | | | | | | | | | | 1600 |
| Pyrene | | | | R | R | | | | | | | | | J | 1200 |
| Butylbenzylphthalate | | | | R | R | | | | | | | | | | J |
| 3,3'-Dichlorobenzidine | | | | R | R | | | | | | | | | | |
| Benzo(a)anthracene | | | | R | R | | | | | | | JN | | | 810 |
| Chrysene | | | | R | R | | | | | | | JN | | | 870 |
| bis(2-Ethylhexyl)phthalate | | | | R | R | | | | | | | | | 580 | 3000 |
| Di-n-octylphthalate | | | | R | R | | | | | | | | | | J |
| Benzo(b)fluoranthene | | | | R | R | | | | | | | JN | JN | JN | 2000 EN |
| Benzo(k)fluoranthene | | | | R | R | | | | | | | JN | JN | JN | 2000 EN |
| Benzo(a)pyrene | | | | R | R | | | | | | | | | | 760 |
| Indeno(1,2,3-cd)pyrene | | | | R | R | | | | | | | | | | J |
| Dibenz(a,h)anthracene | | | | R | R | | | | | | | | | | J |
| Benzo(g,h,i)perylene | | | | R | R | | | | | | | | | | J |

NOTES:
Blank space - compound analyzed for but not detected
- compound found in lab blank as well as sample, indicates possible/probable blank contamination
- estimated value
- estimated value, compound present below CRQL but above IDL
- analysis did not pass EPA QA/QC
- Presumptive evidence of the presence of the material
R - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

100019

02-9003-01-SI
Rev. No. 0

SI[illegible]
TDD#: 02-9003-01
SAMPLING DATES: 04/18/[illegible] [illegible]4/19/90
EPA CASE NO.: 13909 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| SEMI-VOLATILES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-S1 | NYJL-S2(MS/MSD) | NYJL-S3 | NYJL-S4 | NYJL-S7 | NYJL-S11(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-TRBK1 |
| Traffic Report No | BEB50 | BEB51 | BEB52 | BEB53 | BEB58 | BEB60 | BEB61 | BEB62 | BEB63 | BEB64 | BEB69 |
| Matrix | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | WATER | WATER | WATER | WATER | WATER |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | .99 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | N/A |
| Percent Moisture | 27 | 52 | 18 | 13 | 12 | 24 | -- | -- | -- | -- | N/A |
| Phenol | | | | | | | | | | | NR |
| bis(2-Chloroethyl)ether | | | | | | | | | | | NR |
| 2-Chlorophenol | | | | | | | | | | | NR |
| 1,3-Dichlorobenzene | | | | | | | | | | | NR |
| 1,4-Dichlorobenzene | | | | | | | | | | | NR |
| Benzyl alcohol | | | | | | | | | | | NR |
| 1,2-Dichlorobenzene | | | | | | | | | | | NR |
| 2-Methylphenol | | | | | | | | | | | NR |
| bis(2-Chloroisopropyl)ether | | | | | | | | | | | NR |
| 4-Methylphenol | | | | | | | | | | | NR |
| N-Nitroso-di-n-dipropylamine | | | | | | | | | | | NR |
| Hexachloroethane | | | | | | | | | | | NR |
| Nitrobenzene | | | | | | | | | | | NR |
| Isophorone | | | | | | | | | | | NR |
| 2-Nitrophenol | | | | | | | | | | | NR |
| 2,4-Dimethylphenol | | | | | | | | | | | NR |
| Benzoic acid | | 3 | 3 | | 3 | 3 | | | | | NR |
| bis(2-Chloroethoxy)methane | | | | | | | | | | | NR |
| 2,4-Dichlorophenol | | | | | | | | | | | NR |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | NR |
| Naphthalene | | | | | | | | | | | NR |
| 4-Chloroaniline | | | | | | | | | | | NR |
| Hexachlorobutadiene | | | | | | | | | | | NR |
| 4-Chloro-3-Methylphenol | | | | | | | | | | | NR |
| 2-Methylnaphthalene | | | | | | | | | | | NR |
| Hexachlorocyclopentadiene | | | | | | | | | | | NR |
| 2,4,6-Trichlorophenol | | | | | | | | | | | NR |
| 2,4,5-Trichlorophenol | | | | | | | | | | | NR |
| 2-Chloronaphthalene | | | | | | | | | | | NR |
| 2-Nitroaniline | | | | | | | | | | | NR |
| Dimethylphthalate | | | | | | | | | | | NR |
| Acenaphthylene | | | | | | | | | | | NR |
| 2,6-Dinitrotoluene | | | | | | | | | | | NR |
| 3-Nitroaniline | | | | | | | | | | | NR |
| Acenaphthene | | | | | | | | | | | NR |
| 2,4-Dinitrophenol | | | | | | | | | | | NR |
| 4-Nitrophenol | | | | | | | | | | | NR |
| Dibenzofuran | | | | | | | | | | | NR |
| 2,4-Dinitrotoluene | | | | | | | | | | | NR |
| Diethylphthalate | | | | | | | | | | | NR |
| 4-Chlorophenyl-phenyl ether | | | | | | | | | | | NR |
| Fluorene | | | | | | | | | | | NR |
| 4-Nitroaniline | | | | | | | | | | | NR |
| 4,6-Dinitro-2-methylphenol | | | | | | | | | | | NR |
| N-nitrosodiphenylamine | | | | | | | | | | | NR |
| 4-Bromophenyl-phenyl ether | | | | | | | | | | | NR |
| Hexachlorobenzene | | | | | | | | | | | NR |

100020

02-9003-01-S1
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13909 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| SEMI-VOLATILES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-S1 | NYJL-S2(MS/MSD) | NYJL-S3 | NYJL-S4 | NYJL-S9 | NYJL-S11(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-TRBK1 |
| Traffic Report No. | BEB50 | BEB51 | BEB52 | BEB53 | BEB58 | BEB60 | BEB61 | BEB62 | BEB63 | BEB64 | BEB69 |
| Matrix | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | WATER | WATER | WATER | WATER | WATER |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | .99 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | N/A |
| Percent Moisture | 27 | 52 | 18 | 13 | 12 | 24 | -- | -- | -- | -- | N/A |
| Pentachlorophenol | | | | | | | | | | | NR |
| Phenanthrene | | | | | J | J | | | | | NR |
| Anthracene | | | | | J | | | | | | NR |
| Di-n-butylphthalate | | J | 690 | | | | | | | | NR |
| Fluoranthene | J | | | | 610 | J | | | | | NR |
| Pyrene | | | | | 630 | J | | | | | NR |
| Butylbenzylphthalate | | | | | | | | | | | NR |
| 3,3'-Dichlorobenzidine | | | | | | | | | | | NR |
| Benzo(a)anthracene | | | | | 410 | J | | | | | NR |
| Chrysene | | | | | 390 | J | | | | | NR |
| bis(2-Ethylhexyl)phthalate | J | J | J | | | J | | | | | NR |
| Di-n-octylphthalate | | | | | | | | | | | NR |
| Benzo(b)fluoranthene | JN | JN | | | 980 EN | 460 EN | | | | | NR |
| Benzo(k)fluoranthene | JN | JN | | | 980 EN | 460 EN | | | | | NR |
| Benzo(a)pyrene | | | | | 440 | J | | | | | NR |
| Indeno(1,2,3-cd)pyrene | | | | | J | J | | | | | NR |
| Dibenz(a,h)anthracene | | | | | J | | | | | | NR |
| Benzo(g,h,i)perylene | | | | | 380 | J | | | | | NR |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

100021

SITE NAME: LI TUNGSTEN
IDO#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 12906 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| SEMI-VOLATILES | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW2 | NYJL-GW3 | NYJL-GW7 | NYJL-GW8 | NYJL-SW7 | NYJL-SW8 | NYJL-SW9 | NYJL-SW10 | NYJL-SED7 | NYJL-SED8 | NYJL-SED9 | NYJL-S5 | NYJL-S6 | NYJL-S7 | NYJL S8 | NYJL-S10 | NYJL-RIN5 | NYJL-RIN6 |
| Traffic Report No. | BEB19 | BEB20 | BEB24 | BEB25 | BEB34 | BEB35 | BEB36 | BEB37 | BEB47 | BEB48 | BEB49 | BEB54 | BEB55 | BEB56 | BEB57 | BEB59 | BEB65 | BEB66 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SOIL | SOIL | SOIL | SOIL | SOIL | WATER | WATER |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Percent Moisture | -- | -- | -- | -- | -- | -- | -- | -- | 56 | 46 | 83 | 18 | 23 | 13 | 18 | 35 | -- | -- |
| Phenol | | R | | | | R | R | | J | | | | | | | | | |
| bis(2-Chloroethyl)ether | | | | | | | | | | | | | | | | | | |
| 2-Chlorophenol | | R | | | | R | R | | | | | | | | | | | |
| 1,3-Dichlorobenzene | | | | | | | | | | | | | | | | | | |
| 1,4-Dichlorobenzene | | | | | | | | | | | | | | | | | | |
| Benzyl alcohol | | | | | | | | | | | | | | | | | | |
| 1,2-Dichlorobenzene | | | | | | | | | | | | | | | | | | |
| 2-Methylphenol | | R | | | | R | R | | | | | | | | | | | |
| bis(2-Chloroisopropyl)ether | | | | | | | | | | | | | | | | | | |
| 4-Methylphenol | | R | | | | R | R | | | | | | | | | | | |
| N-Nitroso-di-n-dipropylamine | | | | | | | | | | | | | | | | | | |
| Hexachloroethane | | | | | | | | | | | | | | | | | | |
| Nitrobenzene | | | | | | | | | | | | | | | | | | |
| Isophorone | | | | | | | | | | | | | | | | | | |
| 2-Nitrophenol | | R | | | | R | R | | | | | | | | | | | |
| 2,4-Dimethylphenol | | R | | | | R | R | | | | | | | | | | | |
| Benzoic acid | | R | | | | R | R | J | J | | | | | | | J | | |
| bis(2-Chloroethoxy)methane | | | | | | | | | | | | | | | | | | |
| 2,4-Dichlorophenol | | R | | | | R | R | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | | | | | | | | | | | | J | | | | | | |
| Naphthalene | | | | | | | | | | | | | | J | | | | |
| 4-Chloroaniline | | | | | | | | | | | | | | | | | | |
| Hexachlorobutadiene | | | | | | | | | | | | | | | | | | |
| 4-Chloro-3-Methylphenol | | R | | | J | R | R | | | | | | | | | | | |
| 2-Methylnaphthalene | | | | | | | | | | | | | | | | | | |
| Hexachlorocyclopentadiene | | | | | | | | | | | | | | | | | | |
| 2,4,6-Trichlorophenol | | R | | | | R | R | | | | | | | | | | | |
| 2,4,5-Trichlorophenol | | R | | | | R | R | | | | | | | | | | | |
| 2-Chloronaphthalene | | | | | | | | | | | | | | | | | | |
| 2-Nitroaniline | | | | | | | | | | | | | | | | | | |
| Dimethylphthalate | | | | | | | | | | | | | | | | | | |
| Acenaphthylene | | | | | | | | | | | | | | | | | | |
| 2,6-Dinitrotoluene | | | | | | | | | | | | | | | | | | |
| 3-Nitroaniline | | | | | | | | | | | | | | | | | | |
| Acenaphthene | | | | | | | | | J | | | | | J | | | | |
| 2,4-Dinitrophenol | | R | | | | R | R | | | | | | | | | | | |
| 4-Nitrophenol | | R | | | | R | R | | | | | | | | | | | |
| Dibenzofuran | | | | | | | | | J | | | | | J | | | | |
| 2,4-Dinitrotoluene | | | | | | | | | | | | | | | | | | |
| Diethylphthalate | | | | | | | | | | | | | | | | | | |
| 4-Chlorophenyl-phenyl ether | | | | | | | | | | | | | | | | | | |
| Fluorene | | | | | | | | | J | | | | | J | | | | |
| 4-Nitroaniline | | | | | | | | | | | | | | | | | | |
| 4,6-Dinitro-2-methylphenol | | R | | | | R | R | | | | | | | | | | | |
| N-nitrosodiphenylamine | | | | | | | | | | | | | | | | | | |
| 4-Bromophenyl-phenyl ether | | | | | | | | | | | | | | | | | | |
| Hexachlorobenzene | | | | | | | | | | | | | | | | | | |

100022

02-9003-01-SI
Rev. No. 0

SITE NAME: LI TUNGSTEN
TOD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13906 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| SEMI-VOLATILES | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW2 | NYJL-GW3 | NYJL-GW7 | NYJL-GW8 | NYJL-SW7 | NYJL-SW8 | NYJL-SW9 | NYJL-SW10 | NYJL-SED7 | NYJL-SED8 | NYJL-SED9 | NYJL-S5 | NYJL-S6 | NYJL-S7 | NYJL-S8 | NYJL-S10 | NYJL-RIN5 | NYJL-RIN6 |
| Traffic Report No | BEB19 | BEB20 | BEB24 | BEB25 | BEB34 | BEB35 | BEB36 | BEB37 | BEB47 | BEB48 | BEB49 | BEB54 | BEB55 | BEB56 | BEB57 | BEB59 | BEB65 | BEB66 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SOIL | SOIL | SOIL | SOIL | SOIL | WATER | WATER |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Percent Moisture | -- | -- | -- | -- | -- | -- | -- | -- | 56 | 46 | 82 | 18 | 23 | 13 | 18 | 35 | -- | -- |
| Pentachlorophenol | | R | | | | R | R | | | | | | | | | | | |
| Phenanthrene | | | | | | | | | 2700 | | | J | J | 390 | | J | | |
| Anthracene | | | | | | | | | J | | | | | J | | | | |
| Di-n-butylphthalate | | | | | | | | | J | | | | | | | J | | |
| Fluoranthene | | | | | | | | | 6800 | | | J | J | 990 | | J | | |
| Pyrene | | | | | | | | | 3900 | | | J | J | 950 | | J | | |
| Butylbenzylphthalate | | | | | | | | | J | | | | | J | | J | | |
| 3,3'-Dichlorobenzidine | | | | | | | | | | | | | | | | | | |
| Benzo(a)anthracene | | | | | | | | | 2400 | | | | J | 560 | | J | | |
| Chrysene | | | | | | | | | 3000 | | | J | J | 540 | | J | | |
| bis(2-Ethylhexyl)phthalate | | | | | | | | | 7200 | | | J | J | J | J | J | | |
| Di-n-octylphthalate | | | | | | | | | J | | | | | | | | | |
| Benzo(b)fluoranthene | | | | | | | | | 3600 | | | JN | JN | 930 EN | | JN | | |
| Benzo(k)fluoranthene | | | | | | | | | 2500 | | | JN | JN | 930 EN | | JN | | |
| Benzo(a)pyrene | | | | | | | | | 2500 | | | J | J | 420 | | J | | |
| Indeno(1,2,3-cd)pyrene | | | | | | | | | J | | | | J | J | | J | | |
| Dibenz(a,h)anthracene | | | | | | | | | J | | | | | J | | | | |
| Benzo(g,h,i)perylene | | | | | | | | | J | | | | J | J | | J | | |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

100023

02-9003-01-SI
Rev. No. 0

SITE NAME: LI TUNGSTEN
TODD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CA NO.: 13906 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| SEMI-VOLATILES | | | |
|---|---|---|---|
| Sample ID No. | NYJL-RIN7 | NYJL-RIN8 | NYJL-TRBX2 |
| Traffic Report No. | BEB67 | BEB68 | BEB70 |
| Matrix | WATER | WATER | WATER |
| Units | ug/L | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | N/A |
| Percent Moisture | -- | -- | N/A |
| Phenol | | | NR |
| bis(2-Chloroethyl)ether | | | NR |
| 2-Chlorophenol | | | NR |
| 1,3-Dichlorobenzene | | | NR |
| 1,4-Dichlorobenzene | | | NR |
| Benzyl alcohol | | | NR |
| 1,2-Dichlorobenzene | | | NR |
| 2-Methylphenol | | | NR |
| bis(2-Chloroisopropyl)ether | | | NR |
| 4-Methylphenol | | | NR |
| N-Nitroso-di-n-dipropylamine | | | NR |
| Hexachloroethane | | | NR |
| Nitrobenzene | | | NR |
| Isophorone | | | NR |
| 2-Nitrophenol | | | NR |
| 2,4-Dimethylphenol | | | NR |
| Benzoic acid | | | NR |
| bis(2-Chloroethoxy)methane | | | NR |
| 2,4-Dichlorophenol | | | NR |
| 1,2,4-Trichlorobenzene | | | NR |
| Naphthalene | | | NR |
| 4-Chloroaniline | | | NR |
| Hexachlorobutadiene | | | NR |
| 4-Chloro-3-Methylphenol | | | NR |
| 2-Methylnaphthalene | | | NR |
| Hexachlorocyclopentadiene | | | NR |
| 2,4,6-Trichlorophenol | | | NR |
| 2,4,5-Trichlorophenol | | | NR |
| 2-Chloronaphthalene | | | NR |
| 2-Nitroaniline | | | NR |
| Dimethylphthalate | | | NR |
| Acenaphthylene | | | NR |
| 2,6-Dinitrotoluene | | | NR |
| 3-Nitroaniline | | | NR |
| Acenaphthene | | | NR |
| 2,4-Dinitrophenol | | | NR |
| 4-Nitrophenol | | | NR |
| Dibenzofuran | | | NR |
| 2,4-Dinitrotoluene | | | NR |
| Diethylphthalate | | | NR |
| 4-Chlorophenyl-phenyl ether | | | NR |
| Fluorene | | | NR |
| 4-Nitroaniline | | | NR |
| 4,6-Dinitro-2-methylphenol | | | NR |
| N-nitrosodiphenylamine | | | NR |
| 4-Bromophenyl-phenyl ether | | | NR |
| Hexachlorobenzene | | | NR |

100024

02-9003-01-02
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CAS NO.: 13906 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| SEMI-VOLATILES | | | |
|---|---|---|---|
| Sample ID No. | NYJL-RIN7 | NYJL-RIN8 | NYJL-TRBK2 |
| Traffic Report No. | BEB67 | BEB68 | BEB70 |
| Matrix | WATER | WATER | WATER |
| Units | ug/L | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | N/A |
| Percent Moisture | -- | -- | N/A |
| Pentachlorophenol | | | NR |
| Phenanthrene | | | NR |
| Anthracene | | | NR |
| Di-n-butylphthalate | | | NR |
| Fluoranthene | | | NR |
| Pyrene | | | NR |
| Butylbenzylphthalate | | | NR |
| 3,3'-Dichlorobenzidine | | | NR |
| Benzo(a)anthracene | | | NR |
| Chrysene | | | NR |
| bis(2-Ethylhexyl)phthalate | | | NR |
| Di-n-octylphthalate | | | NR |
| Benzo(b)fluoranthene | | | NR |
| Benzo(k)fluoranthene | | | NR |
| Benzo(a)pyrene | | | NR |
| Indeno(1,2,3-cd)pyrene | | | NR |
| Dibenz(a,h)anthracene | | | NR |
| Benzo(g,h,i)perylene | | | NR |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

100025

02-9003-01-SI
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO. 13906 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| PESTICIDES | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW1 | NYJL-GW4 | NYJL-GW5 | NYJL-GW9 | NYJL-GW10(DUP) | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3 | NYJL-SW4 | NYJL-SW6 | NYJL-SW13(DUP) | NYJL-SED2 | NYJL-SED3 | NYJL-SED4 | NYJL-SED6 |
| Traffic Report No. | BEB18 | BEB21 | BEB22 | BEB26 | BEB27 | BEB28 | BEB29 | BEB30 | BEB31 | BEB33 | BEB40 | BEB42 | BEB43 | BEB44 | BEB46 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SEDIMENT |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/kg | ug/kg |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 |
| Percent Moisture | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 24 | 45 | 40 | 40 |
| alpha-BHC | | | R | | | | | | | | | | | | R |
| beta-BHC | | | R | | | | | | | | | | | | R |
| delta-BHC | | | R | | | | | | | | | | | | R |
| gamma-BHC (Lindane) | | | R | | | | | | | | | | | | R |
| Heptachlor | | | R | | | | | | | | | | | | R |
| Aldrin | | | R | | | | | | | | | | | | R |
| Heptachlor epoxide | | | R | | | | | | | | | | | | |
| Endosulfan I | | | R | | | | | | | | | | | | |
| Dieldrin | | | | | | | | | | | | | | | |
| 4,4'-DDE | | | | | | | | | | | | | | | |
| Endrin | | | | | | | | | | | | | | | |
| Endosulfan II | | | | | | | | | | | | | | | |
| 4,4'-DDD | | | | | | | | | | | | | | | |
| Endosulfan sulfate | | | | | | | | | | | | | | | |
| 4,4'-DDT | | | | | | | | | | | | | | | |
| Methoxychlor | | | | | | | | | | | | | | | |
| Endrin ketone | | | | | | | | | | | | | | | |
| alpha-Chlordane | | | | | | | | | | | | | | | |
| gamma-Chlordane | | | | | | | | | | | | | | | |
| Toxaphene | | | | | | | | | | | | | | | |
| Aroclor-1016 | | | | | | | | | | | | | | | |
| Aroclor-1221 | | | | | | | | | | | | | | | |
| Aroclor-1232 | | | | | | | | | | | | | | | |
| Aroclor-1242 | | | | | | | | | | | | | | | |
| Aroclor-1248 | | | | | | | | 2.6 | | | | 9600 | 50000 | 610 | |
| Aroclor-1254 | | | | | | 2 | | 1.4 | | | 2.2 | 1600 | | | |
| Aroclor-1260 | | | | | | | | | | | | | | | |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

100026

02-9003-01-S1
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13909 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| PESTICIDES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-S1 | NYJL-S2(MS/MSD) | NYJL-S3 | NYJL-S4 | NYJL-S9 | NYJL-S11(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-TRBK1 |
| Traffic Report No. | BEB50 | BEB51 | BEB52 | BEB53 | BEB58 | BEB60 | BEB61 | BEB62 | BEB63 | BEB64 | BEB69 |
| Matrix | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | WATER | WATER | WATER | WATER | WATER |
| Units | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | N/A |
| Percent Moisture | 27 | 52 | 18 | 13 | 12 | 24 | -- | -- | -- | -- | N/A |
| alpha-BHC | | | R | | | | | | | | NR |
| beta-BHC | | | R | | | | | | | | NR |
| delta-BHC | | | R | | | | | | | | NR |
| gamma-BHC (Lindane) | | | R | | | | | | | | NR |
| Heptachlor | | | R | | | | | | | | NR |
| Aldrin | | | R | | | | | | | | NR |
| Heptachlor epoxide | | | R | | | | | | | | NR |
| Endosulfan I | | | R | | | | | | | | NR |
| Dieldrin | | | | | | | | | | | NR |
| 4,4'-DDE | 34 | | | | | | | | | | NR |
| Endrin | | | | | | | | | | | NR |
| Endosulfan II | | | | | | | | | | | NR |
| 4,4'-DDD | | | | | | | | | | | NR |
| Endosulfan sulfate | | | | | | | | | | | NR |
| 4,4'-DDT | 60 | | | | | 57 | | | | | NR |
| Methoxychlor | | | | | | | | | | | NR |
| Endrin ketone | | | | | | | | | | | NR |
| alpha-Chlordane | | | | | | | | | | | NR |
| gamma-Chlordane | | | | | | | | | | | NR |
| Toxaphene | | | | | | | | | | | NR |
| Aroclor-1016 | | | | | | | | | | | NR |
| Aroclor-1221 | | | | | | | | | | | NR |
| Aroclor-1232 | | | | | | | | | | | NR |
| Aroclor-1242 | | | | | | | | | | | NR |
| Aroclor-1248 | | | | | 4700 | | | | | | NR |
| Aroclor-1254 | | | | | 2900 | | | | | | NR |
| Aroclor-1260 | | | | | | | | | | | NR |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
M - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

100027

Rev. No. 0

SITE NAME: LI TUNGST
TDDB: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13906 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| PESTICIDES | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW2 | NYJL-GW3 | NYJL-GW7 | NYJL-GW8 | NYJL-SW7 | NYJL-SW8 | NYJL-SW9 | NYJL-SW10 | NYJL-SED7 | NYJL-SED8 | NYJL-SED9 | NYJL-S5 | NYJL-S6 | NYJL-S7 | NYJL-S8 | NYJL-S10 | NYJL-RIN5 | NYJL-RIN6 |
| Traffic Report No. | BEB19 | BEB20 | BEB24 | BEB25 | BEB34 | BEB35 | BEB36 | BEB37 | BEB47 | BEB48 | BEB49 | BEB54 | BEB55 | BEB56 | BEB57 | BEB59 | BEB65 | BEB66 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SOIL | SOIL | SOIL | SOIL | SOIL | WATER | WATER |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/kg | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Percent Moisture | -- | -- | -- | -- | -- | -- | -- | -- | 56 | 46 | 82 | 18 | 23 | 13 | 18 | 35 | -- | -- |
| alpha-BHC | | | | | | | | | | | | | | | | | | |
| beta-BHC | | | | | | | | | | | | | | | | | | |
| delta-BHC | | | | | | | | | | | | | | | | | | |
| gamma-BHC (Lindane) | | | | | | | | | | | | | | | | | | |
| Heptachlor | | | | | | | | | | | | | | | | | | |
| Aldrin | | | | | | | | | | | | | | | | | | |
| Heptachlor epoxide | | | | | | | | | | | 67 E | | | | | | | |
| Endosulfan I | | | | | | | | | | | | | | | | | | |
| Dieldrin | | | | | | | | | | | | | | | | | | |
| 4,4'-DDE | | | | | | | | | | 170 | | | | | | | | |
| Endrin | | | | | | | | | | | | | | | | | | |
| Endosulfan II | | | | | | | | | | | | | | | | | | |
| 4,4'-DDD | | | | | | 0.17 | | | 70 | 150 | | | | | | | | |
| Endosulfan sulfate | | | | | | | | | | | | | | | | | | |
| 4,4'-DDT | | | | | | | | | | | | | 71 | | | | | |
| Methoxychlor | | | | | | | | | | | | | | | | | | |
| Endrin ketone | | | | | | | | | | | | | | | | | | |
| alpha-Chlordane | | | | | | | | | | | | | | | | | | |
| gamma-Chlordane | | | | | | | | | | | | | | | | | | |
| Toxaphene | | | | | | | | | | | | | | | | | | |
| Aroclor-1016 | | | | | | | | | | | | | | | | | | |
| Aroclor-1221 | | | | | | | | | | | | | | | | | | |
| Aroclor-1232 | | | | | | | | | | | | | | | | | | |
| Aroclor-1242 | | | | | | | | | | | | | | | | | | |
| Aroclor-1248 | | | | | | | | | | | | | | | | | | |
| Aroclor-1254 | | | | | | | | | | | | 540 | | 640 | | 690 | | |
| Aroclor-1260 | | | | | | | | | | | | | | | | | | |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

100028

02-9003-01-SI
Rev. No. 0

SITE NAME: LI TUNGSTEN
ICD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13906 LAB: COMPUCHEM

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| PESTICIDES | | | |
|---|---|---|---|
| Sample ID No | NYJL-RIN7 | NYJL-RIN8 | NYJL-TR6K2 |
| Traffic Report No. | BEB67 | BEB68 | BEB70 |
| Matrix | WATER | WATER | WATER |
| Units | ug/L | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | N/A |
| Percent Moisture | -- | -- | N/A |
| alpha-BHC | | | NR |
| beta-BHC | | | NR |
| delta-BHC | | | NR |
| gamma-BHC (Lindane) | | | NR |
| Heptachlor | | | NR |
| Aldrin | | | NR |
| Heptachlor epoxide | | | NR |
| Endosulfan I | | | NR |
| Dieldrin | | | NR |
| 4,4'-DDE | | | NR |
| Endrin | | | NR |
| Endosulfan II | | | NR |
| 4,4'-DDD | | | NR |
| Endosulfan sulfate | | | NR |
| 4,4'-DDT | | | NR |
| Methoxychlor | | | NR |
| Endrin ketone | | | NR |
| alpha-Chlordane | | | NR |
| gamma-Chlordane | | | NR |
| Toxaphene | | | NR |
| Aroclor-1016 | | | NR |
| Aroclor-1221 | | | NR |
| Aroclor-1232 | | | NR |
| Aroclor-1242 | | | NR |
| Aroclor-1248 | | | NR |
| Aroclor-1254 | | | NR |
| Aroclor-1260 | | | NR |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor 1 and/or percent moisture 0%

100029

02-9003-01-01
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13906
LAB NAME: ENSECO/RMAL

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| INORGANICS | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW1 | NYJL-GW4 | NYJL-GW5 | NYJL-GW9 | NYJL-GW10(DUP) | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3 | NYJL-SW4 | NYJL-SW6 | NYJL-SW13(DUP) | NYJL-SED2 | NYJL-SED3 | NYJL-SED4 | NYJL-SED6 |
| Traffic Report No. | MBCJ01 | MBCJ04 | MBCJ05 | MBCJ09 | MBCJ10 | MBCJ11 | MBCJ12 | MBCJ13 | MBCJ14 | MBCJ16 | MBCJ23 | MBCJ25 | MBCJ26 | MBCJ27 | MBCJ29 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SEDIMENT |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | mg/kg | mg/kg | mg/kg | mg/kg |
| Aluminum | 32600 | 171000 | | 122000 | 120000 | J | 409 | 931 | 204 | J | J | 2190 | 3560 | 12600 | 6000 E |
| Antimony | 68.8 | | 3390 | 184 | 212 | | 73.1 | 212 | | | | 3320 E | 3290 E | 245 E | |
| Arsenic | | J | R | 2690 | 2800 | J | 50.2 | 145 E | 15.2 | | J | 1240 | 1770 | 228 | 20.1 E |
| Barium | 525 | 707 | J | J | J | J | J | J | J | J | J | 333 | 387 | 131 | J |
| Beryllium | J | 11.1 | | 11.2 | 12.3 | | | | | | | | | 2.8 | J |
| Cadmium | | | | | | | | | | | | 5.6 | 10.1 | 5.9 | 8.3 E |
| Calcium | 26100 | 28000 | 214000 | 541000 | 572000 | 6560 | 6670 | 40600 | 449000 | 71200 | 6930 | 2800 | 24000 | 149000 | 6640 E |
| Chromium | 97.9 | 344 | J | 137 | 132 | | J | J | | | | 24.5 | 78.7 | 62 | 34.5 E |
| Cobalt | 128 | 221 | | 353 | 358 | | 61.2 | 475 | 85.8 | J | | 18.1 | 60.8 | 1390 | 53.6 E |
| Copper | 171 E | 276 E | J | 231 E | 212 E | J | 103 E | 640 E | 48.2 E | J | 26.4 | 171 E | 454 E | 994 E | 281 E |
| Iron | 228000 | 257000 | 6390 | 370000 | 384000 | 174 | 2150 | 4530 | 547 | 871 | 141 | 46400 | 145000 | 20900 | 19200 E |
| Lead | 31.1 | 209 | R | 144 E | 88.6 E | J | 141 | 195 | 102 E | J | J | 2950 | 5140 | 937 | 254 E |
| Magnesium | 17900 | 46300 | J | 179000 | 187000 | J | J | J | 15900 | 175000 | J | J | J | 24100 | 4240 E |
| Manganese | 3990 | 7620 | 1730 | 35300 | 37300 | J | 108 | 535 | 138 | 173 | J | 221 | 260 | 1110 | 245 E |
| Mercury | 0.42 | 13 | 0.48 | 0.28 | 0.25 | | 0.21 | 0.66 | | | | 4.4 E | 9 E | 0.71 E | 0.45 E |
| Nickel | 135 | 213 | | 339 | 336 | J | 50 | 140 | J | J | J | | | 291 | 82.3 E |
| Potassium | 10100 E | 14100 E | J | 25400 E | 25600 E | J | J | J | 5920 E | 49000 E | J | J | 3430 | 3510 | J |
| Selenium | | | | | | | | | J | | | J | 19 E | | |
| Silver | | | | | | J | 15 | 23.6 | J | | | 103 | 136 | 32.2 | 33.8 E |
| Sodium | 10600 | 9940 | 13100000 | 1390000 | 1460000 | 36100 | 14100 | 56300 | 21700 | 1360000 | 36700 | | J | | 5150 E |
| Thallium | | | | | | | | | | | | R | R | R | R |
| Vanadium | 125 | 512 | | 198 | 181 | | | | | | | | | 56.5 E | 28.3 E |
| Zinc | 508 E | 825 E | J | 5940 E | 6200 E | 20.7 E | 93.3 E | 229 E | 31.4 E | J | R | 119 E | 197 E | 551 E | 1720 E |
| Cyanide | | 13.6 | | | | | | | | | | | | | |

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

100030

02-9003-01-02
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13906
LAB NAME: ENSECO/RMAL

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| INORGANICS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-S1 | NYJL-S2(MS/MSD) | NYJL-S3 | NYJL-S4 | NYJL-S9 | NYJL-S11(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-TRBK1 |
| Traffic Report No. | MBCJ33 | MBCJ34 | MBCJ35 | MBCJ36 | MBCJ41 | MBCJ43 | MBCJ44 | MBCJ45 | MBCJ46 | MBCJ47 | N/A |
| Matrix | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | WATER | WATER | WATER | WATER | N/A |
| Units | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Aluminum | 6150 | 32300 E | 330 | 519 | 4960 | 5550 | | | | | NR |
| Antimony | 258 E | 272 E | 796 E | 188 E | 296 E | 189 E | | | | | NR |
| Arsenic | 309 | 2600 E | 3370 | 3700 | 233 | 413 | | | | | NR |
| Barium | J | 492 E | J | J | 177 | J | | | | | NR |
| Beryllium | J | 8.9 E | | | J | | | | | | NR |
| Cadmium | J | 49 E | 14.9 | 16 | 9.1 | 1.5 | | | | | NR |
| Calcium | J | 59200 E | J | J | 2200 | J | | | | | NR |
| Chromium | 14.3 | 172 E | | 39.1 | 20.5 | 14 | | | | | NR |
| Cobalt | J | 198 E | J | J | 73.5 | J | | | | | NR |
| Copper | 46.2 E | 3080 E | 2190 E | 752 E | 1150 E | 46.5 E | | | J | J | NR |
| Iron | 28500 | 172000 E | 327000 | 246000 | 60100 | 31600 | J | J | J | | NR |
| Lead | 179 | 16000 E | 9090 | 1960 | 8660 | 188 | | | | | NR |
| Magnesium | J | 2470 E | J | J | 1540 | J | | | | | NR |
| Manganese | 87.3 | 25100 E | 2260 | 5290 | 2120 | 85.4 | | | | | NR |
| Mercury | 0.54 E | 13 E | 0.68 E | 0.6 E | 1.4 E | 0.37 E | | | | | NR |
| Nickel | J | 53.9 E | | | 165 | J | | | | | NR |
| Potassium | J | J | J | J | J | J | | | | | NR |
| Selenium | | | 2.5 E | 3.4 E | 10 E | | | | | | NR |
| Silver | 4.8 | 65.5 E | 156 | 84.3 | 55.5 | 5.5 | | | | | NR |
| Sodium | | | 8540 | | | J | | | | | NR |
| Thallium | R | R | R | R | R | R | | | | | NR |
| Vanadium | 20.8 E | 117 E | J | J | 22.7 E | 20.3 E | | | | | NR |
| Zinc | 43.3 E | 2980 E | 1330 E | 1240 E | 559 E | 39.7 E | | | | J | NR |
| Cyanide | | 1.5 E | | | | | | | | | NR |

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13906
LAB NAME: ENSECO/RMAL

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| INORGANICS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-GW2 | NYJL-GW3 | NYJL-GW7 | NYJL-GW8 | NYJL-SW7 | NYJL-SW8 | NYJL-SW9 | NYJL-SW10 | NYJL-SED7 | NYJL-SED8 | NYJL-SED9 | NYJL-S5 |
| Traffic Report No. | MBCJ02 | MBCJ03 | MBCJ07 | MBCJ08 | MBCJ17 | MBCJ18 | MBCJ19 | MBCJ20 | MBCJ30 | MBCJ31 | MBCJ32 | MBCJ37 |
| Matrix | WATER | WATER | WATER | WATER | WATER | WATER | WATER | WATER | SEDIMENT | SEDIMENT | SEDIMENT | SOIL |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | mg/kg | mg/kg | mg/kg | mg/kg |
| Aluminum | 152000 | 115000 | 3970 | 3910 | J | 581 | 338 | J | 9200 E | 7570 | 5540 E | 16300 |
| Antimony | J | | 276 | J | | 86.2 | | 877 | | | 104 E | 310 E |
| Arsenic | J | J | 81.7 | 31.8 | | 43.8 | 17.2 | J | 17.1 E | 45.9 | 193 E | 437 |
| Barium | 963 | 894 | J | J | J | J | J | J | J | 116 | 1340 E | 860 |
| Beryllium | 11 | 9.4 | | | | | | | J | J | J | 2 |
| Cadmium | 53.6 | 14 E | 29.1 | | | 7.5 E | | 15.2 E | R | | J | 16.5 |
| Calcium | 39900 | 88100 | 90600 | 130000 | 32400 | 52500 | 37700 | 37500 | 19900 E | J | 13200 E | 36800 |
| Chromium | 369 | 271 | 23.7 | 20.9 | | | | 66.2 | 47.4 E | 20.4 | 87.6 E | 160 |
| Cobalt | 115 | 109 | 703 | 52.9 | | 3020 | 805 | 17500 | 30 E | 92.1 | 7910 E | 2270 |
| Copper | 231 E | 2080 E | 391 E | 60.8 E | J | 169 E | 55.9 E | 1570 | 268 E | 26.1 E | 571 E | 4180 E |
| Iron | 246000 | 231000 | 9450 | 34200 | 663 | 17300 | 24200 | 6580 | 21000 E | 22800 | 239000 E | 85900 |
| Lead | 146 | 121 | 198 | 7.3 | | 30.8 | 13.2 E | 153 | 345 E | 31.5 E | 356 E | 3390 |
| Magnesium | 57200 | 42500 | 13000 | 19300 | 29000 | 14700 | 12700 | 18600 E | 7990 E | 1990 | J | 48900 |
| Manganese | 3900 | 8190 | 1480 | 829 | 93.5 | 2280 | 7200 | 29500 | 212 E | 205 | 65100 E | 18400 |
| Mercury | 0.25 | | 0.87 | 0.29 | | | | 0.84 | 0.53 E | | | 1.7 E |
| Nickel | 243 | 225 | 525 | 50 | | 1700 | 369 | 76900 | 48.3 E | 44.4 | 3320 E | 9130 |
| Potassium | 34100 E | 11400 E | 8720 E | 9380 E | 9290 E | 8970 E | J | 7633 | J | J | J | J |
| Selenium | | | J | | | | | | | | | 1.9 E |
| Silver | | | J | | | | | 34.6 | 37.6 E | | 23.6 E | 75.6 |
| Sodium | 23300 | 45500 | 117000 | 35900 | 202000 | 69800 | 21300 | 464000 | 13500 E | | | 4460 |
| Thallium | | | | | | | | | R | R | R | R |
| Vanadium | 421 | 320 | J | J | | J | | | 37.7 E | 32.9 E | J | 43.3 E |
| Zinc | 632 E | 1820 E | 3840 E | 160 E | J | 1530 E | 81.4 E | P | 390 E | 96.9 E | 622 E | 1570 E |
| Cyanide | | 11.4 | | | | | | | | | | |

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

100032

02-9003-01-01
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDDB: 02-9003-01
SAMPLING DATES: 04/18/90-04/19/90
EPA CASE NO.: 13906
LAB NAME: ENSECO/RMAL

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| INORGANICS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-S6 | NYJL-S7 | NYJL-S8 | NYJL-S10 | NYJL-RIN5 | NYJL-RIN6 | NYJL-RIN7 | NYJL-RIN8 | NYJL-TRBK2 |
| Traffic Report No. | MBCJ39 | MBCJ39 | MBCJ40 | MBCJ42 | MBCJ48 | MBCJ49 | MBCJ50 | MBCJ51 | N/A |
| Matrix | SOIL | SOIL | SOIL | SOIL | WATER | WATER | WATER | WATER | N/A |
| Units | mg/kg | mg/kg | mg/kg | mg/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Aluminum | 2710 | 8750 | 9840 | 11200 | | J | | | NR |
| Antimony | 458 E | 17.7 | | | | | | | NR |
| Arsenic | 452 | 44.1 | 33 | 10.5 | | | | | NR |
| Barium | 83.1 | 66.9 | 109 | 95.2 | | | | | NR |
| Beryllium | J | J | J | J | | | | | NR |
| Cadmium | 17.4 | 2 | 1.4 | 1.7 | | | | 31.6 | NR |
| Calcium | 4770 | 14700 | J | 4580 | | | | | NR |
| Chromium | 13.3 | 19.3 | 24.2 | 23.6 | | | | | NR |
| Cobalt | J | 21.4 | J | 16 | | | | | NR |
| Copper | 1030 E | 172 E | 317 E | 42.1 E | J | | J | | NR |
| Iron | 48700 | 14700 | 60200 | 17200 | J | J | 122 | J | NR |
| Lead | 14200 | 324 | 58 | 240 | | | | | NR |
| Magnesium | J | 8950 | 1230 | 2130 | | | | | NR |
| Manganese | 154 | 403 | 340 | 760 | | | | | NR |
| Mercury | 0.9 E | 1.1 E | | 0.36 E | | | | | NR |
| Nickel | J | 29.5 | 9.8 | 25.4 | | | | J | NR |
| Potassium | J | J | J | J | | | | | NR |
| Selenium | 13.6 E | | | | | | | | NR |
| Silver | 125 | 2.6 | | | | | | | NR |
| Sodium | | | | | | | | | NR |
| Thallium | R | R | R | R | | | | | NR |
| Vanadium | 39.5 E | 32.4 E | 39.2 E | 50.4 E | | | | | NR |
| Zinc | 847 E | 166 E | 52.6 E | 179 E | J | J | J | J | NR |
| Cyanide | | | | | | | | | NR |

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

100033

02-9003-01
Rev. No. 0

SITE NAME: LI [illegible]
TDD#: 02-9003-01
SAMPLING DATE: 5/15/90
EPA CASE NO.: 14115 LAB: NET MID-ATLANTIC

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| VOLATILES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3(DUP) | NYJL-SED1(MS/MSD) | NYJL-SED2(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-TBLK1 |
| Traffic Report No. | BDK63 | BDK64 | BDK65 | BDK66 | BDK67 | BDK68 | BDK69 | BDK72 | BDK73 | BDP03 |
| Matrix | WATER | WATER | WATER | SEDIMENT | SEDIMENT | WATER | WATER | WATER | WATER | WATER |
| Units | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Dilution Factor | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Percent Moisture | -- | -- | -- | 44 | 45 | -- | -- | -- | -- | -- |
| Chloromethane | | | | | | | | | | |
| Bromomethane | | | | | | | | | | |
| Vinyl Chloride | | | | | | | | | | |
| Chloroethane | | | | | | | | | | |
| Methylene Chloride | | | | J | | | | | | |
| Acetone | | | | | | | | | | |
| Carbon Disulfide | | | | | | | | | | |
| 1,1-Dichloroethene | | | | | | | | | | |
| 1,1-Dichloroethane | | | | | | | | | | |
| Trans-1,2-Dichloroethene (total) | | | | | | | | | | |
| Chloroform | | | | | | | | | | |
| 1,2-Dichloroethane | | | | | | | | | | |
| 2-Butanone | | | | R | R | | | | | |
| 1,1,1-Trichloroethane | | | | | | | | | | |
| Carbon Tetrachloride | | | | | | | | | | |
| Vinyl Acetate | | | | | | | | | | |
| Bromodichloromethane | | | | | | | | | | |
| 1,2-Dichloropropane | | | | | | | | | | |
| cis-1,3-Dichloropropene | | | | | | | | | | |
| Trichloroethene | | 7 | | | | | | | | |
| Dibromochloromethane | | | | | | | | | | |
| 1,1,2-Trichloroethane | | 36 | | | | | | | | |
| Benzene | | | | | | | | | | |
| trans-1,3-Dichloropropene | | | | | | | | | | |
| Bromoform | | | | | | | | | | |
| 4-Methyl-2-Pentanone | | | | | | | | | | |
| 2-Hexanone | | | | | | | | | | |
| Tetrachloroethene | | | | | | | | | | |
| Toluene | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | | | | | | | | | | |
| Chlorobenzene | | | | | | | | | | |
| Ethylbenzene | | | | | | | | | | |
| Styrene | | | | | | | | | | |
| Xylenes (Total) | | | | | | | | | | |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution

100034

SITE NAME: LI TUNGSTE
TDD#: 02-9003-01
SAMPLING DATE: 5/15/90
EPA CASE NO.: 14115 LAB: NET MID-ATLANTIC

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| SEMI-VOLATILES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample Id No. | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3(DUP) | NYJL-SED1(MS/MSD) | NYJL-SED2(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-TBLK1 |
| Traffic Report No. | BDK63 | BDK64 | BDK65 | BDK66 | BDK67 | BDK68 | BDK69 | BDK72 | BDK73 | BDP03 |
| Matrix | WATER | WATER | WATER | SEDIMENT | SEDIMENT | WATER | WATER | WATER | WATER | WATER |
| Units | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | N/A |
| Percent Moisture | -- | -- | -- | 44 | 45 | -- | -- | -- | -- | N/A |
| Phenol | | | | | | | | | | NR |
| bis(2-Chloroethyl)ether | | | | | | | | | | NR |
| 2-Chlorophenol | | | | | | | | | | NR |
| 1,3-Dichlorobenzene | | | | | | | | | | NR |
| 1,4-Dichlorobenzene | | | | | | | | | | NR |
| Benzyl alcohol | | | | | | | | | | NR |
| 1,2-Dichlorobenzene | | | | | | | | | | NR |
| 2-Methylphenol | | | | | | | | | | NR |
| bis(2-Chloroisopropyl)ether | | | | | | | | | | NR |
| 4-Methylphenol | | | | | | | | | | NR |
| N-Nitroso-di-n-dipropylamine | | | | | | | | | | NR |
| Hexachloroethane | | | | | | | | | | NR |
| Nitrobenzene | | | | | | | | | | NR |
| Isophorone | | | | | | | | | | NR |
| 2-Nitrophenol | | | | | | | | | | NR |
| 2,4-Dimethylphenol | | | | | | | | | | NR |
| Benzoic acid | | | | | J | | | | | NR |
| bis(2-Chloroethoxy)methane | | | | | | | | | | NR |
| 2,4-Dichlorophenol | | | | | | | | | | NR |
| 1,2,4-Trichlorobenzene | | | | | | | | | | NR |
| Naphthalene | | | | | | | | | | NR |
| 4-Chloroaniline | | | | | | | | | | NR |
| Hexachlorobutadiene | | | | | | | | | | NR |
| 4-Chloro-3-Methylphenol | | | | | | | | | | NR |
| 2-Methylnaphthalene | | | | | | | | | | NR |
| Hexachlorocyclopentadiene | | | | | | | | | | NR |
| 2,4,6-Trichlorophenol | | | | | | | | | | NR |
| 2,4,5-Trichlorophenol | | | | | | | | | | NR |
| 2-Chloronaphthalene | | | | | | | | | | NR |
| 2-Nitroaniline | | | | | | | | | | NR |
| Dimethylphthalate | | | | | | | | | | NR |
| Acenaphthylene | | | | | | | | | | NR |
| 2,6-Dinitrotoluene | | | | | | | | | | NR |
| 3-Nitroaniline | | | | | | | | | | NR |
| Acenaphthene | | | | | | | | | | NR |
| 2,4-Dinitrophenol | | | | | | | | | | NR |
| 4-Nitrophenol | | | | | | | | | | NR |
| Dibenzofuran | | | | | | | | | | NR |
| 2,4-Dinitrotoluene | | | | | | | | | | NR |
| Diethylphthalate | | | | | | | | | | NR |
| 4-Chlorophenyl-phenyl ether | | | | | | | | | | NR |
| Fluorene | | | | | | | | | | NR |
| 4-Nitroaniline | | | | | | | | | | NR |
| 4,6-Dinitro-2-methylphenol | | | | | | | | | | NR |
| N-nitrosodiphenylamine | | | | | | | | | | NR |
| 4-Bromophenyl-phenyl ether | | | | | | | | | | NR |
| Hexachlorobenzene | | | | | | | | | | NR |

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02-9003-01-SI
Rev. No. 0

SITE NAME: LI TUNGSTEN
TDD#: 02-9003-01
SAMPLING DATE: 5/15/90
EPA CASE NO.: 14115 LAB: NET MID-ATLANTIC

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| SEMI-VOLATILES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3(DUP) | NYJL-SED1(MS/MSD) | NYJL-SED2(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-T6LK1 |
| Traffic Report No. | BDK63 | BDK64 | BDK65 | BDK66 | BDK67 | BDK68 | BDK69 | BDK72 | BDK73 | BDP03 |
| Matrix | WATER | WATER | WATER | SEDIMENT | SEDIMENT | WATER | WATER | WATER | WATER | WATER |
| Units | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | N/A |
| Percent Moisture | -- | -- | -- | 44 | 45 | -- | -- | -- | -- | N/A |
| Pentachlorophenol | | | | | | | | | | NR |
| Phenanthrene | | | | | | | | | | NR |
| Anthracene | | | | | | | | | | NR |
| Di-n-butylphthalate | | | | | J | | | | | NR |
| Fluoranthene | | | | | | | | | | NR |
| Pyrene | | | | | | | | | | NR |
| Butylbenzylphthalate | | | | | | | | | | NR |
| 3,3'-Dichlorobenzidine | | | | | | | | | | NR |
| Benzo(a)anthracene | | | | | | | | | | NR |
| Chrysene | | | | | | | | | | NR |
| bis(2-Ethylhexyl)phthalate | | | | J | J | | | | | NR |
| Di-n-octylphthalate | | | | | | | | | | NR |
| Benzo(b)fluoranthene | | | | | | | | | | NR |
| Benzo(k)fluoranthene | | | | | | | | | | NR |
| Benzo(a)pyrene | | | | | | | | | | NR |
| Indeno(1,2,3-cd)pyrene | | | | | | | | | | NR |
| Dibenz(a,h)anthracene | | | | | | | | | | NR |
| Benzo(g,h,i)perylene | | | | | | | | | | NR |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: LI TUNGSTEN
IDD#: 02-9003-01
SAMPLING DATE: 5/15/90
EPA CASE NO.: 14115 LAB: NET MID-ATLANTIC

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
## (cont'd)

| PESTICIDES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3(DUP) | NYJL SED1(MS MSD) | NYJL SED2(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-TBLK1 |
| Traffic Report No. | BDK63 | BDK64 | BDK65 | BDK66 | BDK67 | BDK68 | BDK69 | BDK72 | BDK73 | BDP03 |
| Matrix | WATER | WATER | WATER | SEDIMENT | SEDIMENT | WATER | WATER | WATER | WATER | WATER |
| Units | ug/L | ug/L | ug/L | ug/kg | ug/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Dilution Factor/GPC Cleanup (Y) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | N/A |
| Percent Moisture | -- | -- | -- | 44 | 45 | -- | -- | -- | -- | N/A |
| alpha-BHC | | | | | | | | | | NR |
| beta-BHC | | | | | | | | | | NR |
| delta-BHC | | | | | | | | | | NR |
| gamma-BHC (Lindane) | | | | | | | | | | NR |
| Heptachlor | | | | | | | | | | NR |
| Aldrin | | | | | | | | | | NR |
| Heptachlor epoxide | | | | | | | | | | NR |
| Endosulfan I | | | | | | | | | | NR |
| Dieldrin | | | | | | | | | | NR |
| 4,4'-DDE | | | | | | | | | | NR |
| Endrin | | | | | | | | | | NR |
| Endosulfan II | | | | | | | | | | NR |
| 4,4'-DDD | | | | | | | | | | NR |
| Endosulfan sulfate | | | | | | | | | | NR |
| 4,4'-DDT | | | | | | | | | | NR |
| Methoxychlor | | | | | | | | | | NR |
| Endrin ketone | | | | | | | | | | NR |
| alpha-Chlordane | | | | | | | | | | NR |
| gamma-Chlordane | | | | | | | | | | NR |
| Toxaphene | | | | | | | | | | NR |
| Aroclor-1016 | | | | | | | | | | NR |
| Aroclor-1221 | | | | | | | | | | NR |
| Aroclor-1232 | | | | | | | | | | NR |
| Aroclor-1242 | | | | | | | | | | NR |
| Aroclor-1248 | | | | | | | | | | NR |
| Aroclor-1254 | | | | | | | | | | NR |
| Aroclor-1260 | | | | | | | | | | NR |

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: LI TUNGSTEN
TDDB: 02-9003-01
SAMPLING DATE: 5/15/90
EPA CASE NO.: 14115
LAB NAME: BETZ

# TABLE 1
## SUMMARY OF SITE INSPECTION ANALYTICAL DATA
(cont'd)

| INORGANICS | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID No. | NYJL-SW1 | NYJL-SW2(MS/MSD) | NYJL-SW3(DUP) | NYJL-SED1(MS/MSD) | NYJL-SED2(DUP) | NYJL-RIN1 | NYJL-RIN2 | NYJL-RIN3 | NYJL-RIN4 | NYJL-TBLK1 |
| Traffic Report No. | MBCP89 | MBCP90 | MBCP91 | MBCP92 | MBCP93 | MBCP94 | MBCP95 | MBCP96 | MBCJ65 | N/A |
| Matrix | WATER | WATER | WATER | SEDIMENT | SEDIMENT | WATER | WATER | WATER | WATER | N/A |
| Units | ug/L | ug/L | ug/L | mg/kg | mg/kg | ug/L | ug/L | ug/L | ug/L | ug/L |
| Aluminum | J | J | J | 1350 | 610 | | | | | NR |
| Antimony | | J | | | R | | | | | NR |
| Arsenic | J | 11 | J | 72.1 | 37 | | | | | NR |
| Barium | J | J | J | J | J | J | J | J | J | NR |
| Beryllium | | | | J | J | | | | | NR |
| Cadmium | | | | 2.7 | | | | | | NR |
| Calcium | 90700 | 53100 | 94100 | 202000 | 308000 | | | | | NR |
| Chromium | | | | 35.4 E | 21.5 E | | | | | NR |
| Cobalt | 51 | 366 | 53 | 3970 | 1530 | | | | | NR |
| Copper | 25 | 504 | 25 | 610 | 293 | | | | | NR |
| Iron | J | 1760 | J | 2780 | 1980 | J | J | | | NR |
| Lead | 4.2 E | 15.8 E | 3.9 E | 341 | 243 | | | | | NR |
| Magnesium | J | 12500 | J | J | J | | | | | NR |
| Manganese | J | 1640 | J | 1090 | 491 | | J | | | NR |
| Mercury | | | | 0.23 | 0.21 | | | | | NR |
| Nickel | J | 544 | J | 1110 | 450 | | | | | NR |
| Potassium | 24900 E | 22200 E | 24700 E | J | | J | | | | NR |
| Selenium | | J | | | | | | | | NR |
| Silver | | | | 14.3 | 7.6 | | | | | NR |
| Sodium | 919000 | 53100 | 867000 | 7720 E | 12600 E | J | | | J | NR |
| Thallium | | | | R | R | | | | | NR |
| Vanadium | J | | J | 112 E | 57.2 E | | | | | NR |
| Zinc | 30.7 | 265 E | 35.8 | 782 E | 303 E | | | | | NR |
| Cyanide | J | 11.7 | 11.4 | | | | | | | NR |

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

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02-9003-01-51
Rev. No. 0

# PART IV: HAZARD ASSESSMENT

## GROUNDWATER ROUTE

1. **Describe the likelihood of a release of contaminant(s) to the groundwater as follows: observed, alleged, potential, or none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminant(s) to the facility.**

An observed release to groundwater has occurred at the site. Previous investigations identified four different contaminant plumes in the groundwater on the site. Two plumes contain volatile organic compounds that include several solvents related to tetrachloroethylene derived from two adjacent areas and are not attributable to the Li Tungsten facility. A plume of No. 2 fuel oil from the aboveground 500,000-gallon storage tank is evidenced by the presence of petroleum hydrocarbons in nearby monitoring wells. This tank is part of the Li Tungsten facility but is leased to the Hawkins Fuel Oil Company for the storage of its fuel oil. According to a consultant for the Li Tungsten site owner, the tank contains about 8 feet of standing fuel oil at present. The last underground plume occurs in the vicinity of the Mud Pond and adjacent Mud Holes, which have been leaking waste/process water solutions. This plume was found to contain sulfate compounds and elevated concentrations of lead, chromium, cadmium, tungsten, arsenic, and chloride compounds. Contaminants in the groundwater attributable to the site were also analytically identified in downgradient monitoring well water samples collected by NUS Corporation Region 2 FIT on April 18-19, 1990. Analytical data from these samples indicate the presence of elevated concentrations of various metals, including antimony, arsenic, barium, cadmium, chromium, cobalt, nickel, silver, and zinc.

Ref. Nos. 4 (Volume 1, Part 1, pp. 1-4 to 1-6; Part 4, pp. 17 to 21), 21, 22, 49, 50

2. **Describe the aquifer of concern; include information such as depth, thickness, geologic composition, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.**

In vicinity of the facility, two distinct aquifers have been identified. From the surface downward, these aquifer systems are known as the Upper Glacial Aquifer and the Lloyd Sand Aquifer. The Raritan Clay acts a confining unit between the overlying Upper Glacial Aquifer and the Lloyd Sand Aquifer; as a combined unit they form a wedge-shaped deposit of unconsolidated sediment that overlies crystalline schist and gneiss bedrock on Long Island. Although the Magothy Aquifer overlies the Raritan Clay in some areas within the 3-mile radius, it is not present in the immediate vicinity of the site. The Upper Glacial Aquifer and the Magothy Aquifer may be considered hydrologically connected where both occur.

The Upper Glacial Aquifer is the aquifer of concern and is derived from Pleistocene glacial deposits consisting of glacial till and outwash deposits composed of fine to coarse, grey, brown, and yellow stratified quartzose sand and gravel. The deposit also contains thin interbeds of greyish-green silt and clay lenses which can create localized perched water table conditions. The Upper Glacial Aquifer is estimated to be 175 feet thick feet under Li Tungsten, based upon nearby drill core data. This aquifer has an estimated permeability of greater than $10^{-3}$ cm/sec. Groundwater in this aquifer flows south-southwest toward Glen Cove Creek and occurs at a depth of 0 to 45 feet below the surface; the average depth to groundwater within the monitoring wells on site is approximately 8 feet. The Upper Glacial Aquifer serves eight public water supply wells within 3 miles of the site and has been designated as a sole source aquifer by the U. S. EPA.

The Upper Glacial Aquifer rests unconformably upon the Raritan Clay of Cretaceous Age. In the vicinity of the site, the Raritan Clay occurs at an approximate depth of 175 feet and has an average thickness of 50 feet. The Raritan Clay consists predominantly of light to dark grey, red, white, or yellow clay with variable amounts of silt and fine silty sand. Due to the heterogeneity of sediments within this clay, the permeability is variable; the average vertical permeability is $3.0 \times 10^{-7}$ cm/sec. Some public supply wells and other private supply wells obtain water from the sandy horizons of the Raritan Clay.

Below the Raritan Clay lies the Lloyd Sand Aquifer of early Cretaceous Age. It can be found at a depth of approximately 225 feet below the surface in the vicinity of the site and is approximately 200 feet thick. The Lloyd Sand consists of discontinuous layers of silt, clay, sandy clay, sand, and gravel that exhibit variations in permeability. The average permeability is $1.7 \times 10^{-2}$ cm/sec. Groundwater within this aquifer flows from north to south. The Lloyd Sand Aquifer serves six public water supply wells within a 3-mile radius of the Li Tungsten Site and has been designated as a sole source aquifer by the U. S. EPA.

Ref. Nos. 4 (Volume 1, part 4, pp. 14 to 17) 10, 12, 14, 24, 39

3. **Is a designated sole source aquifer within 3 miles of the site?**

A sole source aquifer has been designated within 3 miles of the site.

Ref. Nos. 10, 12, 24

4. **What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?**

Contaminants attributable to the facility were detected in samples GW-9 and GW-10, which were collected by NUS Corporation Region 2 FIT from monitoring well EMW-4, located south of the Mud Pond. The depth to the top of the screened interval in this well has been reported to be 8.6 feet below ground surface. The depth to groundwater below ground surface at the time of sampling was 5 feet. Therefore, the waste is considered to be in contact with the aquifer of concern.

Ref. Nos. 4, 13, 50

5. **What is the permeability value of the least permeable continuous intervening stratum between the ground surface and the aquifer of concern?**

The permeability value of the least permeable continuous intervening stratum between the ground surface and the Upper Glacial Aquifer is estimated to be greater than $10^{-3}$ cm/sec.

Ref. Nos. 12,14

6. **What is the net precipitation for the area?**

The estimated net precipitation for this area, based upon the normal annual total precipitation minus the mean annual lake evaporation, is approximately 16 inches.

Ref. No. 14

7. **Identify uses of groundwater within 3 miles of the site (i.e., private drinking source, municipal source, commercial, industrial, irrigation, unusable).**

Groundwater within 3 miles of the site is used for private drinking sources, public supply wells, and commercial, industrial, and irrigation applications. Many wells have been closed or have restricted use due to volatile organic chemical contamination from undetermined sources.

Ref. Nos. 9, 12, 15, 38, 39

8. **What is the distance to and depth of the nearest well that is currently used for drinking or irrigation purposes?**

The nearest well supplying potable water from the aquifer of concern is located 1.3 miles west of the Warehouse. This well ( No. 901) is 68 feet deep and is screened within the Upper Glacial Aquifer. Refer to Table 2 for a list of wells within 3 miles of the site.

Ref. Nos. 6, 12, 39

9. **Identify the population served by the aquifer of concern within a 3-mile radius of the site.**

The population served by the aquifer of concern within a 3-mile radius of the site is approximately 18,000 or more.

Ref. Nos. 9, 12, 16

**SURFACE WATER ROUTE**

10. **Describe the likelihood of a release of contaminant(s) to surface water as follows: observed, alleged, potential, or none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminants to the facility.**

There is a potential for contaminants to be released to Glen Cove Creek via storm drains on Herb Hill Road and the storm drains on site. Runoff from the landfill and from the main part of the facility enters Glen Cove Creek via these routes. The leaking Mud Holes, Mud Pond, and aboveground 500,000-gallon oil tank are located across the street (Garvies Point Road) from Glen Cove Creek. Chemicals identified in surface soil and groundwater samples around these waste sources include arsenic, selenium, silver, barium, cobalt, chromium, copper, iron, manganese, nickel, strontium, vanadium, zinc, lead, antimony, thallium, aluminum, tungsten, cadmium, titanium, and molybdenum. The site is located on the 100/500-year floodplain; therefore, the potential also exists for surficial contaminants to be transported off site and into Glen Cove Creek via flooding. Surface water samples analyzed for tungsten by inductively coupled plasma mass spectrometry (ICP/MS) were found to contain tungsten, copper, zinc, arsenic, molybdenum, antimony, lead, bismuth, thorium, and uranium.

Ref. Nos . 1, 4 (Volume 1, part 1, pp. 1-14 to 1-15), 8, 21, 22, 27, 28, 31, 32, 37, 40, 43

11. **Identify and locate the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.**

The nearest downslope surface water is Glen Cove Creek, which generally flows southwest but is also affected by the tides. Glen Cove Creek is adjacent to the south property boundary; it then flows into Hempstead Harbor and Long Island Sound. Runoff from the site and from storm drains on Herb Hill Road can drain directly into Glen Cove Creek via several outfalls.

Ref. Nos. 6, 8, 27, 43, 44

**TABLE 2**
**WELLS WITHIN 3 MILES OF LI TUNGSTEN, GLEN COVE, NY**

UN = Unused, P.S. = Public Supply, IND = Industrial, COM = Commercial, IRR = Irrigation, UNK = Unknown, AC = Air Conditioning

| Well No. | Use | Contaminated |
|---|---|---|
| 109 | UN | |
| 110 | UN | |
| 112 | UN | |
| 114 | IRR | |
| 115 | UN | |
| 116 | UN | |
| 117 | UN | |
| 119 | P.S. | |
| 120 | UN | |
| 121 | UN | |
| 121A | IRR | |
| 660 | IND | |
| 661 | UN | |
| 801-818 | UN | |
| 834 | UN | |
| 835 | P.S. | |
| 842 | UN | |
| 901 | P.S. | |
| 902 | P.S. | |
| 903 | P.S. | |
| 904 | UN | |
| 905-909 | P.S. | |
| 1037 | P.S. | |
| 1149-1153 | UN | |
| 1171-1174 | UN | |
| 1327 | P.S. | |
| 1595 | P.S. | |
| 1651 | P.S. | |
| 1917 | IND | |
| 2027 | UN | |
| 2060 | UN | |
| 2087 | IND/UN | |
| 2316 | IND | X |
| 2616 | IRR | |
| 3310 | IND | |
| 3466 | P.S. | X |
| 3892 | P.S. | X |
| 4432 | COM | |
| 4440 | DOM | |
| 4462 | UN | |
| 4639 | UNK | |
| 5071 | IRR | |
| 5201 | P.S. | |
| 5250 | UN | |
| 5261 | P.S. | X |

**TABLE 2 (CONTINUED)**

| Well No. | Use | Contaminated |
|---|---|---|
| 5450 | IRR | |
| 5762 | P.S. | |
| 5792 | P.S. | |
| 6289 | UN | |
| 6289 | IRR | |
| 6416 | UN | |
| 6444 | IRR | |
| 6549 | IND | |
| 6579 | UNK | X |
| 6587 | UN | |
| 6665 | UN | |
| 6668-70 | UN | |
| 6708 | UN | |
| 6806 | IRR | |
| 6881 | UN | |
| 6883 | UN | |
| 6973 | UN | |
| 7427 | IND | X |
| 7439 | UNK | |
| 7614 | IND | |
| 7664 | IRR | X |
| 7782 | AC | |
| 7834 | IRR | |
| 7857 | P.S. | |
| 8048 | UNK | |
| 8224 | IND | |
| 8259 | UN | |
| 8326 | P.S. | X |
| 8327 | P.S. | X |
| 8394 | UNK | |
| 8690 | UNK | |
| 8709 | IND | |
| 8716 | UN | |
| 8887 | IND | X |
| 8898 | UN | |
| 8937 | COM | |
| 9066 | UN | |
| 9100 | UN | |
| 9115 | UN | |
| 9117 | UN | |
| 9210 | P.S. | |
| 9211 | P.S. | |
| 9334 | P.S. | |

Ref. Nos. 10, 12, 39

12. **What is the facility slope in percent? (Facility slope is measured from the highest point of deposited hazardous waste to the most downhill point of the waste area or to where contamination is detected.)**

The facility slope, as measured from the northern boundary of the landfill to the southern boundary of the landfill, is 5 percent.

Ref. Nos. 4, 6, 13

13. **What is the slope of the intervening terrain in percent? (Intervening terrain slope is measured from the most downhill point of the waste area to the probable point of entry to surface water.)**

The slope of the intervening terrain, as measured from the southern boundary of the landfill to Glen Cove Creek, is less than 2 percent.

Ref. Nos. 6, 8, 13

14. **What is the 1-year 24-hour rainfall?**

The 1-year 24-hour rainfall for the area is approximately 3 inches.

Ref. No. 14

15. **What is the distance to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.**

Glen Cove Creek is adjacent to the southern property boundary. Previously permitted outfalls and on-site storm drains discharge through the bulkhead along the southern property boundary directly into Glen Cove Creek.

Ref. Nos. 8, 13, 27, 43, 44

16. **Identify uses of surface waters within 3 miles downstream of the site (i.e., drinking, irrigation, recreation, commercial, industrial, not used).**

Surface water uses within 3 miles downstream of the site include recreational and commercial.

Ref. Nos. 6, 20

17. **Describe any wetlands, greater than 5 acres in area, within 2 miles downstream of the site. Include whether it is a freshwater or coastal wetland.**

No wetlands greater than 5 acres in area have been identified within 2 miles downstream of the site.

Ref. Nos. 6, 20

18. **Describe any critical habitats of federally listed endangered species within 2 miles of the site along the migration path.**

No critical habitats of federally listed endangered species have been identified within 2 miles of the site. However, Hempstead Harbor is a waterfowl wintering area most noted for scaup, canvasback, and black ducks, and is a nursery/feeding habitat for striped bass, bluefish, Atlantic

silverside, menhaden, winter flounder, and blackfish. Hempstead Harbor has been designated as a "significant coastal fish and wildlife habitat" by the NYS Department of State under Policy 7 of the Waterfront Revitalization and Coastal Resources Act of 1981.

Ref. Nos. 6, 7, 20, 23, 25

**19. What is the distance to the nearest sensitive environment along or contiguous to the migration path (if any exist within 2 miles)?**

No sensitive environments have been identified along Glen Cove Creek or Hempstead Harbor within 2 miles of the site.

Ref. Nos. 6, 7, 20, 23, 25

**20. Identify the population served or acres of food crops irrigated by surface water intakes within 3 miles downstream of the site and the distance to the intake(s).**

There are no crops irrigated by surface water intakes within 3 miles downstream of the site.

Ref. Nos. 6,11

**21. What is the state water quality classification of the water body of concern?**

The state water quality classification for Hempstead Harbor north of Bar Beach is Class SA (suitable for shellfishing for market purposes and primary/secondary recreation). The state water quality classification for Glen Cove Creek is Class 1 ( secondary contact recreation except for primary recreation and shellfishing).

Ref. No. 18

**22. Describe any apparent biota contamination that is attributable to the site.**

Biota contamination attributable to the site exists along the grassy areas around the Mud Pond, Mud Holes, and the nine waste piles. There was a notable lack of vegetation around these areas, and grass near the fence along Garvies Point Road was stained black.

Ref. Nos. 4, 5, 13

**AIR ROUTE**

**23. Describe the likelihood of a release of contaminant(s) to the air as follows: observed, alleged, potential, none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminant(s) to the facility.**

There is a potential for release of contaminants from the site into the air. Tank covers, siding shingles, roofing tiles, and pipe wrapping, all of which are known to contain asbestos, are in a state of decay. However, analyses of indoor and outdoor air samples previously collected from the site indicate the presence of little or no volatile organic chemicals and airborne metals; analyses also indicate little or no asbestos particulates. Larger pressurized tanks containing aqueous ammonia and propane, and open-air tanks containing hydrochloric acid and tungsten acid could potentially release their contents to the air.

Ref. Nos. 4 ( Volume 1, part 1, pp.1-6; Volume 2, part 6), 13, 25, 26, 34, 35, 36, 41

**24. What is the population within a 4-mile radius of the site?**

The population within a 4-mile radius of the site is approximately 67,900.

Ref. No. 17

**FIRE AND EXPLOSION**

**25. Describe the potential for a fire or explosion to occur with respect to the hazardous substance(s) known or suspected to be present on site. Identify the hazardous substance(s) and the method of storage or containment associated with each.**

There is a potential for fire or explosion to occur with respect to the hazardous substances known to be present on the site. An outdoor, partially filled and pressurized tank of propane gas and a pressurized tank of aqueous ammonia are present on site and represent a potential for an explosion or fire to occur. In a letter to the NYSDEC dated January 31, 1990, the mayor of the City of Glen Cove expressed his concern about the potential for a fire to occur at the site and for the safety of local fire fighters who would have to enter the site, if such an event were to occur.

Ref. Nos. 4 (Part 6), 13, 25, 26, 33, 41

**26. What is the population within a 2-mile radius of the hazardous substance(s) at the facility?**

The population within a 2-mile radius of the hazardous substances present on the site is approximately 35,400.

Ref. No. 17

**DIRECT CONTACT/ON-SITE EXPOSURE**

**27. Describe the potential for direct contact with hazardous substance(s) stored in any of the waste units on site or deposited in on-site soils. Identify the hazardous substance(s) and the accessibility of the waste unit.**

There is a potential for direct contact with the hazardous substances deposited in on-site soils, which include heavy metals, PCBs, and radioactive elements. Along Garvies Point Road, the Mud Pond has overflowed and stained the soil. The stained soil contains notable concentrations of arsenic, antimony, chromium, copper, lead, mercury, vanadium, and zinc.

Ref. Nos. 4, 5, 13, 21, 33, 36, 49, 50

**28. How many residents live on a property whose boundaries encompass any part of an area contaminated by the site?**

There are no residents who live on a property whose boundaries encompass any part of an area contaminated by the site.

Ref. Nos. 5, 13, 50

**29. What is the population within a 1-mile radius of the site?**

The population within a 1-mile radius of the site is approximately 9,900.

Ref. No. 17

## PART V: ACTUAL HAZARDOUS CONDITIONS

Waste processed ore containing heavy metals and radioactive isotopes of uranium, thorium, and radium occur in nine waste piles and within many drums and crates in many parts of the site. The drums and crates are badly weathered, corroded, and spilling their contents on the ground. Particulates from the waste piles can become airborne as they are not covered. The waste piles also contain radioactive slags mixed with the soil, and several separate piles containing large chunks of radioactive slag have been roped off and marked with radiation placards; however, radioactive slag is not considered a hazardous waste in New York State. The Li Tungsten Site has been designated as a Class 2 site (significant threat to public health or environment) on the NYSDEC registry because of the presence of other contaminants. The stained soil on the corner of Garvies Point Road contains notable concentrations of many heavy metals. Several 55-gallon drums containing elevated levels of radioactive waste process ore and soil that was excavated from behind the wooden fence at the corner of Garvies Point and Herb Hill Roads have been stored within the Dice Building until an approved disposal site for New York State has been established. Tank covers, pipe wrappings, wallboard, and shingles on site contain asbestos. These items are known to be in poor condition and have been found in broken pieces upon the ground. Although air testing previously conducted has not shown the presence of airborne asbestos particles, the potential exists for a release of particulates to the air. Also, many wooden, steel, or fiberglass tanks still contain process solutions containing heavy metals and concentrated or spent acids and bases. There are two pressurized tanks on site, one of which contains aqueous ammonia and the other propane gas. Although the site is patrolled by a one-man private security force, the site is very large and the fence surrounding the site has been broken many times; therefore, there is a potential for unauthorized entry to the site. The buildings on the site are in poor condition and local officials have expressed a concern for the safety of their firemen; they are especially concerned about the asbestos dusts and particulates that may be released if a fire should break out on the site. At least four different contaminant plumes have been identified as a result of several groundwater sampling events conducted on site.

No other actual hazardous conditions pertaining to human or environmental contamination have been documented. Specifically:

- Contamination has not been documented either in organisms in a food chain leading to humans or in organisms directly consumed by humans.
- There have been no documented observed incidents of direct physical contact with hazardous substances at the site involving a human being (not including occupational exposure) or a domestic animal.

- There have been no documented incidents of damage to fauna (e.g., fish kill) that can be attributed to the hazardous materials at the facility.

Ref. Nos. 4, 13, 25, 26, 33, 36, 49, 52

## PART VI: SITE SUMMARY AND RECOMMENDATIONS

Li Tungsten is located in an industrial area on approximately 26 acres along the north bank of Glen Cove Creek in the City of Glen Cove, Nassau County, New York. From the 1940s to the early 1980s, tungsten ores imported from Mainland China and Canada were smelted at this facility for the making of tungsten carbide powder, tungsten wire, and welding rods. In 1985, the company filed for bankruptcy; the property is presently owned by the Glen Cove Development Company located in Baltimore, Maryland.

Although the site is presently inactive, most of the wastes generated by the facility remain on site. These wastes include 17,000 tons of solid residue/ore materials in piles, in a landfill, in wooden crates, and in 30- and 55-gallon drums. Some of the drums are overstacked and some have toppled and have broken open, spilling their contents upon the ground. One hundred and eight drums containing acids, waste oil, and organics have been overpacked and/or staged to a secure area on site. The remaining unsound drums are also recommended for overpacking to eliminate the potential for a release of their contents. Elsewhere on the site, there are approximately 373,000 gallons of various liquids stored in 224 aboveground tanks of unknown physical condition, some of which contain hazardous organic and inorganic liquids. The inorganic liquids include spent or unused hydrochloric acid and aqueous ammonia. Fifty tanks have been inspected for leaks and rupture. Two tanks were determined not to be secure and have been drained and their contents drummed for disposal. Small quantities of identifiable chemicals have been overpacked and secured, while small quantities of unidentified chemicals remain in some areas. Thirty-eight electrical transformers formerly located on site, three of which contained PCB-contaminated oil, have been drained, drummed, and disposed of at a licensed off-site facility. Removal activities have also begun with respect to some of the surficial containers (including pressurized cylinders).

A site investigation conducted by a consulting firm on behalf of the site owner was completed in May of 1988, during which samples were taken from 10 existing groundwater monitoring wells and 13 more monitoring wells were installed. Analyses of samples from these wells identified four underground plumes within the groundwater of the Upper Glacial Aquifer. One plume occurs at a depth of approximately 20 feet along the eastern boundary of the site and was found to contain several dry cleaning solvents related to tetrachloroethylene. The plume is believed to originate from a dry cleaning facility that formerly occupied the property adjacent to the site. Another plume was found along the western boundary of the site and was traced to an adjacent property formerly occupied by a petrochemical company. Both plumes are moving south towards Glen Cove Creek. Another plume of No. 2 fuel oil occurs in the vicinity of a leaking 500,000-gallon tank north of Garvies Point Road. The last plume is located around the Mud Pond/Mud Holes, which contain waste processing water and heavy metals. Chloride and sulfate compounds, and notable concentrations of

## PART VI: SITE SUMMARY AND RECOMMENDATIONS (CONT'D)

lead, cadmium, tungsten, chromium, arsenic, barium, and silver have been detected in groundwater samples collected from this area. The materials leaking from the fuel oil tank and the ponds have also scarred the vegetation and stained the soil in this area. Asbestos fibers from decaying tank covers and pipe wrapping materials are known to be present on the ground. Similarly, waste piles containing raw and processed tungsten ores are known to contain radioactive radium, uranium, and thorium compounds used in the ore refining process. The United States Environmental Protection Agency issued an Administrative Order on Consent to the Glen Cove Development Company on July 21, 1989, outlining initial actions to be taken at the site. The site is scheduled for a cleanup of hazardous wastes including, but not limited to, the removal of drums, the contents of the tanks, and the laboratory chemicals, but plans for cleanup of the groundwater and soil have not been finalized. Development as a residential area is planned for the site.

Analytical results from groundwater, surface water, soil, and sediment samples collected from this site by NUS Corporation Region 2 FIT in April and May of 1990 indicate a release of significant concentrations of contaminants associated with tungsten refining to the environment. Elevated concentrations of antimony, arsenic, barium, beryllium, copper, cobalt, chromium, lead, manganese, mercury, nickel, vanadium, cadmium, uranium, thorium, molybdenum, bismuth, zinc, and cyanide were detected in soil and/or groundwater samples. The uranium and thorium compounds are known to be radioactive. Analytical results from the surface water and sediment samples collected from on-site waste sources indicate the presence of notable concentrations of PCBs ( Aroclor-1248 and Aroclor-1254) and elevated concentrations of metals. Two of the surface water samples collected from on-site waste sources contained cyanide. Surface water samples collected from Glen Cove Creek showed the presence of tetrachloroethene; sediment samples collected from the creek contain polycyclic aromatic hydrocarbons and elevated concentrations of several metals.

Based upon the high target population potentially affected by groundwater contamination and the potential for direct contact with some of the wastes on site, the Li Tungsten Site is recommended for a **LISTING SITE INSPECTION.** All of the radioactive waste piles should be roped off from unauthorized access and labelled with radiation placards until they can be contained/covered, removed from the site, and properly stored at a licensed facility. The propane and aqueous ammonia tanks and other large process tanks containing organic and inorganic liquids/residues should be emptied and disposed of properly. The remaining drums, barrels, and crates of tungsten ore/residues should be recycled or processed at another tungsten refining facility. The many empty 55- and 30-gallon drums on site should be crushed and properly disposed. Lastly, a cleanup plan for the contaminated groundwater, surface water, soil, and sediment should be formulated.

# ATTACHMENT 1

**Li TUNGSTEN**
**GLEN COVE, NEW YORK**

**CONTENTS**

Exhibit A: Photograph Log, Site Reconnaissance: March 22, 1990
Exhibit B: Photograph Log, Site Inspection: April 18-19, 1990
Exhibit C: Photograph Log, Site Inspection: May 15, 1990

# EXHIBIT A
# PHOTOGRAPH LOG

## Li TUNGSTEN
## GLEN COVE, NEW YORK

SITE RECONNAISSANCE: MARCH 22, 1990

Li TUNGSTEN
GLEN COVE, NEW YORK
MARCH 22, 1990

PHOTOGRAPH INDEX

ALL PHOTOGRAPHS TAKEN BY STEVEN OKULEWICZ

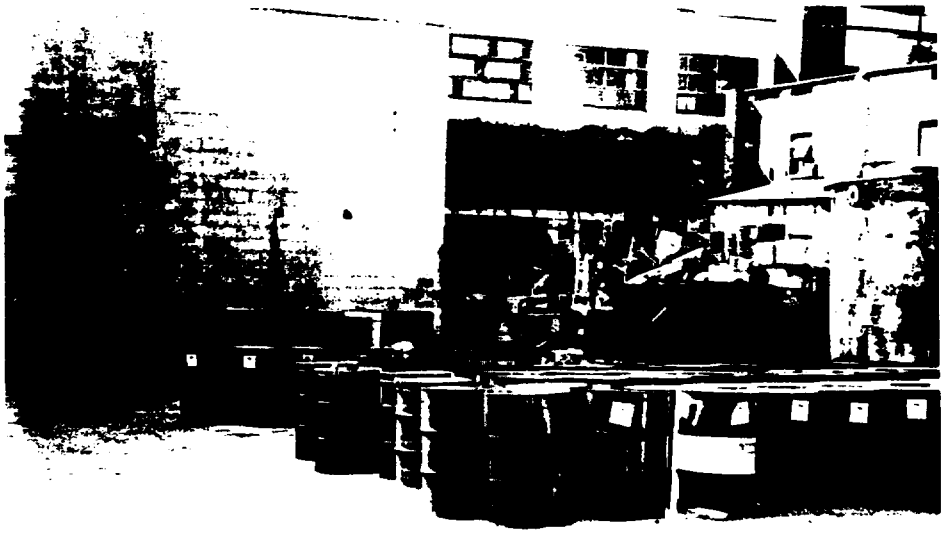
| Photo Number | Description | Time |
|---|---|---|
| 1P-1 | Southwest view of staged drums containing PCB oil from electrical transformers on site. | 0950 |
| 1P-2 | West view of rusted and leaking drums of processed waste ore outside of Dice Building. | 0955 |
| 1P-3 | West view of corroded drums along front of Dice Building. | 1000 |
| 1P-4 | Open, rusted drums of processed ore looking north behind Carbide Building. | 1005 |
| 1P-5 | North view of tank 35 and water treatment pool. | 1015 |
| 1P-6 | Southwest view of radioactive rusted drums of processed ore. | 1022 |
| 1P-7 | South view of oil recovery sumps along western part of Dice Building. | 1025 |
| 1P-8 | 30-Gallon drums of ore and leaking wooden tank No. 32 on corner of Herb Hill Road and Dickson Lane | 1100 |
| 1P-9 | West view of corner of Herb Hill Road and Dickson Lane where radioactive ore was removed. | 1105 |
| 1P-10 | North view of Wire Plant and laboratory. | 1135 |
| 1P-11 | Large empty process tanks outside Loung Building looking east. | 1150 |
| 1P-12 | View of friable asbestos pipe wrapping outside of Loung Building. | 1200 |
| 1P-13 | View of monitoring well GM-17 located on southwest corner of East Building. | 1205 |
| 1P-14 | North view of white, horizontal ammonia tank and empty vertical storage tanks. | 1206 |
| 1P-15 | West view inside of Dice Warehouse showing stacked, corroded drums of raw and processed ore. | 1220 |
| 1P-16 | East view of black waste piles in landfill area. | 1350 |
| 1P-17 | Northwest view of drums outside of Reduction Building. | 1405 |

Li TUNGSTEN
GLEN COVE, NEW YORK

PHOTOGRAPH INDEX
(cont'd)

| Photo Number | Description | Time |
|---|---|---|
| 1P-18 | Southeast view of empty hydrogen ball tank behind Reduction Building. | 1406 |
| 1P-19 | Roped-off radioactive waste pile by northwest corner of Reduction Building. | 1407 |
| 1P-20 | South view of radioactive waste pile by Reduction Building. | 1416 |
| 1P-21 | Radioactive waste pile behind Dickson Warehouse, looking east. | 1430 |
| 1P-22 | North view of drums, crates, and tanks behind Dickson Warehouse. | 1445 |
| 1P-23 | East view of 2 unlined mud holes adjacent to oil storage tank on Garvies Point Road. | 1450 |
| 1P-24 | Southwest view of lined settling pond on Garvies Point Road. | 1455 |

Li TUNGSTEN, GLEN COVE, NEW YORK



1P-1 March 22, 1990 0950
Southwest view of staged drums containing PCB oil from electrical transformers on site.

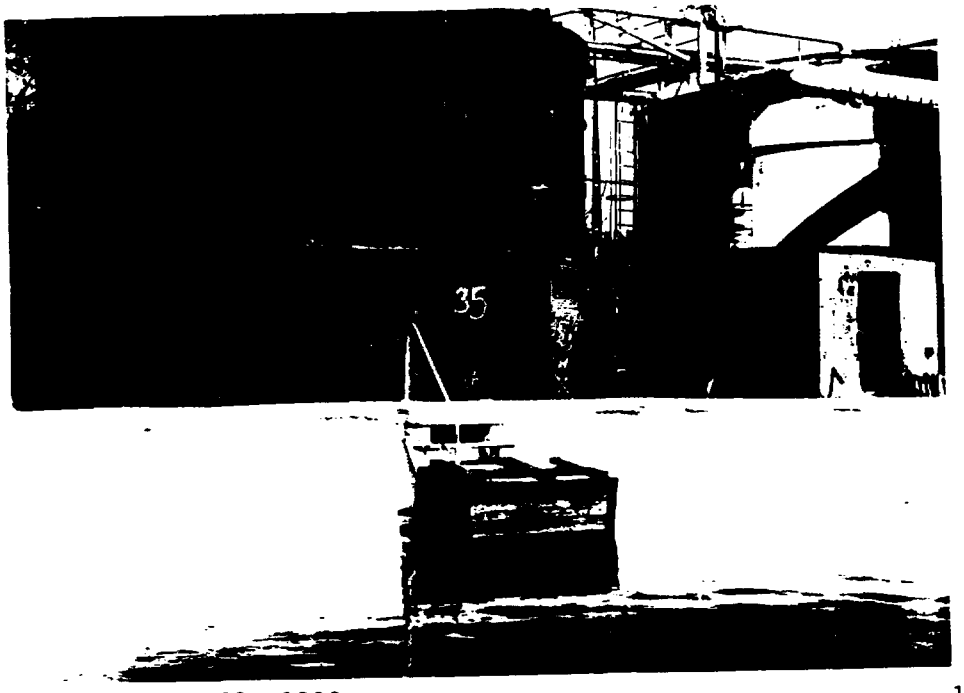
1P-2 March 22, 1990 0955
West view of rusted and leaking drums of processed waste ore outside of Dice Building.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-3 March 22, 1990 1000
West view of corroded drums along front of Dice Building.

1P-4 March 22, 1990 1005
Open, rusted drums of processed ore looking north behind Carbide Building.

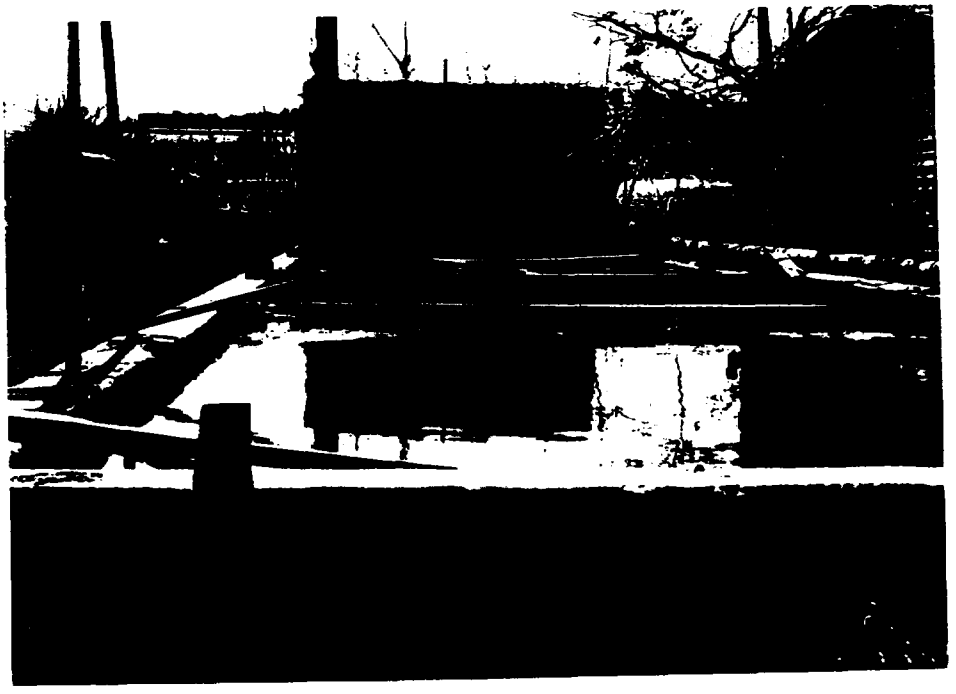
Li TUNGSTEN, GLEN COVE, NEW YORK




1P-5 March 22, 1990 1015
North view of tank 35 and water treatment pool.

1P-6 March 22, 1990 1022
Southwest view of radioactive rusted drums of processed ore.

Li TUNGSTEN, GLEN COVE, NEW YORK



1P-7 March 22, 1990 1025
South view of oil recovery sumps along western part of Dice Building.

1P-8 March 22, 1990 1100
30-Gallon drums of ore and leaking wooden tank No. 32 on corner of Herb Hill Road and Dickson Lane.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-9 March 22, 1990 1105
West view of corner of Herb Hill Road and Dickson Lane where radioactive ore was removed.

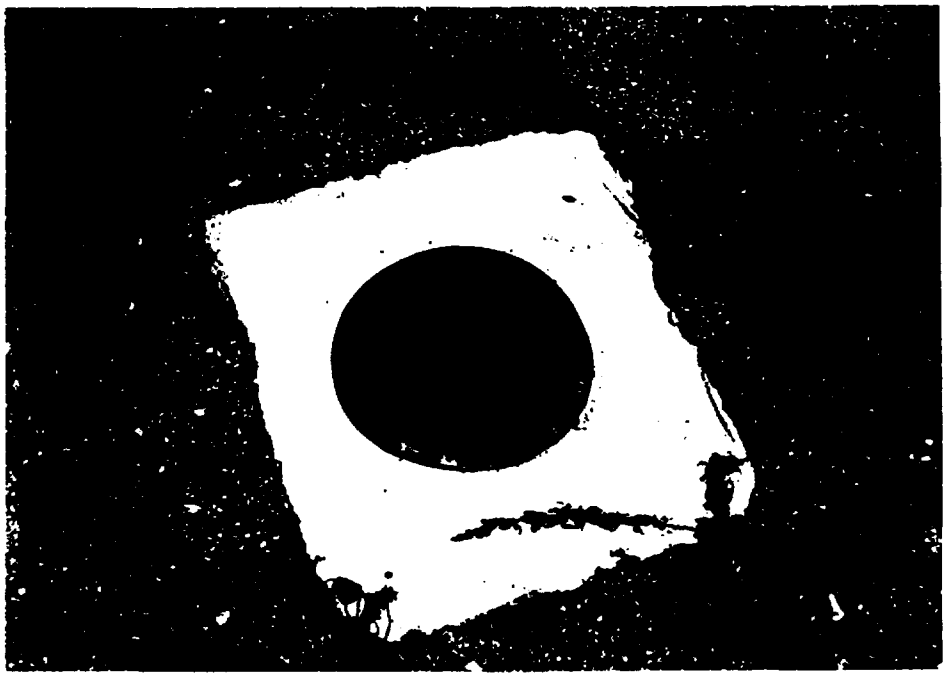
1P-10 March 22, 1990 1135
North view of Wire Plant and laboratory.

Li TUNGSTEN, GLEN COVE, NEW YORK

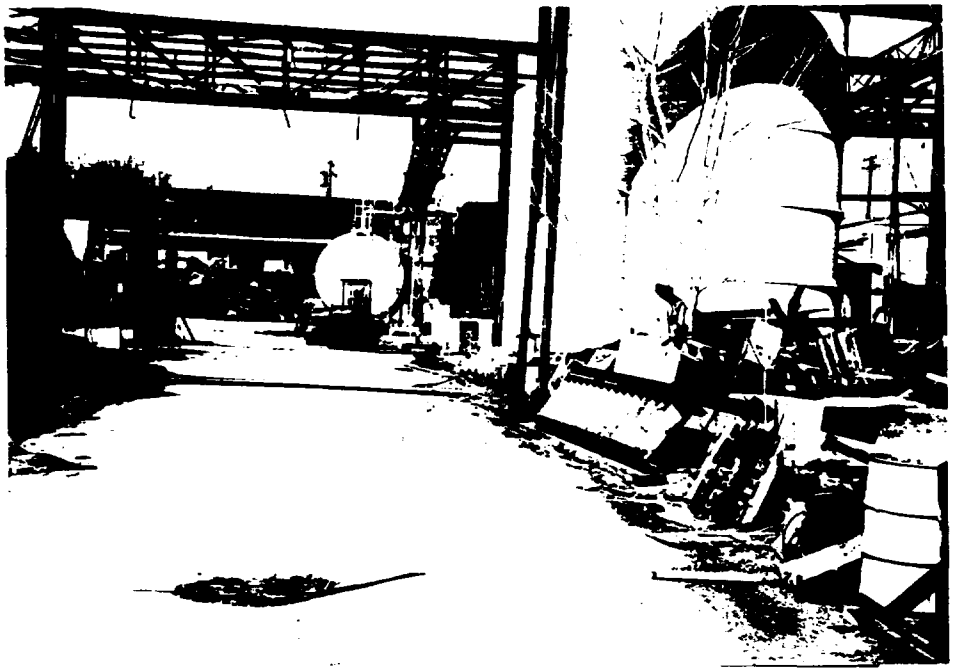
1P-11 March 22, 1990 1150
Large empty process tanks outside Loung Building looking east.

1P-12 March 22, 1990 1200
View of friable asbestos pipe wrapping outside of Loung Building.

Li TUNGSTEN, GLEN COVE, NEW YORK



1P-13 March 22, 1990 1205
View of monitoring well GM-17 located on southwest corner of East Building.



1P-14 March 22, 1990 1206
North view of white, horizontal ammonia tank and empty vertical storage tanks.

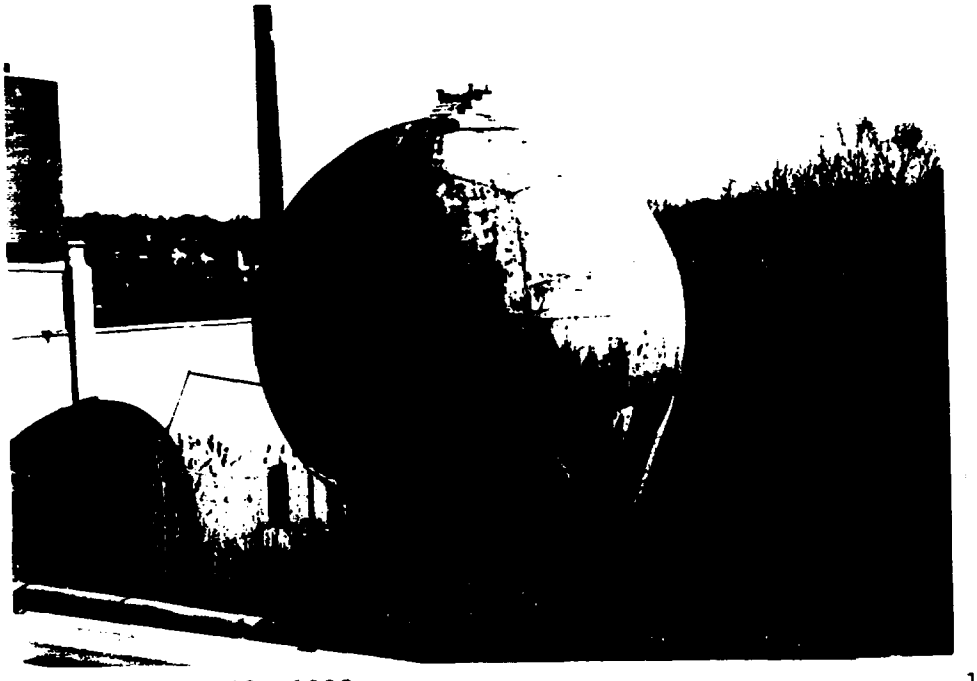
Li TUNGSTEN, GLEN COVE, NEW YORK

1P-15 March 22, 1990 1220
West view inside of Dice Warehouse showing stacked, corroded drums of raw and processed ore.

1P-16 March 22, 1990 1350
East view of black waste piles in landfill area.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-17 March 22, 1990 1405
Northwest view of drums outside of Reduction Building.



1P-18 March 22, 1990 1406
Southeast view of empty hydrogen ball tank behind Reduction Building.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-19 March 22, 1990 1407
Roped-off radioactive waste pile by northwest corner of Reduction Building.

1P-20 March 22, 1990 1416
South view of radioactive waste pile by Reduction Building.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-21 March 22, 1990 1430
Radioactive waste pile behind Dickson Warehouse, looking east.

1P-22 March 22, 1990 1445
North view of drums, crates, and tanks behind Dickson Warehouse.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-23 March 22, 1990 1450
East view of 2 unlined mud holes adjacent to oil storage tank on Garvies Point Road.

1P-24 March 22, 1990 1445
Southwest view of lined settling pond on Garvies Point Road.

# EXHIBIT B

## PHOTOGRAPH LOG

L i TUNGSTEN
GLEN COVE, NEW YORK

SITE INSPECTION: APRIL 18-19, 1990

Li TUNGSTEN
GLEN COVE, NEW YORK
APRIL 18, 1990

PHOTOGRAPH INDEX

ALL PHOTOGRAPHS WERE TAKEN BY STEVEN OKULEWICZ AND GREGORY POLLACK*

| Photo Number | Description | Time |
|---|---|---|
| 1P-1 | Joe Filosa takes soil sample S-2 by Dickson Warehouse. | 1010 |
| 1P-2 | Joe Filosa takes soil sample S3 by northwest corner of Reduction Building. | 1105 |
| 1P-3 | Colored soil composite from behind propane tank. | 1125 |
| 1P-4 | Joe Filosa collects soil composite sample S4 from behind propane tank. | 1130 |
| 1P-1* | Robert Scerbo collects groundwater sample GW1. | 1140 |
| 1P-5 | Mike Gallagher collects surface water sample SW2 from mud hole east of oil tank. | 1240 |
| 1P-6 | Mike Gallagher collects sediment sample SED2 from mud hole east of oil tank. | 1305 |
| 1P-7 | Joe Filosa collects surface water sample SW3 from mud hole northeast of mud pond. | 1340 |
| 1P-8 | Joe Filosa collects sediment sample SED3 from mud hole northeast of mud pond. | 1357 |
| 1P-2* | Robert Scerbo collects groundwater sample GW5. | 1445 |
| 1P-9 | Mike Gallagher takes soil sample S1 along Garvies Point Road. | 1450 |
| 1P-10 | Mike Gallagher collects soil sample S11 from along Garvies Point Road. | 1459 |
| 1P-11 | Joe Filosa collects surface water sample SW4 from lined mud pond. | 1520 |
| 1P-12 | Joe Filosa collects sediment sample SED4 from mud pond. | 1530 |
| 1P-3* | Robert Scerbo collects groundwater sample GW9. | 1545 |
| 1P-13 | Mike Gallagher collects soil sample S9 by gate along Dickson Lane. | 1558 |
| 1P-14 | Joe Filosa takes surface water sample SW1 from water treatment pool. | 1730 |

Li TUNGSTEN
GLEN COVE, NEW YORK
APRIL 18, 1990

PHOTOGRAPH INDEX
(cont'd)

| Photo Number | Description | Time |
|---|---|---|
| 1P-15 | Joe Filosa takes surface water sample SW13 from water treatment pool. | 1735 |
| 1P-4* | Robert Scerbo collects groundwater sample GW4. | 1830 |
| 1P-16 | Mike Gallagher collects surface water sample SW6 from below outfall No. 004 on Glen Cove Creek. | 1845 |
| 1P-17 | Mike Gallagher collects sediment sample SED6 from below outfall No. 004 on Glen Cove Creek. | 1850 |

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-1 April 18, 1990 1010
Joe Filosa takes soil sample S-2 by Dickson Warehouse.

1P-2 April 18, 1990 1105
Joe Filosa takes soil sample S3 by northwest corner of Reduction Building.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-3 April 18, 1990 1125
Colored soil composite from behind propane tank.

1P-4 April 18, 1990 1130
Joe Filosa collects soil composite sample S4 from behind propane tank.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-1* April 18, 1990 1140
Robert Scerbo collects groundwater sample GW1.

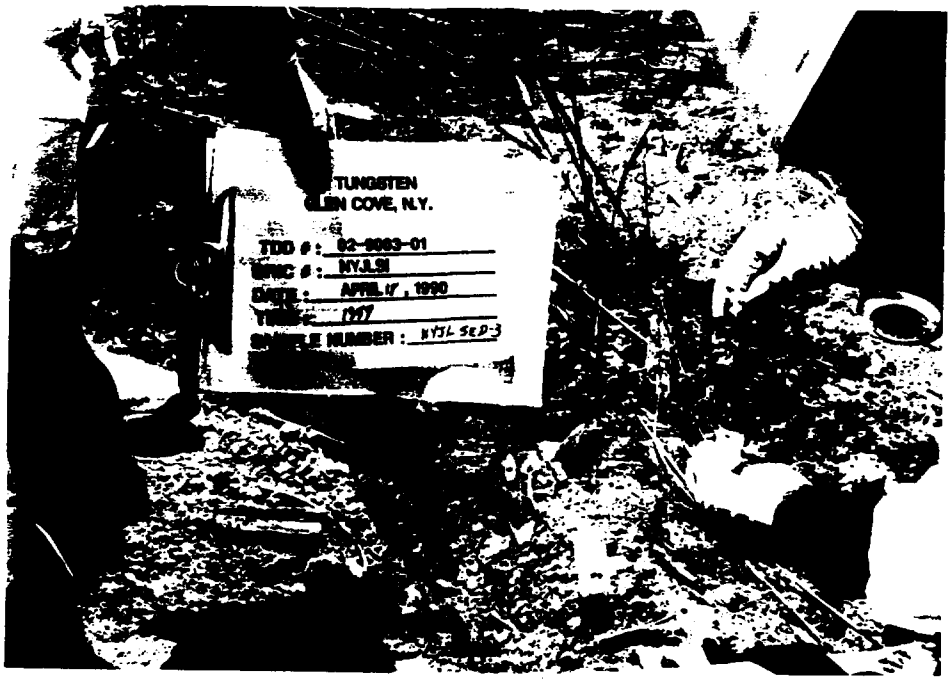
1P-5 April 18, 1990 1240
Mike Gallagher collects surface water sample SW2 from mud hole east of oil tank.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-6 April 18, 1990 1305
Mike Gallagher collects sediment sample SED2 from mud hole east of oil tank.

1P-7 April 18, 1990 1340
Joe Filosa collects surface water sample SW3 from mud hole northeast of mud pond.

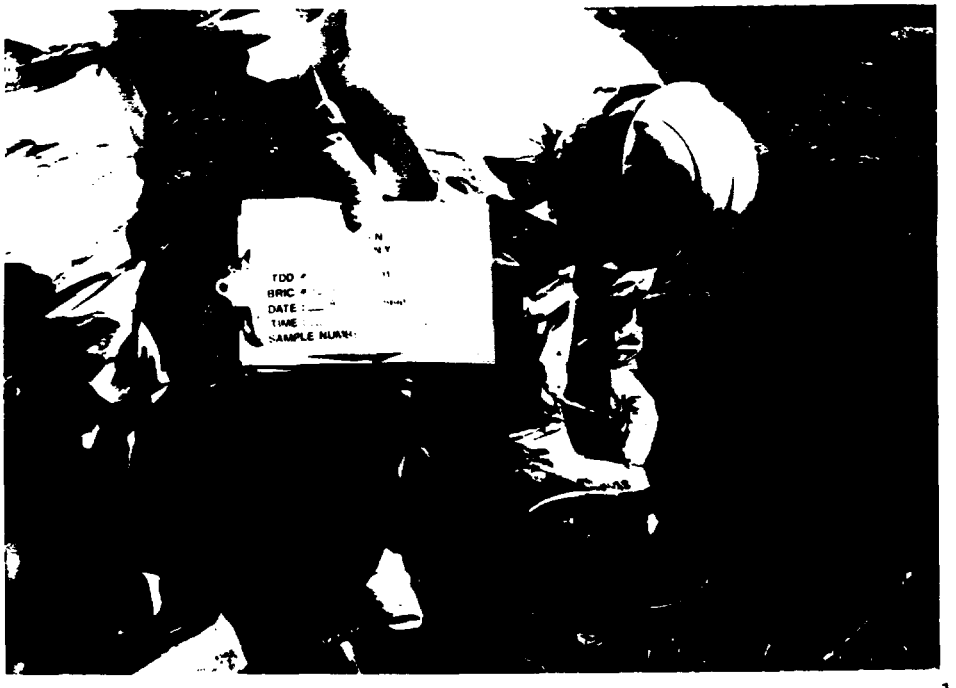
Li TUNGSTEN, GLEN COVE, NEW YORK



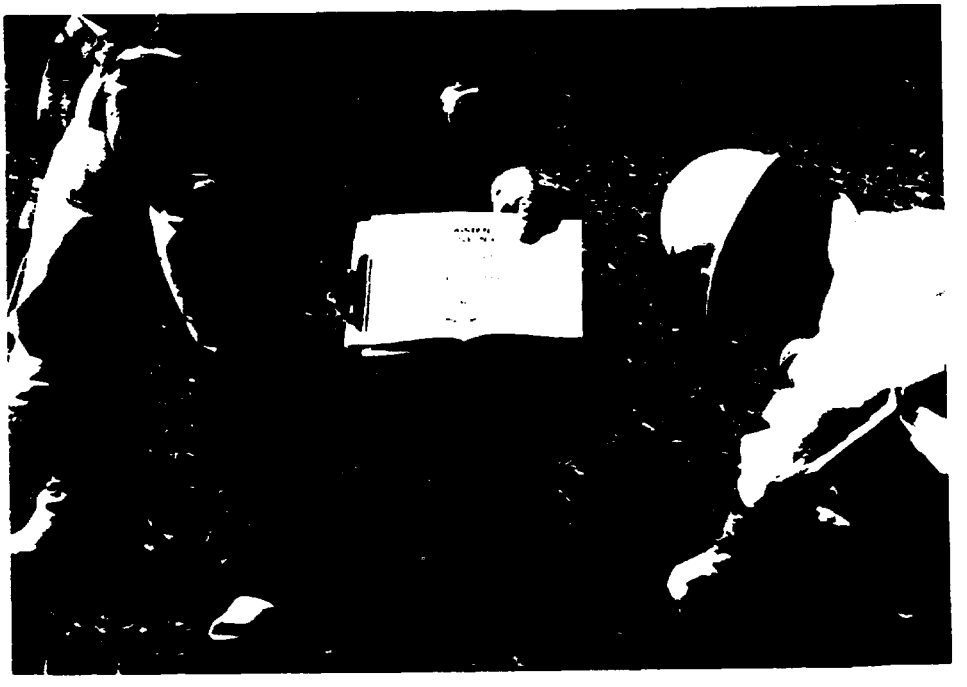

1P-8 April 18, 1990 1357
Joe Filosa collects sediment sample SED3 from mud hole northeast of mud pond.

1P-2* April 18, 1990 1445
Robert Scerbo collects groundwater sample GW5.

Li TUNGSTEN, GLEN COVE, NEW YORK




1P-9 April 18, 1990 1450
Mike Gallagher takes soil sample S1 along Garvies Point Road.



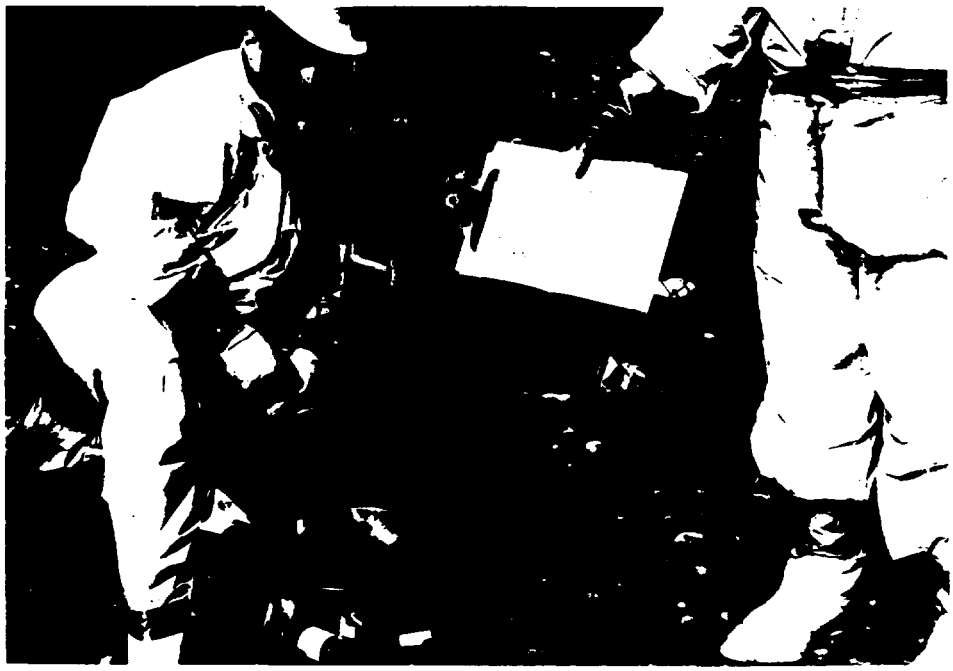
1P-10 April 18, 1990 1459
Mike Gallagher collects soil sample S11 from along Garvies Point Road.

1P-11 April 18, 1990 1520
Joe Filosa collects surface water sample SW4 from lined mud pond.

1P-12 April 18, 1990 1530
Joe Filosa collects sediment sample SED4 from mud pond.

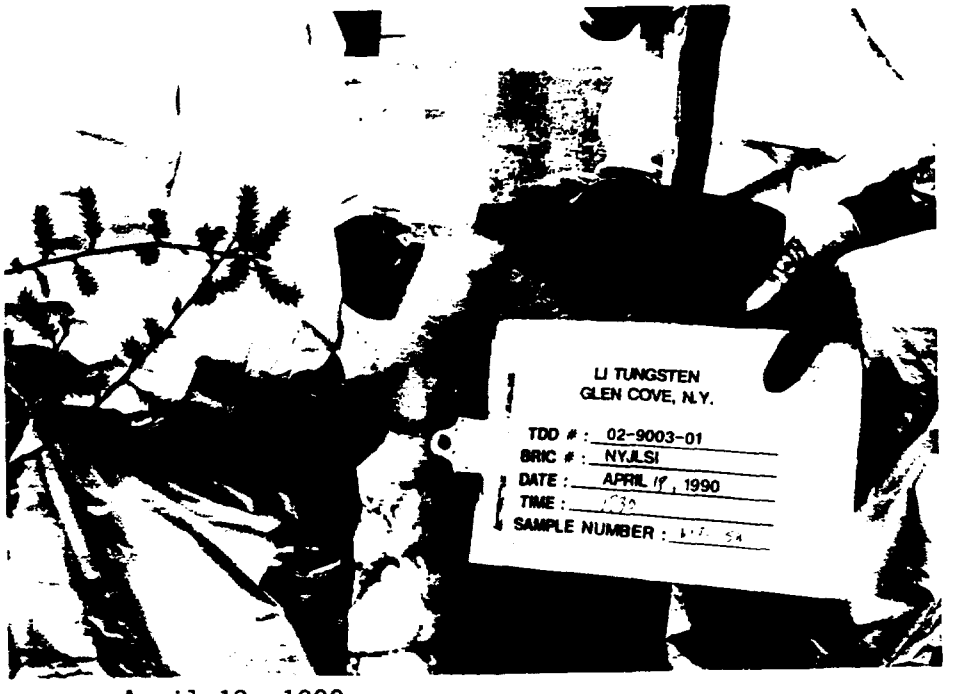
Li TUNGSTEN, GLEN COVE, NEW YORK

1P-3* April 18, 1990 1545
Robert Scerbo collects groundwater sample GW9.

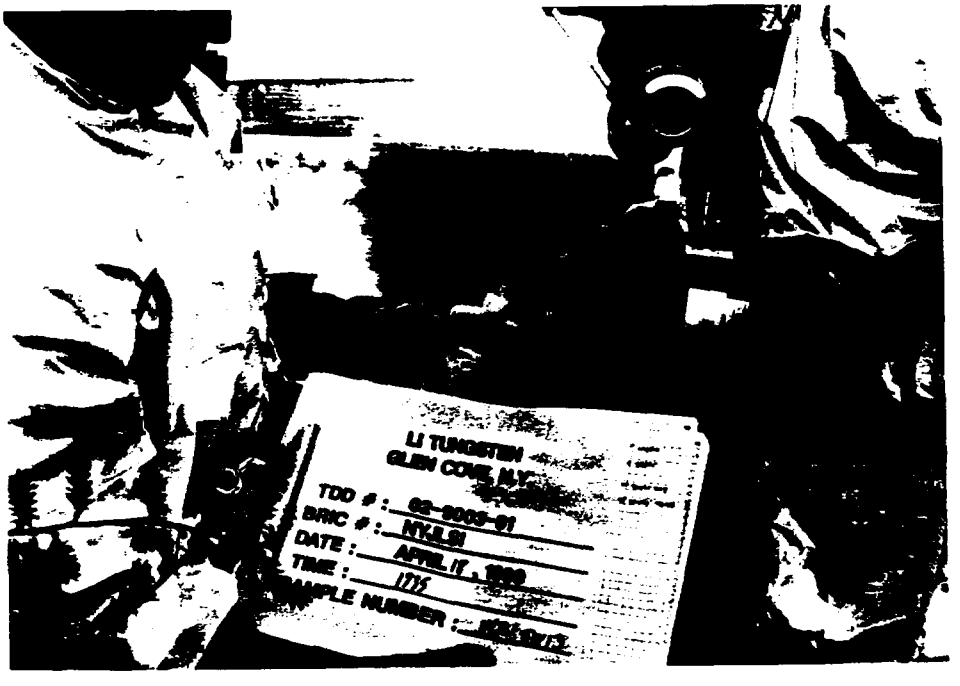


1P-13 April 18, 1990 1558
Mike Gallagher collects soil sample S9 by gate along Dickson Lane.

Li TUNGSTEN, GLEN COVE, NEW YORK

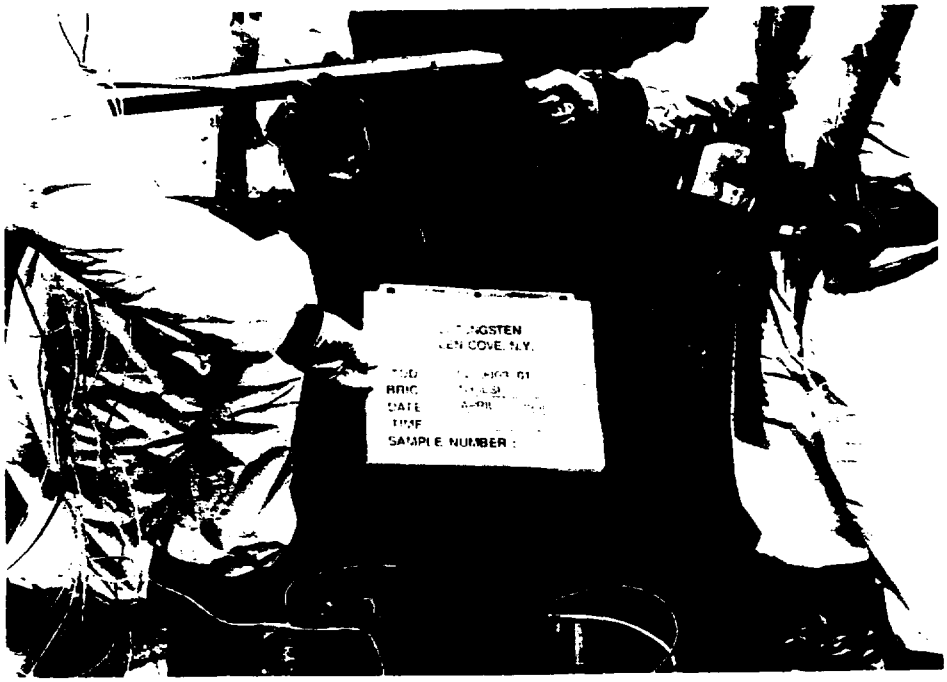



1P-14 April 18, 1990 1730
Joe Filosa takes surface water sample SW1 from water treatment pool.

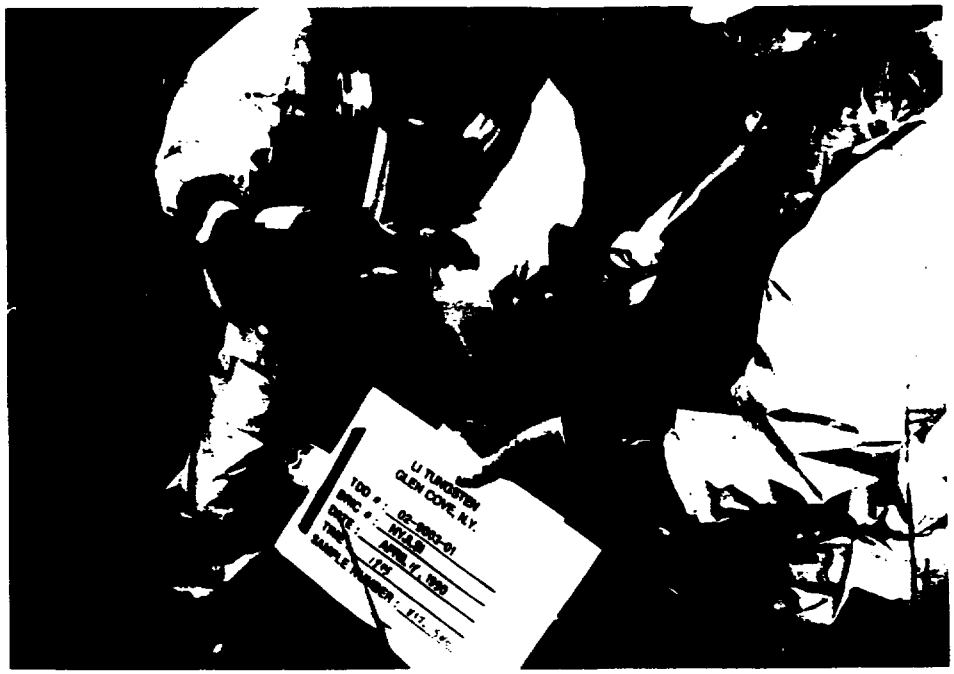



1P-15 April 18, 1990 1735
Joe Filosa takes surface water sample SW13 from water treatment pool.

Li TUNGSTEN, GLEN COVE, NEW YORK




1P-4* April 18, 1990 1830
Robert Scerbo collects groundwater sample GW4.




1P-16 April 18, 1990 1845
Mike Gallagher collects surface water sample SW6
from below outfall No. 004 on Glen Cove Creek

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-17 April 18, 1990 1850

Mike Gallagher collects sediment sample SED6 from below outfall No. 004 on Glen Cove Creek.

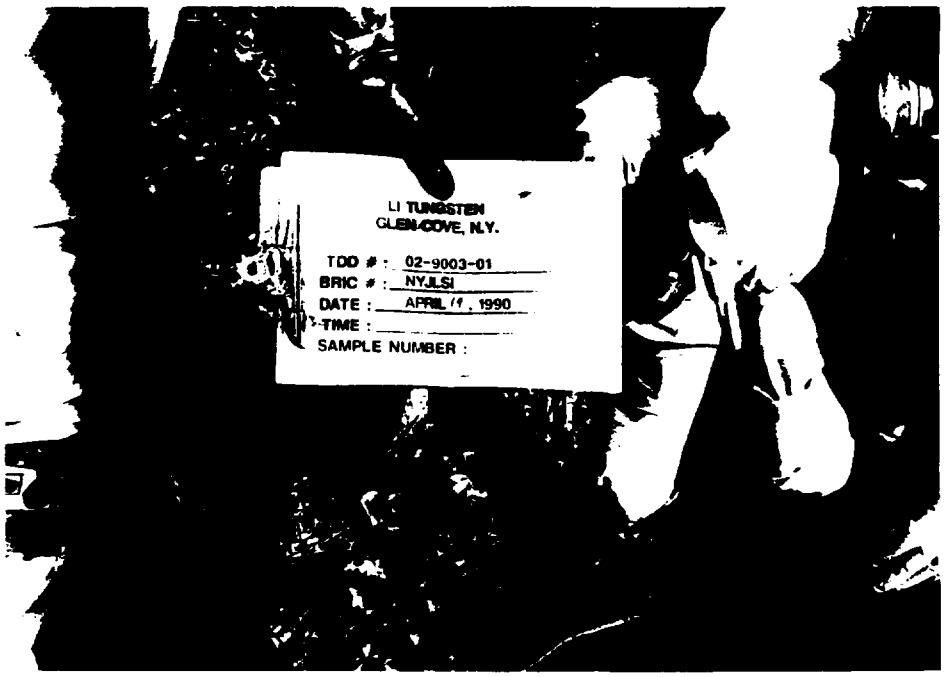
Li TUNGSTEN
GLEN COVE, NEW YORK
APRIL 19, 1990

PHOTOGRAPH INDEX

ALL PHOTOGRAPHS TAKEN BY STEVEN OKULEWICZ AND GREG POLLACK*

| Photo Number | Description | Time |
|---|---|---|
| 2P-1 | Phil Cicolello takes soil sample S10 near monitoring well GM-5. | 1005 |
| 1P-5* | Robert Scerbo collects groundwater sample GW2 from monitoring well GM-5. | 1030 |
| 2P-2 | Phil Cicolello takes soil sample S5 from landfill area. | 1112 |
| 2P-3 | Joe Filosa collects surface water sample SW8 from pond in landfill area. | 1220 |
| 2P-4 | Joe Filosa collects sediment sample SED8 from pond in landfill area. | 1230 |
| 1P-6* | Robert Scerbo collects groundwater sample GW3 from monitoring well GM-3D. | 1235 |
| 2P-5 | Joe Filosa takes soil sample S8 by tanks in landfill area. | 1410 |
| 2P-6 | Phil Cicolello collects surface water sample SW9 from spring east of pond. | 1435 |
| 2P-7 | Phil Cicolello takes sediment sample SED9 from spring above pond. | 1450 |
| 1P-7* | Robert Scerbo collects groundwater sample GW8 from monitoring well EMW-3. | 1510 |
| 2P-8 | Joe Filosa takes soil sample S6 from east bank of spring. | 1510 |
| 1P-8* | Mike Gallagher collects surface water sample SW10 from flooded floor of Dice Building. | 1530 |
| 2P-9 | Phil Cicolello takes soil sample S7 along fence on Herb Hill Road. | 1545 |
| 2P-10 | Joe Filosa takes surface water sample SW7 from Glen Cove Creek below outfall No. 001. | 1635 |
| 2P-11 | Joe Filosa takes sediment sample SED7 from Glen Cove Creek below outfall No. 001. | 1650 |
| 1P-9* | Robert Scerbo collects groundwater sample GW7 from monitoring well GM-17. | 1715 |

Li TUNGSTEN, GLEN COVE, NEW YORK




2P-1 April 19, 1990 1005
Phil Ciccolello takes soil sample S10 near monitoring well GM-5.

1P-5* April 19, 1990 1030
Robert Scerbo collects groundwater sample GW2 from monitoring well GM-5.

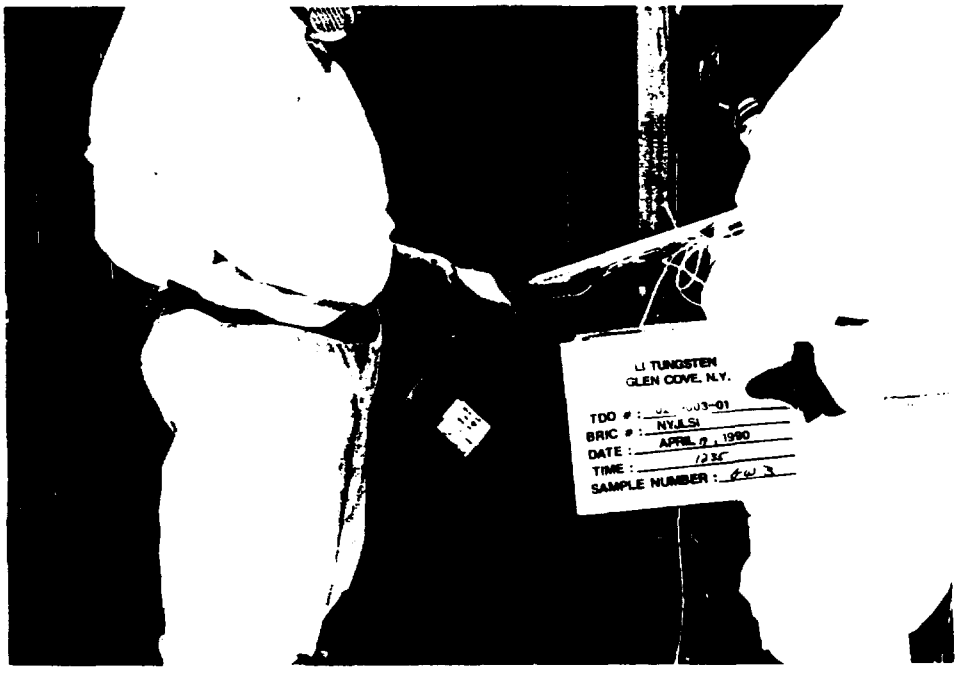
Li TUNGSTEN, GLEN COVE, NEW YORK

2P-2 April 19, 1990 1112
Phil Cicolello takes soil sample S5 from landfill area.

2P-3 April 19, 1990 1220
Joe Filosa collects surface water sample SW8 from pond in landfill area.

Li TUNGSTEN, GLEN COVE, NEW YORK

2P-4 April 19, 1990 1230
Joe Filosa collects sediment sample SED8 from pond in landfill area.




1P-6* April 19, 1990 1235
Robert Scerbo collects groundwater sample GW3 from monitoring well GM-3D.

2P-5 April 19, 1990 1410
Joe Filosa takes soil sample S8 by tanks in landfill area.

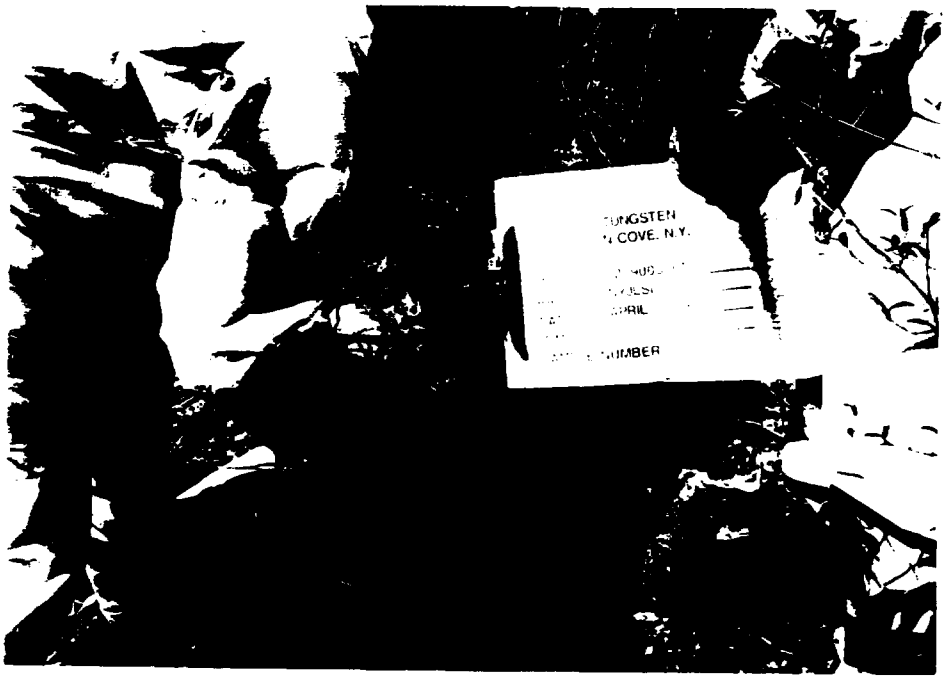
2P-6 April 19, 1990 1435
Phil Cicolello collects surface water sample SW9 from spring east of pond.

Li TUNGSTEN, GLEN COVE, NEW YORK

2P-7 April 19, 1990 1450
Phil Cicolello takes sediment sample SED9 from spring above pond.

1P-7* April 19, 1990 1510
Robert Scerbo collects groundwater sample GW8 from monitoring well EMW-3.

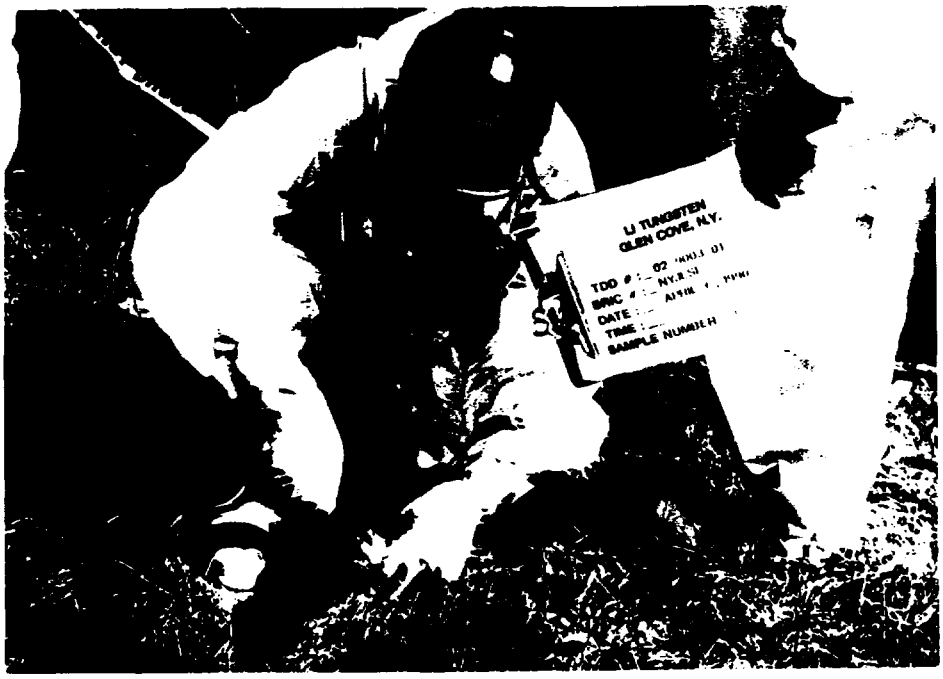
Li TUNGSTEN, GLEN COVE, NEW YORK



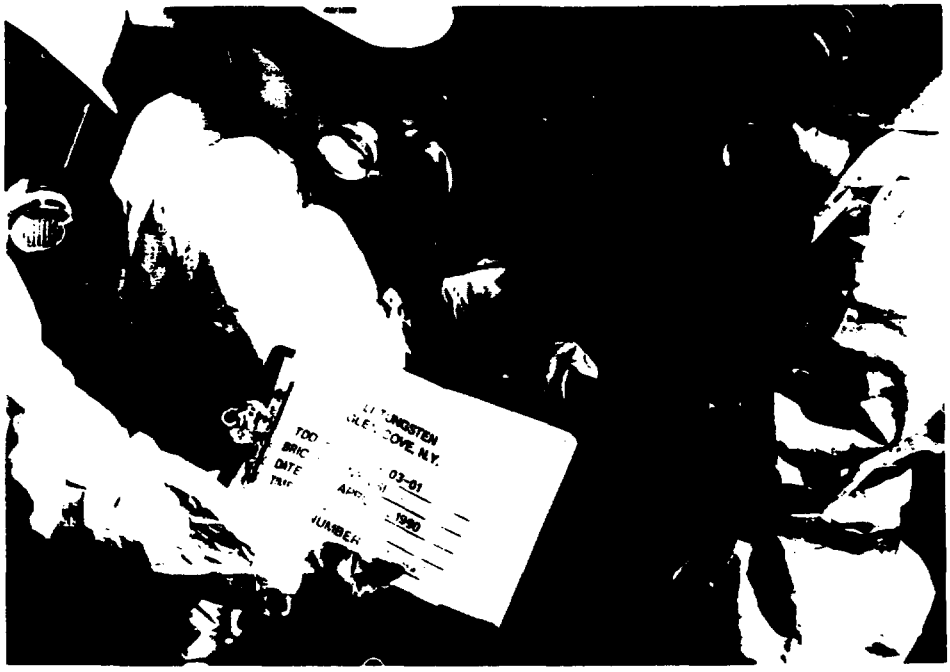

2P-8 April 19, 1990 1510
Joe Filosa takes soil sample S6 from east bank of spring.

1P-8* April 19, 1990 1530
Mike Gallagher collects surface water sample SW10 from flooded floor of Dice Building.

Li TUNGSTEN, GLEN COVE, NEW YORK

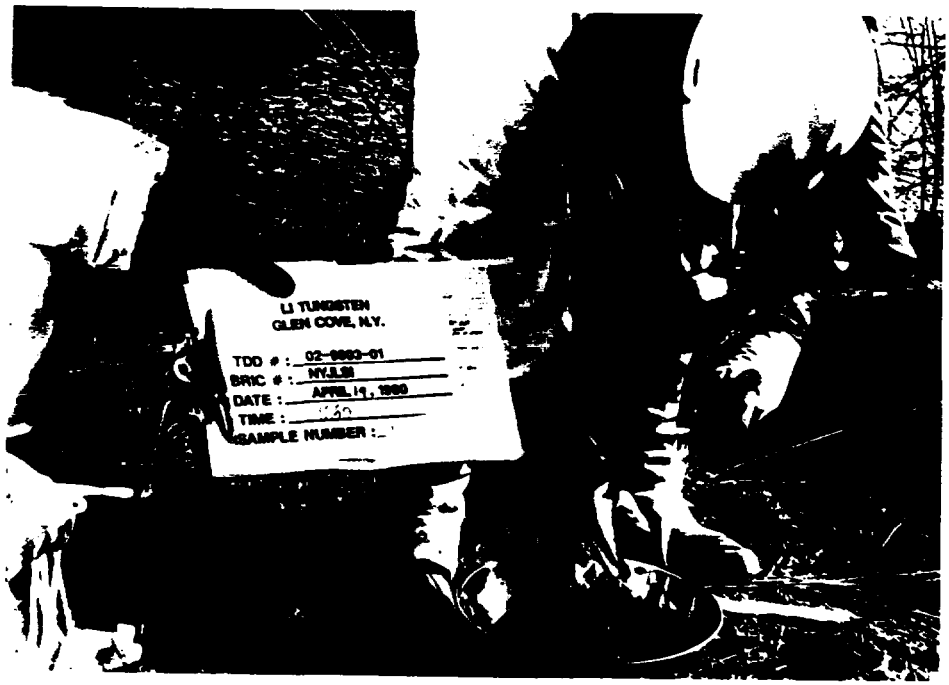



2P-9 April 19, 1990 1545
Phil Cicolello takes soil sample S7 along fence on Herb Hill Road.




2P-10 April 19, 1990 1635
Joe Filosa takes surface water sample SW7 from Glen Cove Creek below outfall No. 001.

Li TUNGSTEN, GLEN COVE, NEW YORK




2P-11 April 19, 1990 1650
Joe Filosa takes sediment sample SED7 from Glen Cove Creek below outfall No. 001.

1P-9* April 19, 1990 1715
Robert Scerbo collects groundwater sample GW7 from monitoring well GM-17.

# EXHIBIT C

## PHOTOGRAPH LOG

Li TUNGSTEN
GLEN COVE, NEW YORK

SITE INSPECTION: MAY 15, 1990

Li TUNGSTEN
GLEN COVE, NEW YORK
MAY 15, 1990

PHOTOGRAPH INDEX

ALL PHOTOGRAPHS WERE TAKEN BY STEVEN OKULEWICZ

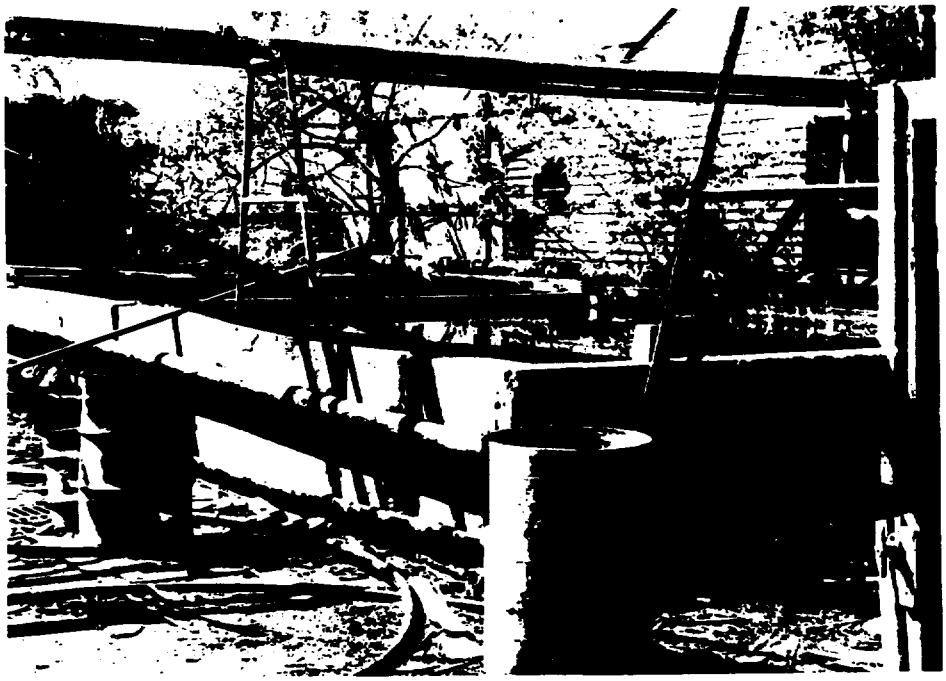
| Photo Number | Description | Time |
|---|---|---|
| 1P-1 | Phil Ciccolello collects surface water sample SW-1 from oil recovery sump looking west. | 1005 |
| 1P-2 | Phil Ciccolello collects surface water sample SW-3 from oil recovery sump, looking west. | 1015 |
| 1P-3 | View of oil recovery sump looking south. | 1020 |
| 1P-4 | East view of Warehouse Building showing stacked drums and flooded floor. | 1030 |
| 1P-5 | East view of Glen Cove Creek at low tide. | 1035 |
| 1P-6 | Phil Ciccolello collects sediment sample SED1 from oil recovery sump, looking west. | 1205 |
| 1P-7 | Phil Ciccolello collects sediment sample SED2 from oil recovery sump looking west. | 1210 |
| 1P-8 | Joe Filosa collects surface water sample SW2 from floor of the East Building looking east. | 1315 |
| 1P-9 | Northwest view of tanks containing hydrochloric acid west of East Building. | 1316 |
| 1P-10 | Rusted drums containing ore looking northwest outside the East Building. | 1317 |
| 1P-11 | Crate label, looking west, outside of the East Building. | 1318 |

Li TUNGSTEN, GLEN COVE, NEW YORK

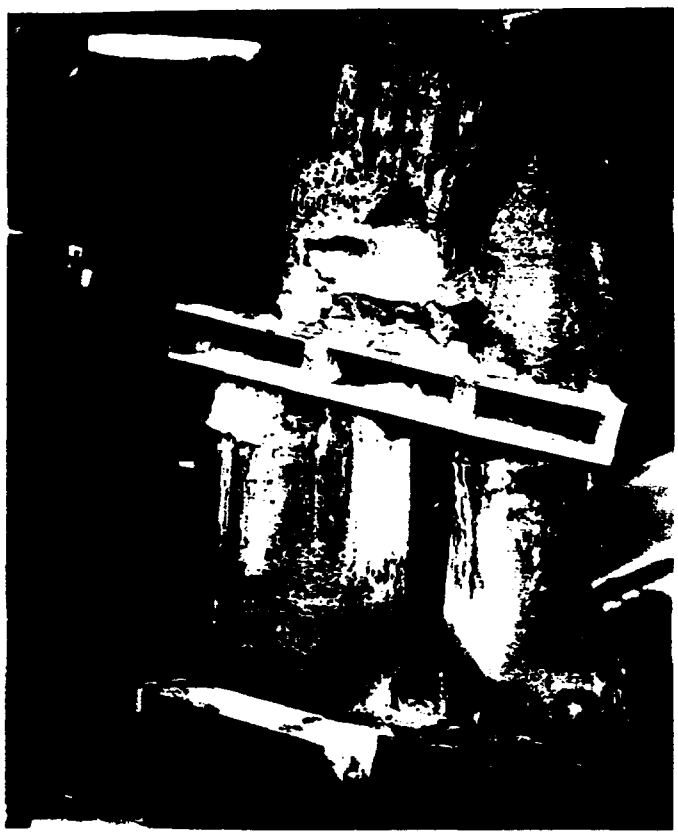
1P-1 May 15, 1990 1005
Phil Cicolello collects surface water sample SW1 from oil recovery sump looking west.

1P-2 May 15, 1990 1015
Phil Cicolello collects surface water sample SW3 from oil recovery sump, looking west.

Li TUNGSTEN, GLEN COVE, NEW YORK



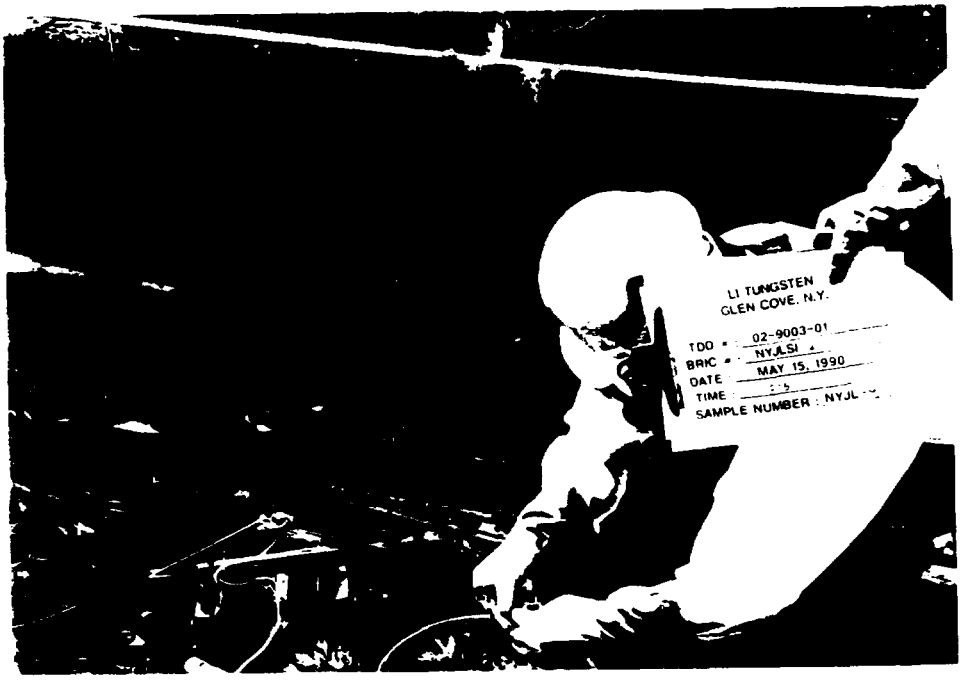
1P-3 May 15, 1990 1020
View of oil recovery sump looking south.



1P-4 May 15, 1990 1030
East view of Warehouse Building showing stacked drums and flooded floor.

Li TUNGSTEN, GLEN COVE, NEW YORK

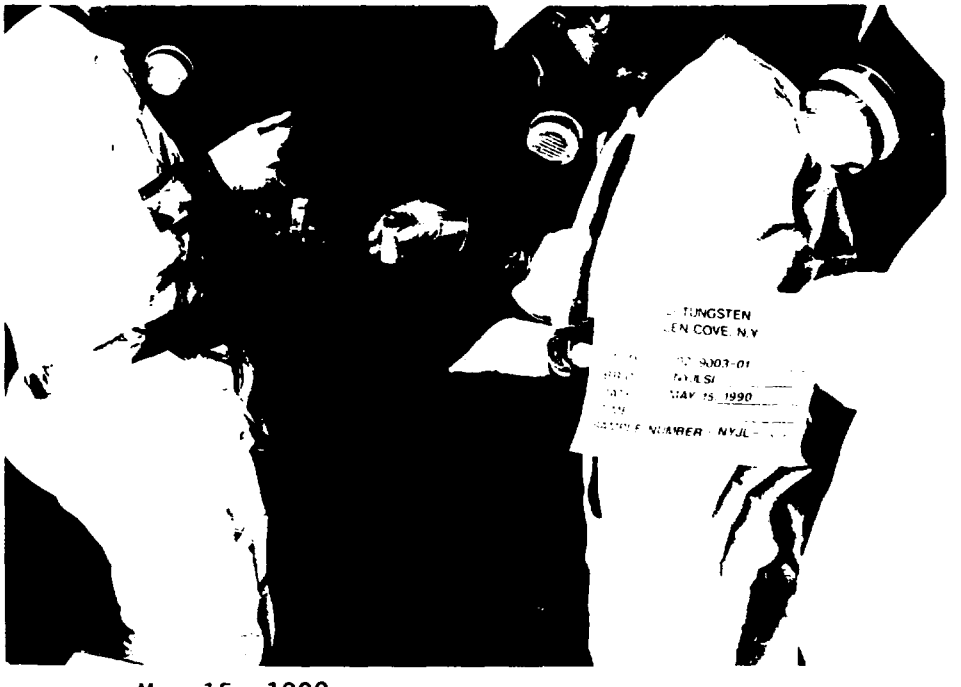
1P-5 May 15, 1990 1035
East view of Glen Cove Creek at low tide.




1P-6 May 15, 1990 1205
Phil Cicolello collects sediment sample SED1 from oil recovery sump, looking west.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-7 May 15, 1990 1210
Phil Cicolello collects sediment sample SED2 from oil recovery sump looking west.




1P-8 May 15, 1990 1315
Joe Filosa collects surface water sample SW2 from floor of the East Building looking east.

Li TUNGSTEN, GLEN COVE, NEW YORK

1P-9 May 15, 1990 1316
Northwest view of tanks containing hydrochloric acid west of East Building.

1P-10 May 15, 1990 1317
Rusted drums containing ore looking northwest outside the East Building.

Li TUNGSTEN, GLEN COVE, NEW YORK

?P-11 May 15, 1990 1318
Crate label, looking west, outside of the East Building.

# ATTACHMENT 2

# REFERENCES

1. Letter from Robert A. Becherer, Regional Hazardous Substances Engineer, New York State Department of Environmental Conservation, to Charles Fitzsimmons, U.S. EPA, Edison, NJ, May 9, 1989.

2. Letter from John A. Miele, Associate Radiophysicist, Licensing Section, NYS Department of Labor, Division of Industrial Hygiene, to F. H. Lee, Radiation Safety Officer, Wah Chang Smelting and Refining Company of America. Inc., November 30, 1971.

3. Telecon Note: Conversation between Charles Fitzsimmons, U. S. EPA, Edison, NJ, and Steven Okulewicz, NUS Corp. Region 2 FIT, July 31, 1989.

4. Li Tungsten Site Investigation Report, Volume 1, RTP Environmental Associates Inc., May 1988.

5. Preliminary Assessment Off-Site Reconnaissance Information Reporting Form, Li Tungsten, TDD No. 02-8907-28, NUS Corp. Region 2 FIT, Edison, NJ, July 20, 1989.

6. Three-Mile Vicinity Map, compiled from U.S. Department of the Interior, Geological Survey Topographic Maps, 7.5 minute series, Sea Cliff, NY Quadrangle, 1968, photorevised 1979; Bayville, NY-Conn. Quadrangle, 1967; Mammaroneck, NY-Conn. Quadrangle, 1967; Hicksville, NY Quadangle, 1967, photorevised 1979.

7. U.S. Department of the Interior, Fish and Wildlife Service, Atlantic Coast Ecological Inventory, NY-Conn-NJ, 1980.

8. Site Plan of Li Tungsten, prepared by Fred C. Hart Associates Inc., September 21, 1989.

9. New York State Atlas of Community Water System Sources, NYS Department of Health, Division of Environmental Protection, Bureau of Public Water Supply Protection, 1982.

10. Monthly fluctuations in the quality of ground water near the water table in Nassau and Suffolk Counties, Long Island, New York. U.S. Geological Survey Water Resources Investigations 78-41, 1978.

11. U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Nassau County, NY 1985.

12. Hydrogeology and ground-water quality of the northern part of the town of Oyster Bay, Nassau County, New York, in 1980. U. S. Geological Survey Water Resources Investigations, Report 85-4051, 1987.

13. Field Notebook Nos. 0541, 0562, and 0579, Li Tungsten, TDD No. 02-9003-01, on-site reconnaissance conducted on March 22, 1990, and site inspections conducted on April 18-19, 1990, May 15, 1990, June 21, 1990, and July 13, 1990.

14. Uncontrolled hazardous waste site ranking system, A users manual, 40 CFR, Part 300, Appendix A, 1986.

15. Telecon Note: Conversation between Don Myott, Nassau County Department of Health, Bureau of Public Water Supply, and Brian Dietz, NUS Corp. Edison, NJ, March 29, 1989.

16. Nassau County Planning Commission, Water Supply and Water Districts Map. October 1984.

## REFERENCES (Cont'd)

17. General Sciences Corporation, Graphical Exposure Modeling System (GEMS). Landover, Maryland, 1986.

18. Telecon Note: Conversation between Jim Gilmore, New York State Department of Environmental Conservation, and Steve Okulewicz, NUS Corp., Edison, NJ, August 7, 1989.

19. Telecon Note: Conversation between Debra Rothberg, Jones, Day, Revis, and Pogue Law Office, and Steve Okulewicz, NUS Corp., Edison, NJ, August 4, 1989.

20. Telecon Note: Conversation between Jim Gilmore, New York State Department of Environmental Conservation, and Steve Okulewicz, NUS Corp, Edison, NJ, August 8, 1989.

21. Letter from Agnes Gara, Assistant Sanitary Engineer, NY State Department of Health, to Robert J. Mangan, Director of Public Works, Glen Cove, NY. September 28, 1987.

22. NYSDEC memorandum from R.A. Becherer to Li Tungsten File, Subject: Analytical Data. July 15, 1986.

23. Letter from John W. Ozard, Senior Wildlife Biologist, NYSDEC Wildlife Resources Center, to David J. Grupp, NUS Corp., Edison, NJ, April 10, 1987.

24. Federal Register/Volume 43, Number 120/Wednesday, June 21, 1978. Aquifers underlying Nassau and Suffolk Counties, New York.

25. U.S. EPA Region 2, Administrative Order on Consent, Index No. II CERCLA-90215, In the Matter of Li Tungsten Site, July 21, 1989.

26. Letter and laboratory reports from James A. Perazzo, Associate-Manager of Geosciences, Fred C. Hart Associates, to Charles Fitzsimmons, Environmental Engineer, U.S. EPA Region II, September 21, 1989.

27. Li Tungsten's Discharges to Glen Cove Creek, William F. Cosulich Associates, Enviromental Engineers, February 7, 1975, based on drawing from Li Tungsten entitled "Underground Drainage Lines" dated January 1959.

28. City of Glen Cove Flood Map derived from Federal Emergency Management Agency, National Flood Insurance Program, Flood Insurance Rate Map. Community Panel No. 360465-0002-C, Revised September 5, 1984.

29. Telecon Note: Conversation between Robert Thessifeld, Nassau County Department of Health, and Steven Okulewicz, NUS Corp. Region 2 FIT, October 23, 1989.

30. Telecon Note: Conversation between Daniel Russell, City Historian, Glen Cove, NY, and Steven Okulewicz, NUS Corp. Region 2 FIT, July 16, 1990.

31. U.S. EPA memorandum from Charles R. Aschwanden, Acting Chief, Enforcement Specialist Office, to Douglas R. Blazey, Esq., Regional Council and Barbara Metzger, Director, Environmental Services Division (all from U.S. EPA), Subject: NEIC report regarding Long Island Tungsten Site Analyses. August 2,1990. (Re: SAS analysis of samples collected by NUS Corporation Region 2 FIT on April 18-19, 1990 and May 15, 1990).

## REFERENCES (Cont'd)

32. Russell, Daniel E. Tungsten: mineralogy, geochemistry, and extractive metallurgy, City of Glen Cove, N. Y., August 1989.

33. Letter from Michael J. O'Toole Jr., P.E., Director, Division of Hazardous Waste Remediation, NYSDEC, to Stephen Luftig, Director, Emergency and Remedial Response Division, U.S. EPA Region II. Undated.

34. Letter from Stephen D. Luftig, Director, Emergency and Remedial Response Division, to Michael J. O'Toole Jr., P.E., Director, Division of Hazardous Waste Remediation, NYSDEC. August 15, 1989.

35. Letter from Stephen D. Luftig, Director, Emercency and Remedial Response Division, to Michael J. O'Toole Jr., P.E. , Director, Division of Hazardous Waste Remediation, NYSDEC. February 7, 1990.

36. Memorandum from Laura J. Amend, Roy F. Weston, Inc., to Charles Fitzsimmons, U.S. EPA. Subject: Li Tungsten air sampling analytical results evaluation. October 20, 1989.

37. Preliminary Radiological Assessment of the Li Tungsten Facility, Glen Cove, N.Y. The NDL Organization, Peekskill, N. Y. December 1989.

38. Chemical quality of water from community systems in New York, November 1970 to May 1975, U.S. Geological Survey, Water Resources Investigations 80-77, 1980.

39. Hydrogeologic correlations for selected wells on Long Island, N.Y., U.S. Geological Survey, Water Resources Investigations 86-04318, 1989.

40. Radionuclide concentrations in surface sediments and core sediments form Glen Cove Creek and Hempstead Harbor, New York, October 28, 1989.

41. Nytest Environmental Inc., analytical data report package - composite tank samples, Li Tungsten, December 30, 1989.

42. U. S. EPA Region 2 Fact Sheet, EPA Superfund Action at Li Tungsten in Glen Cove, N.Y. January 23, 1990.

43. Fax Transmittal from Jim Perazzo, Hart Environmental Management Corporation, to Steven Okulewicz, NUS Corp. Subject: outfall locations for Li Tungsten. March 26, 1990.

44. Telecon Note: Converation between Jim Perazzo, Hart Environmental Management Corporation, and Steven Okulewicz, NUS Corp, Edison, N.J. March 26, 1990.

45. U.S. EPA Superfund Program, Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) pp. 304 and 360, June 7, 1990.

46. Aerial Photographs: Li Tungsten, Photo No. (P-29)-68-333, April 5, 1950; Photo No. 1738-7-871, April 11, 1969; Photo No. 3975-18-878, March 11, 1988. All photos from Lockwood, Kessler & Bartlett, Syosset, New York.

47. New York State Board of Elections, New York State Legislative State Task Force on Demographic Research and Reapportionment, N.Y. S. Congressional Districts, 1984.

48. Telecon Note: Conversation between Charles Fitzsimmons, U. S. EPA, and Joann Wagner, NUS Corp. Region 2 FIT, February 28, 1990.

## REFERENCES (Cont'd)

49. Waste Characterization Report, Li Tungsten Site, prepared for RTP Environmental Associates, Inc., by Enviropact Northeast, Inc. April 29, 1988. Volume 1.

50. U. S. EPA Contract Laboratory Program, Compuchem and Enseco/ Rocky Mountain Analytical Laboratories, Case No. 13906; NET Mid-Atlantic Inc. and Betz Laboratories, Case No. 14115. Laboratory analyses from NUS Corporation Region 2 FIT site inspections conducted on April 18-19, 1990 and May 15, 1990.

51. Wah Chang's unique plant for concentrating tungsten. Publication, Author, and Date are unknown.

52. Interim Remedial Actions Report, Li Tungsten Facility, Fred C. Hart Inc., April 4, 1990.

REFERENCE NO. 1

**New York State Department of Environmental Conservation**
**Building 40—SUNY, Stony Brook, New York 11794**

516/ 751-1312

**Thomas C. Jorling**
**Commissioner**

May 9, 1989

Mr. Charles Fitzsimmons
DEEPA
Woodbridge Avenue
Edison, NJ 08837

Dear Mr. Fitzsimmons:

As per our telephone conversation, attached are data pertaining to the U Tungsten site, Glen Cove, from our files. The following information pertains to the regulatory status of the site:

1. The facility had a New York State Discharge Permit (SPDES) NYD 000249. I was not able to obtain a copy of the permit, but this can be pursued if necessary. I am attaching copies of the company's discharge monitoring report.

2. The facility never had RCRA regulatory status. The company never obtained an EPA ID number. In spite of this fact, the Department inspected the facility in December, 1988. The inspection did not indicate that any hazardous waste was being generated from the facility operation. A copy of the salient portions of the inspection is attached.

3. The RCRA inspection report indicates the facility had an air permit. Since the Nassau County Health Department (NCHD) administers the air program for DEC in Nassau County, I suggest you contact the NCHD if you would like information on their Air Permit.

100105

Mr. Charles Fitzsimmons
USEPA
Re: Lt Tungsten, Glen Cove, NY

2.

Samples of materials on site and soil samples have been taken and analyzed over the past few years. Copies of the sampling results are enclosed.

I hope you will find this information useful in your work at the site.

Very truly yours,

Robert A. Becherer

Robert A. Becherer, P.E.
Regional Hazardous Substances
Engineer

RAB:mz
cc: [illegible] Bratten
T. Candela

100106

| UNTY | DATE PRODUCED | PAGE |
|---|---|---|
| NASSAU | 07-02-82 | 1 of 2 |

REPORT PERIOD 07-01-82 THRU 07-31-82 | 1

W YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

# SPDES — DISCHARGE MONITORING REPORT

SEE THE REVERSE SIDE OF PART 4 FOR INSTRUCTIONS

| IVY NET RAMETER/UNITS | OUT FALL | MONITORING LOCATION | | MINIMUM | AVERAGE | MAXIMUM | # EX | TYPE | FREQUENCY |
|---|---|---|---|---|---|---|---|---|---|
| | 003 | EFFLUENT VALUE 0100056050301 | LIMIT | MONITORING | REQUIRED | NO LIMITS | | METERED | CONTINUOUS |
| | | | REPORTED VALUE | | 0.088 | | | | |
| | 004 | EFFLUENT VALUE 0200056050401 | LIMIT | MONITORING | REQUIRED- | NO LIMITS | | METERED | INSTANT |
| | | | REPORTED VALUE | | 0.010 | | | | |
| | 005 | EFFLUENT VALUE 0300056050501 | LIMIT | MONITORING | REQUIRED- | NO LIMITS | | METERED | INSTANT |
| | | | REPORTED VALUE | | 0.020 | | | | |
| TURE | 003 | EFFLUENT VALUE 0400010030301 | LIMIT | ********* | ********* | 90.0000 | | METERED | CONTINUOUS |
| | | | REPORTED VALUE | ********* | ********* | 69 | 0 | | |
| TURE | 005 | EFFLUENT VALUE 0500010030501 | LIMIT | ********* | ********* | 90.0000 | | GRAB | MONTHLY |
| | | | REPORTED VALUE | ********* | ********* | 66 | 0 | | |
| | 003 | EFFLUENT VALUE 0600400120301 | LIMIT | 5.0000 | ********* | 9.0000 | | GRAB | MONTHLY |
| | | | REPORTED VALUE | 6.8 | ********* | 6.8 | 0 | | |
| | 004 | EFFLUENT VALUE 0700400120401 | LIMIT | 6.0000 | ********* | 10.0000 | | GRAB | CONTINUOUS |
| | | | REPORTED VALUE | 6.9 | ********* | 7.5 | 0 | | |
| | 005 | EFFLUENT VALUE 0800400120501 | LIMIT | 5.0000 | ********* | 9.0000 | | GRAB | MONTHLY |
| | | | REPORTED VALUE | 6.5 | ********* | 6.5 | 0 | | |
| (AS NH3) | 004 | EFFLUENT VALUE 0900610020401 | LIMIT | ********* | 29.2000 | 58.4000 | | 24 HR COMP | 2/MONTH |
| | | | REPORTED VALUE | ********* | 0.10 | 0.23 | 0 | | |
| -SO3 | 004 | EFFLUENT VALUE 1000740020401 | LIMIT | ********* | 11.3000 | 23.5000 | | 24 HR COMP | 2/MONTH |
| | | | REPORTED VALUE | ********* | 0.04 | 0.04 | 0 | | |

eby affirm under penalty of perjury that information provided on this form is true to the best of my and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to 0 45 of the Penal Law.

NAME AND TITLE

rles Gow Vice President 8/25/82

☒ 1 PERMITTEE
☐ 2 AGENT

Charles C. Gow

DATE 8/25/82

LI TUNGSTEN CORP
53 HERB HILL ROAD
GLEN COVE NY 11542

NY0008245
04 MPI 02
35 17 SUB 02 [illegible]

RECEIVED
AUG 26 1982

PART 1—ENCON COPY

100107

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

# SPDES — DISCHARGE MONITORING REPORT

SEE THE REVERSE SIDE OF PART 4 FOR INSTRUCTIONS

| NTY | DATE PRODUCED | PAGE |
|---|---|---|
| NASSAU | 07-02-82 | 2 of 2 |

REPORT PERIOD: 07-01-82 THRU 07-31-82

| NPDES NO. | |
|---|---|
| 249 | 1 |

| PARAMETER/UNITS | OUTFALL | MONITORING LOCATION | | MINIMUM | AVERAGE | MAXIMUM | NO. EX. | TYPE | FREQUENCY |
|---|---|---|---|---|---|---|---|---|---|
| | | | LIMIT | ********** | 5.0000 | 11.0000 | | 24 HR COMP | 2/MONTH |
| | 004 | EFFLUENT VALUE 100951020401 | REPORTED VALUE | ********** | 0.25 | 0.30 | 0 | | |
| | | | LIMIT | ********** | 0.2000 | 0.4000 | | 24 HR COMP | 2/MONTH |
| TOTAL | 004 | EFFLUENT VALUE 201002020401 | REPORTED VALUE | ********** | 0.0004 | 0.001 | 0 | | |
| | | | LIMIT | ********** | 0.3000 | 0.6000 | | 24 HR COMP | 2/MONTH |
| TAL | 004 | EFFLUENT VALUE 301051020401 | REPORTED VALUE | ********** | 0.002 | 0.006 | 0 | | |
| | | | LIMIT | ********** | 3.0000 | 6.0000 | | 24 HR COMP | 2/MONTH |
| SE-TOTAL | 004 | EFFLUENT VALUE 401055020401 | REPORTED VALUE | ********** | 0.02 | 0.16 | 0 | | |
| | | | LIMIT | ********** | 3.0000 | 6.0000 | | 24 HR COMP | 2/MONTH |
| M-TOTAL | 004 | EFFLUENT VALUE 501105020401 | REPORTED VALUE | ********** | 0.02 | 0.13 | 0 | | |
| | | | LIMIT | ********** | 70.0000 | 140.0000 | | 24 HR COMP | 2/MONTH |
| | 004 | EFFLUENT VALUE 635001020401 | REPORTED VALUE | ********** | 0.42 | 0.42 | 0 | | |
| | | | LIMIT | ********** | 0.4000 | 0.8000 | | 24 HR COMP | 2/MONTH |
| TAL | 004 | EFFLUENT VALUE 795005020401 | REPORTED VALUE | ********** | 0.03 | 0.04 | 0 | | |
| | | | LIMIT | ********** | 0.4500 | 0.9000 | | 24 HR COMP | 2/MONTH |
| TOTAL | 004 | EFFLUENT VALUE 885009020401 | REPORTED VALUE | ********** | 0.02 | 0.04 | 0 | | |
| | | | LIMIT | ********** | 7.0000 | 14.0000 | | 24 HR COMP | 2/MONTH |
| TAL | 004 | EFFLUENT VALUE 995012020401 | REPORTED VALUE | ********** | 0.04 | 0.05 | 0 | | |
| | | | LIMIT | ********** | 5.9000 | 11.0000 | | 24 HR COMP | 2/MONTH |
| . (AS S) | 004 | EFFLUENT VALUE 203990102040 1 | REPORTED VALUE | ********** | 0.02 | 0.02 | 0 | | |

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.

NAME AND TITLE: Charles C. Gow Vice President

Charles C. Gow

[X] 1 PERMITTEE
[ ] 2 AGENT

DATE: 8/25/82

LI TUNGSTEN CORP
55 HERB HILL ROAD
GLEN COVE NY 11542

NY0008249
04 MP1 02
05 17 SUB 02 SC 0

PART 1—ENCON COPY

100108

REGION: 1

# INSPECTION FORM

Major: ___ Non-Major: ✓

TSDF: ___ Substitution: ___

NEW YORK STATE INDUSTRIAL HAZARDOUS WASTE MANAGEMENT ACT

(Chapter 639, Laws of 1978)

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Henry G. Williams, Commissioner

Division of Solid and Hazardous Waste
Norman H. Nosenchuck, Director

Send to: Compliance Inspection Section
50 Wolf Road - Room 207/415
Albany, New York 12233-0001

EPA I.D. NUMBER: N Y NO probable site no EPA ID

*HANDLER'S NAME (Corporate):

(Division):

*HANDLER'S MAILING ADDRESS:

City, State & Zip Code

*HANDLER'S LOCATION ADDRESS:
(if different than mailing)

City, State & Zip Code

*HANDLER'S TELEPHONE NUMBER: ( ) Extension:

*FULL NAME OF HANDLER'S CONTACT: (Mr.) (Ms.)

*SIGNATURE OF HANDLER'S CONTACT:

*TITLE OF HANDLER'S CONTACT:

INSPECTION DATE: TIME OF INSPECTION: (a.m.) (p.m.)

COUNTY: E/A NUMBER:

INSPECTOR'S NAME:

TITLE:

NAME:

TITLE:

CHECK ONE: Copy of THIS form (___has) (X has not) been given/sent to the Handler.

REPORT PREPARED BY: DATE:

REPORT APPROVED BY: DATE:

(Inspection Form 85-86)

100109

New York State Department of Environmental Conservation
Division of Solid and Hazardous Waste
50 Wolf Road, Albany, New York 12233

PART I

## General Information and Classification of Facility

1. Identification of Hazardous Waste - 371 — Yes ____ No ____

A. Is there reason to believe the facility has hazardous waste on-site? If yes, what leads you to believe it is hazardous waste? Check appropriate box/boxes and attach any applicable correspondence with DEC or EPA:

(1) ____ Company recognizes that its waste is hazardous during the inspection.

(2) ____ Company admitted the waste is hazardous in its RCRA notification and/or Part A permit application.

(3) ____ EPA testing (SWA-46) has shown characteristics of:
( ) ignitability - 371.3(b);
( ) corrosivity - 371.3(c);
( ) reactivity - 371.3(d);
( ) EP toxicity - 371.3(e)

____ Has revealed hazardous constituents (please attach analysis report) 371.4(a)(2), Appendix 22, Appendix 23

(4) ____ The material is listed in the regulations as a hazardous waste from non-specific sources 371.4(b).

(5) ____ The waste material is listed in the regulations as a hazardous waste from specific sources. 371.3(c).

(6) ____ The material or product is listed in the regulations as discarded commercial chemical products, off-specification species, container residues and spill residues thereof. 371.4(d).

(7) ____ Company is unsure, but they have reason to believe that waste materials are hazardous. (Explain) _____

_____.

(8) ____ If don't know, please explain: _____

Their waste was not hazardous
[illegible] tested by [illegible]
[illegible] inspection +
more test [illegible] done.



100110

B. Is there reason, other than those above, for you to believe that there is hazardous waste on site? (Explain) _____

_____

_____

C. What other environmental permits are held by the company, relative to hazardous waste management?

X SPDES Permit Number ____ Air Permit Number

____ Part 364 Industrial Waste Transporter Permit (indicate this company's permit number if any)

Please describe other relavent (if any) permits and give the name, address, Part 364 Permit Number and EPA I.D. Number of transporter(s) used by company.

_____

_____

_____

D. If the facility is a treatment, storage or disposal facility, have they:

____ Submitted a Part A application. ____ Have changes been made that are not reflected in the Part A application? Should the Part A be modified by the Company? ____ If so, explain.

_____

_____

_____

_____

_____

____ Submitted a Part B application.

____ Been granted a Part 373 permit.

If so, when does it expire: _____
Please attach or explain any special conditions or variances - 360.1(g) _____

_____

_____

_____

NOT FOR RELEASE TO COMPANY, PROTECTED INFORMATION

## PART III

### Comments, Conclusions and Recommendations Section

Facility Name [illegible]

EPA I.D. No. _____

Date of Inspection 12/12/85

General Comments and Conclusions (cite appropriate State regulations in violation and attach additional sheets and other information as required)

[illegible] (from [illegible] Canada) for tungsten. [illegible] process [illegible] for extraction than it is neutralized and water is discharged to creek. (SPDES monitoring.) No hazardous [illegible] discovered [illegible] Samples [illegible] [illegible] [illegible] [illegible] we want to see if closure plan or cleanup is necessary.



100112

ORATORY REPORT
MICAL EXAMINATION OF INDUSTRIAL
ND HAZARDOUS WASTES
ion of Laboratories and Research
County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. [illegible]

Field No. UN-183

ce Information (Please Print)

emises Li Tungsten

ess 32 Herb Hill Rd.

Glen Cove

llection Point Outfall 004

| | Month | Day | Year |
|---|---|---|---|
| Date Collected | 11 | 27 | 85 |
| Date Received | | | 8 |
| Date Reported | | | 8 |

Collection Time 12:30m

Collected By: [illegible]

ampler's Comments:

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☑ Water
B ☐ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

| Check | Metals | | Result | Check | Non-Metals | | Result |
|---|---|---|---|---|---|---|---|
| | Aluminum | mg/l | 3.9 | 15 | Chloride | mg/l | |
| | Arsenic | mg/l | <0.005 | 16 | Cyanide | mg/l | |
| 3 | Barium | mg/l | | 17 | Fluoride | mg/l | |
| | Cadmium | mg/l | | 18 | MBAS | mg/l | |
| 5 | Chromium, Total | mg/l | | 19 | pH | | |
| | Copper | mg/l | 0.07 | 20 | Phenols | mg/l | |
| 7 | Iron, Total | mg/l | 4.10 | 21 | Solids, Suspended | mg/l | |
| 8 | Lead | mg/l | 0.32 | 22 | Solids, Total Diss. | mg/l | |
| 9 | Manganese | mg/l | 0.17 | 23 | Sulfate | mg/l | |
| 0 | Mercury | mg/l | | 24 | Ammonia nitrogen | mg/l | |
| 1 | Nickel | mg/l | <0.05 | 25 | Kjeldahl nitrogen | mg/l | |
| 2 | Selenium | mg/l | | 26 | Nitrite nitrogen | mg/l | |
| 3 | Silver | mg/l | | 27 | Nitrate nitrogen | mg/l | |
| 4 | Zinc | mg/l | 0.07 | 28 | Total Phos. | mg/l | |

SPECIAL ANALYSIS

| Check | Constituent | | Result |
|---|---|---|---|
| 29 | Chromium hex. | mg/l | |
| 30 | | | |
| 31 | | | |
| 32 | | | |
| 33 | | | |
| 34 | | | |
| 35 | | | |
| 36 | | | |
| 37 | | | |
| 38 | | | |
| 39 | | | |
| 40 | | | |
| 41 | | | |
| 42 | | | |

aminer's Comments

ONLY METAL BOTTLE SUBMITTED

100113

LABORATORY WORKSHEET

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

Division of Laboratories and Research

Nassau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab No.

Field No. [illegible]

N. No. (Public Water Supply Only)

Source Information (Please Print)

Premises: Li Tungsten

Address: 63 Herl Hill Rd

Town: Glen Cove

Collection Point: outfall 004

Well No.

| | Month | Da |
|---|---|---|
| Date Collected | | 2[illegible] |
| Date Received | 11 | 2[illegible] |
| Date Reported | | |
| Collection Time | 12:3[illegible] | |
| Collected By: | V. N[illegible] | |

Sampler's Comments:

- Sample on ice

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:

DEC 0 5 1985

100114

LABORATORY REPORT
CHEMICAL EXAMINATION OF INDUSTRIAL AND HAZARDOUS WASTES
Division of Laboratories and Research
Nassau County Department of Health

1 ☐ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 24
Field No. JN-180

Source Information (Please Print)

| | | | Month | Day |
|---|---|---|---|---|
| Premises | Li Tungsten | Date Collected | 10 | 7 |
| Address | 63 Herb Hill Rd | Date Received | | |
| Town | Glen Cove | Date Reported | | |
| Collection Point | catch basin / lagoon. soil sample | Collection Time | 10 | :00 |
| | | Collected By: | J. Nigro | |

Sampler's Comments:
- Extraction procedure, please
- DEC sample taken during hurricane

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☑ Soil
C ☐ Sludge
D ☐ Waste Soil
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

| Check | Metals | | Result | Check | Non-Metals | | Result |
|---|---|---|---|---|---|---|---|
| 1 | Aluminum | mg/l | 3.0 | 15 | Chloride | mg/l | |
| 2 | Arsenic | mg/l | 0.031 | 16 | Cyanide | mg/l | |
| 3 | Barium | mg/l | <0.5 | 17 | Fluoride | mg/l | |
| 4 | Cadmium | mg/l | 0.065 | 18 | MBAS | mg/l | |
| 5 | Chromium, Total | mg/l | <0.01 | 19 | pH INITIAL | | 3.5 |
| 6 | Copper | mg/l | 4.10 | 20 | Phenols | mg/l | |
| 7 | Iron, Total | mg/l | 16.58 | 21 | Solids, Suspended | mg/l | |
| 8 | Lead | mg/l | 0.78 | 22 | Solids, Total Diss. | mg/l | |
| 9 | Manganese | mg/l | .27 | 23 | Sulfate | mg/l | |
| 10 | Mercury | mg/l | INTERFERENCE | 24 | Ammonia nitrogen | mg/l | |
| 11 | Nickel | mg/l | 0.10 | 25 | Kjeldahl nitrogen | mg/l | |
| 12 | Selenium | mg/l | <0.005 | 26 | Nitrite nitrogen | mg/l | |
| 13 | Silver | mg/l | | 27 | Nitrate nitrogen | mg/l | |
| 14 | Zinc | mg/l | 0.72 | 28 | Total Phos. | mg/l | |

SPECIAL ANALYSIS

| Check | Constituent | |
|---|---|---|
| 29 | Chromium hex. | mg/l |
| 30 | Final pH | |
| 31 | | |
| 32 | | |
| 33 | | |
| 34 | | |
| 35 | | |
| 36 | | |
| 37 | | |
| 38 | | |
| 39 | | |
| 40 | | |
| 41 | | |
| 42 | | |

Examiner's Comments

Agnes 2 samples broke

100115

...ORY REPORT
...AL EXAMINATION OF INDUSTRIAL
...RDOUS WASTES
...oratories and Research
...ounty Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 13197

Field No. UN-183

...rmation (Please Print)

...Tungsten
...Herb Hill Rd.
Glen Cove
...oint Outfall 004 (SPDES)

| | Month | Day | Year |
|---|---|---|---|
| Date Collected | 11 | 27 | 85 |
| Date Received | | | 8 |
| Date Reported | | | 8 |

Collection Time 12:30m

Collected By: [illegible]

...omments:

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☑ Water
B ☐ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

| Metals | | Result | Check | Non-Metals | | Result |
|---|---|---|---|---|---|---|
| ...nium | mg/l | 3.9 | 15 | Chloride | mg/l | |
| ...senic | mg/l | <0.005 | 16 | Cyanide | mg/l | |
| ...n | mg/l | | 17 | Fluoride | mg/l | |
| ...dmium | mg/l | | 18 | MBAS | mg/l | |
| ...nium, Total | mg/l | | 19 | pH | | |
| ...pper | mg/l | 0.07 | 20 | Phenols | mg/l | |
| ... Total | mg/l | 0.13 | 21 | Solids, Suspended | mg/l | |
| ...ad | mg/l | 0.32 | 22 | Solids, Total Diss. | mg/l | |
| ...anese | mg/l | 0.17 | 23 | Sulfate | mg/l | |
| ...ercury | mg/l | | 24 | Ammonia nitrogen | mg/l | |
| ... | mg/l | <0.05 | 25 | Kjeldahl nitrogen | mg/l | |
| ...nium | mg/l | | 26 | Nitrite nitrogen | mg/l | |
| ... | mg/l | | 27 | Nitrate nitrogen | mg/l | |
| ... | mg/l | 0.07 | 28 | Total Phos. | mg/l | |

SPECIAL ANALYSIS

| Check | Constituent | Result |
|---|---|---|
| 29 | Chromium hex. mg/l | |
| 30 | | |
| 31 | | |
| 32 | | |
| 33 | | |
| 34 | | |
| 35 | | |
| 36 | | |
| 37 | | |
| 38 | | |
| 39 | | |
| 40 | | |
| 41 | | |
| 42 | | |

...er's Comments:

ONLY METAL BOTTLE SUBMITTED

100116

B

RATORY REPORT
CAL EXAMINATION OF INDUSTRIAL
RDOUS WASTES
ion of Laboratories and Research
County Department of Health

B

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

Lab. No. 3652

Field No. VN196

ce Information (Please Print)

Li Tungsten
63 Herb Hill Rd.
Glen Cove

ction Point composite of sludge from 6 drums on Li property

| | Month | Day | Year |
|---|---|---|---|
| Date Collected | 12 | 13 | 85 |
| Date Received | DEC 13 | | 85 |
| Date Reported | | | 8 |

Collection Time 11 : am

Collected By: V. Nigro

oler's Comments:

laylike; dk brown color
- EP Toxicity

FROM DRUMS STORING ORE

Bureau:
1 ☒ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☒ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

| Metals | | Result | Check | Non-Metals | | Result |
|---|---|---|---|---|---|---|
| Aluminum 2.0 | mg/l | 25.0 | 15 | Chloride | mg/l | |
| rsenic | mg/l | <0.005 | 16 | Cyanide | mg/l | |
| Barium | mg/l | <0.5 | 17 | Fluoride | mg/l | |
| dmium 0.02 | mg/l | 0.33 | 18 | MBAS | mg/l | |
| Chromium, Total | mg/l | <0.01 | 19 | pH INITIAL | | 10.3 |
| opper 1.0 | mg/l | 34.5 | 20 | Phenols | mg/l | |
| Iron, Total | mg/l | 0.41 | 21 | Solids, Suspended | mg/l | |
| ead | mg/l | 0.04 | 22 | Solids, Total Diss. | mg/l | |
| Manganese 0.6 | mg/l | 20.0 | 23 | Sulfate | mg/l | |
| ercury | mg/l | | 24 | Ammonia nitrogen | mg/l | |
| ickel 2.0 | mg/l | 32.0 | 25 | Kjeldahl nitrogen | mg/l | |
| Selenium | mg/l | <0.005 | 26 | Nitrite nitrogen | mg/l | |
| lver | mg/l | | 27 | Nitrate nitrogen | mg/l | |
| Zinc 5.0 | mg/l | 21.5 | 28 | Total Phos. | mg/l | |

SPECIAL ANALYSIS

| Check | Constituent | | Result |
|---|---|---|---|
| 29 | Chromium hex. | mg/l | |
| 30 | FINAL pH | | 5.5 |
| 31 | | | |
| 32 | | | |
| 33 | | | |
| 34 | | | |
| 35 | | | |
| 36 | | | |
| 37 | | | |
| 38 | | | |
| 39 | | | |
| 40 | | | |
| 41 | | | |
| 42 | | | |

n er's Comments

100117

LABORATORY REPORT
CHEMICAL EXAMINATION OF INDUSTRIAL AND HAZARDOUS WASTES
Division of Laboratories and Research
Nassau County Department of Health

1 ☐ Routine
2 ☐ Resample
3 ☑ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 13651

Field No. UN-195

User Information (Please Print)

Premises: Li Tungsten
Address: 63 Herb Hill Rd
Town: Glen Cove
Collection Point: composite of recharge basin soil across street from Li; on Garvies Pt. Rd.
Sampler's Comments:
- sample orange } large
- EP Toxicity } settling POND

| | Month | Day | Year |
|---|---|---|---|
| Date Collected | 12 | 13 | 85 |
| Date Received | DEC | 13 | 85 |
| Date Reported | | | 8 |

Collection Time: 10:50 am
Collected By: U. Nigro

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☑ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

| Check | Metals | | Result | Check | Non-Metals | | Result |
|---|---|---|---|---|---|---|---|
| | Aluminum | ≥ 0 mg/l | 25.0 | 15 | Chloride | mg/l | |
| | Arsenic | mg/l | 0.015 | 16 | Cyanide | mg/l | |
| | Barium | mg/l | <0.5 | 17 | Fluoride | mg/l | |
| | Cadmium | 0.02 mg/l | 0.094 | 18 | MBAS | mg/l | |
| | Chromium, Total | mg/l | 0.02 | 19 | pH initial | | 9.5 |
| | Copper | 1.0 mg/l | 4.45 | 20 | Phenols | mg/l | |
| | Iron, Total | mg/l | 0.10 | 21 | Solids, Suspended | mg/l | |
| | Lead | 0.05 mg/l | 0.08 | 22 | Solids, Total Diss. | mg/l | |
| | Manganese | 0.6 mg/l | 13.3 | 23 | Sulfate | mg/l | |
| | Mercury | mg/l | | 24 | Ammonia nitrogen | mg/l | |
| | Nickel | 2.0 mg/l | [illegible] | 25 | Kjeldahl nitrogen | mg/l | |
| | Selenium | mg/l | <0.005 | 26 | Nitrite nitrogen | mg/l | |
| | Silver | mg/l | | 27 | Nitrate nitrogen | mg/l | |
| | Zinc | mg/l | 10.5 | 28 | Total Phos. | mg/l | |

SPECIAL ANALYSIS

| Check | Constituent | | Result |
|---|---|---|---|
| 29 | Chromium hex. | mg/l | |
| 30 | Final pH | | 5.6 |
| 31 | | | |
| 32 | | | |
| 33 | | | |
| 34 | | | |
| 35 | | | |
| 36 | | | |
| 37 | | | |
| 38 | | | |
| 39 | | | |
| 40 | | | |
| 41 | | | |
| 42 | | | |

Other's Comments

100118

LABORATORY REPORT
CHEMICAL EXAMINATION OF INDUSTRIAL HAZARDOUS WASTES
Division of Laboratories and Research
Nassau County Department of Health

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

Lab. No. 1913

Field No. W1-76

Source Information (Please Print)

Premises: [illegible] Tuxedo

Address: [illegible]

Town: [illegible]

Collection Point: [illegible] road from [illegible] Tuxedo

[illegible] soil / runoff - running in SE direction

Sampler's Comments:

[illegible] - access [illegible]

| | Month | Day | Year |
|---|---|---|---|
| Date Collected | [illegible] | [illegible] | 8[illegible] |
| Date Received | | | 8 |
| Date Reported | | | 8 |

Collection Time: [illegible]

Collected By: [illegible]

Bureau:
1 ☒ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☒ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

| Check | Metals | | Result | Check | Non-Metals | | Result |
|---|---|---|---|---|---|---|---|
| [illegible] | Aluminum | mg/l | <0.5 | 15 | Chloride | mg/l | |
| | Arsenic | mg/l | <0.005 | 16 | Cyanide | mg/l | |
| 3 | Barium | mg/l | <0.5 | 17 | Fluoride | mg/l | |
| | Cadmium | mg/l | <0.001 | 18 | MBAS | mg/l | |
| 5 | Chromium, Total | mg/l | <0.01 | 19 | pH initial | | 3.8 |
| | Copper | mg/l | 0.14 | 20 | Phenols | mg/l | |
| | Iron, Total | mg/l | 0.19 | 21 | Solids, Suspended | mg/l | |
| | Lead | mg/l | 0.09 | 22 | Solids, Total Diss. | mg/l | |
| | Manganese | mg/l | 0.33 | 23 | Sulfate | mg/l | |
| 7 | Mercury | mg/l | <0.0005 | 24 | Ammonia nitrogen | mg/l | |
| | Nickel | mg/l | <0.05 | 25 | Kjeldahl nitrogen | mg/l | |
| 2 | Selenium | mg/l | <0.005 | 26 | Nitrite nitrogen | mg/l | |
| | Silver | mg/l | <0.05 | 27 | Nitrate nitrogen | mg/l | |
| 4 | Zinc | mg/l | 0.13 | 28 | Total Phos. | mg/l | |

SPECIAL ANALYSIS

| Check | Constituent | | Result |
|---|---|---|---|
| 29 | Chromium hex. | mg/l | |
| 30 | final pH | | 3.1 |
| 31 | | | |
| 32 | | | |
| 33 | | | |
| 34 | | | |
| 35 | | | |
| 36 | | | |
| 37 | | | |
| 38 | | | |
| 39 | | | |
| 40 | | | |
| 41 | | | |
| 42 | | | |

Sampler's Comments

100119

MAY 10 [illegible]

...ORATORY REPORT
...EMICAL EXAMINATION OF INDUSTRIAL
...ND HAZARDOUS WASTES
... of Laboratories and Research
...assau County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 1914

Field No. [illegible]-74

...rce Information (Please Print)

...emises [illegible] Tunnel
...ress [illegible]
...own [illegible]
...ection Point [illegible]
...orthern most pile of soil - access - Trail Ct.

| | Month | Day | Y |
|---|---|---|---|
| Date Collected | 4 | 4 | 8 |
| Date Received | | | 8 |
| Date Reported | | | 8 |
| Collection Time | 1 : 15 PM | | |
| Collected By: | V. [illegible] | | |

...pler's Comments:
- [illegible] Toxicity
- [illegible] Property

Bureau :
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☑ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

## CHEMICAL EXAMINATION

| Check | Metals | | Result | Check | Non-Metals | | Result |
|---|---|---|---|---|---|---|---|
| | ...minum | mg/l | <0.5 | 15 | Chloride | mg/l | |
| 2 | Arsenic | mg/l | 0.033 | 16 | Cyanide | mg/l | |
| 3 | Barium | mg/l | <0.5 | 17 | Fluoride | mg/l | |
| 4 | Cadmium | mg/l | <0.001 | 18 | MBAS | mg/l | |
| 5 | Chromium, Total | mg/l | <0.01 | 19 | pH initial | | 3.8 |
| | Copper | mg/l | 0.17 | 20 | Phenols | mg/l | |
| | Iron, Total | mg/l | 0.64 | 21 | Solids, Suspended | mg/l | |
| | Lead | mg/l | 0.04 | 22 | Solids, Total Diss. | mg/l | |
| | Manganese | mg/l | 0.16 | 23 | Sulfate | mg/l | |
| | Mercury | mg/l | <0.0005 | 24 | Ammonia nitrogen | mg/l | |
| | Nickel | mg/l | <0.05 | 25 | Kjeldahl nitrogen | mg/l | |
| | Selenium | mg/l | <0.005 | 26 | Nitrite nitrogen | mg/l | |
| | Silver | mg/l | <0.05 | 27 | Nitrate nitrogen | mg/l | |
| | Zinc | mg/l | 0.12 | 28 | Total Phos. | mg/l | |

## SPECIAL ANALYSIS

| Check | Constituent | | Result |
|---|---|---|---|
| 29 | Chromium hex. | mg/l | |
| 30 | final pH | | 3.1 |
| 31 | | | |
| 32 | | | |
| 33 | | | |
| 34 | | | |
| 35 | | | |
| 36 | | | |
| 37 | | | |
| 38 | | | |
| 39 | | | |
| 40 | | | |
| 41 | | | |
| 42 | | | |

...miner's Comments

MAY 16 1986

100120

ORATORY REPORT
MICAL EXAMINATION OF INDUSTRIAL
ND ZARDOUS WASTES
ion of Laboratories and Research
u County Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. [illegible]

Field No. VN-75

e Information (Please Print)

| | | Month | Day | Ye |
|---|---|---|---|---|
| mises | [illegible] Tungsten | Date Collected | [illegible] | 86 |
| ess | [illegible] | Date Received | | 8 |
| | Glen Cove | Date Reported | | 8 |

lection Point: [illegible] Tungsten
[illegible] pile of soil - west of forced tank area
Collection Time: 1:20 [illegible]
Collected By: [illegible]

mpler's Comments:
[illegible] Toxicity
- access Janet Ct.

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☐ Water
B ☑ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

| Metals | | Result | Check | Non-Metals | | Result |
|---|---|---|---|---|---|---|
| Aluminum | mg/l | <0.5 | 15 | Chloride | mg/l | |
| Arsenic | mg/l | 0.041 | 16 | Cyanide | mg/l | |
| Barium | mg/l | <0.5 | 17 | Fluoride | mg/l | |
| Cadmium | mg/l | <0.001 | 18 | MBAS | mg/l | |
| Chromium, Total | mg/l | <0.01 | 19 | pH initial | | 3.6 |
| Copper | mg/l | 1.17 | 20 | Phenols | mg/l | |
| Iron, Total | mg/l | 3.75 | 21 | Solids, Suspended | mg/l | |
| Lead | mg/l | <0.04 | 22 | Solids, Total Diss. | mg/l | |
| Manganese | mg/l | 0.15 | 23 | Sulfate | mg/l | |
| Mercury | mg/l | <0.0005 | 24 | Ammonia nitrogen | mg/l | |
| Nickel | mg/l | <0.05 | 25 | Kjeldahl nitrogen | mg/l | |
| Selenium | mg/l | <0.005 | 26 | Nitrite nitrogen | mg/l | |
| Silver | mg/l | <0.05 | 27 | Nitrate nitrogen | mg/l | |
| Zinc | mg/l | 0.13 | 28 | Total Phos. | mg/l | |

SPECIAL ANALYSIS

| Check | Constituent | | Result |
|---|---|---|---|
| 29 | Chromium hex. | mg/l | |
| 30 | final | pH | 3.6 |
| 31 | | | |
| 32 | | | |
| 33 | | | |
| 34 | | | |
| 35 | | | |
| 36 | | | |
| 37 | | | |
| 38 | | | |
| 39 | | | |
| 40 | | | |
| 41 | | | |
| 42 | | | |

iner's Comments

MAY 16 1985

100121

REFERENCE NO. 2

November 30, 1971

Address Reply To:

Radiological Health Unit

Wah Chang Smelting and Refining
Company of America, Inc.
63 Herb Hill Road
Glen Cove, New York 11542

Refer To:

L0464

Att: Mr. F. H. Lee
Radiation Safety Officer

Dear Mr. Lee:

This is in reply to your letter of October 29, 1971.

Our findings indicate that your firm has satisfactorily complied with the State of New York Industrial Code Rule No. 38, "Radiation Protection" governing the possession and use of radiation sources. Accordingly, your New York State License No. 743-0464 and your Registration No. L0464 are hereby cancelled.

Your attention is directed to the Code Rule and in particular, the provisions pertaining to licensing and the maintenance and disposition of records of inactivated installations. Should you desire to resume use of radiation sources at some future date, it will be necessary for you to re-register with, or obtain a license from, this Department.

Please contact us directly if you have any questions, or if we may be of further assistance to you.

Very truly yours,

Morris Kleinfeld, M.D.
Director

by: John A. Miele
Associate Radiophysicist
Licensing Section

JAM:pc
cc: Committee on Licensing

100123

# STATE OF NEW YORK
# RADIOACTIVE MATERIALS LICENSE

Pursuant to the Labor Law and Industrial Code Rule No. 38, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to transfer, receive, possess and use the radioactive material(s) designated below; and to use such radioactive materials for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations, and orders now or hereafter in effect of all appropriate regulatory agencies and to any conditions specified below.

| Licensee | 3. License number |
|---|---|
| 1. Name Wah Chang Smelting and Refining Company of America, Inc. | 743-0464 |
| 2. Address 63 Herb Hill Road Glen Cove, New York | 4. Expiration date Valid until terminated |
| | 5. Reference number 1 |

| 6. Radioactive materials (element and mass number) | 7. Chemical and/or physical form | 8. Maximum quantity licensee may possess at any one time |
|---|---|---|
| 1. Thorium | 1. Thorium oxide | 1. 2300 pounds |
| 2. Thorium | 2. Thorium nitrate | 2. 750 pounds |
| | | Total thorium not to exceed ~~15.1~~ curies .15 Ci (error in calculation) ANJ |

## CONDITIONS

9. Authorized use. (Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.) 1. As insulator in vacuum furnace.
2. Production of thoriated tungsten powder as step in manufacturing of welding rods.

10. The licensee shall conduct operations involving the use of sources of radiation in compliance with the requirements of New York State Industrial Code Rule No. 38, "Radiation Protection".

11. Any disposal of radioactive waste by the licensee by burial, through the sanitary sewer, or by other release to the environment shall be in accordance with the provisions of Part 16, New York State Sanitary Code Records of all such disposal shall be maintained by the licensee. Monitoring procedures shall be instituted where necessary to demonstrate that concentrations and quantities of radioactive material so disposed of do not exceed permissible levels.

12. The agreement material described in Items 6, 7 and 8 above:
   A. Shall be used only by or under the supervision of either A. Morra or A. Pathie
   B. Shall not be used in or on human beings, in products intended for uncontrolled distribution to the general public, nor in field applications where radioactivity is released.

FOR THE NEW YORK STATE DEPARTMENT OF LABOR

Date_____ by_____

Form COL-6aSL (8-63)

100124

STATE OF NEW YORK
RADIOACTIVE MATERIALS LICENSE



License Number 743-0464

Reference Number: 1

1. Shall be possessed and used by the licensee in accordance with statements, representations and procedures contained in his application dated February 26, 1961, and in related documents as follows:

   1. Letter to the United States Atomic Energy Commission dated February 20, 1961, signed by Allen Lau.

   2. So much of Part 40, Title 10, Code of Federal Regulations as is applicable to operations of the licensee and not in conflict with Code Rule 30 or the other conditions of this license.

100125

FOR THE NEW YORK STATE DEPARTMENT OF LABOR

Date March 19, 1964

by [illegible]
Nathan Solomon, Ph.D., M.D.
Chief, Radiological Health Unit
For: Morris Kleinfeld, Director, DIH

APA:jb

Form COL-6bSI (8-63)

# REGISTRATION OF SOURCES OF RADIATION

(See Over For Instructions)

Reg. No. _____

Date _____

Owner-Name: Mah Chang Smelting & Refining Co. of America, Inc. Address: 53 Herb Hill Road, Glen Cove, N

Confines of Installation: Same

RADIATION PRODUCING EQUIPMENT (Use Additional Sheets if Necessary) NASSAU

| TYPES OF RADIATION SOURCES | Number Fixed | Number Mobile | Size or Rating of Each Machine or Unit | Purpose or Use |
|---|---|---|---|---|
| Industrial X-Rays | | | | |
| Medical or Dental X-Rays | | | | |
| Non-Destructive Static Eliminators | | | | |
| Beta Ray Gauge | | | | |
| Nuclear Reactors | | | | |
| Particle Accelerators | | | | |
| High Voltage Equipment | | | | |
| Other (Specify) | | | | |

STATE OF NEW YORK DEPARTMENT OF LABOR
REGISTERED
UNDER RULE 38 OF INDUSTRIAL CODE
DIVISION OF INDUSTRIAL HYGIENE
Date: 6/26/58 By: S.G.

RADIOACTIVE MATERIALS

| TYPES | Number Fixed | Number Mobile | Sealed | Unsealed | Source Strength | Estimated Quantity Used Annually | Average Quantity on Hand | Purpose or Use |
|---|---|---|---|---|---|---|---|---|
| Thorium Oxide | 250 | 100 | 450 | | | 20 - 50 lbs. | 800 lbs. | Furnace Lining |
| Thorium Nitrate | | 25 | 50 | | | 300 - 400 lbs. | 75 lbs. | Thoriated Wire |

100126

5. Name and Address of Person in Charge of Radiation Protection
1. Henry Lee, 2. Stanley Grecz

Qualifications 1. Chief Chemist 2. Safety Director

Henry Lee
Stanley Grecz

June 12, 1958
Date

Signature of Person in Charge of Radiation Protection

312 (12-55)

# RADIOLOGICAL HEALTH INVESTIGATION REPORT

| | | |
|---|---|---|
| A. DATE OF VISIT: 11/-/62 | B. TYPE OF VISIT: Initial | |
| C. FIRM NAME: Wah Chang Smelting & Refining Co. of America Inc. | D. REGISTRATION NO: 0404 | E. LICENSE NO: SNB-135 |
| F. ADDRESS: 63 Herkhill Road, Glen Cove, Sal. N.Y. | G. INDUSTRY: Metal Refining | H. NO. OF WORKERS EXPOSED: 19 |
| I. PERSON SEEN & TITLE: Mr. Henry Lee, Chief Chemist | J. NAME OF R.S.O. OR REPRESENTATIVE: Henry Lee | |
| K. CONFINES OF INSTALLATION: Grade Level - Groups of factory buildings | L. INSPECTED BY: J. Ofiele | M. REPORT REVIEW BY: |

N. FINDINGS

| | | SOURCES IN VIO. | I.C. | N.A. | | | SOURCES IN VIO. | I.C. | N.A. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | Exemptions from C. R. 38 | | | X | 26.1b | Radiation Instruments | 21 | | |
| 4 | Registration | | X | | 26.2 | Equipment Surveys | | | X |
| b | Changes in Reg'n. Data | | X | | 26.3 | Material Surveys | | | X |
| 5 | Unlicensed Use or Poss'n. | | X | | 26.4 | Unsealed Sources Surveys | 21 | | |
| 5 | Exemptions from Licensing | | | X | 26.5 | Sealed Sources-Leak Test | | | X |
| 5.1a | Radioactivity Increase | | | X | 26.6 | Check of Protect. Devices | | | X |
| b | Rad'y. in Food or Drug | | | X | 27 | Exit from Controlled Area | | X | |
| 5 | Notification of Receipt | | | X | 28 | Eating, etc., in Rad. Area | | X | |
| b | Unauthorized Disposal | | | X | 29a | Decontam. Vacated Inst. | | | X |
| c | Labeling | | | X | b | Survey of Vacated Inst. | | | X |
| | Compliance with Instructions | | | X | 30 | Pers. Monitoring Equipment | | X | |
| | Source Leak Testing | | | X | 31.2a | Posting Radiation Area | | X | |
| f | Competent Test Personnel | | | X | b | Posting High Rad. Area | | | X |
| | Failure of Shielding | | | X | c | Posting Airb. Rad. Area | | | X |
| | Lic. Application Inadequate | | X | | d | Posting Rad. Material Area | | X | |
| 3a | Lic'g. - Proposal Unsafe | | X | | 32.2 | Labeling of Containers | | X | |
| b | Lic'g. - Personnel Unqualified | | X | | 33 | Labeling of Rad. Equipment | | | X |
| | Compliance with Lic. Terms | | X | | 34.1 | Instruction of Personnel | | X | |
| | Special Nuclear Mat'l. Excess | | | X | 34.2 | Avail'ty. of Rule 38, etc. | | X | |
| | Duration of License | | X | | 34.3 | Posting Notice to Employees | | X | [illegible] |
| | Renewal of License | | X | | 34.4 | Med. Services and Reports | | | X |
| 3c | More than 20 Days Use | | | X | 35.1a | Secure Storage of Sources | | X | |
| b | Failure to Notify Dept. | | | X | b | Hazards in Mat'l. Storage | | X | |
| c | Compliance with C. R. 38 | | | X | 35.2 | Fire Protection for Mat'ls. | | X | |
| d | Compliance with License | | | X | 36.1a | For Surveys and Tests | | X | |
| 1a1 | To Whole Body ___ Qr. ___ Yr. | | X | | b | For Transfer of Material | | X | |
| 2 | To Hands, etc. ___ Qr. ___ Yr. | | X | | c | For Personnel Exposure | | X | |
| 3 | Skin ___ Qr. ___ Yr. | | X | | d | For Medical Evaluations | | | X |
| | To Minors | | X | | 36.2 | Records Preservation | | X | |
| c | Lifetime | | X | | 37.1a | of Theft or Loss | | | X |
| | Controlled Area Int. Exposure | | X | | b | of Exces. Ext. Exposure | | | X |
| | Uncon. Area Ext. Annual Dose | | X | | c | of Exces. Int. Exposure | | | X |
| b | Uncon. Area Ext. Dose Rate | | X | | 37.2 | Exposure Reports to Emp. | | X | |
| 2 | Uncon. Area Internal Dose | 21 | | | 38 | Cooperation in Inspection | | X | |
| | Disposal of Rad. Waste | [illegible] | X | | 39a | Transportation Safeguards | | X | |
| | Unauthorized Human Use | | | X | b | Transport Rule Exemption | | | X |
| | Qualified R.S.O. | | X | | | | | | |
| | Surveys | 21 | | | | | | | |

EXEMPTION REQUIREMENTS — DEVICES

OTHER LICENSES

EXCESSIVE DOSE IN CONTROLLED AREA

RADIATION SIGNS

RECORDS MAINTENANCE

REPORTS TO I.C.

RECOMMENDATIONS TO FIRM

[illegible] 41 and 46 (Thorium Nitrate and Oxide)

~~COMMENTS TO SUPERVISOR~~

The company shall make a further radiation survey of the Thorium Nitrate and Thorium Oxide Process Area and Storage Building to ascertain the degree and type of contamination. Surveys should be performed periodically and the results recorded (26.1-26.4)

(See page 2)

Comments to Supervisor: None

100127

323.1 (8-62)

# INVESTIGATION REPORT

DIVISION OF INDUSTRIAL HYGIENE
RADIOLOGICAL UNIT

| 1. NAME OF FIRM | 2. REGISTRATION NO. | 3. DATE OF REGISTRATION |
|---|---|---|
| Chang Smelting & Refining Co. of America Inc. | 0464 | 6/26/58 |
| 4. ADDRESS: 63 Herbhill Road, Glen Cove, L.I., N.Y. | | |
| 5. REPORT PREPARED BY: J. Mile | 6. REVIEWED BY | 7. DATE REPORT PREPARED: 11/7/62 |

The radioactive material in storage shall be provided with reasonable protection against loss, leakage or dispersion by fire effects or by water, hose streams or other means used to fight fire. (38-35.2)

100128

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

IN REPLY REFER TO
40-943
L:PGS

Wah Chang Smelting & Refining Company of America, Inc.,
Woolworth Building
New York 7, New York

Attention: Mr. Allen Lau, Ass't Treasurer

SOURCE MATERIAL LICENSE

License No. D-607

Dated: DEC 6 1957

Gentlemen:

Pursuant to the Atomic Energy Act of 1954 and Section 40.21 of the Code of Federal Regulations, Title 10 - Atomic Energy, Chapter I, Part 40 - Control of Source Material, you are hereby licensed to receive possession of and title to sixteen hundred (1600) pounds of uranium and thorium compounds during the term of this license, for use as an analytical reagent and in the manufacture of thoriated tungsten wire and columbite metal at your plant locations at Glen Cove, New York and Albany, Oregon.

You are further licensed to transfer and deliver possession of and title to refined source material to any person licensed by the Atomic Energy Commission, within the limits of his license.

As a condition of this license, you are required to maintain records of your inventories, receipts and transfers of refined source material.

This license is subject to all the provisions of the Atomic Energy Act of 1954, now or hereafter in effect and to all valid rules and regulations of the U. S. Atomic Energy Commission, including 10 CFR 20, "Standards For Protection Against Radiation."

Neither this license nor any right under this license shall be assigned or otherwise transferred in violation of the provisions of the Atomic Energy Act of 1954.

This license shall expire December 1, 1[illegible]

FOR THE ATOMIC ENERGY COMMISSION

CC: Document room
Formal file
Supply file
State Health Dep.
Inspection
[illegible] Section
[illegible] Branch
[illegible] Application

Enclosure:
10 CFR 20

100129

FORM AEC-2

UNITED STATES OF AMERICA
ATOMIC ENERGY COMMISSION

# APPLICATION FOR AEC LICENSE TO TRANSFER, DELIVER, EXPORT OR RECEIVE URANIUM OR THORIUM SOURCE MATERIAL

Pursuant to Code of Federal Regulations, Title 10—Atomic Energy, Part 40—Control of Source Material

Form approved
Budget Bureau No. 30-R[illegible]

1. PREVIOUS AEC LICENSE NUMBER, IF ANY.

R-130

TO: U. S. Atomic Energy Commission
P. O. Box 30, Ansonia Station
New York 23, N. Y.

2. NAME AND ADDRESS OF APPLICANT (Street, city, zone, state)

Wah Chang Smelting & Refining Co.
of America, Inc.
63 Harbhill Road
Glen Cove, New York

INSTRUCTIONS

File two (2) copies of this application with the U. S. Atomic Energy Commission, P. O. Box 30, Ansonia Station, New York 23, N. Y. This application may be used for an original license or for the renewal of a license. In the case of a renewal, this application should be received by the Commission on or before 30 days before the expiration of the previous license. Complete blocks 1, 2, 3, 4, and if you combine two or more of the activities of Producer, Processor, Distributor, Exporter, or Consumer, complete each of the applicable blocks numbered 4 through 8.

3. INVENTORY: INVENTORY OF SOURCE MATERIAL AND DEFINED AS OF February 29, 1952
(Specify date of last inventory)

INSTRUCTION.—Include all source material in your possession or under your control, regardless of location. Include any source material you have possession of but which is owned by others, whether or not they are licensees of the Commission. Please specify that part of your inventory which is owned by other persons, listing the names, addresses, and quantities owned by each. Do not include in this inventory any raw source material not yet removed from its place of deposit in nature.

(a) Raw Source Material

| DESCRIPTION OF MATERIAL | ESTIMATED PERCENT URANIUM OR THORIUM | QUANTITY IN INVENTORY (Gross tons) | NAME AND ADDRESS OF OWNER, IF DIFFERENT FROM THAT IN BLOCK 1 ABOVE |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

(b) Defined Source Material

| DESCRIPTION OF MATERIAL | GRADE (Comm., CP, USP, etc.) | PERCENT OF URANIUM OR THORIUM | QUANTITY (Lb.) | NAME AND ADDRESS OF OWNER, IF DIFFERENT FROM THAT IN BLOCK 1 ABOVE |
|---|---|---|---|---|
| Uranyl Acetate Reagent | CP | 55.96% by wt. | 0.620 lbs. | |
| Thorium Nitrate Crystals | CP | 41.66% by wt. | 85.735 lbs. | |

100130

COPY

Form AEC—410
(1-61)

UNITED STATES
ATOMIC ENERGY COMMISSION

# SOURCE MATERIAL LICENSE

Pursuant to the Atomic Energy Act of 1954, and Title 10, Code of Federal Regulations, Chapter 1, Part 40, "Licensing of Source Material," and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to ~~receive, possess, and~~ import the source material designated below; ~~to use such material for the purpose(s) and at the place(s) designated below and to deliver or transfer such material to persons authorized to receive it in accordance with the regulations in said Part~~. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954 and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission, now or hereafter in effect, including Title 10, Code of Federal Regulations, Chapter 1, Part 20, "Standards for Protection Against Radiation," and to any conditions specified below.

| Licensee | 3. License No. |
|---|---|
| 1. Name Wah Chang International Corporation<br>2. Address 100 Church Street<br>New York 7, N. Y. | STI-782, as amended |
| | 4. Expiration Date<br>January 31, 1968 |
| | 5. Docket No.<br>40-7216 |

| 6. Source Material | 7. Maximum quantity of source material which licensee may ~~possess~~ import at any one time under this license |
|---|---|
| Monazite Sands | 50 long tons |

## CONDITIONS

8. Authorized use (Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.)

This license authorizes only the import of the above specified source material in accordance with the procedures described in the application dated January 14, 1965.

RECEIVED
MAR 5 1965
DIVISION OF
INDUSTRIAL HYGIENE

For the U. S. ATOMIC ENERGY COMMISSION

Date of issuance FEB 2 1965

Robert L. Layfield
Division of Materials Licensing

* U. S. GOVERNMENT PRINTING OFFICE : 1962 O - 632985

COPY

100131

# SURVEY RESULTS

LR 202 71 Lab. Page 2478

Firm [illegible] - Glen Cove Install # [illegible] ☐ Sealed: ☒ Unsealed

# of Samples ____ ☐ Q tip; ☐ Filter; ☒ Other Nuclides Th Survey Date [illegible] Radiophysicist [illegible]

| SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET ±σ | ACTIVITY (pCi) ±σ | REMARKS |
|---|---|---|---|---|---|---|
| | TMC analysis | | | 11/9/71 | | [illegible] Th storage |
| | ~ 100 mls Water as in in Spec. Bot | | | | | pit. |
| | 0-2.0 Alc in 1/2 | | | -1.0 min net | | NI X One 3 pls areas. |
| | | | | | pCi = 35 / 100 ml Vol | ∴ for Spec. Act. in pCi/ml (÷ by 100) |
| 1 | 14.3 | 1.0 | 14.3 | -7.00 ±1.89 | -40.19 ±32.50 | |
| | | | | | | ∴ by TMC - mainly |
| 1 | 161 | 1.0 | 161 | 1.0 ±5.67 | 0.47 ±7.98 | SUBO - no significant |
| | | | | | | 5 pks - no need to et |
| 1 | 210 | 1.0 | 210 | 0.00 ±6.48 | 0.00 ±7.53 | in TC & see 4318 below |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 1 | 28 | 10 | 2.80 | -1.63 ±0.85 | -0.64 ±1.01 / 2 mls = | -0.32 ±0.51 pCi/ml |
| | | | | | | or total of ~ 100 mls |
| | | | | | | = -32 ± 51 pCi/100 mls |
| | | | | | | |
| | | ∴ | No significant amts of activity obs'd | | | |
| | | | | for Th in water from storage pit. | | |
| | | | | | | |
| | | | | | | |

Count for TMC above ~~α+β~~ vs Th Std, Instrument 4318 - S-257 Detector β10 gas, prop. Windowless

Voltage -2000 Gain α 5.4 inoperable Date Counted 11/9-10/71 Radiochemist RFB/LSC

Background 4.43 CPM; Factor$_2$ = 0.3943 pCi/cpm (net)

6/3 $3F_2$ = 1.1829

100132

[illegible] F. Blais 11/19/71
SIGNATURE (UNIT REVIEW)

[illegible]
SIGNATURE (SECTION REVIEW)

# SURVEY RESULTS

LR 200 71 [illegible] Lab. Page 2450

Firm [illegible] Install # [illegible] ☐ Sealed: ☑ Unsealed

# of Samples [illegible] ☐ Q tip; ☑ Filter; ☐ Other Nuclides [illegible] Survey Date [illegible] Radiophysicist [illegible]

| SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET | ACTIVITY (pCi) | REMARKS |
|---|---|---|---|---|---|---|
| | [illegible] | 5 | [illegible] | [illegible] ±0.87 | [illegible] ±2.13 | |
| [illegible] | [illegible] | 5 | [illegible] | [illegible] ±0.99 | [illegible] ±1.24 | |
| [illegible] | 5 | 5 | [illegible] | 0.56 ±0.38 | [illegible] ±1.00 | |
| [illegible] | 3 | 5 | [illegible] | 0.16 ±0.32 | [illegible] ±0.84 | |
| [illegible] | 5 | 5 | [illegible] | 0.56 ±0.38 | [illegible] ±1.00 | |
| [illegible] | [illegible] | 5 | [illegible] | [illegible] ±0.43 | [illegible] ±1.13 | |
| [illegible] | 8 | 5 | 1.60 | [illegible] ±0.45 | [illegible] ±1.18 | |
| [illegible] | 21 | 5 | 4.20 | [illegible] ±0.68 | 3.36 ±1.79 | |
| [illegible] | 2 | 5 | 0.40 | -0.04 ±0.29 | -0.04 ±0.76 | |
| [illegible] | 5 | 5 | [illegible] | 0.56 ±0.38 | [illegible] ±1.00 | |
| [illegible] | 14 | 5 | 2.80 | [illegible] ±0.57 | 2.07 ±1.50 | |
| 12 | 5 | 5 | [illegible] | 0.56 ±0.38 | [illegible] ±1.00 | |
| [illegible] | 13 | 5 | 2.60 | 2.16 ±0.55 | [illegible] ±1.45 | |
| [illegible] | 13 | 5 | 2.60 | 2.16 ±0.55 | [illegible] ±1.45 | |
| [illegible] | 4 | 5 | 0.80 | 0.36 ±0.28 | 0.32 ±0.74 | |
| 16 | 3 | 5 | 0.60 | 0.16 ±0.32 | 0.14 ±0.84 | |
| [illegible] | 11 | 5 | 2.20 | 1.76 ±0.51 | 1.54 ±1.34 | |
| [illegible] | 13 | 5 | 2.60 | 2.16 ±0.55 | 1.89 ±1.45 | |
| [illegible] | 1 | 5 | 0.20 | -0.24 ±0.25 | -0.21 ±0.66 | |
| [illegible] | 3 | 5 | 0.60 | 0.16 ±0.32 | 0.14 ±0.84 | |

Count for X vs Ra 226 Std, Instrument [illegible] on 4318 Detector [illegible]

Voltage 1200 Gain X 5.4 inoperable Date Counted 11/1-71 Radiochemist [illegible]

Background [illegible] CPM; Factor 0.877 pCi/cpm (net)

[illegible] $3\sigma_2$ = 2.691

100133

Robert F. Blais 11/11/71
SIGNATURE (UNIT REVIEW)

[illegible]
SIGNATURE (SECTION REVIEW)

IH-375 (12-66)

# SURVEY RESULTS

LR [illegible] Lab. Page [illegible]

Firm [illegible] Install # L-0464 ☐ Sealed: ☑ Unse

# of Samples 23 ☐ Q tip; ☑ Filter; ☐ Other Nuclides [illegible] Survey Date 10/28/71 Radiophysicist AHJ

| SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET ±σ | ACTIVITY (pCi) ±3σ | REMARKS |
|---|---|---|---|---|---|---|
| 1 | 2225 | 60 | 37.08 | 17.05 ±2.46 | 22.57 ±3.54 | |
| 2 | 784.2 | 60 | 13.07 | 6.35 ±1.41 | 3.65 ±2.03 | |
| 3 | 529.2 | 60 | 8.82 | 2.16 ±1.25 | 1.61 ±1.80 | |
| 4 | 775.8 | 60 | 12.93 | 6.21 ±1.40 | 2.48 ±2.02 | |
| 5 | 718.2 | 60 | 11.97 | 5.25 ±1.37 | 2.52 ±1.97 | |
| 6 | 555 | 60 | 9.80 | 2.08 ±1.25 | 1.60 ±1.80 | |
| 7 | 748.2 | 60 | 12.47 | 5.75 ±1.39 | 2.76 ±2.00 | |
| 8 | 795 | 60 | 13.25 | 6.53 ±1.41 | 3.13 ±2.03 | |
| 9 | 525 | 60 | 8.75 | 2.03 ±1.24 | 0.97 ±1.79 | |
| 10 | 765 | 60 | 12.75 | 6.03 ±1.40 | 2.89 ±2.02 | |
| 11 | 645 | 60 | 10.75 | 4.03 ±1.32 | 1.93 ±1.90 | |
| 12 | 664.8 | 60 | 11.08 | 4.36 ±1.33 | 2.09 ±1.92 | |
| 13 | 846 | 60 | 14.1 | 7.35 ±1.44 | 3.54 ±2.07 | |
| 14 | 847.8 | 60 | 14.13 | 7.41 ±1.44 | 3.56 ±2.07 | |
| 14 | 400.2 | 60 | 6.67 | -0.05 ±1.16 | -0.02 ±1.67 | |
| 16 | 475.8 | 60 | 7.93 | 1.21 ±1.21 | 0.58 ±1.74 | |
| 17 | 334.8 | 60 | 5.58 | -1.14 ±1.11 | -0.55 ±1.60 | |
| 18 | 571.2 | 60 | 9.52 | 2.80 ±1.27 | 1.34 ±1.83 | |
| 19 | 444 | 60 | 7.40 | 0.68 ±1.19 | 0.33 ±1.71 | |
| 20 | 364.8 | 60 | 6.08 | -0.64 ±1.13 | -0.31 ±1.63 | |

Count for β vs TK Std, Instrument B-250 4318 Detector [illegible]

Voltage [illegible] Gain 5.4 [illegible] Date Counted 11/1/71 Radiochemist [illegible]

Background 6.72 CPM: Factor TK 0.480 pCi/cpm (net)

[illegible] 3σ = 1.440

100134

Robert F. Blais 11/11/71
SIGNATURE (UNIT REVIEW)

[illegible]
SIGNATURE (SECTION REVIEW)

IH-275 (12-64)

# SURVEY RESULTS

LR [illegible] 5 [illegible] Lab. Page [illegible]

Firm [illegible] Install # [illegible] Sealed: [illegible]

# of Samples 23 ☐ Q tip; ☑ Filter; ☐ Other Nuclides [illegible] Survey Date [illegible] Radiophysicist [illegible]

| SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET | ACTIVITY (pCi) ± 3σ | REMARKS |
|---|---|---|---|---|---|---|
| [illegible] | 21 | [illegible] | [illegible] | [illegible] ± 0.68 | 3.50 ± 1.79 | alg Total x vs Ra 226 - 23 fpi |
| 32 [illegible] | 242 | [illegible] | [illegible] | 47.96 ± 2.21 | 42.06 ± 5.81 | + = 68.74 |
| 33 [illegible] | 1 | [illegible] | [illegible] | [illegible] ± 0.25 | -0.21 ± 0.66 | − = −0.46 |
| | | | | | | alg = 68.28 ± 8.24 pCi |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 5A170 [illegible] | 1→23 | 128 | 1.0 | 128 | −32 ± 5.37 | −15.02 ± 7.56 |
| | | | | | | |
| | | | | | | |
| 5A199 0-2.0 [illegible] | 1→23 | 186 | 1.0 | 186 | −24 ± 6.29 | −9.30 ± 7.31 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

and 11/1/71 TMC Anal. 23 fp grp 0-2.0 Mea in 1/2
1.0 min net NI x One 2 pks area

∴ by TMC - mainly SOBO
no truly significant
γ pks obs'd

Count for X vs Ra 226 Std, Instrument A 250 on 4318 Detector Pic gas-propane

Voltage 120-E Gain X 5.4 inoperable Date Counted 11/1/71 Radiochemist [illegible]

Background 0.44 CPM; Factor 0.577 pCi/cpm (net)

[illegible] 3σ = 2.631

100135

Robert F. Blais 11/11/71
SIGNATURE (UNIT REVIEW)

[illegible]
SIGNATURE (SECTION REVIEW)

# SURVEY RESULTS

LR [illegible] 5 [illegible] Lab. Page [illegible]

Firm [illegible] Install # L-0464 ☐ Sealed ☑ Unsealed

# of Samples 23 ☐ Q tip; ☑ Filter; ☐ Other Nuclides Th [illegible] Survey Date 10/28/71 Radiophysicist AHJ

| | SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET | ACTIVITY (pCi) | REMARKS |
|---|---|---|---|---|---|---|---|
| 31 | 21 | 846 | 60 | 14.10 | 7.38 ±1.44 | 3.54 ± 2.07 | alg Total Q as Th — 23 fgs |
| 32 | 22 | 3742.1 | 60 | 62.35 | 55.66 ±2.63 | 26.72 ± 3.79 | + = + 88.27 |
| 33 | 23 | 622.5 | 60 | 10.35 | 3.66 ±1.31 | 1.76 ± 1.89 | − = − 0.88 |
| | | | | | | | alg Total = 87.39 ± 10.09 pCi |

Count for B vs Th Std, Instrument B-250 4318 Detector [illegible]

Voltage [illegible] Gain [illegible] Date Counted 11/1/71 Radiochemist [illegible]

Background 6.720 CPM; Factor 0.480 pCi/cpm (net)

[illegible] 5 ar. 3σ = 1.440

100136

Robert F. Blais 11/11/71
SIGNATURE (UNIT REVIEW)

[illegible]
SIGNATURE (SECTION REVIEW)

# SURVEY RESULTS

LR [illegible] Lab. Page [illegible]

Firm [illegible] Install # [illegible] Sealed: ☐ Unsea

# of Samples 23 ☐ Q tip; ☑ Filter; ☐ Other Nuclides [illegible] Survey Date [illegible] Radiophysicist [illegible]

| | SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET | ACTIVITY (pCi) | REMARKS |
|---|---|---|---|---|---|---|---|
| 11 | 1 | 758 | 40 | 18.95 | -1.30 ± 1.95 | -7.00 ± 15.97 | |
| 12 | 2 | 770 | 40 | 19.25 | -1.20 ± 1.99 | -3.20 ± 16.05 | |
| 13 | 3 | 710 | 40 | 17.75 | -2.70 ± 1.95 | -9.20 ± 15.72 | |
| 14 | 4 | 806 | 40 | 20.15 | -0.30 ± 2.01 | -0.80 ± 16.21 | |
| 15 | 5 | 696 | 40 | 17.40 | -3.05 ± 1.99 | -8.14 ± 16.05 | |
| 16 | 6 | 766 | 40 | 19.15 | -1.30 ± 1.99 | -3.47 ± 16.05 | |
| 17 | 7 | 767 | 40 | 19.18 | -1.27 ± 1.99 | -3.38 ± 16.05 | |
| 18 | 8 | 901 | 40 | 22.53 | +2.08 ± 2.07 | +5.53 ± 16.69 | |
| 19 | 9 | 688 | 40 | 17.20 | -3.25 ± 1.94 | -8.67 ± 16.64 | |
| 20 | 10 | 710 | 40 | 17.75 | -2.70 ± 1.95 | -7.20 ± 15.72 | |
| 21 | 11 | 731 | 40 | 18.28 | -2.17 ± 1.97 | -5.79 ± 15.89 | |
| 22 | 12 | 698 | 40 | 17.45 | -3.00 ± 1.95 | -8.00 ± 15.72 | |
| 23 | 13 | 824 | 40 | 20.95 | +0.53 ± 2.04 | +1.41 ± 16.45 | |
| 24 | 14 | 800 | 40 | 20.00 | -0.45 ± 2.01 | -1.19 ± 16.21 | |
| 25 | 15 | 761 | 40 | 19.03 | -1.42 ± 1.99 | -3.79 ± 16.05 | |
| 26 | 16 | 675 | 40 | 16.88 | -3.57 ± 1.93 | -9.50 ± 15.56 | |
| 27 | 17 | 643 | 40 | 16.08 | -4.37 ± 1.91 | -11.66 ± 15.40 | |
| 28 | 18 | 667 | 40 | 16.68 | -3.77 ± 1.93 | -10.06 ± 15.56 | |
| 29 | 19 | 766 | 40 | 19.15 | -1.30 ± 1.99 | -3.47 ± 16.05 | |
| 30 | 20 | 625 | 40 | 15.88 | -4.57 ± 1.91 | -12.18 ± 15.40 | |

Count for $H^3$ pk vs $H^3$ Std, Instrument 90.362 RDFH Detector [illegible]

Voltage opt fact set Gain 51% 40-900 Date Counted 11/3-9/71 Radiochemist [illegible]

Background 20.45 CPM; Factor 2.658 pCi/cpm (net) $H^3$ [illegible] = 36.1369

3σ = 8.004

100137

Robert F. Blair 11/11/71
SIGNATURE (UNIT REVIEW)

[illegible]
SIGNATURE (SECTION REVIEW)

# SURVEY RESULTS

LR [illegible] Lab. Page [illegible]

Firm [illegible] Install # [illegible] Sealed: ☐ Unsealed

# of Samples 33 ☐ Q tip; ☐ Filter; ☐ Other Nuclides [illegible] Survey Date [illegible] Radiophysicist [illegible]

| | SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET ± σ | ACTIVITY (pCi) ± 3σ | REMARKS |
|---|---|---|---|---|---|---|---|
| TC [illegible] 31 | 21 | 837 | 40 | [illegible] | [illegible] | + 1.25 ± 16.37 | alg Total H3 pCi w/H3 23 [illegible] |
| 32 | 22 | 1655 | 40 | 41.55 | [illegible] | + 55.54 ± 20.08 | T = 64.08 |
| 33 | 23 | 766 | 40 | 19.15 | [illegible] | − 3.47 ± 16.05 | − = −115.17 |
| | | | | | | | alg = −51.09 ± 77.41 pCi |
| | | | | | | | |
| | | Using PK [illegible] | | | | | |
| 18 | 8 | [illegible] | 40 | 22.53 | + 2.05 | − 3.60 | −1.52 ± 2.07 / −4.09 ± 16.69 |
| 23 | 13 | 839 | 40 | 20.98 | [illegible] | − 3.17 | −2.64 ± 2.04 / −7.10 ± 16.45 |
| 31 | 21 | 837 | 40 | 20.93 | + 6.48 | − 2.41 | −2.43 ± 2.03 / −6.53 ± 16.37 |
| 32 | 22 | 1655 | 40 | 41.38 | [illegible] | − 56.45 | −29.52 ± 2.49 / −79.35 ± 20.08 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | above all neg on H3 pCi |
| | | | | | | | by. −97.07 ± 34.93 pCi on H3 |

100138

Count for H3 vs [illegible] Std, Instrument YC-362-BDFH Detector Liquid Scintillation

Voltage [illegible] set Gain 51% 40-400 Date Counted 11/3-9/81 Radiochemist [illegible]

Background 20.45 CPM: Factor 2.688 pCi/cpm (net) H3 Tone 14pK − 36.136%

3σ = 8.064

Robert F. Blair 11/11/81
SIGNATURE (UNIT REVIEW)

[illegible]
SIGNATURE (SECTION REVIEW)

# SURVEY RESULTS

LR 200 6 71 Lab. Page 24FC

Firm [illegible] Install # L046 4 ☐ Sealed: ☑ Unse

# of Samples 23 ☐ Q tip: ☑ Filter: ☐ Other [illegible] Survey Date 10/28/71 Radiophysicist [illegible]

| | SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET | ACTIVITY (pCi) ±3σ | REMARKS |
|---|---|---|---|---|---|---|---|
| 11 | 1 | 1,37[illegible] | 40 | 34.2[illegible] | +1.[illegible] ±2.5[illegible] | +1.32 ±5.19 | |
| 12 | 2 | 1,223 | 40 | 30.53 | -1.73 ±2.51 | -1.17 ±5.05 | |
| 13 | 3 | 1,169 | 40 | 29.23 | -3.10 ±2.45 | -2.08 ±4.98 | |
| 14 | 4 | 1,301 | 40 | 32.53 | +0.20 ±2.55 | +0.13 ±5.13 | |
| 15 | 5 | 1,256 | 40 | 31.40 | -0.93 ±2.52 | -0.62 ±5.07 | |
| 16 | 6 | 1,298 | 40 | 32.45 | +0.12 ±2.55 | +0.08 ±5.13 | |
| 17 | 7 | 1,237 | 40 | 30.93 | -1.40 ±2.52 | -0.94 ±5.07 | |
| 18 | 8 | 1,729 | 40 | 43.23 | +10.40 ±2.75 | +7.30 ±5.53 | |
| 19 | 9 | 1,164 | 40 | 29.10 | -3.23 ±2.48 | -2.16 ±4.98 | |
| 20 | 10 | 1,278 | 40 | 31.95 | -0.38 ±2.54 | -0.25 ±5.11 | |
| 21 | 11 | 1,344 | 40 | 33.60 | +1.27 ±2.57 | +0.85 ±5.17 | |
| 22 | 12 | 1,236 | 40 | 30.90 | -1.43 ±2.51 | -0.96 ±5.05 | |
| 23 | 13 | 1,677 | 40 | 41.93 | +9.60 ±2.73 | +6.43 ±5.49 | |
| 24 | 14 | 1,432 | 40 | 35.80 | +3.47 ±2.61 | +2.32 ±5.25 | |
| 25 | 15 | 1,245 | 40 | 31.13 | -1.20 ±2.52 | -0.80 ±5.07 | |
| 26 | 16 | 1,207 | 40 | 30.18 | -2.15 ±2.50 | -1.44 ±5.03 | |
| 27 | 17 | 1,153 | 40 | 28.83 | -3.50 ±2.47 | -2.35 ±4.96 | |
| 28 | 18 | 1,212 | 40 | 30.30 | -2.03 ±2.50 | -1.36 ±5.03 | |
| 29 | 19 | 1,247 | 40 | 31.18 | -1.15 ±2.52 | -0.77 ±5.07 | |
| 30 | 20 | 1,176 | 40 | 29.40 | -2.93 ±2.48 | -1.96 ±4.98 | |

Count for [illegible] ws [illegible] Std, Instrument T.C 362 BDFH Detector Liquid Scintillation

Voltage Opt feet set Gain 5.1% 40-1000 Date Counted 11/3-9/71 Radiochemist RFB/[illegible]

Background 32.33 CPM: Factor 0.670 pCi/cpm (net) [illegible] = 33.056%

3E = 2.010

100139

Robert F. Blais 11/11/71
SIGNATURE (UNIT REVIEW)

Dr. Edward Stern 11/11
SIGNATURE (SECTION REVIEW)

# SURVEY RESULTS

LR 200 & 71 Lab. Page 2412

Firm [illegible] Install [illegible] Sealed: Unsea

# of Samples 23 Q tip: Filter: Other Nuclides [illegible] Surv Date 10/28/71 Radiophysicist [illegible]

| SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET ±σ | ACTIVITY (pCi) ±3σ | REMARKS |
|---|---|---|---|---|---|---|
| 31 21 | 1645 | 40 | 41.13 | [illegible] | [illegible] ± 5.45 | alg Total C14 pb ∞ C14 Std |
| 32 22 | 7398 | 40 | 184.95 | +152.62 ± 4.66 | +162.26 ± 9.37 | + = 126.59 |
| 33 23 | 1241 | 40 | 31.02 | [illegible] | [illegible] ± 5.07 | − = −17.86 |
| | | | | | | ~~alg = +108.73 ± 25.82 pCi~~ |

| | | | | | | ∓σ expected cpm | | Actual cpm based on CPM pb ± 3σ | |
|---|---|---|---|---|---|---|---|---|---|
| | | Using Pb | Reference on Filter | | | | | | |
| 18 | 8 | 1329 | 40 | 33.23 | [illegible] | [illegible] | +10.15 ± 2.75 | +6.80 | ± 5.53 |
| 23 | 13 | 1677 | 40 | 41.93 | [illegible] | −0.19 | +9.41 ± 2.73 | +6.30 | ± 5.49 |
| 31 | 21 | 1645 | 40 | 41.13 | [illegible] | −0.19 | +8.63 ± 2.71 | +5.78 | ± 5.45 |
| 32 | 22 | 7398 | 40 | 184.95 | +152.62 ± 4.66 | −7.50 | +145.06 ± 4.66 | +97.19 | ± 9.37 |

above all + C14 pb

Total = 116.07 ± 13.37 pCi

100140

Count for CM pb vs C14 std, Instrument TC 362 BDFH Detector Legend Scintillation

Voltage optimal set Gain 5.19, 40-1000 Date Counted 11/3-9/71 Radiochemist RE/REB

Background 32.33 CPM; Factor 0.610 pCi/cpm (net) C14 in Tom Pb = 33.056%

3σ = 2.010

Robert F. Blais 11/11/71
SIGNATURE (UNIT REVIEW)

D. Thomas P. Stern 11/11
SIGNATURE (SECTION REVIEW)

# INVESTIGATION REPORT

DIVISION OF INDUSTRIAL HYGIENE
RADIOLOGICAL UNIT

| 1. NAME OF FIRM | 2. REGISTRATION NO. | 3. DATE OF REGISTRATION |
|---|---|---|
| Wah Chang Div Teledyne Inc. | 20404 | |
| 4. ADDRESS | | |
| Glen Cove | | |
| 5. REPORT PREPARED BY | 6. REVIEWED BY | 7. DATE REPORT PREPARED |
| [illegible] | [illegible] | |

On [illegible] I visited the above firm to perform a [illegible] survey of their [illegible]. [illegible] being shutdown [illegible] in response to a call [illegible] He indicated that [illegible] I said I would pick it up when [illegible] visit.

On [illegible] I met with Mr. [illegible] H. Hughes acting plant manager who will remain on the premises until 12/31/7[illegible] when Wah Chang-Teledyne's lease expires. [illegible]

There are two areas of concern at Wah Chang. One was a pit where containers of ThO2 were stored for a long period of time & the other was the [illegible] plant where ThO2 was used in the mfg. of welding rods. Mr. [illegible] survey performed in both areas. [illegible]

[illegible]

[illegible]

# INVESTIGATION REPORT

DIVISION OF INDUSTRIAL HYGIENE
RADIOLOGICAL UNIT

| NAME OF FIRM | 2. REGISTRATION NO. | 3. DATE OF REGISTRATION |
|---|---|---|
| 4. ADDRESS | | |
| 5. REPORT PREPARED BY | 6. REVIEWED BY | 7. DATE REPORT PREPARED |

Previously on hand was included in a shipment to be made to Work Chemy in Huntsville Ala. Although the shipment had not left as yet, I was assured that it would leave on 10/29/71.

I instructed Mr. Zee to wait until then to send in letter with final survey and to include a copy of the shipping sheet.

I then made and instrument & wipe survey of both area.

Action: Release letter to be sent pending lab results.

100142

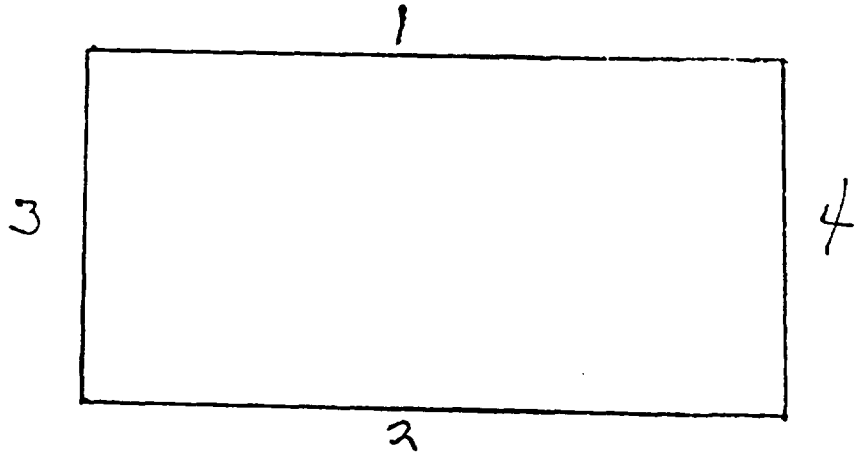
WAH CHANG CORPORATION

Glen Cove, N. Y.

RADIATION SURVEY REPORT

Date Oct 15 1971

Thorium Storage Pit
(located outside the chem lab)




| | | | |
|---|---|---|---|
| W1 | <10 DPM/100 cm² | M1 | <20 DPM/100 cm² |
| W2 | <10 | M2 | <20 |
| W3 | <10 | M3 | <20 |
| W4 | <10 | M4 | <20 |

A Sample from the bottom of the pit shows 150 DPM/100 cm²

Signed [illegible]

adiation Officer

100143

NAM CHANG CORPORATION
[illegible]

RADIATION SURVEY REPORT

Date Oct 14 1971

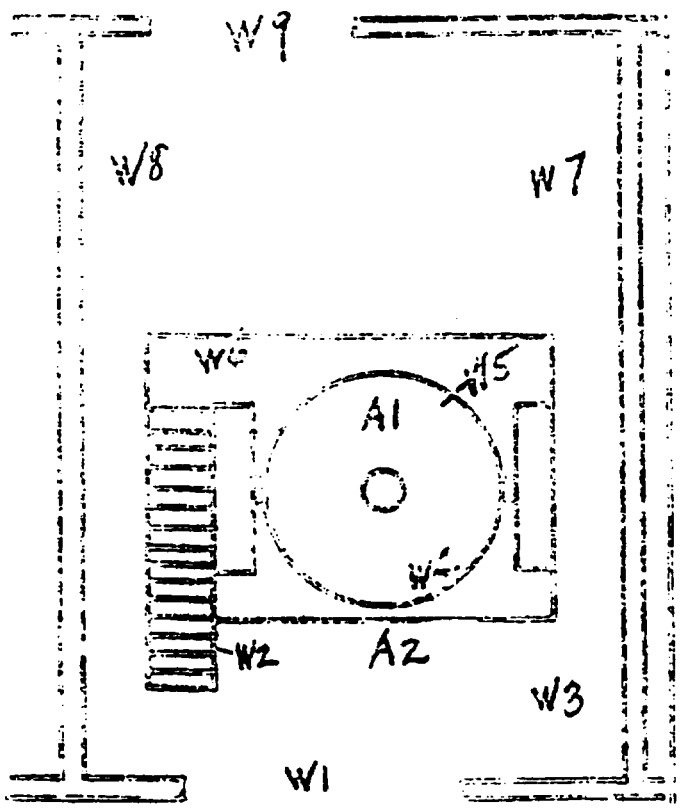
Air Sampling By W Ritchie

Blending Room

Meter Tests By E H Lee

WIPE SAMPLES

| | | |
|---|---|---|
| W1 | 20 | DPM/100cm² |
| W2 | 25 | DPM |
| W3 | 20 | DPM |
| W4 | 20 | DPM |
| W5 | 25 | DPM |
| W6 | 20 | DPM |
| W7 | 20 | DPM |
| W8 | 25 | DPM |
| W9 | 25 | DPM |
| W10 | | CPM |




SAMSON MONITOR READINGS

| | | |
|---|---|---|
| M1 | 40 | DPM/100cm² |
| M2 | 80 | DPM |
| M3 | 150 | DPM |
| M4 | 300 | DPM |
| M5 | 300 | DPM |
| M6 | 100 | DPM |
| M7 | 40 | DPM |
| M8 | 150 | DPM |
| M9 | 40 | DPM |
| M10 | | CPM |

AIR SAMPLING STATIONS:

A1 ( Loading ) at 15CFM, Sampling Time 30 Min., Shows <10 DPM/100cm²

A2 ( Unloading) at 15 CFM, Sampling Time 30 Min., Shows <10 DPM/100cm²

Signed [illegible]

Radiation Officer

100144

WAH CHANG CORPORATION

Glen Cove, N. Y.

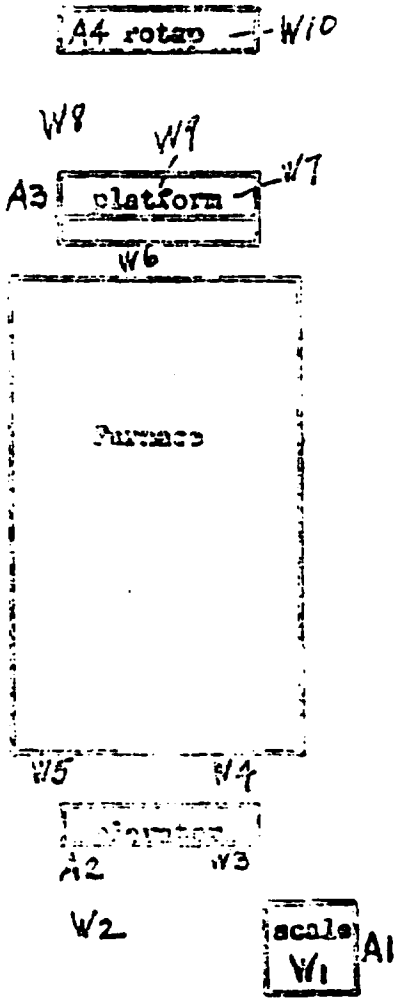
RADIATION SURVEY REPORT

Date Oct 14 1971 Air Sampling By W. Ritchie

Reduction Furnace No. 8 Meter Tests By F. H. Lee

WIPE SAMPLES

| | |
|---|---|
| | <20 DPM/100cm² |
| | <20 DPM |
| | <20 DPM |
| | <20 DPM |
| | <20 DPM |
| | <20 DPM |
| | <20 DPM |
| | <20 DPM |
| | <20 DPM |
| W10 | <20 DPM |




SAMSON METER READINGS

| | |
|---|---|
| M1 | 50 DPM/100cm² |
| M2 | 25 |
| M3 | 25 |
| M4 | 100 |
| M5 | 25 |
| M6 | 50 |
| M7 | 25 |
| M8 | 25 |
| M9 | 50 |
| M10 | 100 |

AIR SAMPLING STATIONS:

A1 (Weighing) at 15 CFM, Sampling Time 30 Min., Shows <10 DPM/100cm²

A2 (Elevator) " " " 30 Min., Shows <10 DPM "

A3 (Unloading) " " " 30 Min., Shows <10 DPM "

A4 (Rotap) " " " 30 Min., Shows <10 DPM "

Signed [signature]

Radiation Officer

100145

August 12, 1971

Address Reply To:

Radiological Health Unit

Wah Chang Smelting & Refining Company
63 Herb Hill Road
Glen Cove, New York

Att: Mr. Henry Lee
Radiation Safety Officer

Dear Mr. Lee:

As per our telecon of August 10, 1971, I am enclosing a copy of our instruction sheet for the decon and release of radiation facilities and equipment, in case you have not been able to locate the copy previously left with you in March of this year. As you can see the instructions are quite explicit, however, I wish to clarify one point, namely, the term contamination. As used in the instruction sheet, it applies to both removable (loose) and fixed radioactive surface contamination. Table V specifies the limits for both types of contamination.

There are two known areas of your plant where a final survey will be required. These are:

1. The reduction building where Th $NO_3$ was used;

2. Thorium storage pit.

If there are any other areas of your facility where radioactive material was used, please include them in the survey.

If I may be of any further assistance to you in this matter, please contact me.

Very truly yours,

AHJ

100146

AHJ:pc
Enclosure

Alan H. Jones
Senior Radiophysicist

4

# SUPPLEMENTARY DATA

| | |
|---|---|
| Firm | [illegible] |
| Installation # | [illegible] |

## 1. Personnel Dosimetry

### a. Whole Body Exposure

| Monitoring Period | Type of Dosimeter | Number Monitored | Number of Persons in Dose Range | | | | Maximum Exposure in Rem |
|---|---|---|---|---|---|---|---|
| | | | min.det. | min-3 Rem | 3-5 Rem | > 5 Rem | |
| prev. year | [illegible] | | | | | | |
| year to date | | | | | | | |

### b. Extremity Exposure

| Monitoring Period | Type of Dosimeter | Number Monitored | Number of Persons in Dose Range | | | | Maximum Exposure in Rem |
|---|---|---|---|---|---|---|---|
| | | | min.det. | min-25 Rem | 25-75 Rem | > 75 Rem | |
| prev. year | [illegible] | | | | | | |
| year to date | | | | | | | |

### c. Internal Exposure

| Nuclide of Int. | Bioassay Technique | Sample Freq. | Analyzed By | No. Mon. | Number of Persons in Exp. Range | | | | Max. Exp. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | min. det. | 0-25% of lim. | 25-100% of lim. | > 100% of lim. | |
| | [illegible] | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

## 2. Surveys

| Type | How often performed | Date of latest | Performed By | Results |
|---|---|---|---|---|
| Radiation Equipment | NA | | | |
| Radioactive Materials (Sealed) | NA | | | |
| Radioactive Materials (Unsealed) | [illegible] | 3/15/69 | RSC | OK |
| Sealed Source Leak Tests | NA | | | |
| Interlocks | [illegible] | | | |

100147

3. Radioactive Material/Equipment Inventory Fluctuations

a. Radioactive Material

| Nuclide | Rec'd in past 12 mons. | Removed from Facility in Past 12 Months | | | |
|---|---|---|---|---|---|
| | | non-waste | waste | | |
| | activity | activity | activity | physical form | vendor/method |
| ThO2 | 1874 lbs = | [illegible] | None | | |
| | 169 lbs | [illegible] | | | |
| | | | | | |
| | | | | | |
| | | | | | |

b. Equipment

| Received | | Disposed of | |
|---|---|---|---|
| Type | Description (kVp, beam current) | Type | Where |
| None | | | |
| | | | |
| | | | |
| | | | |

4. Evaluation of Health Physics Program based on above data and attached instrument/smear survey with any general comment:

I suggested to KSC that ThO2 be put for disposal if it is not going to be used.

KSC recommend that someone else would take surveys when Th powder is processed. It was pointed out to him that it was his responsibility to see that it gets done. He says he would do so.

By [illegible]

Date 11/30/70

AHJ:pc
11-70

# SURVEY RESULTS

LR 368 30 Lab. Page [illegible]

Firm Wah Chang Glen Cove Install # [illegible] Sealed: ☑ Unsealed

# of Samples 16 ☐ Q tip; ☑ Filter; ☐ Other Nuclides Th Survey Date 11/30/70 Radiophysicist [illegible]

at B [illegible] x only [illegible]

| 318 [illegible] # | SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET | ACTIVITY (pCi) | REMARKS |
|---|---|---|---|---|---|---|---|
| | 1 | 21 | 5 | 4.20 | 4.05 | 9.61 | Total α ~ $Th^{232}$ |
| | 2 | 3 | 5 | 0.60 | 0.45 | 1.07 | = 131.51 pCi |
| 13 | 3 | 62 | 5 | 12.40 | 12.25 | 29.05 | |
| | 4 | 69 | 5 | 13.80 | 13.65 | 32.40 | Actually Std for α etd @ |
| 15 | 5 | 44 | 5 | 8.80 | 8.65 | 20.53 | 18% Efficiency |
| | 6 | 7 | 5 | 1.40 | 1.25 | 2.97 | Should actually be ~ 57% |
| 17 | 7 | 3 | 5 | 0.60 | 0.45 | 1.07 | (loss due to cover on Th Std) |
| 18 | 8 | 22 | 5 | 4.40 | 4.25 | 10.09 | ∴ These results are |
| 19 | 9 | 23 | 5 | 4.60 | 4.45 | 10.56 | probably a factor of 3 high |
| 21 | 10 | 1 | 5 | 0.20 | 0.05 | 0.12 | R.F.B. |
| 22 | 11 | 1 | 5 | 0.20 | 0.05 | 0.12 | |
| 23 | 12 | 2 | 5 | 0.40 | 0.25 | 0.59 | |
| 24 | 13 | 9 | | 1.80 | 1.65 | 3.92 | |
| 25 | 14 | 8 | 5 | 1.60 | 1.45 | 3.44 | |
| 26 | 15 | 9 | 5 | 1.80 | 1.65 | 3.92 | |
| 27 | 16 | 5 | 5 | 1.00 | 0.85 | 2.02 | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Count for Alpha vs $Th^{232}$ Std, Instrument A-157 4318 Detector [illegible] pro cli

Voltage 1200 Gain x 5.4 Date Counted 12/2-3/70 Radiochemist [illegible] RFB

Background 0.15 CPM; Factor 2.3738 pCi/cpm (net)

[illegible] 5/4

Robert F. Blaw 12/3/70
SIGNATURE (UNIT REVIEW)

D. [illegible] Stein 12/4
SIGNATURE (SECTION REVIEW)

100149

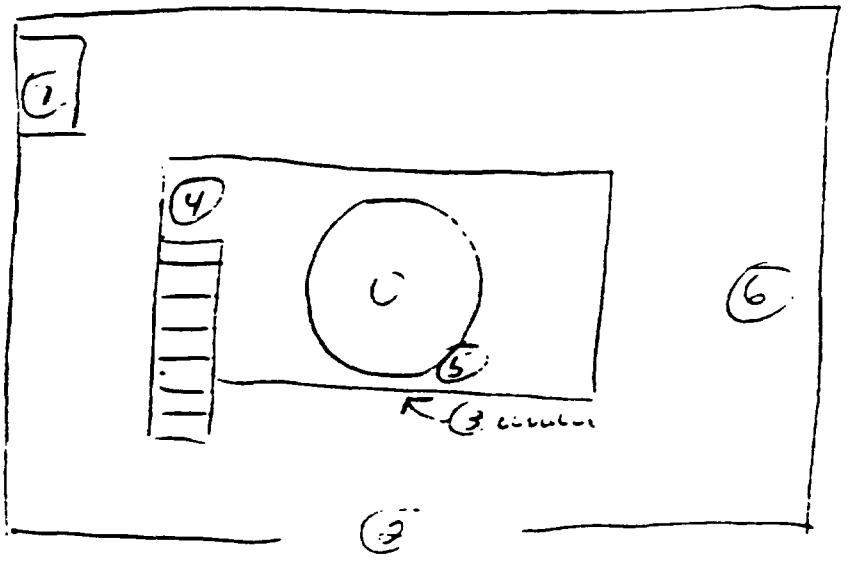
3 box 70

# DIAGRAM OF SURVEYED AREA

Radiophysicist [illegible]

Installation = L0464 Date 11/30/70

Firm Wah Chang Address Glen Cove




(1) Can in pb storage box

(8) table in sluicing area
(9) floor at [illegible]
(10) hopper
(11) loading table at #7 furnace
(12) floor at loading area
(13) west screening table
(14) east " "
(15) floor behind #7 furnace
(16) outside shipping container of th in warehouse

Hard; S: Soft; a: Alpha; n: Neutron
Red Numerals: Radiation in MREM/HR
Green Numerals: Smear Numbers
Blue Circled Smear Numbers: Greater Than 3 x Background -andard Deviation or as Indicated

[H-371 (12-66)

100150

LMS Compl Assign ~~Nov 69~~

STATE OF NEW YORK – DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL HYGIENE
RADIOLOGICAL HEALTH UNIT
80 Centre Street
New York, N. Y. 10013

# NOTICE OF INSPECTION FINDINGS

1. Date
2. Type Visit

3. Firm Name & Address
4. No. Employees Exposed — Male / Female
5. Confines of Installation
6. Registration No.
7. License No. (s)
8. Industrial Code
9. Radiation Safety Officer

10. Findings

☐ A. No item of non-compliance found.
☐ B. The following paragraphs of Code Rule 38, or conditions of your license were found in violation.

| | | | | | |
|---|---|---|---|---|---|
| (47 ☐ 4) | | ( ☐ 23) | | (19 ☐ 34.1) | |
| ( ☐ 5.1) | | (47 ☐ 24) | | (20 ☐ 34.2) | |
| ( ☐ 6.2) | | (47 ☐ 25) | | (21 ☐ 34.3) | |
| ( ☐ 9.1) | | (15 ☐ 26.2) | | (47 ☐ 34.4) | |
| ( ☐ 9.1) | | (15 ☐ 26.3) | | ( ☐ 35.1) | |
| ( ☐ 9.1) | | (15 ☐ 26.4) | | (47 ☐ 35.2) | |
| (47 ☐ 10) | | (30 ☐ 26.5) | | (25 ☐ 36.1a) | |
| (47 ☐ 11) | | (47 ☐ 26.6) | | (19 ☐ 36.1b) | |
| (47 ☐ 20) | | (47 ☐ 28) | | (24 ☐ 36.1c) | |
| (10 ☐ 21.1) | | (16 ☐ 30) | 81 | (47 ☐ 36.2) | [redacted] |
| (11 ☐ 21.2) | 81 | ( ☐ 31.2) | 81 | (28 ☐ 3) | |
| (13 ☐ 22.1) | Voided area | (18 ☐ 32) | | (31 ☐ 39) | |
| (14 ☐ 22.2) | | (18 ☐ 33) | 81 | ( ☐ ) | |
| ( ☐ ) | | ( ☐ ) | | ( ☐ ) | |

11. Remarks

100151

12. The violations indicated above should be removed within _____ days.

13. Signature of Department Representative

FOR THE COMMISSIONER

IH-317 1 (8-65)

| 14. DATE | 15. REVIEWED BY | 16. DISPOSITION |
|---|---|---|
| | | |

REPORT ON COMPLIANCE VISIT

| 17. DATE | 18. PERSON CONTACTED | 19. REASON FOR NON-COMPLIANCE |
|---|---|---|
| 2/17/69 | Henry Lee | 22.1 – Thorium nitrate cans placed into lead lined box in "Xmas tree" area. (< 2 mr/hr)<br>31.2<br>32<br>26.1 } I.C. |

DATE CASE CLOSED 12/17/69 21. INITIALS L.M.S

100152

9/3/69

Wah Chang Smelt + Refg Co
Glen Cove, L.I.

## SUPPLEMENTARY DATA

1. Personnel Dosimetry

None

L 0464

a. Whole Body Exposure

| Monitoring Period | Type of Dosimeter | Number Monitored | Number of Persons in Dose Range: min.det. | min-3 Rem | 3-5 Rem | > 5 Rem | Maximum Exposure in Rem |
|---|---|---|---|---|---|---|---|
| prev. year | None (used film badges [illegible] when working with [illegible]) (Atomic Film Badge - L.T.C.) | | | | | | |
| year to date | | | | | | | |

b. Extremity Exposure

| Monitoring Period | Type of Dosimeter | Number Monitored | Number of Persons in Dose Range: min.det. | min-25 Rem | 25-75 Rem | > 75 Rem | Maximum Exposure in Rem |
|---|---|---|---|---|---|---|---|
| prev. year | None | | | | | | |
| year to date | | | | | | | |

c. Internal Exposure

| Nuclide of Int. | Bioassay Technique | Sample Freq. | Analyzed By | No. Mon. | Number of Persons in Exp. Range: min. det. | 0-25% of lim. | 25-100% of lim. | > 100% of lim. | Max. Exp. |
|---|---|---|---|---|---|---|---|---|---|
| | None | | | | | | | | |
| (used to take blood tests when working with thorium oxide) | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

. Surveys

| Type | How often performed | Date of latest | Performed By | Results (in excess of limits, etc.) |
|---|---|---|---|---|
| Radiation Equipment | N. A. | | | |
| Radioactive Materials (Sealed) | N. A. | | | |
| Radioactive Materials (Unsealed) | when working with thorium (wipes + air samples) | 3/16/69 Previous 1/15/69 | Henry Lee | O K (max. [illegible]) |
| Sealed Source Leak Tests | N A | | | |
| Interlocks | N A | | | |

100153

. Radioactive Material/Equipment Inventory Fluctuations

a. Radioactive Material

| Nuclide | Rec'd in past 12 mons. | Removed from Facility in Past 12 Months | | | |
|---|---|---|---|---|---|
| | | non-waste | | waste | |
| | activity | activity | activity | physical form | vendor/method |
| Thorium | 7/31/68 460 lbs | used in product | | N-26 | |
| 232 | 12/15/68 [illegible] | 1968 | 460 lbs | | |
| | 6/16/69 [illegible] | 1969 (to date) | 420 " | | |
| | 8/12/69 460 | | | | |
| | 1260 | | 930 | | |
| On hand at present abt 250 lbs in original containers | | | | | |

b. Equipment

| Received | | Disposed of | |
|---|---|---|---|
| Type | Description (kVp, beam current) | Type | Where |
| | | | |
| N.A. | | | |
| | | | |
| | | | |

4. Evaluation of Health Physics Program based on above data and attached instrument/smear survey with any general comment:

There is some Thorium Oxide scrap (recovery) [illegible] with a heavy concrete locked cover on it in the yard. Marked with a radiation area sign. They have not used the oxide for several years. Now only Thorium Nitrate used in their process. Their Nucleon Chicago Model 2612 is presently not [illegible]. However they also have a "El-Tronics" Scintillation Sealer Model LS 64-88. 18 wipes were taken to-day. Also to-days surveys showed < 1 mr/hr all around the blender + the furnace, < 2 mr/hr at 1 ft above the cover of the pit, but 5 mr/hr in the vicinity of the unopened containers of thorium nitrate stored in the warehouse. They will relocate these containers and post a radiation area sign.

Lester M. Schuster

Da: Sept 3 1969

AHJ:pc
4-69

100154

100155

# SURVEY RESULTS

LR - 224 - 69 Lab. Page 1995

Firm Wah Chang S+R, Glen Cove, N.Y. install # L0464 ☐ Sealed: ☒ Unsealed

# of Samples 18 ☐ Q tip; ☒ Filter; ☐ Other Nuclides $^{232}$Th Survey Date 9/3/69 Radiophysicist L. Schu[illegible]

| SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET ±σ | ACTIVITY (pCi) ±3σ | REMARKS |
|---|---|---|---|---|---|---|
| 1 | 535 | 15 | 35.67 | 31.27 ±2.00 | 27.91 ±5.35 | See diagram |
| 2 | 1,272 | 15 | 84.80 | 80.40 ±2.99 | 71.76 ±8.01 | |
| 3 | 273 | 15 | 18.20 | 13.80 ±1.50 | 12.32 ±4.02 | |
| 4 | 301 | 15 | 20.07 | 15.67 ±1.56 | 13.99 ±4.18 | |
| 5 | 319 | 15 | 21.27 | 16.87 ±1.60 | 15.06 ±4.28 | |
| 6 | 162 | 15 | 10.80 | 6.40 ±1.23 | 5.71 ±3.29 | |
| 7 | 117 | 15 | 7.80 | 3.40 ±1.10 | 3.03 ±2.95 | |
| 8 | 90 | 15 | 6.00 | 1.60 ±1.02 | 1.43 ±2.73 | |
| 9 | 62 | 15 | 4.13 | -0.27 ±0.92 | -0.24 ±2.46 | |
| 10 | 119 | 15 | 7.93 | 3.53 ±1.11 | 3.15 ±2.97 | |
| 11 | 99 | 15 | 6.60 | 2.20 ±1.05 | 1.96 ±2.81 | |
| 12 | 54 | 15 | 3.60 | -0.80 ±0.89 | -0.71 ±2.38 | |
| 13 | 62 | 15 | 4.13 | -0.27 ±0.92 | -0.24 ±2.46 | |
| 14 | 92 | 15 | 6.13 | 1.73 ±1.03 | 1.54 ±2.75 | |
| 15 | 98 | 15 | 6.54 | 2.14 ±1.05 | 1.91 ±2.81 | (In Furnace Room) Closed can with blended powder in |
| 16 | 28 | 5 | 5.60 | 1.20 ±1.00 | 1.07 ±2.68 | 16 |
| 1. | 38 | 5 | 7.60 | 3.20 ±1.10 | 2.86 ±2.95 | Warehouse - Unopened shipping containers with unblended Th. Nitrate |
| 18 | 30 | 7.5 | 4.00 | -0.40 ±0.92 | -0.30 ±2.46 | Floor near containers. |
| | | | | | | |
| | | | | | | |

Count for X+B vs $Cs^{137}$ Std, Instrument 4318 S-104 Detector P-10, gas, prop. Windowless

Voltage 2000 Gain α 5.4 unreliable Date Counted 9/11-15/69 Radiochemist RFB/LSC

Background 4.40 CPM; Factor $Cs^{137}$ = 0.8925 pCi/cpm (net) Total α+B vs $Cs^{137}$ Std = 163.70 pCi α+b

of 10 $3F_2$ = 2.6774

Robert F. Blais 10/6/69
SIGNATURE (UNIT REVIEW)

J. Edward Stein 10/6
SIGNATURE (SECTION REVIEW)

IH-375 (12-66)

# SURVEY RESULTS

LR 224 6 9 Lab. Page 1996

Firm Wah Chang S&R Glen Cove, NY Install # L-2464 Sealed: [X] Unsealed

# of Samples 18 [ ] Q tip; [X] Filter; [ ] Other Nuclides Th 232 Survey Date 9/3/69 Radiophysicist LS

| SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET ±σ | ACTIVITY (pCi) ±3σ | REMARKS |
|---|---|---|---|---|---|---|
| 1 | 179 | 10 | 17.90 | 17.25 ±1.36 | 14.98 ±3.54 | Other 4318 ctg |
| 2 | 499 | 10 | 49.90 | 49.25 ±2.25 | 42.77 ±5.86 | |
| 3 | 86 | 10 | 8.60 | 7.95 ±0.96 | 6.90 ±2.50 | Beta – roughly same |
| 4 | 71 | 10 | 7.10 | 6.45 ±0.84 | 5.60 ±2.19 | as α+β – α vs Cs 137 |
| 5 | 68 | 10 | 8.80 | 8.15 ±0.97 | 7.08 ±2.53 | becomes ~ 1/2 as much |
| 6 | 38 | 10 | 3.80 | 3.15 ±0.67 | 2.74 ±1.75 | vs Cs 137 std as α+β results |
| 7 | 12 | 10 | 1.20 | 0.55 ±0.78 | 0.48 ±2.03 | on P. 1995 |
| 8 | 26 | 10 | 2.60 | 1.95 ±0.57 | 1.69 ±1.49 | |
| 9 | 8 | 10 | 0.80 | 0.15 ±0.38 | 0.13 ±0.99 | & mainly SVBO as |
| 10 | 21 | 10 | 2.10 | 1.45 ±0.52 | 1.26 ±1.35 | Th 1's too low in energy |
| 11 | 8 | 10 | 0.80 | 0.15 ±0.38 | 0.13 ±0.99 | to effectively penetrate |
| 12 | 18 | 10 | 1.80 | 1.15 ±0.49 | 1.00 ±1.28 | Shielding between |
| 13 | 29 | 10 | 2.90 | 2.25 ±0.60 | 1.95 ±1.56 | detector & plastic |
| 14 | 13 | 10 | 1.30 | 0.65 ±0.44 | 0.56 ±1.15 | β scintillator on |
| 15 | 14 | 10 | 1.40 | 0.75 ±0.45 | 0.65 ±1.17 | 4318 system |
| 16 | 6 | 10 | 0.60 | −0.05 ±0.35 | −0.04 ±0.91 | |
| 17 | 20 | 10 | 2.00 | 1.35 ±0.51 | 1.17 ±1.33 | See also TMC data |
| 18 | 4 | 10 | 0.40 | −0.25 ±0.32 | −0.22 ±0.83 | P. 1998 |
| | | | | | | |
| | | | | | | |

Count for α vs Ra 226 Std, Instrument 4318 A-104 Detector P-10 gas, Prop Windowless

Voltage 1200 Gain α 5.4 inoperable Date Counted 9/16-17/69 Radiochemist RFP/LSC

Background 0.65 CPM; Ra 226 Factor 2 = 0.8685 pCi/cpm (net) Total α vs Ra 226 = 29.09 pCi Th

0/10 3F2 = 2.6055

Robert F. Blair 10/6/69
SIGNATURE (UNIT REVIEW)

D. Edwards Tern 10/6
SIGNATURE (SECT. REVIEW)

IH-375 (12-66)

100156

TMC analysis!

# SURVEY RESULTS

LR 224 6 9 — Lab. Page 1998

Firm Wah Chang STR Glen Cove N.Y. — Install # L-0464 — ☐ Sealed: ☒ Unseale

# of Samples 18 — ☐ Q tip; ☒ Filter; ☐ Other — Nuclides $Th^{232}$ — Survey Date 9/3/69 — Radiophysicist L.S.

| SAMPLE # | GROSS COUNTS | T (MIN) | CPM GROSS | CPM NET | ACTIVITY (pCi) ± 3σ | REMARKS |
|---|---|---|---|---|---|---|
| | The 18 fpp as a group were subjected to TMC analysis on 9/11/69 | | | | | |
| | 0–2.0 Mev in ½; 1.0 min net, DT < 0.5%, to 10² CRT | | | | | |
| | expected to be mainly a SUBC. Low NI x on 3 pha areas | | | | | |
| | on 5-A3.1 Th; 5A70 Ra; 5A149 0–2.0 Mev. Calc. from these | | | | | |
| | data appear below: | | | | | |
| | | | for $Th^{232}$ area | | ch 5A3.1 | Bkgd = 114 CPM; $F_2$ = 1.8595; $3F_2$ = 5.5785 |
| 18 fpp | 126 | 1.0 | 126 | 12 ±4.90 | 22.31 ±27.33 | pCi Th / 18 fpp grp |
| | | | for $Ra^{226}$ area | | 5A70 | Bkgd = 158; $F_2$ = 1.502; $3F_2$ = 4.506 |
| 18 fpp | 171 | 1.0 | 171 | 13 ±5.74 | 14.53 ±25.86 | pCi Ra area / 18 fpp grp |
| | | | for 0–2.0 Mev area | | 5A99 | Bkgd = 194; $F_2$ = 1.2603; $3F_2$ = 3.7848 |
| 18 fpp | 214 | 1.0 | 214 | 15 ±6.43 | 18.90 ±24.31 | pCi 0–2.0 Mev area / 18 fpp |
| | Each value agrees fairly well, so activity, mainly due to $Th^{232}$ | | | | | |

Count for Alpha vs $Th^{232}$ Std, Instrument TMC 400 CA AA F. 0–2.0 Mev in ½ in 2 weeks — Detector 3" NaI Crystal

Voltage 1000 — Gain 216 — Date Counted 9/11/69 — Radiochemist KFV/LSC

Background — CPM; Factor — pCi/cpm (net)

100157

Robert F. Blais 10/6/69 — SIGNATURE (UNIT REVIEW)

Dr. Samuel Stein 10/6 — SIGNATURE (SECTION REVIEW)

IH-375 (12-66)

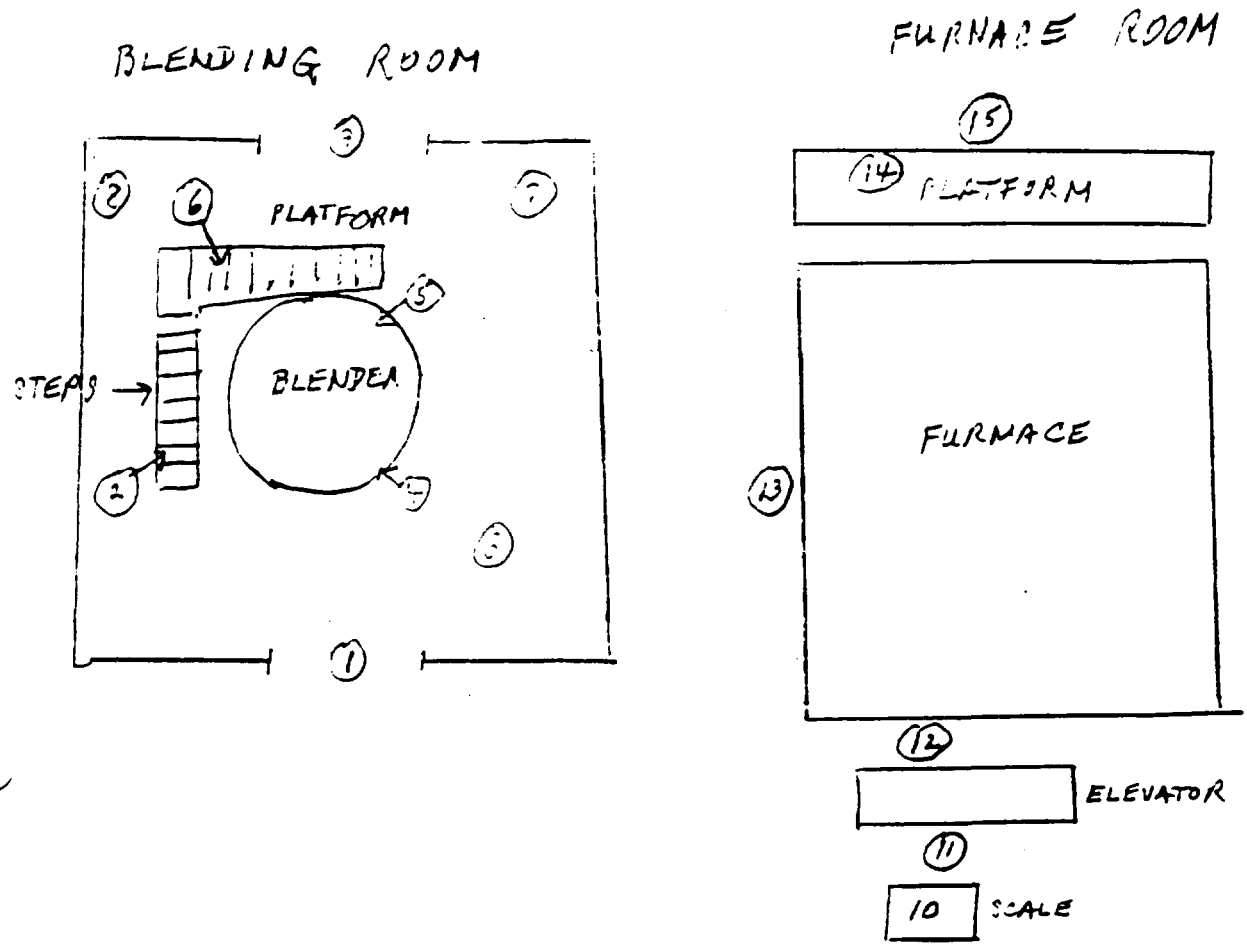
224 9

# DIAGRAM OF SURVEYED AREA

Radiophysicist [illegible]

Installation # L 0462 Date 3/3/69

Firm Nah Chang S & R Address Glen Cove L I




H: Hard; S: Soft; a: Alpha; n: Neutron
Red Numerals: Radiation in MREM/HR
Green Numerals: Smear Numbers
Blue Circled Smear Numbers: Greater Than 3 x Background Standard Deviation or as Indicated

100158

IH-371 [illegible]

[illegible] CORPORATION
[illegible]

RADIATION SURVEY REPORT

Date Mar 15 1969

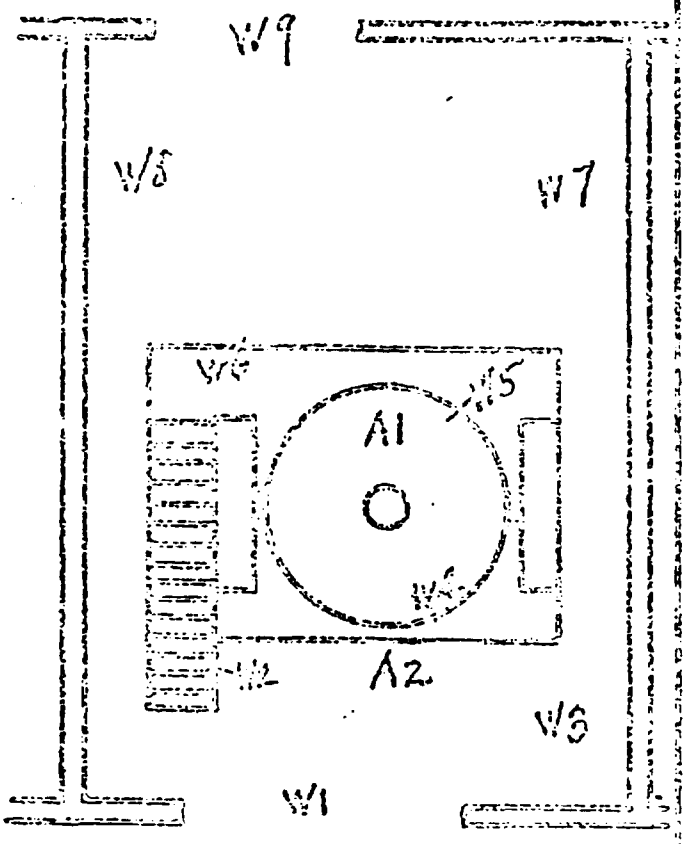
Air Sampling By [illegible]

Blending Room

Wipe Samples By _____

WIPE SAMPLES

| | | |
|---|---|---|
| W1 | 60 | DPM |
| W2 | 25 | DPM |
| W3 | 52 | DPM |
| W4 | 66 | DPM |
| W5 | 49 | DPM |
| W6 | 69 | DPM |
| W7 | 46 | DPM |
| W8 | 25 | DPM |
| W9 | 18 | DPM |
| W10 | | DPM |




GAMMON METER READINGS

| | | |
|---|---|---|
| M1 | | CPM |
| M2 | | CPM |
| M3 | | CPM |
| M4 | | CPM |
| M5 | | CPM |
| M6 | | CPM |
| M7 | | CPM |
| M8 | | CPM |
| M9 | | CPM |
| M10 | | CPM |

AIR SAMPLING STATIONS:

A1 ( Loading ) at 250CFM, Sampling Time 15 Min., Shows 7 DPM/100 cm²

A2 ( Unloading) at 25 CFM, Sampling Time 15 Min., Shows 7 DPM

Signed [illegible]

Radiation Officer

100159

NAM CHANG CORPORATION

Glen Cove, N. Y.

RADIATION SURVEY REPORT

Date Mar 6 [illegible]

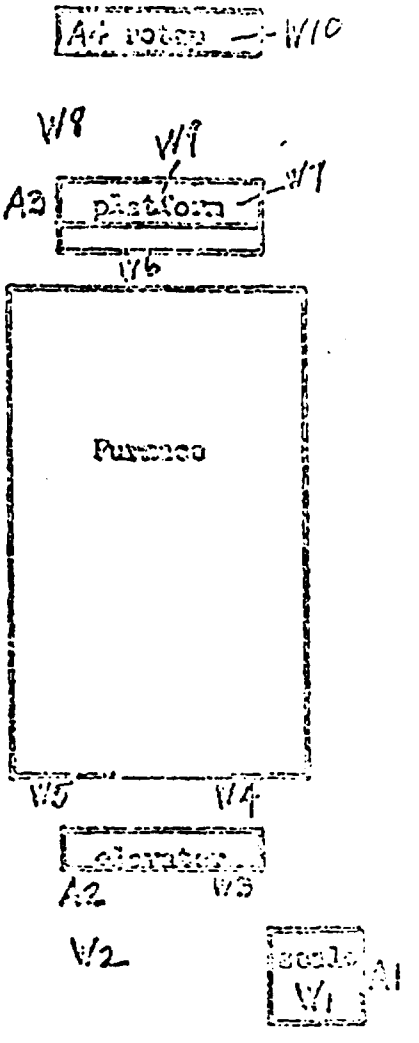
Air Sampling By [illegible]

Radiation Furnace No.

Meter Tests By

WIPE SAMPLES

| | | |
|---|---|---|
| | 49 | DPM/100 CM² |
| | 28 | DPM |
| W3 | 14 | DPM |
| | 11 | DPM |
| | 49 | DPM |
| W5 | 42 | DPM |
| | 21 | DPM |
| | 46 | DPM |
| W8 | 42 | DPM |
| | 25 | DPM |
| W10 | | DPM |




SAMSON METER READINGS

| | |
|---|---|
| M1 | |
| M2 | |
| M3 | |
| M4 | |
| M5 | |
| M6 | |
| M7 | |
| M8 | |
| M9 | |
| M10 | |

AIR SAMPLING STATIONS:

A1 (Weighing) at 35 CFM, Sampling Time 15 Min., Shows 11 DPM/100 CM²

A2 (Elevator) " " " 15 Min., Shows 14 DPM

A3 (Unloading) " " " 15 Min., Shown 21 DPM

A4 (Roto-p) " " " 15 Min., Shows 11 DPM

Signed [illegible]

Radiation Officer

100160

[illegible] Compl Assign [illegible]

STATE OF NEW YORK — DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL HYGIENE
RADIOLOGICAL HEALTH UNIT
[illegible] Centre Street
[illegible], N. Y. 10013

# NOTICE OF INSPECTION FINDINGS

| 1. Date |
|---|
| 2. Type Visit |

| Firm Name & Address | 4. No. Employees Exposed Male | Female |
|---|---|---|
| 5. Confines of Installation | | |

| Registration No | 7. License No.(s) | 8. Industrial Code | 9. Radiation Safety Officer |
|---|---|---|---|
| | | | |

## 10. Findings

☐ A. No item of non-compliance found.

☐ B. The following paragraphs of Code Rule 38, or conditions of your license were found in violation.

| | | | | | |
|---|---|---|---|---|---|
| 47 ☐ 4) | | ( ☐ 23) | | (19 ☐ 34.1) | |
| ☐ 5.1) | | (47 ☐ 24) | | (20 ☐ 34.2) | |
| ( ☐ 6.2) | 81 | (47 ☐ 25) | | (21 ☐ 34.3) | |
| ☐ 9.1) | | (15 ☐ 26.2) | | (47 ☐ 34.4) | |
| ( ☐ 9.1) | | (15 ☐ 26.3) | 81 | ( ☐ 35.1) | |
| ( ☐ 9.1) | | (15 ☐ 26.4) | | (47 ☐ 35.2) | |
| 47 ☐ 10) | | (30 ☐ 26.5) | | (25 ☐ 36.1a) | |
| (47 ☐ 11) | | (47 ☐ 26.6) | | ( 9 ☐ 36.1b) | |
| 47 ☐ 20) | | (47 ☐ 28) | | (24 ☐ 36.1c) | |
| 10 ☐ 21.1) | | (16 ☐ 30) | | (47 ☐ 36.2) | |
| (11 ☐ 21.2) | | ( ☐ 31.2) | | (28 ☐ 37.2) | |
| (13 ☐ 22.1) | | (18 ☐ 32) | | (31 ☐ 39) | |
| 14 ☐ 22.2) | | (18 ☐ 33) | | ( ☐ ) | |
| ( ☐ ) | | ( ☐ ) | | ( ☐ ) | |

11. Remarks

100161

12. The violations indicated above should be removed within _____ days.

13. _____ Signature of Department Representative

[illegible] THE COMMISSIONER

IH-317.1 (8-65)

| 14. DATE | 15. REVIEWED BY | 16. DISPOSITION |
|---|---|---|
| [illegible]-68 | [illegible] | Compl. 1-68 |
| 28-68 | [illegible] | " 4-68 |
| 10-68 | [illegible] | " 6-68 |
| 11-68 | [illegible] | " 8-68 |
| 13-68 | [illegible] | " 10-68 |

REPORT ON COMPLIANCE VISIT

| 17. DATE | 18. PERSON CONTACTED | 19. REASON FOR NON-COMPLIANCE |
|---|---|---|
| [illegible] | [illegible] | [illegible] IC<br>[illegible] - Firm looking [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] - Firm to be [illegible] within 60 days. |
| 25/68 | H. Lee | 26.4 - Firm has located a scaler and is in process of purchasing an α scint. detector. Should be in compliance by end of May. |
| /68 | H. Lee | 26.4 - α scintillation probe + α source ordered on 5/20/68. Should be received by end of July. |
| 28/68 | H. Lee | 26.4 - α counter + α source received but equipment not functioning properly with old scaler - equipment was sent to B/A for repair. Should be functioning properly by end of Sept. |
| 5/68 | H. Lee | 26.4 - Necessary equipment now functioning properly |

TE CASE CLOS 11/25/68 21. INITIALS [illegible]

100162

New York State Department of Labor

Radiation Survey

Compliance Information

(Note to Radiophysicist: Fill out in advance as much of the information as possible from company folder)

Date [illegible]

Radiophysicist [illegible]

License/Registration No. [illegible]

A. Administrative Information

1. Name of installation or plant

[illegible] Smelting & Refining Co

2. Address No. and Street [illegible] Rd.

City [illegible]

County [illegible]

3. Person(s) interviewed:

| | Name | Title |
|---|---|---|
| a. | [illegible] | Chief Chemist |
| b. | | |
| c. | | |

4. Type of industry

Metal Refining

b. Industrial Code Rule No. 38 — Rule No.

1. All radiation sources in plant have been registered/licensed: yes ✓ no ____ — 38-4, 38-5

2. Exempt quantities of radioactive material have not been combined or increased: yes ____ no ____ — 38-6.1

3. If an exempt device (U.S. AEC general license) has been received

a. the Industrial Commissioner has been notified: yes ____ no ____ — 38-6.2(a)

100163

Rule No.

b. it has been disposed of in approved manner:

yes ____ no____ 38-6.2(b)

c. it has affixed to it an approved label:

yes ____ no____ 38-6.2(c)

d. the conditions of exemption (USAEC general license) have been complied with:

yes ____ no____ 38-6.2(d)

e. the device has been leak tested and on/off mechanism checked every six months (or as provided in U.S. AEC/other agreement state general license) (Kr-85 no leak test required, H-3 no leak or operation required)

yes ____ no____

i. the last test was _____

ii. results affixed to this report

yes ____ no____ 38-6.2(e)

f. testing and servicing of exempt (U.S. AEC generally licensed) device performed by duly licensed person or firm

yes ____ no____

License No._____ 38-6.2(f)

g. any indication of possible leakage or damage to device has been investigated:

yes ____ no____

(Action taken)_____ 38-6.2(g)

4. Has there been any changes in proposed use, equipment, facilities, procedures, or personnel from those on registration/license:

yes ____ no X 38-8(a) & (b)

New personnel Title

a._____ _____

b._____ _____

c._____ _____

100164

Rule No.

5. What licensed material has been received since last inspection

| | Nuclide | Activity (μc, mc, c) |
|---|---|---|
| a. | Th [illegible] | [illegible] |
| b. | | |
| c. | | |

38-9.1

6. What licensed material has been shipped off-site (other than as waste) (Use another sheet, if necessary.)

| | Nuclide | Activity | Sent To | License/Registration |
|---|---|---|---|---|
| a. | Th. | [illegible] | [illegible] | [illegible] |
| b. | | | | |
| c. | | | | |
| d. | | | | |

38-9.2

7. Is special nuclear material (U-235, U-233, Pu-239) covered by this license: Yes ____ No ✓

Has special nuclear material been produced under this license:

Yes ____ No ✓

How much: _____ 38-10

8. Is this license still valid: Yes ✓ No ____

Expiration Date on license [illegible] 38-11

9. ~~Has there been any violation(s) or failure(s) to observe the Industrial Code Rule 38 or any other applicable rule, regulation, code or order to your knowledge? Yes ____ No ____~~

~~Enumerate a. _____~~

~~b. _____~~ 38-14

10. Has a license or permit been issued by N.Y.S. or N.Y.C. Dept. of Health to you? Yes ____ No ✓

Have you transported and used radioactive material or radiation producing devices in another state: Yes ____ No ✓

State _____ 38-18

100165

Rule No.

11. Is a U.S. Atomic Energy Commission License held?

Yes ____ No / U.S. AEC Lic. No. _____ 38-19

C. Radiation Protection Program

1. Personnel dosimetry

a. External Exposure (Whole Body)

| No. of Persons Working with Ionizing Radiation | No. of Persons Wearing Film Badges (WB) | Number in Given Dose | | | |
|---|---|---|---|---|---|
| | | 0 or N.D. | 0-3 | 3-5 | >5 |
| | | rem/y | rem/y | rem/y | rem/y |
| N/A | | | | | |

b. External Exposure (Extremities)

| No. of Persons Working with Ionizing Radiation | No. of Persons Wearing Wrist or Finger Badges | Number in Given Dose | | |
|---|---|---|---|---|
| | | 0 or N.D. | 0-25 | 25-75 |
| | | rem/y | rem/y | rem/y |
| N/A | | | | |

c. No. of Exposed Persons Under 18 years of Age N/A.

d. Are Cumulative Lifetime Dose Records maintained for exposed personnel:

Yes ____ No N/A 38-21.1

2. Is radiation dose, acquired by personnel at other place of employment, maintained in this facility? Yes ____ No N/A. 38-21.1

3. Is the airborne activity in controlled areas monitored?

Yes X No ____ 38-21.2

4. If yes:

| Nuclide (s) | Location | Concentration ($\mu c/cm^3$) |
|---|---|---|
| a. [illegible] | [illegible] | [illegible] |
| b. [illegible] | [illegible] | [illegible] |
| c. [illegible] | [illegible] | |
| d. | | |
| e. | | |

100166

38-21.2

5. Is there any potential exposure of persons in uncontrolled area?

Yes ✓ No _____

If yes: a. External Exposure (copy of survey is adequate)

| Nuclide(s)/Machine | Location | Dose Rate |
|---|---|---|
| a. | | |
| b. | | |
| c. | | |
| d. | | |
| e. | | |

38-22.1

b. Internal Exposure not monitored

| Nuclide(s) | Location | Concentration($\mu c/cm^3$) |
|---|---|---|
| a. | | |
| b. | | |
| c. | | |
| d. | | |
| e. | | |

38-22.2

6. Disposal of Radioactive waste

Solid

| Date | Vendor | Activity |
|---|---|---|
| a. | | |
| b. | None | |
| c. | | |
| d. | | |

Liquid

| Date | Vendor or Sink Disposal | Activity |
|---|---|---|
| a. | | |
| b. | None | |
| c. | | |
| d. | | |

Gas

| D | Vendor or Atmospheric Disposal | Activity |
|---|---|---|
| a. | | |
| b. | [illegible] | |
| c. | | |
| d. | | |

38-23

7. Has there been any human use of radioactivity under this license?

Yes _____ No X

38-24

8. Name of Radiation Safety Officer is H. [illegible]

His experience with ionizing radiation is (if not on application)

_____

_____ 38-25

9. Survey Instruments (If not on application)

| Mfg. Name | Model & Serial No. | How often Calibrated | Last Calibrated |
|---|---|---|---|
| a. Samson | | | 1964 |
| b. [illegible] | - [illegible] | | 1964 |
| c. | | | |
| d. | | | |

38-26.1

10. Surveys:

Radiation Equipment: How often N/A Last _____ 38-26.2

Radioactive Materials (sealed):
(How often N/A Last _____ 38-26.3 & 38-26.5

Leak test of Sealed Sources: Date: N/A

Result _____ μc

Performed by: _____

100168

Rule No.

11. Radioactive Materials (unsealed) Survey: How often ____ Last [illegible] 30-26.4

12. Are interlocks and timers in good shape?

Yes N/A No ____

Last checked ____

By ____ 30-26.6

13. Are instructions given to personnel re:

eating, drinking and smoking in controlled areas

Yes ____ No N/A

Instructions Posted Yes ____ No ____ 30-28

14. Has any controlled area been vacated or converted to other use?

Yes ____ No Y 30-29

If yes, attach copy of final survey

15. Are all controlled areas marked with the proper radiation hazard symbol and clearly visible?

Yes ____ No ____

Location(s) marked with "Radiation Area" Signs ____

(5-100 mrem/hr)

Location(s) marked with "High Radiation Area" Signs ____

(>100 mrem/hr)

Location(s) marked with "Airborne Radioactivity Area" ____

Location(s) marked with "Radioactive Material(s) Sign ____

(normally in Radiation Areas) 30-31

Rule No.

16. Labels on container(s): Are all container(s) properly marked which contain (a) radioactive material in quantities greater than that listed in Table (4) other than U or Th and (b) U or Th in quantities 10 times greater than that listed in Table (4). Yes X NO ____

Are radioisotope storage containers marked with label which states activity and nuclide with date? Yes ____ No X 38-32

17. Are all radiation producing machines other than Medical and Dental X-Ray Units marked with hazard symbol and appropriate cautionary wording? Yes ____ No N/A 38-33

18. Have all persons who work in control areas been instructed in (a) presence of radiation, (b) procedures to minimize exposure to radiation, (c) applicable provisions of Code Rule 38, and (d) personnel dosimetry including bioassay the need for, and his rights to foregoing information: Yes X No ____ 38-34.1

19. Do you keep available for employees: Copies of Code Rule 38, license(s) or registration(s) covering radiation, and operation procedures? Yes X No ____ 38-34.2

20. Is the "Notice to Employees" posted so that employees can read it on their way to or from controlled areas? Yes X No ____ 38-34.3

21. How and where are radiation sources stored when not in use?

Location [illegible]

Is there any flammable, toxic materials stored in same location: Yes ____ No X

If yes, give description ____ 38-35.1

In your opinion will this storage area provide reasonable protection against

Rule No.

loss, leakage or dispersion by fire effects, water, hose streams or other means used to fight fire.

yes _____ no _____

If no; what is being done to improve storage? _____ 38-35.2

22. Records:

a. Survey, check, and test records. yes ✓ no _____

b. Transfer, receipt, and disposal of radioactive materials records. yes _____ no X

c. Personnel Dosimetry records. yes _____ no ✓

d. Bio-assay and medical evaluation service records.

yes _____ no ✓ 38-36.1

23. Dose, bio-assay and medical evaluation service records are on approved forms. yes _____ no N/A

These records are preserved for how long: N/A year(s)

All other records are preserved for [illegible] year(s) 38-36.2

24. Has there been:

a. Any theft or loss of any radiation source?

yes _____ no ✓

Date of last inventory check _____

b. Any incident involving such radiation source which may have caused or threatens to cause any individual to receive a dose that exceeds the limit permitted by this Rule.

yes _____ no ✓

If yes, give details:

_____

_____

_____

_____

100171

Rule No.

c. Any level of radiation from, or release of, a concentration of radioactive material in any uncontrolled area that exceeds 10 times the limit permitted by this Rule or any applicable license:

yes ____ no ✓

If yes, give details:

_____

_____

_____

d. Was this reported to the Commissioner? yes ____ no ____

If yes:

Date _____ By _____ 38-37

25. Has any employee(s) (present or past) requested information on the dose he has received? yes ____ no ✓

Note: Attach a copy of form on which this information is reported. 38-37.2

26. A meter and/or smear radiation survey was made at _____ by _____ and results are attached.

End of Report

Date 9/29/6

Time _____

By _____

Note: Any person (firm) may petition the Board of Standards and Appeals: "If there shall be practical difficulties or unnecessary hardship in carrying out provisions of . . . . this rule . . . ".

-1238 Std
5100-6000 c/m =
6,000 to 12,000 c/m

WAH CHANG CORPORATION

Glen Cove, N. Y.

RADIATION SURVEY REPORT

Date Sept 14 1966

Air Sampling By _____

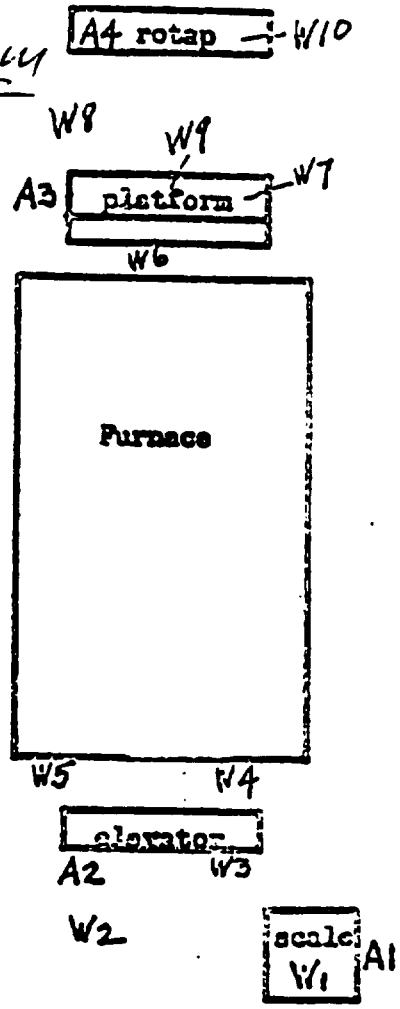
Reduction Furnace No. 8

Meter Tests By F. H. Lee

WIPE SAMPLES

CPM x 2 = dpm

| | | |
|---|---|---|
| | None | CPM |
| | 1X20 | CPM |
| W3 | 1X20 | CPM |
| | 1X20 | CPM |
| W5 | 1X10 | CPM |
| | 1X20 | CPM |
| | 1X30 | CPM |
| W8 | 1X50 | CPM |
| | 1X40 | CPM |
| W10 | 1X40 | CPM |




SAMSON METER READINGS

| | |
|---|---|
| M1 | 1X325 |
| M2 | 1X125 |
| M3 | 5X200 |
| M4 | 1X150 |
| M5 | 1X25 |
| M6 | 1X50 |
| M7 | 1X50 |
| M8 | 1X10 |
| M9 | 1X50 |
| M10 | 1X50 |

AIR SAMPLING STATIONS:

A1 (Weighing) at 15 CFM, Sampling Time _____ Min., Shows _____ CPM

A2 (Elevator) " , " _____ Min., Shows _____ CPM

A3 (Unloading) " , " _____ Min., Shows _____ CPM

A4 (Rotap) " , " _____ Min., Shows _____ CPM

Note: No air sampling was taken since there was no production of thoriated tungsten powder.

Signed [illegible]

Radiation Officer

100173

[illegible] OF INDUSTRIAL HYGIENE
RADIOLOGICAL HEALTH UNIT
80 Centre Street
New York, N. Y. 10013

# NOTICE OF INSPECTION FINDINGS

1. [illegible] 7/1/6
2. Type Visit [illegible]

3. Firm Name & Address: Wah Chang Smelting & Refining Co. 63 Herbhill Rd. Glen Cove
4. No. Employees Exposed: Male 10 Female 0
5. Confines of Installation: [illegible]
6. Registration No.:
7. License No.(s): 743-0464
8. Industrial Code: 33
9. Radiation Safety Officer: H. Lee

10. Findings

☐ A. No item of non-compliance found.
☒ B. The following paragraphs of Code Rule 38, or conditions of your license were found in violation.

| | | | | | |
|---|---|---|---|---|---|
| (47 ☐ 4) | | ( ☐ 23) | | (19 ☐ 34.1) | |
| ( ☐ 5.1) | | (47 ☐ 24) | | (20 ☐ 34.2) | |
| ☐ 6.2) | | (47 ☐ 25) | | (21 ☐ 34.3) | |
| ☐ 9.1) | | (15 ☐ 26.2) | | (47 ☐ 34.4) | |
| ( ☐ 9.1) | | (15 ☐ 26.3) | | ( ☐ 35.1) | |
| ☐ 9.1) | | (15 ☒ 26.4) | Unsealed Source Surveys | (47 ☐ 35.2) | |
| 47 ☐ 10) | | (30 ☐ 26.5) | | (25 ☒ 36.1a) | Records of Survey |
| (47 ☐ 11) | | (47 ☐ 26.6) | | ( 9 ☐ 36.1b) | |
| (47 ☐ 20) | | (47 ☐ 28) | | (24 ☐ 36.1c) | |
| 0 ☐ 21.1) | | (16 ☐ 30) | | (47 ☐ 36.2) | |
| (11 ☐ 21.2) | | ( ☐ 31.2) | | (28 ☐ 37.2) | |
| (13 ☐ 22.1) | | (18 ☒ 32) | ~~Rad. Material~~ Sign (Complied) | (31 ☐ 39) | |
| 4 ☐ 22.2) | | (18 ☐ 33) | | ( ☐ ) | |
| ( ☐ ) | | ( ☐ ) | | ( ☐ ) | |

Remarks

100174

12. The violations indicated above should be removed within 30 days.

13. [signature] Signature of Department Representative

| 11 DATE | 12 REVIEWED BY | 13 POSITION |
|---|---|---|
| 7-27-66 | [illegible] | Compl Sept 66 |
| 9-13-66 | [illegible] | Reg. |

## REPORT ON COMPLIANCE VISIT

| 17 DATE | 18 PERSON CONTACTED | 19 REASON FOR NON-COMPLIANCE |
|---|---|---|
| 9/23/66 | H. Lee | Complied - sent copy of required survey |
| 9/29/66 | H. Lee | Made visit to clear up question as to survey report (re. meter calibration.) |

9/29/66

[illegible]

100175

REFERENCE NO. 3

**NUS CORPORATION AND SUBSIDIARIES** — **TELECON NOTE**

| CONTROL NO: | DATE: 7/31/89 | TIME: 13:50 |
|---|---|---|

**DISTRIBUTION:** FILE - LI TUNGSTEN TDD 07-8907-78-PA
MRICS NYSLPA

| BETWEEN: | OF: | PHONE: |
|---|---|---|
| CHARLES FITZSIMMONS | EPA - EDISON | (201) 321-6608 |

**AND:** STEVE OKULEWICZ NUS FIT EDISON NJ.

**DISCUSSION:**

LI TUNGSTEN - CURRENT INFO & SITE STATUS

MR. FITZSIMMONS INFORMED ME THAT THE CORRECT NAME OF THE SITE IS LI TUNGSTEN NAMED AFTER ITS OWNER AND THAT THE SITE IS CURRENTLY OWNED BY OLD COURT SAVINGS AND LOAN CORPORATION OF BALTIMORE MARYLAND. THIS SAVINGS & LOAN CORPORATION LEASED THE SITE TO LI TUNGSTEN FROM 1974 - 1985, AFTER WHICH LI TUNGSTEN WENT BANKRUPT IN 1985. LI TUNGSTEN WAS ORIGINALLY OWNED BY WAH CHANG SMELTING COMPANY FROM 1940 TO 1985. THE SITE IS IN THE CLEAN UP PROCESS AND ALL SURFACE CONTAINERS INCLUDING TANKS, CRATES, DRUMS, PONDS LABORATORY REAGENTS AND SOME OF THE WASTE PILES WILL BE REMOVED BY JANUARY OF 1990, PROVIDED THE PLAN REMAINS ON SCHEDULE. NO GROUNDWATER

~~ACTION ITEMS:~~

CLEAN UP IS SCHEDULED AT THIS TIME. A RADIATION SURVEY WAS JUST COMPLETED BUT ITS RESULTS ARE NOT KNOWN PRESENTLY. PLANT WAS SHUT DOWN IN 1985.

100177

REFERENCE NO. 4

100178

# LI TUNGSTEN SITE INVESTIGATION REPORT (Volume 1)

Prepared For:

**Campon Realty Corp.**

445 Fifth Avenue

New York, NY 10016

Prepared by:

**RTP Environmental Associates, Inc.**

400 Post Avenue

Westbury, NY 11590

May, 1988

DRAFT

VOLUME 1

# LI TUNGSTEN SITE INVESTIGATION REPORT

## TABLE OF CONTENTS


SECTION

Volume 1

1.0 Executive Summary

2.0 Introduction

3.0 Review of Regulatory Issues Related to Site Development

4.0 Hydrogeologic Investigation and Soil Gas Survey

Volume 2

5.0 Site Residues and Transformer Removal

6.0 Tank Cleaning, Removal of Asbestos and Demolition of Structures

APPENDIX

Li Tungsten Health and Safety Plan

Excerpts Discussing Tungsten Processing, Tungsten Alloys and Tungsten Compounds

SECTION 1.0

# EXECUTIVE SUMMARY

# LI TUNGSTEN SITE ENVIRONMENT INVESTIGATION REPORT

## 1.0 EXECUTIVE SUMMARY

This site environmental investigation report summarizes the activities and findings of RTP Environmental Associates, Inc. and subcontractors at the Li Tungsten, Glen Cove, New York site. An investigation of site groundwater, soils, structures and equipment focused on determining the nature and extent of any potential or existing environmental contamination. The overall goal of the study was to determine the appropriate procedures and estimated costs for closure of the site, prior to its future intended use as a residential development.

The investigation protocol is detailed in the RTP contract with Campon Realty Corporation. RTP has successfully completed all the terms and conditions of its contract. The study began on March 25, 1988 and ended on May 13, 1988. The time frame for this investigation was limited and the study was designed to uncover the maximum amount of information about site remediation requirements within this limited time frame. Furthermore, coordination with regulatory agencies was restricted by the terms of RTP's contract in this phase of work. Thus, the study cannot be considered a comprehensive assessment of all site environmental matters as may be required by regulatory agencies for purposes of planning site remediation and obtaining a complete clean bill of health. The estimated costs for remediation, preferred alternatives and schedules may need adjustment once coordination with regulatory agencies is initiated.

This executive summary contains a discussion of the findings, outlining the specific cost/benefits of various alternatives. The supporting documents, as supplied by RTP subcontractors, have been provided in the remainder of this report for completeness.

As a preface to the discussion of findings, we note that our investigation has uncovered several new and significant environmental contamination problems at the site. These include underground plumes of oil contaminated soils and solvent contaminated groundwater. Specifically, the identified PCE plume was found to be rather extensive, a hazardous VOC plume from the Mattiace property was identified, and subsurface oil contamination was found in two separate locations. Due to the conditions of low soil permeability, we are forced to predict a rather lengthy period for remediation of these conditions. Finally, the uppermost groundwater throughout the facility shows evidence of infiltration by metals from processing activities at the facility. Thus, the site has substantial environmental problems that go beyond those typically associated with conversion of industrial sites to residential use. This does not mean that remediation sufficient to satisfy regulatory requirements is not attainable. In fact, our review of remediation procedures, costs and schedules indicates that the concept of a successful cleanup plan is a plausible one and that serious discussions with regulatory agencies in this regard may prove worthwhile. Nonetheless, it is important to keep in mind that the site has been found to pose some [redacted] challenges, each of which has alternative methods of resolution.

The costs provided and the schedules given in Section 1.4 pertaining to remediation recognize the uncertainties described above and are intended to be best estimates of actual costs, if site remediation as envisioned by RTP begins within the next few months. Costs and schedules are based upon

current New York State requirements and our estimates of how applicable review procedures will be implemented in this case. Costs and time lines will likely expand should New York State pass new legislation or if remediation is delayed for a lengthy period.

This executive summary consists of five subsections covering the various aspects of study findings and conclusions.

## 1.1 QUALITY AND QUANTITIES OF MATERIALS ONSITE

The following is a brief discussion of the types and quantities of materials onsite. The details are provided in the annotated sections of this report.

### Stored Materials

An estimated volume of 11,000 cubic yards, 17,000 tons of solid residue/ore materials are onsite. These materials are contained in various drums, crates, piles, etc. in almost all areas of the site and are present as landfill material in a significant portion of the northwest and northern portions of the site. These have been screened for metals and E.P. Toxicity and have been shown to contain substantial heavy metal concentrations but to be non-toxic. When detailed analyses are conducted for remediation, some [redacted] as being E.P. toxic. An estimated volume of 350,[redacted] liquids are stored onsite. These liquids will be best handled by transporting offsite to a disposal location. An estimated 131,[redacted] hazardous organic liquids are stored onsite and these will need to be manifested and removed. Three main laboratory areas with substantial chemical inventories have been identified which will require special treatment. These should be packed and removed from the site.

remove when [illegible] neutral [illegible] flush



100185

Subsurface Conditions

A tetrachloroethene (PCE) plume is one of several plumes that have been detected onsite as shown in Figure E-1. The exact plume extent will need to be better defined. The area surrounds groundwater monitoring wells GM-9, GM-3D, EMW-1 and GM-6. Purportedly a dry cleaning fluid was discharged on an adjoining property.

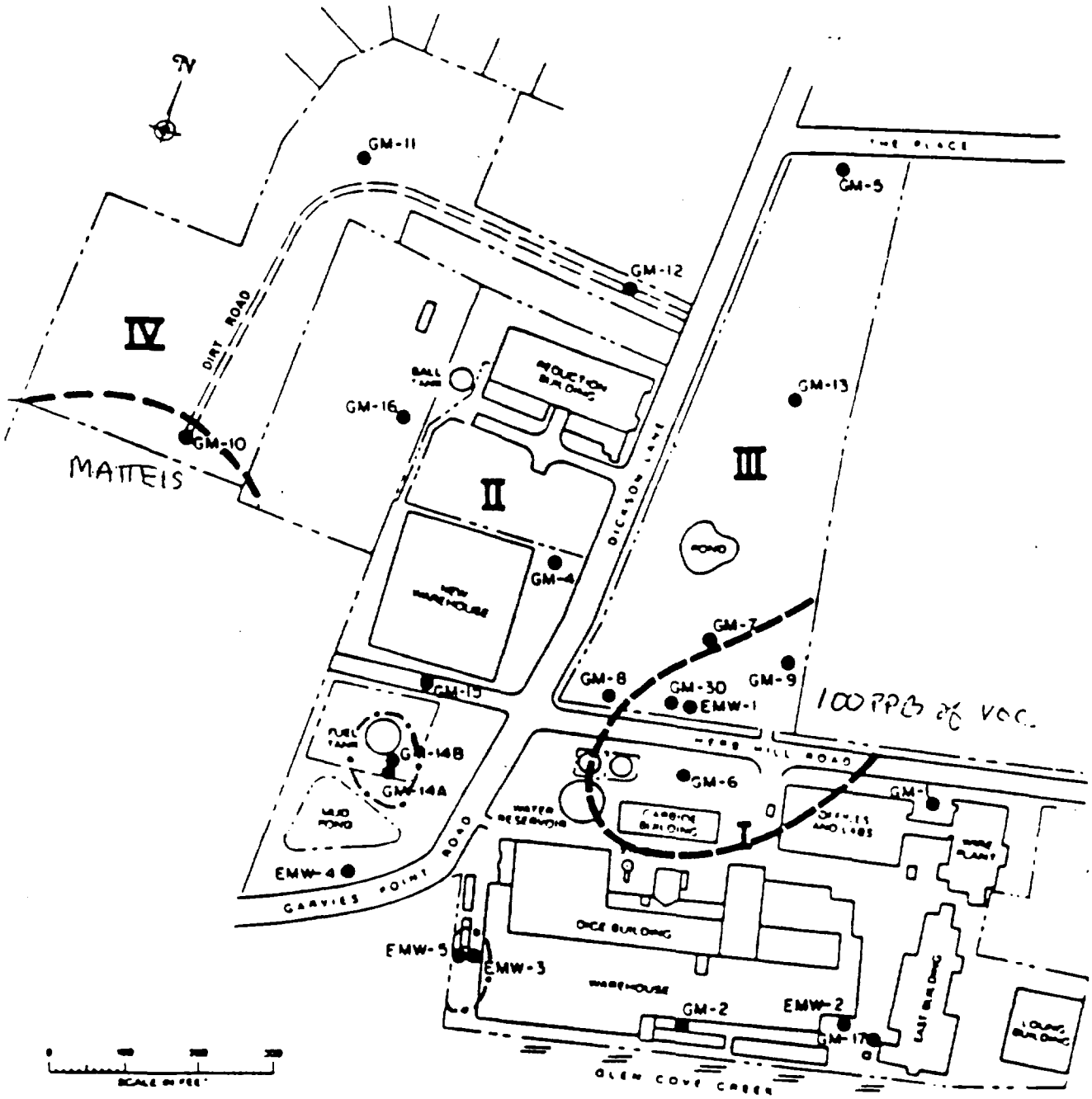
Discussions with the current tenant of the adjoining property suggest that there was never dry cleaning on the site, however, the Nassau County Department of Health (NCDOH) has a record of dry cleaning solvents on the adjoining property.

A 1,1,1 trichloroethane plume has been detected onsite and its aerial extent is roughly estimated in Figure E-1. The plume is in the vicinity of a groundwater monitoring well GM-10 and the likely source is the Mattiace property. This property is currently under investigation by the USEPA, New York State Department of Environmental Conservation (NYSDEC) and NCDOH and is currently undergoing remediation.

An oil plume has been detected under the 500,000 gallon No. 2 "fuel tank" and is also located on Figure E-1. This tank was leased by an oil supplier and numerous spills have been reported to NCDOH at this site. A smaller partially remediated spill was detected on the southwest corner of the property near Glen Cove Creek.

A waste/process water solution plume which contains heavy metals has been detected onsite emanating from under the location of the mud pond (Figure E-1).

RTP ENVIRONMENTAL ASSOC., INC




EXPLANATION

| | | | |
|---|---|---|---|
| | | — • — | INFERRED EXTENT OF OIL PLUME |
| II | PARCEL NUMBER | ● | MONITORING WELL LOCATION |
| — · — · — | PROPERTY/PARCEL BOUNDARY | ▬ | INFERRED EXTENT OF VOC PLUME WITH CONCENTRATION OF 100 ppb OR GREATER |

NOTE: REFER TO TABLE 3 FOR CONCENTRATIONS OF VOCs DETECTED IN MONITORING WELLS SAMPLED IN SPRING 1987 AND SPRING 1988

INFERRED EXTENT OF PLUME OF VOCs IN SHALLOW GROUND-WATER SYSTEM IN THE VICINITY OF LI TUNGSTEN GLEN COVE, NEW YORK

FIGURE E-1

100187

Finally, a significant but undetermined volume of site soils have been contaminated by the above materials.

Structures and Related Materials

There are 224 tanks of various sizes and shapes that have been inventoried during the site study. The total capacity of tanks is over 2,000,000 gallons. The tanks range from empty to full on current inventory, and approximately 350,000 gallons of liquid is in the tanks.

There are six (6) main buildings with associated ancillary equipment and support structures onsite that need to be removed. There is also a large inventory of scrap machinery and equipment that resides onsite. [redacted] 23 transformers onsite believed to contain PCB (polychlorinated biphenyl) contaminated oils. There is a substantial asbestos inventory onsite which includes the sidings on buildings, tank covers, and pipe coverings.

## 1.2 IMMEDIATE HAZARDS

Several immediate hazards have been identified during the course of our site investigation work. All identified hazards were provided to Glen Cove Development Company in a project memorandum along with the recommendation that these hazards be remediated immediately. It is our understanding that the Glen Cove Development Company is currently developing a plan for addressing all identified immediate hazards. Once the plan is completed, the site would be in a relatively stable condition.

## 1.3 CURRENT AND FUTURE LIABILITIES

There are several rules and regulations that are applicable to the various parties involved in the Li Tungsten site. The critical rules deal with conditions that are immediate threats to the environment (e.g. oil spills) and the requirements once a party becomes involved. In summary, if an immediate threat to the environment or to human health exists, there are reporting obligations. If an owner has knowledge of such a condition onsite, then the owner is responsible for its remediation to the satisfaction of the regulatory agencies. The extent of liability, the potential for enjoining other potentially responsible parties (PRP) to assist in the cleanup and the general rules that apply or may apply to the various parties involved are addressed in greater detail in Section 3 of this report.

In this regard, RTP has reported to the Nassau County Health Department (NCDOH) and the New York State Departmenc of Environmental Protection (NYSDEC) the results of the groundwater sampling program that fall into the reportable category.

This includes the oil contamination that surrounds the 500,000 gallon fuel tank, the organic plume that appears to be coming from the Mattiace property and the tetrachloroethene and organic plume that appears to be coming from the former laundry (Crown-Dyckman Uniforms) property.

## 1.4 MEASURES FOR SITE REMEDIATION

In all likelihood, whether or not Campon Realty decides to purchase the parcels, NYSDEC will classify the site as an inactive hazardous waste site and then require the owner to develop and implement a remediation plan to

cleanup the site. This is standard procedure for any site currently classified as an industrial site that is no longer in operation or is being converted to residential use in New York State (especially on Long Island). In addition, now that the NCDOH and NYSDEC have knowledge of the organic and oil spills that are uncontrolled on the property, there will be a cleanup action required regardless of ownership. The overall site cleanup and remediation plan will at a minimum, have several elements. Each of the currently identified elements are outlined in Table E-1.

The cost estimates in Table E-1 are separated into a best estimate which means the likely cost of cleanup and a conservative estimate if difficulties arise during remediation. The basis for each cost estimate and schedule is addressed below. Please recognize these prices are likely to hold for approximately 60-days from the date of this report. Delays in beginning remediation beyond that point will likely cause an increase in cleanup and remediation prices.

Liquids/Sludges in Tanks

RTP estimates that 350,000 gallons of various liquid waste need to be pumped and disposed. An additional 188,000 gallons will be produced during the cleaning of the tanks. This total comes to 538,000 gallons which at $0.52 per gallon for removal and disposal amounts to a remediation cost of $279,800. A one hundred percent contingency fee has been added to provide a conservative estimate of cleanup of $559,600. This is based upon the fact that disposal costs vary due to available capacities of disposal facilities and the types of wastes involved. The current owner is likely to remediate 130,000 gallons of onsite liquids for a total savings of $84,500. With remediation, the best estimate is therefore $195,300, while the conservative estimate does not assume any immediate remediation.

TABLE E-1

ESTIMATED COSTS AND SCHEDULE FOR REMEDIATION

| Material/Element | Estimated Cost of Cleanup (Best Estimate) | Estimated Cost of Cleanup (Conservative Estimate) | Schedule |
|---|---|---|---|
| 1. Liquids/Sludges in Tanks | $ 195,300 | $ 559,600 | 3-4 months |
| 2. Tank Cleaning | 203,000 | 243,600 | 3-4 months |
| 3. Structural Demolition/Removal | 1,020,000 | 1,530,000 | 6 months |
| 4. Asbestos Removal/Disposal | 486,300 | 656,500 | 2 months |
| 5. Laboratory Packing/Disposal | 65,500 | 236,000 | 2 months |
| 6. Solid Waste Removal/Disposal | 549,100 | 3,657,000 | 3-4 months |
| 7. Transformer Removal/Disposal | 85,700 | 119,400 | 2 months |
| 8. PCE Spill Cleanup | 675,000 | 1,100,000 | 5-10 years |
| 9. Mattiace Spill Cleanup | 550,000 | 975,000 | 5-10 years |
| 10. No. 2 Oil Spill Cleanup | 150,000 | 300,000 | 2 months |
| 11. Mud Pond Cleanup | 575,000 | 1,300,000 | 6 months |
| Subtotal Cost | $ 4,554,900 | $ 10,677,100 | |
| Management Cost | 750,000 | 1,500,000 | |
| TOTAL PROJECT COST | $ 5,304,900 | $ 12,177,100 | |





ENVIRONMENTAL ASSOCIATES INC.

Tank Cleaning

In order to neutralize the tankage in preparation for demolition, the tanks will be triple rinsed and the contents removed. The cost for this activity is $203,000. A small contingency of twenty percent for unforeseen circumstances was added for the conservative estimate.

Structural Demolition/Removal

The structural demolition/removal of materials includes the demolition of all structures to grade and clearing the site. It assumes the materials to be disposed (including wood, steel and concrete debris) are acceptable to standard landfills and that most of the work will be completed by non-union labor. The cost is estimated at $1,020,000. A modest contingency factor of fifty percent has been added to include removal of some of the materials as special waste or hazardous waste and the use of special labor. Costs for delaying demolition cannot be estimated.

Asbestos Removal/Disposal

The asbestos removal estimates are based on a visual inspection of the current site condition by an asbestos removal specialist. The largest cost item is the removal/disposal of the asbestos transite panels from the Dice Building ($320,000). A total cost of $486,300 includes the removal and disposal of additional asbestos observed around piping, tanks and building structures. A contingency fee of thirty five percent has been added to include additional asbestos that may be found hidden behind piping and other structures as demolition proceeds. The roof panels of the reduction

building may also test positive for asbestos and allowances must be made for that possibility. Before actual asbestos remediation begins, we would recommend a full engineering survey be completed to allow for bidding of the job at competitive rates.

Laboratory Packing/Disposal

There are three primary laboratories onsite that will be packed, shipped and disposed. A rough estimate is provided in that the exact price will be based on what specifically is found, the packing/shipping requirements and disposal requirements. A best estimate price is given at $65,500 with a conservative estimate of $236,000. The best estimate only includes testing, removing and disposing of the labs as packed. The conservative estimate includes complete lab packing, testing, disposal and removal of gas cylinders.

Solid Waste Removal/Disposal

Several scenarios are possible for the removal/disposal of solid wastes from the site. Which scenario is chosen will be highly dependent on regulatory agency requirements, which continue to become more restrictive and therefore more costly. In August, for example, there may be a new landfill law in New York and costs will escalate if the current law changes. The estimates assume various disposal options depending on material classification. The cheapest disposal options assume a landfill in Wayne, Michigan for a disposal cost of $115/ton of material while the Model City, New York fill comes in at $200 to $260/ton depending on whether the material is hazardous or non-hazardous. Mr. John Li could take the materials to his plant in Buffalo, and in that case the price would probably be about $35/ton for

removal plus transport in bulk or about a third of the best estimate price ($167,000). Therefore, the costs as explained in the Enviropact Study can range from $549,100 to $3,657,000.

Transformers and Articles

The Empire Environmental proposal suggests slightly differing prices for removal/disposal of the transformers and PCB articles onsite. [redacted] price assumes oil at 500 ppm or less of PCB. The conservative price assumes a 10,000 ppm PCB concentration which is above the values tested in stored oils onsite.

PCE Dry Cleaning Spill

The PCE organic contamination plume appears to be entering the property from the Northeast from the location of the former Crown-Dyckman Uniforms property. Current estimated cost for a pump and treat option is $250,000 for capital equipment and $85,000 per year operational costs. Two options, a 5 year and 10 year cleanup scenario at $675,000 and $1,100,000 for plume remediation, respectively, are provided. These are speculative costs that will depend on the final design and agency requirements relative to how clean is clean before a clean bill of health can be issued. Obviously, the final cleanup requirements may extend the cleanup period. Since the plume is not a result of Li Tungsten activities, the cost of cleanup would be borne by the owner initially but may be recoverable from the Federal USEPA, State, City or other PRPs.

Mattiace Property Spill

Sampling of the groundwater well placed to the north of the Mattiace property detected organic contamination that is suspected to be moving northward at a depth of 5 feet. The EPA is currently remediating the Mattiace parcel and this cleanup would likely include the parcel to the north of Mattiace. The restrictions that might be placed by NCDOH, may or may not include the prevention of construction of residential units. If the owner is forced to cleanup because of schedules/ requirements, the estimated costs of cleanup are approximated at $125,000 capital cost with a $85,000 per annum cost of operation/testing. This does not include the installation of a slurry wall to contain the Mattiace plume. As in the above example, 5 year and 10 year options are presented as the best and conservative cost estimates but may be extended because of final cleanup requirements.

No. 2 Fuel Oil Spills

The 500,000 gallon fuel tank onsite was placed onsite and leased by Hawkins Fuel Oil. Several spills have been reported and purportedly remediated. Our survey found substantial fuel oil contamination in the soils under the diked area surrounding the tank. The survey also noted a minor oil spill near the Creek at GMW-3 and GMW-5. Both of these spills are noted on Figure E-1. The cost to remediate the soil contamination is estimated by assuming that 1,000 cubic yards are to be removed. Thus, the best estimate price is $150,000 and conservatively 2,000 yards may need to be removed at a cost of $300,000. We would recommend that the excavated material be tested and disposed of via an asphalt processing plant.

Mud Pond Remediation

The mud pond is located just south of the 500,000 gallon fuel tank. The mud pond liner is leaking and therefore the pond area will probably need to be remediated. It is likely that regulatory agencies will be involved in the cleanup and therefore costs and schedules are somewhat speculative. Assuming 5,000 yards of material will need to be removed at $115/yd (best estimate, non-hazardous) and $260/yd (conservative estimate, hazardous), the costs of cleanup are $575,000 and $1,300,000 respectively.

## 1.5 ESTIMATED TOTAL COST OF SITE REMEDIATION

The total cost of site remediation will be a function of the known elements as well as several unknown elements based on 1987 dollars. The known elements are the first seven items listed in Table E-1 from Liquids/Sludges in Tanks thru Transformer Removal/Disposal. These costs are likely to be fairly accurate estimates with the largest uncertainty being the Solid Materials Removal and Disposal element. To narrow down the range of costs for this option, regulatory agency as well as possible current tenant/owner discussions are necessary.

The unknown elements include the following:

- PCE Spill Remediation
- Mattiace Spill Remediation
- Oil Spill Remediation
- Mud Pond Remediation
- Metals in Groundwater/Soils
- Glen Cove Creek Cleanup

The first three elements on this list are probably attributable to third parties: one of whom is out of business (Crown-Dyckman Uniforms), one of whom is an EPA superfund site owner (Mattiace) and, finally, one who is still in business (Hawkins Fuel Oil). The remaining three are associated, in whole or in part, with activities at the Li Tungsten site over the years it was in operation.

The mud pond remediation costs have been estimated in that it is likely the regulatory agencies will want some remediation of the mud pond before giving the site a clean bill of health. The last two elements of this list, Metals in Groundwater and Glen Cove Creek Cleanup, have not been placed on the remediation cost estimate tabulation. At this point it is impossible to estimate whether these will need to be addressed or if addressed, what level of cleanup will be recommended. This is because tungsten contamination is rare and little information is currently available on health/environmental effects. For example, the health effects standards as well as recommended cleanup procedures for tungsten, have not been established by regulatory agencies. We would anticipate a lengthy tedious process for the regulatory agencies to accomplish this. Nevertheless, if it is determined that something must be done, RTP recommends that in the process of conducting discussions concerning site remediation with regulatory officials, the two unresolved questions posed by the cleanup of Glen Cove Creek and the metal contamination be addressed as discussed below.

First, it is proposed that an integrated study of Glen Cove Creek be [illegible] regulatory agencies. Second, we suggest that a health effects criteria review for tungsten be performed by an independent consultant with several components. A literature review of health

effects would be compiled. A draft criteria document would then be prepared establishing the known health effects. Finally, acceptable environmental and health levels would be proposed for use by regulatory agencies to support their decisions on site remediation.

Finally, management/liaison contractors will be necessary to discuss with the owner/state/other parties the variety of cleanup options, to develop specifications and acquire bids, to negotiate cleanup methods, to develop remediation plans, to evaluate bids, to manage site remediation, to perform final testing, to provide legal assistance, etc. These services are estimated to cost $750,000 for completing the necessary tasks to get the site ready for development with a contingency of an additional $750,000 if the likely worst case conditions were to apply.

In summary, based on the information gathered over the course of the site assessment, the total cost of cleanup/remediation including management is $5,304,900, best estimate. By definition, the best estimate price is the likely cost of cleanup, if everything goes according to plan with little leeway for unforeseen problems or delays and basic concurrence by regulatory officials.

The conservative estimate to cleanup/remediate the site is [redacted],100 and accounts for several conditions, terms and items that may cause problems. The largest item in the conservative estimate is the solid waste removal element which is $3.7 million assuming that thirty percent of the materials are removed and disposed of as hazardous materials according to federal and state laws.

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Finally, both estimated prices could be reduced substantially under several assumptions.

- Should John Li move materials to his Buffalo Tungsten Facility at $35/ton the solid waste removal/disposal costs could drop by as much as sixty five percent or more.

- Should EPA/DEC remediate the PCE spill, the actual cost of the project would be only in time/conditions placed on development. Total savings $675,000 to $1,100,000, respectively.

- Should EPA/DEC remediate the Mattiace spill, the actual cost of the project would be only in time/conditions placed on development. Total savings $550,000 to $975,000, respectively.

- Should EPA/DEC/others remediate the fuel oil spill, the total savings could be $150,000 to $300,000, respectively.

- Should the current owner remediate the immediate hazards onsite, cost savings of approximately $200,000 could be realized on the conservative estimate only.

- Environmental Quality Bond Act monies are potentially available to address the Glen Cove Creek and metals contamination issues.

In conclusion, discussions with Mr. Li, Glen Cove Development Company and regulatory agencies will reveal the likelihood of each of the above potential actions and the probably extent of adjustments to cost estimates.

# SECTION 2.0

## INTRODUCTION

# 2.0 INTRODUCTION

## 2.1 Background.

This report describes the results of an environmental investigation performed at the former site of the Li Tungsten Corporation in Glen Cove, New York. The purpose of the investigation was to evaluate the existence and extent of potential environmental contaminants in order to estimate the appropriate procedures and costs for remediation of the site for residential development.

An aerial photo of the Li Tungsten plant is shown in Figure 1 and provides an overview of the size and complexity of the facility. Figure 2 is a site plan, which defines the major structures and features of the site. During industrial operations at the facility (which began in the 1940's), raw ore and scrap materials processing and smelting operations were conducted to produce tungsten products for sale to industry and the government. A detailed description of tungsten (tungsten alloy properties, tungsten processes, tungsten compounds, tungsten uses, etc.) is presented in the Appendix to this report. RTP has acquired standard aerial photos of the site and they are available as far back as 1950.

Most of the acid extraction, refining and processing operations for tungsten took place on the parcel of property south of Herb Hill Road and east of Jarvies Point Road. Here numerous tanks of metal, fiberglass and wooden construction are found both inside and outside the buildings used for processing (Dice Building, East Building and Lounge Building). These were used during extraction, mixing and wastewater treatment operations. Also found on this parcel are offices and chemical laboratories where a

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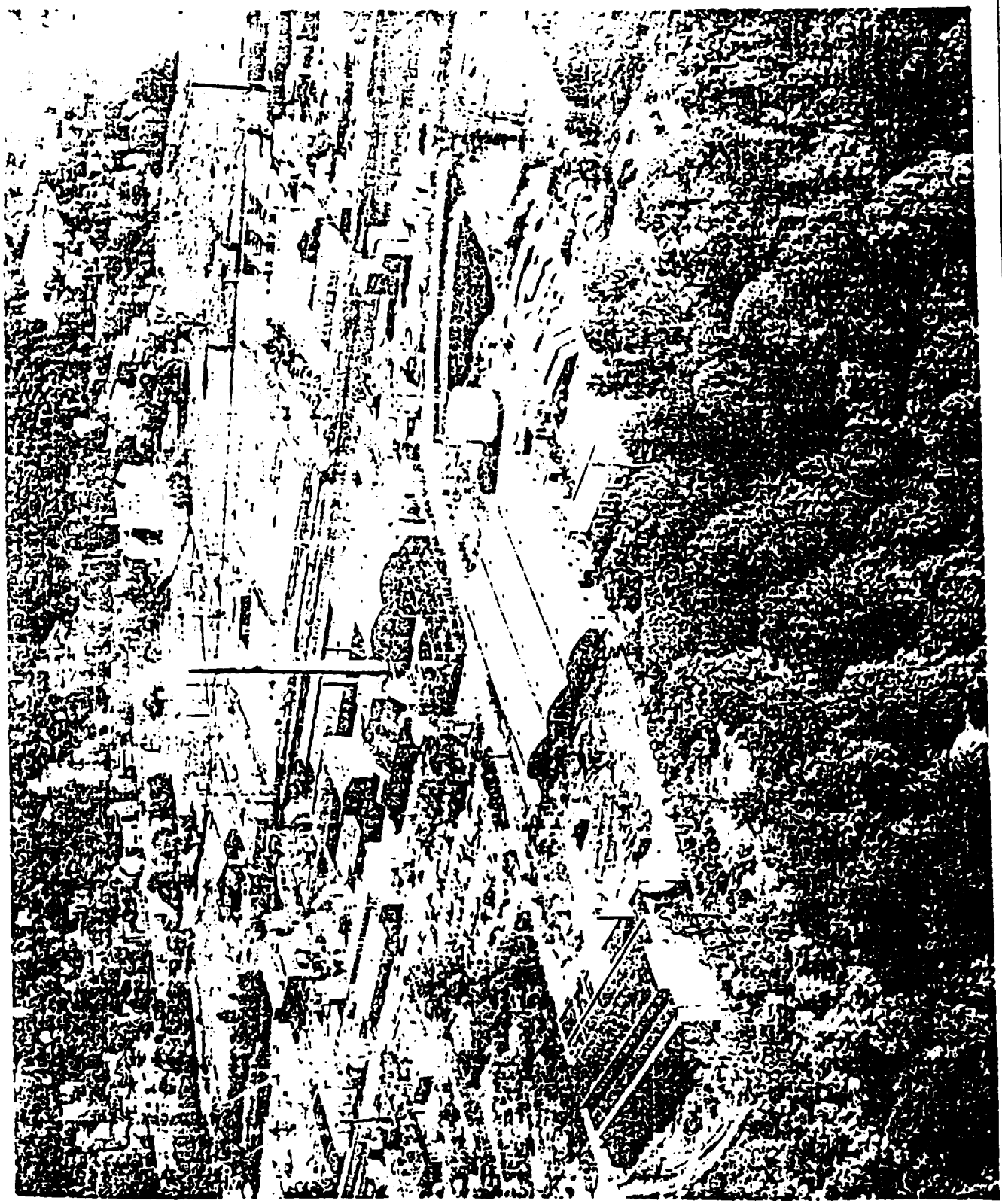

Prepared by RTP Environmental Associates, Inc.

Figure 1. Aerial Photo of Li Tungsten Plant

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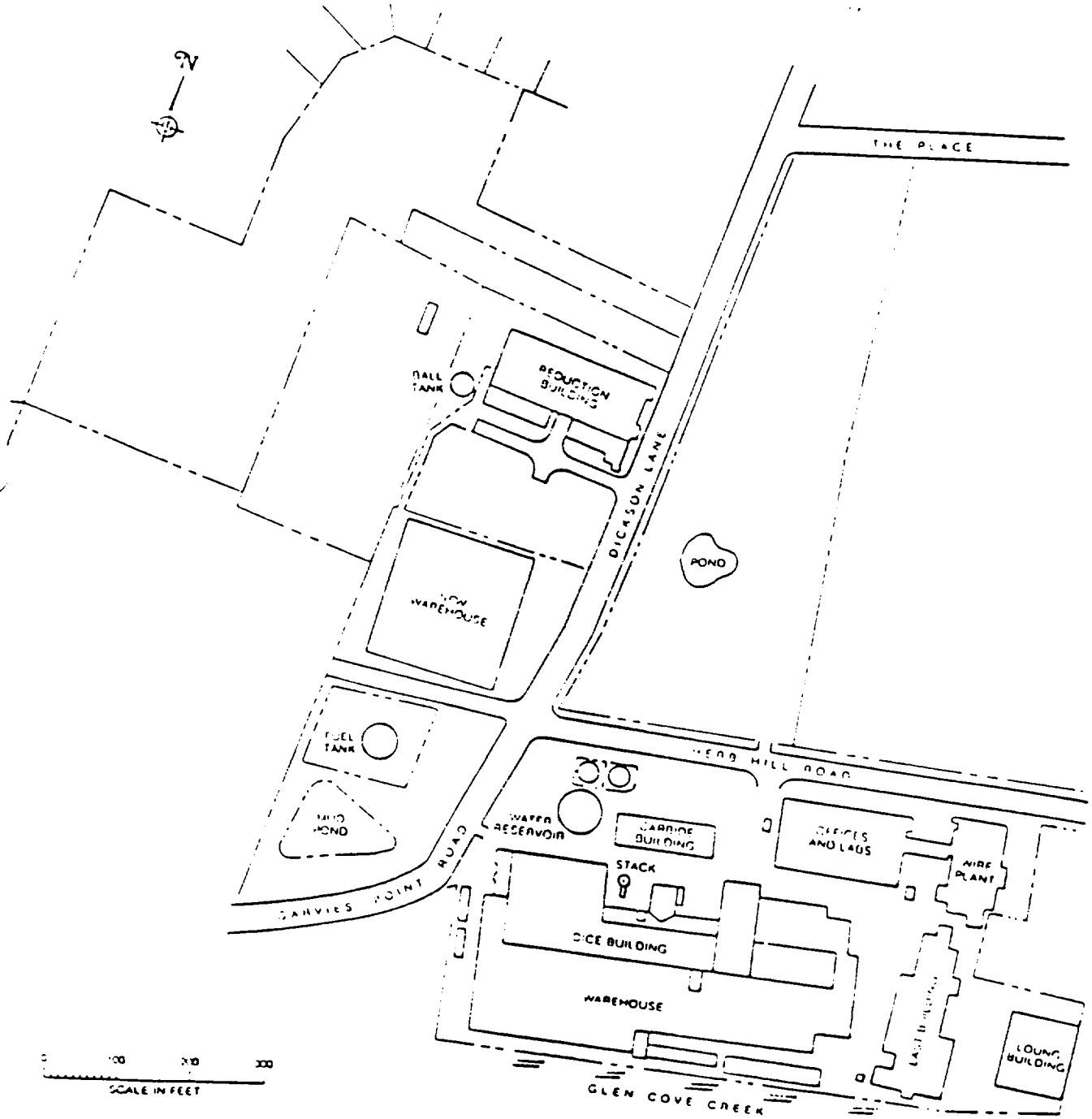


Prepared by RTP Environmental Associates, Inc.

Figure 2. Li Tungsten Facility Site Plan.

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significant amount of chemical analysis took place in support of the facility's operations. Finally, scattered both throughout this parcel and in the Warehouse area are numerous stacked drums and crates of processed ores which were set aside in similar lots in the event that reprocessing would prove to be economically feasible.

The parcel north of Herb Hill Road and east of Dickson Lane was not used for processing activities. The southern portion of the parcel (south of the small natural pond) was used for parking by the site employees. A small portion of the area north of the pond was apparently used as a landfill and waste pile storage area for wastes generated from the main processing operations.

The parcel west of Dickson Lane has several distinctive features. The Reduction Building was utilized for high temperature processing of tungsten into tungsten carbide powder. Its furnaces were fed hydrogen enriched air, with hydrogen supplied by a bank of batteries in the eastern portion of the building. The large ball tank on the western side of the building was constructed to store hydrogen for the tungsten carbide production process, but was never utilized. Permits for its operation were never approved. The New Warehouse is the largest structure on this northwest parcel and was used for materials storage. Unlike the warehouse on the southeast parcel, there is very little storage of processed ores in this building. The 500,000 gallon fuel tank south of the New Warehouse was not used by the Li ngsten facility. A nearby fuel oil facility utilized the tank for storage purposes. Finally, the Mud Pond on the southern portion of this parcel is a lined surface impoundment and settling basin. Processed wastewater from operations on the nearby southeast parcel were pumped into the Pond where natural settling of suspenced solids and evaporation of water would be the

Finally, a parcel that is included in the overall investigation was never owned by Li Tungsten. It is located to the north and west of the Reduction Building and this site was also audited for environmental concerns during the study.

## 2.2 Nearby Land Uses.

During the course of investigations at the Li Tungsten site, RTP conducted a brief survey of surrounding properties so that all possible pathways for contamination might be found. Land use in the area includes residential, commercial, and industrial (both light and heavy). The specific properties to be described either directly or indirectly border the subject property and do have the potential to impact the site.

### Windsor Fuels.

Windsor Fuels is a small fuel oil (#2 distillate) distribution company. The company is located on the corner of Herb Hill Road and Charles Street and is bordered by Glen Cove Creek to the south and Bona-Fide Ready-Mix Corp. to the west. The company has been established for many years and has three large above ground storage tanks that are filled by barge and two smaller tanks. All tanks and piping are above ground and no other chemicals or solvents are kept on the property except the small quantities that are used for basic truck maintenance.

### Bona-Fide Ready Mix Corporation.

The Bona-Fide Ready Mix Corporation is a small construction materials producer that deals strictly with concrete and associated materials such as bluestone, sand, gravel, screenings and blends. The company has been in

existence at the site for approximately 30 years. It is located on the south side of Herb Hill Road and is bordered by Windsor Fuels to the east, Glen Cove Creek to the south and Li Tungsten to the west. The owner is presently building office space for rent near the entrance to the plant area. One underground storage tank exists on site and contains diesel fuel for the cement mixer trucks. Truck maintenance is conducted on site, therefore, normal maintenance oils and solvents are kept on hand in small quantities.

Chemco Technologies.

Chemco Technologies is located on the north side of Herb Hill Road and is bordered by Flipse Autobody and Li Tungsten to the west, New Street and Charles Street to the east and The Place Street to the north. Generally, Chemco is a manufacturing company that produces photographic film and photographic chemicals. The company has been established for many years. The main office building was once occupied by Columbia Carbon and Ribbon Co. It was bought in 1978-1979 by Chemco. The Columbia site is known to have been partially remediated for hazardous waste and a full Remedial Investigation/ Feasibility Study is currently underway according to Region II DEC. Limited information was available other than that underground and above-ground tanks exist and are registered. Solvents and chemicals are onsite for product manufacturing and equipment maintenance. Information pertaining to accidental spills onsite was not made available.

Flipse Autobody.

Flipse Autobody is a small autobody repair shop located on the north side of Herb Hill Road and is bordered by Li Tungsten to the west and Chemco Technologies to the north and east. The repair shop has been in existence

for over three years and the property surrounding the Flipse building is occupied by a number of used automobiles of varying age, size, and condition. Flipse had been storing some of its vehicles on the Li Tungsten property until they were asked to remove them during the course of RTP's investigation.

Flipse autobody is classified as a small generator of hazardous wastes because of materials in use such as lacquers, paints and thinners. These materials and waste solvents are manifested according to applicable regulations prior to their removal from the site. The building housing the repair shop was once a commercial laundry. As a result, a number of underground tanks exist on the property for fuel storage (fuel oil or gasoline). Flipse autobody utilizes an underground tank and above-ground tank, both containing fuel oil, for heating purposes. Remediation of various spills at the autobody facility as well as the laundry have been performed according to Nassau County Department of Health (NCDOH) records.

S and W Laundry.

The S and W Laundry Company is a small commercial laundry occupying the rear section of the structure housing Flipse Autobody. Limited information was available from the company which claims to have been operating for approximately nine years. Dry-cleaning chemicals did not appear to be currently utilized at the facility. Normal operations consist of industrial washing, drying and pressing. NCDOH has reported some accidental spills of hazardous materials at this site and these were apparently remediated.

Northshore Sportswear.

The Northshore Sportswear company is a small sportswear storage and distribution facility located on the west side of Dickson Lane and it is bordered by Li Tungsten to the south and west and residential housing to the north along Janet Lane. Clothing production does not occur here and the facility is generally used for warehousing. The facility has been in existence since 1965 and deals strictly in sportswear products. No fuel tanks exist on site and no equipment related oils and solvents are stored on site.

Hawkins Fuel Oil.

The Hawkins Fuel Oil Company is a small petroleum distribution company located on the south side of Garvies Point Road and bordered on the east and north by Li Tungsten, and on the south by Glen Cove Creek. The company was established over 50 years ago and at one time utilized the 500,000 gallon fuel storage tank on the Li Tungsten property.

The company currently maintains three above-ground storage tanks for #2 distillate fuel oil, one underground storage tank for diesel fuel and one underground storage tank for gasoline. Only as-necessary truck maintenance occurs at this location because the company has another location that has a maintenance shop. Other chemicals or solvents are not utilized in substantial quantities at this facility.

A small oil spill occurred in January, 1988 at the Hawkins site when a valve seat froze, allowing approximately 100 gallons of fuel to leak. The spill was cleaned up under the supervision of state and county officials.

Town of Glen Cove Sewage Pumping Station.

A small parcel of land located to the west of Hawkins Fuel Oil and bordered by Garvies Point Road to the north, and Glen Cove Creek to the south houses a sewage pumping station for the City of Glen Cove. A locked fence surrounds the station and apparently the pumping station transfers sewage via a pipe under Glen Cove Creek to the Glen Cove Sewage Treatment plant directly across the creek.

LIMCO Manufacturing Corporation.

The LIMCO manufacturing corporation primarily engineers and manufactures sheet metal products for aerospace and industrial purposes. The U. S. military is a large buyer of LIMCO's products. The LIMCO plant occupies a large area located on the north side of Garvies Point Road and is bordered to the east and north by the Li Tungsten facility. LIMCO has occupied this location for over 40 years. One underground storage tank contains fuel oil for heating. Above-ground tanks contain mostly gases for welding and metal work. Solvents and related chemicals are used onsite for metal processing.

Mattiace Petrochemical Co.

Mattiace Petrochemical Co. is a now defunct chemical recycling and neutralization company that borders the western section of the Li Tungsten property (the parcel that is north of Garvies Point Road and west of Dickson Lane). This site is presently a Superfund cleanup site due to alleged chemical dumping and chemical storage in leaking tanks.

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Residential

For the most part, the Li Tungsten property is bordered to the north and west by residential housing in areas other than those previously mentioned. Also, Glen Cove Creek borders the site to the south and is bordered on the extreme western portion by the Garvies Point Preserve.

2.3 Scope of Project.

Given the type of operations that were ongoing at the Li Tungsten facility, it is clear that several cleanup activities need to be performed prior to the development of the site for residential purposes. These are summarized as follows:

1. Testing, neutralization, removal and disposal of tankage and associated liquids.
2. Removal and disposal of analytical laboratory chemicals and related gas cylinders.
3. Identification, removal and disposal of asbestos containing materials.
4. Removal and disposal of stockpiled process residues, as necessary.
5. Demolition and cleanup of on-site structures.
6. Removal, cleanup or treatment of sources of any soil, groundwater or air contamination.
7. Removal and disposal of PCB containing transformers and articles.

The assessments undertaken by RTP were aimed at establishing the magnitude of these cleanup activities and their approximate costs. To accomplish

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this, RTP utilized the services of several subcontractors performing the tasks indicated below:

- Geraghty & Miller, Inc.
  - -establishment of groundwater monitoring wells
  - -soil gas survey
  - -water quality sampling and analysis
  - -estimation of groundwater cleanup methodologies and costs

- Enviropact Northeast, Inc.
  - -inventory and sampling of stored waste materials
  - -soils sampling
  - -estimation of onsite laboratory cleanup and disposal costs
  - -hazardous materials determinations
  - -estimation of liquid waste removal and disposal costs
  - -estimation of solid waste removal and disposal costs
  - -outfall sampling
  - -estimation of cleanup and disposal costs for transformers

- American Environment Technologies Corp.
  - -inventory of tankage
  - -estimation of tankage cleanup and removal costs
  - -inventory of asbestos
  - -estimation of asbestos cleanup and disposal costs
  - -estimation of structural demolition and disposal costs

- Levine & Robinson, P.C.
  - -review of requirements for closure/remediation
  - -review of potentially applicable environmental statutes
  - -review of liability issues

In some cases, subcontractors retained their own subcontractors to address specific problems within their areas of responsibility. RTP's principal responsibilities included overall project management, supervision of site activities, liaison with Campon Realty Corp., integration and assimilation of subcontractor reports, and cost and remediation summaries.

During the course of RTP's investigations at the site, a number of hazards or potential hazards were identified that were thought to be in need of immediate remediation. These are conditions that, due to their severity, will be corrected to stabilize the site prior to the overall site cleanup activities associated with preparation of the site for development. Glen Cove Development Company has taken the initiative to investigate these conditions and arrange for any necessary remediation. The conditions being investigated are as follows:

- Approximately 20 tanks are in poor condition and need to be drained and cleaned to eliminate the potential of rupture and spillage of their contents.

- Approximately 23 gas cylinders have been found and need to be removed from the site to eliminate potential hazards from the release of pressurized and, in some cases, hazardous chemicals.

- An estimated 131 drums of liquids have been found scattered throughout the site and need to be overpacked in secure containers to eliminate the potential for spillage.

- The three analytical laboratories and related storage facilities need to be lab packed, secured and stored.

- The liner under the site mud pond is broken and leaking. This has caused adverse effects on nearby soils and vegetation. This condition needs to be corrected so that further leakage is prevented.

- Wastes from ore processing, stored in open piles contain high concentrations of heavy metals and, in some cases, may be classified as hazardous. These need to be properly contained.

- Wastes stored within buildings are potentially hazardous and were put indoors to prevent exposure to the elements. Some areas of these buildings have flooded due to roof leakage and the wastes have come into contact with water creating a potential health hazard. The water on the floors needs to be removed and materials should be stored in areas that will remain dry.

- Asbestos hazards exist in and near several buildings due to the deteriorating nature of structures and associated tanks and piping. These conditions are a small part of the total asbestos remediation needed for site cleanup/closure, but they should be immediately remediated for overall safety at the site.

Due to the conditions noted above, RTP and its subcontractors have prepared health and safety plans for conducting activities at the site. The RTP plan is provided in the Appendix to this report, while those of our subcontractors may be found integrated with the rest of their reports on

cleanup of the site. It should be stressed that the site is currently in an unstable condition and people performing work at the site must exercise appropriate caution.

The main purpose of this final report is to provide sufficient guidance on costs and schedules for each identified cleanup/remediation activity associated with getting a clean bill of health for the site. The seven activities summarized earlier in this section are separate from the immediate remediation activities described above. Information on the overall site cleanup is provided in the following sections, but it must also be recognized that two important constraints were in effect during the course of these investigations.

First, the sixty day schedule for the project meant that assessments were exploratory in nature and designed to provide an overview of contamination at the site and not a complete characterization for purposes of conducting the remediation. Second, RTP and its subcontractors conducted this study under a strict confidentiality agreement which restricted coordination with regulatory agencies unless reportable information was uncovered. Obviously, coordination with regulatory agencies will be necessary before the true extent and costs of remediation can be determined.

The following sections of this report contain the key findings of our subcontractors. Section 3 includes a review of regulatory issues related to cleanup as prepared by Levine & Robinson, P.C. Section 4 contains the report of Geraghty & Miller, Inc. on the groundwater, and soil gas investigation. Section 5 contains a report on site residues and special testing (soils, outfalls, PCBs etc.) performed by Enviropact Northeast, Inc. Section 6 contains American Environment Technologies Corporation (AETC)

estimates of asbestos and tank removal costs as well as demolition costs. Finally, the Appendix contains the RTP health and safety plan as well as a detailed discussion of tungsten processing/refining.

# SECTION 4.0

## HYDROGEOLOGIC INVESTIGATION AND SOIL GAS SURVEY

# HYDROGEOLOGIC INVESTIGATION AT THE LI TUNGSTEN FACILITY GLEN COVE, NEW YORK

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HYDROGEOLOGIC INVESTIGATION
AT THE LI TUNGSTEN FACILITY
GLEN COVE, NEW YORK

## INTRODUCTION

Geraghty & Miller, Inc. (G&M) was retained by RTP Environmental Associates, Inc. (RTP) in March 1988 to conduct a hydrogeologic investigation of the Li Tungsten facility in Glen Cove, New York. The purpose of this investigation was to determine ground-water quality of the shallow ground-water system beneath the site and to determine whether sources of volatile organic compounds (VOCs) were present beneath the unpaved areas of the site. One particular objective of this investigation was to delineate a VOC plume that had been indicated by a previous G&M investigation in the spring of 1987. This report describes the most recent G&M investigation (March to April 1988), which was conducted concurrently with investigations by other environmental consultants who had been retained by RTP to assess other environmental aspects of the Li Tungsten site.

The possible regulatory implications of ground-water and soil-quality conditions of the site (as determined by the G&M soil survey) are discussed in this report, and remedial alternatives are addressed in a preliminary fashion. Cost estimates and time frames for the remedial alternatives

are also included. It must be stressed, however, that regulatory review and approval of remedial alternatives must be obtained in advance of specifying a recommended set of remedial options. Since actions by regulators cannot be predicted with a high degree of confidence, the scope of ground-water and other environmental clean-up activities may differ from that which is discussed in this report.

The scope of work for G&M's investigation included the following: installation of 13 shallow monitoring wells; collection of soil samples from selected well borings; collection of ground-water quality samples from 21 monitoring wells; surveying of monitoring wells and waste piles; collection of water-level data; and performing a soil survey.

## BACKGROUND

The LI Tungsten facility is located in northern Nassau County, Glen Cove, New York, in an industrial area. Consisting of approximately 20 acres, the site is situated on the north bank of Glen Cove Creek, which drains west into Hempstead Harbor (Figure 1). From the 1940s to the early 1980s, tungsten ores, imported from mainland China, were smelted at this facility. Recently, it has been inactive and now alternatives are being considered to develop the properties.

For the purposes of this investigation, the site has been divided into four parcels: I, II, III, and IV. A site map showing the individual parcels is presented in Figure 2. Parcel IV, which is not part of Li Tungsten, adjoins Parcel II and at RTP's request, was included in this investigation. The total area being investigated is comprised of approximately 24 acres.

This hydrogeologic investigation of the Li Tungsten facility was preceded by at least two previous investigations. The first investigation was not conducted by G&M and is reported to have taken place in the early 1980s when five monitoring wells were installed. Data collected during this first investigation were not available to G&M for review. However, G&M inspected and tested these wells as part of the second investigation and judged them to be in adequate condition for water-level and general water-quality monitoring, despite the lack of well-head protection and information about their installation. Therefore, these five monitoring wells were used as monitoring points for the G&M investigation.

The second investigation was conducted by G&M in the spring of 1987 for RTP and Old Stone Development Corporation. G&M supervised the installation of five additional wells during this investigation and used four of the five existing monitoring wells as monitoring points (the fifth

well had not been discovered until the most recent investigation in the spring of 1988). Ground-water samples were collected from the existing wells for analyses for VOCs and for selected inorganic compounds before the new wells were sampled. As a result of the spring 1987 sampling, high concentrations of VOCs (approximately 20 parts per million [ppm] total) were detected in Well EMW-1, one of the original monitoring wells. Since VOCs were reportedly not used at the site, this discovery became the focus of the investigation and five monitoring wells were then installed at locations which would better define the VOC contamination.

One of the new locations, Well GM-3D, was installed as a cluster well (two wells) to Well EMW-1 to monitor the zone 10 ft below the bottom of Well EMW-1. The other wells (GM-1, GM-2, GM-4, and GM-5) were installed to obtain more information about the ground-water quality conditions at the site. Upon completion, the five new monitoring wells were sampled and the existing monitoring wells were resampled and analyzed for VOCs and selected inorganics. High concentrations of VOCs were confirmed in Well EMW-1 and were also detected in Well GM-3D, thus indicating a VOC plume with a depth greater than 20 feet. VOCs were either not detected or were detected in relatively low concentrations in the other wells sampled. G&M's second site investigation in the

spring of 1987 was discontinued after these preliminary findings.

This most recent investigation involved the installation of 13 new monitoring wells and utilizes the two prior investigations and the ten existing monitoring wells to provide a more extensive evaluation of the ground-water quality conditions beneath the three parcels comprising the Li Tungsten site, as well as beneath a fourth parcel (Parcel IV), which is adjacent to Parcel II. The results of this investigation confirm and expand the ground-water flow and chemistry data collected by G&M during the spring 1987 work.

## METHODOLOGY

### Installation of Monitoring Wells

The hollow-stem auger drilling method was used for the 13 monitoring wells installed under G&M's supervision. Wells GM-1 through GM-5 were installed between April 9, 1987 and April 21, 1987 by Slacke Test Borings, Inc., Kings Park, New York, and Wells GM-6 through GM-17 were installed between March 31, 1988 and April 15, 1988 by Empire Soils Investigations, Inc., Highland Park, New Jersey. The locations of these wells and the five wells installed during a previous investigation are shown on Figure 2.

Split-spoon samples of the formation were collected at 5-ft intervals in each borehole during the two G&M investigations. Split-spoon samplers were decontaminated either by steam cleaning or by using a Micro™ solution followed by a distilled water rinse. The samples collected from each borehole were described by an on-site G&M hydrogeologist. Sample core logs are presented in Appendix A.

Soil samples from selected boreholes were retained for laboratory analysis. Soil samples from Wells GM-9, GM-10, and GM-11 were submitted to Enviropact Northeast, Inc., (Enviropact) Yonkers, New York, another consultant to RTP, for VOC analyses. Samples of the drill cuttings from Well GM-14A were sent to EcoTest Laboratories, Inc., North Bellmore, New York, for analysis of VOCs, polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPHC), and selected metals using extraction procedure (EP) testing methods.

Upon completion of the borehole, 2-inch diameter PVC screen and casing was installed inside the augers with the 10-ft long screen extending partially above the water table. An artificial gravel filter pack was emplaced around the well screen through the inside of the augers from the bottom of the borehole to at least 1 ft above the top of the screen. A layer of bentonite pellets was emplaced above the

gravel pack to seal the screen zone from potential contamination from the surface. The remaining annular space was filled with a cement/bentonite grout mixture.

All the wells were completed with locking, protective well-head assemblies. Wells located in active areas were completed with flush-mounted, curb box assemblies. The remaining wells were completed with aboveground protective casings. Well construction details for the G&M wells and the five previously installed wells (EMW wells) are presented in Table 1. Well construction diagrams are presented in Appendix B.

As mentioned above; all the monitoring wells were installed with the well screens extending partially above the water table, except Wells GM-3D and GM-14A. Well GM-3D was installed as a cluster well to Well EMW-1 where high concentrations of VOCs had been found during the first G&M investigation (spring 1987).

Well GM-14A was installed downgradient of a reported fuel spill on Parcel II; however, the nature of formation materials made the water table difficult to locate without waiting an extended period of time for water-level stabilization. The well screen was set entirely below the stabilized water level, and this observation was used to

construct another well, GM-14B, approximately 10 ft north of Well GM-14A to monitor for a possible floating phase.

As a health and safety measure, air monitoring equipment (HNU and OVA) was used by the on-site hydrogeologist to monitor the breathing zone for volatile compounds. VOCs were not encountered at any time during the drilling program as indicated by the above monitoring. The Health and Safety Plan (HASP) followed by G&M and its subcontractors is presented in Appendix C.

Most of the wells were developed by using a centrifugal pump to evacuate several volumes of water or until the water pumped was relatively clear and sediment-free. This procedure ensures good hydraulic interconnection between the well screen and the surrounding formation. Well GM-10 was developed by bailing because the water level was beyond the suction limit of a centrifugal pump. Although the water level was at the surface (within suction limit), Well GM-16 was also developed by bailing because this well was installed on the same day it was sampled. The elevation of the measuring point of the 23 new and existing monitoring wells was surveyed to the nearest 0.01 ft and the horizontal location of the wells were measured by Baldwin & Cornelius, Engineers and Surveyors, Freeport, New York. Well GM-17, had not been installed when surveying occurred and since the surveying could not be delayed, this well was not surveyed .

Sampling of Monitoring Wells

A total of 21 monitoring wells was sampled between April 7, 1988 and April 15, 1988. On April 7 and 8, 1988, the nine wells which had been installed during the most recent investigation and the five wells from the first site investigation were sampled. The remaining seven wells were sampled on April 15, 1988, following installation. The only on-site wells not sampled were GM-14B, which is being used to monitor for a floating liquid phase downgradient of a reported oil spill, and Well GM-17 which was installed after sampling took place. Samples were collected according to USEPA guidelines.

Prior to collection of ground-water samples, between three and five well volumes were evacuated from each well by bailing or by pumping. Samples were collected from each well by means of a Teflon™ bailer which was lowered into the well using new, polypropylene rope. All bailers were decontaminated using a Micro™ solution followed by a distilled water rinse. For wells evacuated by means of a centrifugal pump, new polyethylene tubing was used.

Samples were collected for the following analyses: VOCs and selected inorganic parameters (metals and nonmetals). The selection of the analytical parameters was based on

plant uses and processing of materials at Li Tungsten and on preliminary testing by Envirepact, Inc.

All samples collected for metals analyses were field-filtered through an 0.45-mm filter membrane and preserved with nitric acid ($HNO_3$). At the end of each day of sampling, samples were hand-delivered to EcoTest Laboratories, Inc., North Babylon, New York. Water sampling logs for the 21 wells sampled are presented in Appendix D.

Soil Survey

On April 21 and 22, 1988, G&M conducted a survey of the surficial soils at the Li Tungsten facility using a portable gas chromatograph (GC) to determine whether VOCs were present in soils at the site. The survey was focused on the unpaved areas (portions of Parcels II, III, and IV) where dumping or spilling of VOCs would most likely have occurred.

The Photovac (Model 10S50) GC used for this survey has the capability to identify and quantify VOCs in the field. Based on data that had been previously gathered at the Li Tungsten site, the portable GC was calibrated for three specific compounds: 1,2-dichloroethene, trichloroethylene, and tetrachloroethene. Prior to any analysis, the GC was calibrated with a 1-ppm standard of these three compounds. Next, a distilled water blank was tested. The technique

used by G&M to test the soil samples facilitates measurement of VOCs even at low concentrations and is described below.

Soil samples were collected from the upper 0.5 ft of the soil and transferred to 40 milliliter (ml) glass vials. Each vial was filled halfway with soil and capped and returned to the station where the GC was set up. Prior to analysis, 20 ml of distilled water was added to each sample. The sample was then agitated for 1 minute. Next, a 300-microliter (ul) sample of the headspace above the soil/water mixture was injected into the GC for analysis.

The soil samples were collected from shallow holes excavated with a hand trowel. Between each use, the hand trowel was cleaned using a Micro™ solution followed by a distilled water rinse. A new pair of disposable vinyl gloves was used for handling each sample. Parcel III was studied in the greatest detail since this parcel is unpaved and covered mostly by woods, except for a cleared area along Herb Hill Road formerly used for parking. Buried drums and piles of solid residues were observed in this area.

A grid system, consisting of 21 sample locations, was established for Parcel III. The sampling locations are shown on Figure 3. Additional samples were collected along the fence separating Parcel III from a former dry cleaning facility.

A total of nine soil samples was collected along a dirt road in Parcel IV where dumping would most likely have taken place. This road was overgrown with weeds and other secondary growth and had to be cleared in order to install Wells GM-10, GM-11, and GM-12. Aerial photographs of the site (circa 1960) reveal this road to be clear and free of vegetation, indicating that it was once being used regularly.

A total of five soil samples was also collected from Parcel II immediately north of the Reduction Building. This area drains runoff from topographically higher areas in the vicinity of the propane tank where piles of solid residue are located. VOCs that may have been disposed of near or with the solid residues would most likely be transported by runoff to the drainage area north of the Reduction Building on Parcel II where the samples were collected.

## EXPANDED SCOPE OF WORK

### Additional Wells

During the most recent investigation at the site, the scope of work was expanded at the request of Campon Realty Corporation and RTP to include the installation of three additional monitoring wells on Parcel I. These wells were planned in the vicinity of two proposed canals included in

the planned residential development on this parcel. The purpose of this additional work was to obtain more information on the subsurface environment with respect to bulkheading structures and disposal of materials which may be dredged from the canals.

Of the three proposed monitoring wells, only Well GM-17 was installed. The other two proposed wells were not installed because of concern that contamination in the shallow ground-water system would potentially be introduced to deeper hydrogeologic zones during drilling operations. Since there was insufficient time for adequate site preparation to eliminate this new concern, the additional drilling was cancelled.

Ground-water samples were not collected from Well GM-17; however, this well was developed and used for water-level measurements.

Well-Head Protection

Protective, locking, well-head assemblies were installed on four of the five unprotected wells (EMW-2, EMW-3, EMW-4, and EMW-5) installed during the first site investigation. This was done to protect against vandalism as these wells had been previously unprotected. Also, a locking curb box assembly was installed at Well GM-4 because

the original curb box was apparently destroyed during snow removal operations near the new warehouse on Parcel II.

Laboratory Analyses

The list of analytical parameters for ground-water samples was expanded to include compounds detected by Enviropact's analyses of soil and solid residues. Additionally, at the request of RTP, soil samples from well borings GM-14A and GM-17 were sent to EcoTest for analyses of VOCs, TPHC, PCBs, and metals using EP testing methods.

Surveying

During the surveying of the monitoring wells, RTP, in conjunction with Enviropact, requested that piles of solid residues on Parcels II and III be surveyed so that volumes of these materials could be calculated. This information would be used by Enviropact to estimate costs for removal and disposal of these materials.

## HYDROGEOLOGY

The Li Tungsten facility is underlain by unconsolidated deposits of sand, silt, and clay, totaling more than 500 ft thick, which overlie the crystalline bedrock surface (Swarzenski, 1963). The uppermost stratigraphic unit is of

Upper Pleistocene age and is part of the Harbor Hill ground moraine. This deposit is thin in the Li Tungsten vicinity and ranges from 5 ft to as much as 40 ft in thickness and consists of a heterogeneous mixture of sand, silt, clay, and boulders. Boulders were not encountered during the field program except during the drilling of Well GM-15 just below the concrete slab. However, boulders with diameters of 1 ft to 3 ft were observed in the wooded areas of Parcels III and IV.

Beneath the Harbor Hill ground moraine lies another sequence of Upper Pleistocene deposits known as Harbor Hill drift, which comprises the Upper Glacial aquifer in the vicinity of the site. The thickness, of the Upper Glacial aquifer at the site is approximately 150 ft to 200 ft (Kilburn, 1987).

Geologic logs for wells in the vicinity of the site indicate that the Magothy Formation is absent. The Upper Glacial aquifer rests unconformably on the clay member of the Raritan Formation, approximately 200 ft below the site. To the west and east, there is another confining unit known as the Port Washington Clay.

Between April 13, 1988 and April 18, 1988, Baldwin & Cornelius, P.C., Freeport, New York, surveyed the measuring points of 22 of the 23 monitoring wells to the nearest 0.01

ft. (GM-17 was not installed during surveying activities.) These data were used to calculate water-level elevations from measurements made on April 21 and April 26, 1988. A summary of water-level elevation data for these two dates is presented in Table 2. A contour map of the water-table surface was prepared from the water-level data collected on April 26, 1988 (see Table 2) and is presented on Figure 4.

This map indicates that ground water in the shallow ground-water system flows south toward Glen Cove Creek, which is consistent with published data (Kilburn, 1987). It is also apparent that perched-water conditions exist at the site. Perched water is observed in the northern half of the plant in Wells GM-4, GM-5, GM-11, GM-12, GM-13, and GM-16 (Figure 4). The water-level elevation data also suggest that locally, perched ground water exists in the vicinity of Wells GM-9 and GM-14B. Perched water conditions are also recognized in the literature for the area (Swarzenski, 1963). When water percolating through surficial soils encounters a relatively-impermeable layer of silt or clay, its downward movement is stopped or impeded causing water to accumulate locally as perched ground water.

The water level in Well GM-14B was 3.61 ft higher in elevation than in Well GM-14A on April 26, 1988. Since both of these wells were adequately developed, the water-level difference must be the result of local perched water which

is intercepted by GM-14B. The elevation of perched water at GM-14B may also be increased by ponding of rainwater in the dike surrounding the fuel oil tank.

## WATER QUALITY

### VOCs

All analytical results of ground-water samples collected at Li Tungsten will be discussed in terms of the New York State Department of Environmental Conservation (NYSDEC), Division of Water Technical and Operational Guidance Series, dated July 24, 1985 (TOGS). TOGS references in this report are used solely as reference points for comparative purposes and are not to be construed as applicable clean-up standards.

The results of the VOC analyses for samples collected in spring 1987 and spring 1988 are summarized in Table 3. Laboratory reports for the VOC analyses are presented in Appendix E. These results identify two areas with high concentrations of VOCs in the shallow ground-water system.

The first area where high concentrations of VOCs occur (from 78 ppb to more than 22,000 ppb total) were detected in monitoring wells on the southern portion of Parcel III (Wells EMW-1, GM-3D, GM-8, and GM-9) and in Monitoring Well GM-6 on the northern part of Parcel I, directly downgradient

of the wells mentioned above. These data indicate the presence of a plume of VOCs in the shallow ground-water system that appears to be emanating from an unknown source on the southeastern part of Parcel III between Wells GM-7 and GM-9. It is likely that the contamination is from an off-site source. The adjacent property is reported to have been occupied by a dry cleaning operation several years ago and dry cleaners commonly use tetrachloroethene in their cleaning operations. This compound was the VOC detected in the highest concentrations in the wells defining the plume. The other two VOCs detected in high concentrations are trichloroethene and 1,2-dichloroethene. Both of these compounds are produced during the decomposition of tetrachloroethene.

High concentrations of VOCs were also detected in Well GM-10 (360 ppb total). This well is located in the southernmost part of Parcel IV on the edge of a steep drop-off approximately 30 ft north of the fence separating the Mattiace property to the south (Superfund site) from Parcel IV to the north. The compound occurring in highest concentrations in this well was 1,1,1-trichloroethane. Tetrachloroethene and its decomposition products were also detected in this well. The extent, and source of, the contamination detected in this well is not known.

VOCs were not detected in the wells installed in the perched ground-water zone in the northern part of the site, except in Well GM-13 in a low concentration totaling 13 ppb. This well is installed in an area where solid residues from the smelting operation were disposed.

VOCs were either not detected or detected in relatively low concentrations (less than 100 ppb) in the remaining wells at the site. The inferred extent of the VOC plume (with total VOC concentrations of 100 ppb or greater) is shown on Figure 5.

Inorganics

Metals

A summary of the results of the metals analyses for the monitoring wells sampled in spring 1987 and spring 1988 are presented in Table 4. Laboratory reports for the metals analyses are presented in Appendix E.

Of the 13 metals analyzed, four were found to exceed and/or equal the TOGS values (lead, chromium, cadmium, and arsenic). The TOGS value for lead (0.025 ppm) was exceeded in Wells EM-3 (0.060 ppm), EMW-4 (0.075 ppm), and GM-14A (0.070). Chromium was only detected in Well GM-14A in a concentration equal to the TOGS value (0.050 ppm). Cadmium was detected in concentrations exceeding the TOGS value

(0.010 ppm) in Wells EMW-1 (0.040 ppm), EMW-3 (0.029 ppm), ,EMW-5 (0.017 ppm), GM-3D (0.020 ppm), and GM-8 (0.013 ppm). Although there is no TOGS value for tungsten, this metal was found in monitoring wells throughout the site. Solid residues of spent tungsten ores are known to have been disposed of in at least two areas of the site: the center of Parcel III, and on Parcel II northwest of the Reduction Building. In addition, solid residues are stored in deteriorated drums and crates throughout the site. These practices are likely the source of the tungsten found in the ground water beneath the site.

Nonmetals

Of the three nonmetals analyzed for in spring 1987 and spring 1988, chloride and sulfate were found in concentrations exceeding the TOGS values. Nitrate was not found in concentrations exceeding the TOGS value in any of the wells sampled.

Chloride was detected in concentrations exceeding the TOGS value in five wells: EMW-3 (1,900 ppm), EMW-4 (2,700 ppm), EMW-5 (740 ppm), GM-6 (260 ppm), and GM-14A (700 ppm). All these wells are located in the southwestern area of the site in the vicinity of the wastewater treatment system.

Sulfate was detected in concentrations exceeding the TOGS values in eight wells: EMW-1 (400 ppm), EMW-3 (1,100 ppm), EMW-3 (3,300 ppm), EMW-5 (450 ppm), GM-3D (350 ppm), GM-6 (450 ppm), GM-13 (430 ppm), and GM-14A (11,000 ppm). Most of these wells are also located in the southwestern area of the site in the vicinity of the wastewater treatment system.

In summary, the detections of inorganics exceeding TOGS values for the respective parameters were concentrated in monitoring wells located in the vicinity of the wastewater treatment system in the southwestern part of the site. Tungsten detected in monitoring wells at the site most likely results from disposal and storage activities practiced at the site.

Hydrocarbons

No floating phase of hydrocarbons was found in monitoring Wells EMW-3, EMW-5, and GM-14B when measurements were made in these wells (which are located downgradient of two reported spills at the site).

## SOIL QUALITY

On April 21 and 22, 1988, using a portable GC, G&M conducted a survey of the surficial soils in unpaved areas of

the site to determine whether VOCs were present. The results of the survey are summarized in Table 5.

In all, 36 soil samples were collected from Parcels II, III, and IV, and were analyzed for the targeted compounds (tetrachloroethene, trichloroethene, and 1,2-dichloroethene). The sample locations are shown on Figure 3. Tetrachloroethene was the only compound detected, and it occurred in two of the 36 samples analyzed. This compound was found at sample locations PS-1 and PS-2 in low concentrations of less than 10 ppb. Both of these samples were collected along the fence in the southeast part of Parcel III. No other VOCs were detected in any of the other samples collected at the site.

The results of this survey indicate that VOCs may not have been disposed of on the surficial soils in the areas studied. Since the focus of the survey was on areas where dumping of VOCs would most likely take place, it does not seem likely that dumping of VOCs has recently occurred. Two soil samples were collected from the drill cuttings from Well GM-14A, which is located downgradient of a reported fuel spill on Parcel II. The two samples were composited by EcoTest Laboratories, Inc. and analyzed for VOCs, PCBs, total petroleum hydrocarbons (TPHC), and metals using EP testing methods. The results of these analyses are summa-

rized in Table 6, and the laboratory report is presented in Appendix F.

VOCs and PCBs were not detected in any of the samples analyzed. Arsenic was the only metal detected (0.041 ppm) which is below the federal standard of 5 ppm (40 CFR Section 261.24, Table 1, Section B). However, TPHC was detected in a concentration of 330 ppm. Although there is no standard in the State of New York for this parameter, the detection represents a high concentration and the regulatory response is uncertain.

## REMEDIATION

### Ground-Water Remediation

The plume of VOCs in the ground water which extends from Parcel III to Parcel I under Herb Hill Road will probably require remediation in accordance with New York State law. Although the plume does not appear to have the potential to affect any potable water source, it is moving in the direction of Glen Cove Creek and, therefore, will represent a long-term contaminant discharge to the environment if left unabated. Remediation of this VOC plume is technically feasible by employing a ground-water pumping-and-treatment system whereby contaminated water is pumped from the aquifer, the contaminants removed by air stripping or carbon adsorption, and the treated water is returned to the aquifer

or discharged to surface water. The pump-and-treat system may be enhanced by source removal, soil vapor stripping, and the installation of hydraulic barriers to reduce water pumping rates.

The sediments which comprise the water-table aquifer in the VOC plume area at Li Tungsten are not permeable enough to permit continuous pumping with vertical wells. For this reason, a series of horizontal collector trenches with gravel-packed, perforated pipes might be a better choice for ground-water recovery. The system would require collection of ground water on Parcel I between the Carbide and Dice buildings to prevent further southward plume migration. The remediation would be enhanced by intercepting ground water on both sides of Herb Hill Road where the plume is most concentrated and by excavating the most contaminated sediments in the area of Wells EMW-1 and GM-3D. It might also be possible to remove additional VOCs by soil venting or soil vapor stripping under vacuum, but it would be necessary to conduct pilot testing of soil from these areas to determine whether induced vapor removal would work under the relatively low permeability conditions known to exist at the site. Likewise, it is difficult to estimate the time for plume cleanup without pilot testing; however, a 5- to 10-year period of operation is considered the minimum under comparable circumstances. Installation of a soil vapor recovery system in the area of highest VOC concentrations

would be between $25,000 and $30,000 in capital cost, plus an annual operation and maintenance cost of $3,000 to $5,000.

The cost of constructing a similar pump-and-treat system in Nassau County, Long Island, is approximately $250,000 in capital costs, plus an approximate $75,000 annual operation and maintenance cost. Monitoring the effectiveness of the system in accordance with New York State Department of Environmental Conservation (NYSDEC) guidelines would most probably require an additional $10,000 per year. Summarizing the above costs over the 5 to 10 year operating period resuts in a remedial cost between $675,000 and $1.1 million.

It is not possible to predict the cost of soil excavation for source control because the area of high VOC concentrations extends beneath Herb Hill Road and disruption of the roadway and underground utilities would have to be estimated on the basis of a detailed structural engineering study. Our experience with similar situations leads us to conclude that this work would exceed the other capital costs for ground-water remediation. For this same reason, the cost of installing a hydraulic barrier, such as a clay slurry wall around the outside of the plume would be increased to the point where its feasibility would be questionable.

The preliminary assessment of remedial options and costs must be viewed from the perspective of ground-water contamination problems and possible future remediation on properties adjoining Li Tungsten. VOC contamination from the Mattiace property immediately west of Li Tungsten is being investigated as a Superfund site, and a former dry cleaning operation east of Li Tungsten may have created a VOC plume which crosses Li Tungsten property. If a pump-and-treat system is operated at Li Tungsten with no action on the adjoining VOC plumes, the Li Tungsten pumping system could cause off-site VOC contamination to migrate to Li Tungsten. This would extend the remediation time for an undetermined period. It would also be necessary to analyze the environmental impact of air discharges from the pump-and-treat system. If VOC emissions to the atmosphere are judged to be unacceptable, it may be necessary to add an additional stage of treatment by activated carbon. The issue of air emissions must also be considered in light of similiar treatment activities which may take place on the adjoining properties.

The ground-water chemistry data collected during the investigation do not indicate contamination by dissolved metals, which would require active ground-water remediation. Elevated concentrations of lead, cadmium, arsenic, and chromium near the mud pond are only slightly above the TOGS

standards. High sulfate concentrations in wells near the mud pond indicate that the mud pond has leached into the ground water, and water-quality results from nearly all of the monitoring wells installed for the various investigations show elevated dissolved tungsten concentrations. The regulatory implications of the inorganic water-quality data are uncertain because the dissolved metals and sulfate do not pose a serious environmental or health hazard and because there is no ground-water standard for tungsten as yet. It is probable, however, that, at a minimum, a long-term ground-water monitoring program for substances resulting from Li Tungsten's operations would be required. The cost of long-term ground-water monitoring would most likely range between $15,000 and $20,000 per year, provided the existing monitoring wells can be retained. The period of monitoring cannot be predicted at this time; however, a minimum of 5 years of data would ordinarily be required before a petition for relief from monitoring would be considered by New York State.

## FINDINGS AND CONCLUSIONS

1. Water-level data from monitoring wells at the site revealed the presence of two ground-water systems: (1) the shallow water-table system in the southern part of the site; and (2) a perched ground-water system in the northern section of the site.

2. Ground water flows southward toward Glen Cove Creek in both the shallow water-table system and the perched ground-water system.

3. The site is underlain by unconsolidated glacial deposits consisting of sand, silt, clay, and boulders that occur with a high degree of variability. In general, relatively low permeability deposits occur beneath the site as indicated by slow recovery of water levels during well development and ground-water sampling.

4. Analyses of ground-water samples collected in spring 1987 and spring 1988 indicate the presence of a VOC plume with maximum concentrations greater than 20 ppm. The plume is delineated by monitoring wells in the southern part of Parcel III and the northern part of Parcel I.

5. The principal VOC contaminant in the plume is tetrachloroethene, which is a chemical used by dry cleaners. The source of the plume is unknown. However, given the close proximity of a dry cleaning facility formerly located adjacent to Parcel III, it seems likely that the source of contamination is off-site.

6. High concentrations of VOCs were also detected in Well GM-10, located in the southern part of Parcel IV, approximately 30 ft north of the Mattiace property. The principal VOC contaminant detected in this well was 1,1,1-trichloroethene and it represents a separate problem from the VOC plume discussed above. The extent and source of the contamination detected in this well is unknown.

7. Analytical results indicate that the TOGS values for lead, cadmium, and arsenic were exceeded in monitoring wells located in the vicinity of the wastewater treatment system in the southwestern area of the site, the area most likely to be the source of the contamination observed.

8. Tungsten was detected in monitoring wells throughout the site. Although there are no TOGS values for this metal, the widespread presence of tungsten in the ground-water systems (water table and perched water) indicates that contamination was caused by past disposal practices.

9. Analytical results of the soil survey at the site indicate that VOCs may not have been dumped on the surficial soils in unpaved areas of the site.

Only one compound, tetrachloroethene, was detected in low concentrations in two of the 36 samples collected for analyses. These samples were taken along a fence that separates the lower portion of Area III where high concentrations of VOCs were detected, and an adjacent property to the west which was formerly occupied by a dry cleaning firm.

10. The drill cuttings from Well GM-14A were analyzed for VOCs, PCBs, TPHC, and metals (using EP testing methods) indicate that petroleum hydrocarbons were detected in a concentration of 330 ppm. VOCs and PCBs were not detected. The only metal detected was arsenic in a concentration of 0.041 ppm, which is below the federal standard of 5 ppm (40 CFR Section 261.24, Table 1, Section B). The results of this analysis suggest that soil excavated from this area may be suitable for certain disposal options. One such option would be to send the soil to an asphalt company which can use soils contaminated with petroleum hydrocarbons.

11. No floating phase of hydrocarbons was found in monitoring Wells EMW-3, EMW-5, and GM-14B when measurements were made in these wells (which are located downgradient of two reported spills at the site).

Respectfully submitted,

GERAGHTY & MILLER, INC.

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Staff Scientist

Michael J. McEachern
Associate

April 29, 1988
VJG/MJM:vk

## REFERENCES

Kilburn, C., and R.R. Krulikas. 1987. Hydrogeology and Ground-Water Quality of the Northern Part of the Town of Oyster Bay, Nassau County, New York. U.S. Geological Survey Water-Resources Investigations Report 85-4051, 61 pp.

Swarzenski, W.W. 1963. Hydrogeology of Northwestern Nassau and Northeastern Queens Counties, Long Island, New York. U.S. Geological Survey Water-Supply Paper 1657, 90 pp.

TABLES

Table 1. Summary of Monitoring Well Construction Details, GI Tungsten Facility, Glen Cove, New York.

| Well Designation | Installation Date | Well Diameter (in) | Total Depth (Feet Below Land Surface) | Screened Interval (Feet Below Land Surface) | Gravel Pack (Feet Below Land Surface) | Bentonite Seal (Feet Below Land Surface) | Cement Grout (Feet Below Land Surface) | Height of Measuring Point (Rel. to land surface) |
|---|---|---|---|---|---|---|---|---|
| **First Investigation Wells 1)** | | | | | | | | |
| EMW-1 | NA | 4 | 14.1 | 4.1 - 14.1 | NA | NA | NA | +1.40 |
| EMW-2 | NA | 4 | 5.5 | 0.0 - 5.5 | NA | NA | NA | +0.0 |
| EMW-3 | NA | 4 | 9.9 | +0.1 - 9.9 | NA | NA | NA | +0.40 |
| EMW-4 | NA | 4 | 18.6 | 8.6 - 18.6 | NA | NA | NA | +1.60 |
| EMW-5 | NA | 4 | 9.0 | 0.0 - 9.0 | NA | NA | NA | 0.0 |
| **Second Investigation Wells Spring 1987** | | | | | | | | |
| GM-1 | 4/09/87 | 2 | 14.8 | 4.8 - 14.8 | 2.0 - 4.8 | 0.8 - 2.0 | 0.0 - 0.8 | +0.60 |
| GM-2 | 4/14/87 | 2 | 12.4 | 2.4 - 12.4 | 1.1 - 2.4 | 0.8 - 1.1 | 0.55 - 0.8 | -0.15 |
| GM-3D | 4/14/87 | 1.5 | 23.5 | 13.5 - 23.5 | 7.0 - 13.5 | 5.0 - 7.0 | 0.0 - 5.0 | +0.40 |
| GM-4 | 4/15/87 | 1.5 | 15.4 | 5.4 - 15.4 | 2.5 - 5.4 | 1.0 - 2.5 | 0.7 - 1.0 | -0.30 |
| GM-5 | 4/21/87 | 1.5 | 22.0 | 12.0 - 22.0 | 10.0 - 12.0 | 7.0 - 10.0 | 0.0 - 7.0 | +0.90 |
| **Third Investigation Wells Spring 1988** | | | | | | | | |
| GM-6 | 3/31/88 | 2 | 12.2 | 2.2 - 12.2 | 1.0 - 2.2 | 0.5 - 1.0 | 0.0 - 0.5 | -0.4 |
| GM-7 | 4/01/88 | 2 | 12.9 | 2.9 - 12.9 | 1.0 - 2.9 | 0.5 - 1.0 | 0.0 - 0.5 | +3.10 |
| GM-8 | 4/04/88 | 2 | 12.9 | 2.9 - 12.9 | 2.0 - 2.9 | 1.0 - 2.0 | 0.0 - 1.0 | +2.50 |
| GM-9 | 4/04/88 | 2 | 12.1 | 2.1 - 12.1 | 1.5 - 2.1 | 1.0 - 1.5 | 0.0 - 1.0 | +2.40 |
| GM-10 | 4/06/88 | 2 | 54.1 | 44.1 - 54.1 | 42.0 - 44.1 | 40.0 - 42.0 | 0.0 - 40.0 | +3.30 |
| GM-11 | 4/07/88 | 2 | 14.2 | 4.2 - 14.2 | 3.0 - 4.2 | 2.0 - 3.0 | 0.0 - 2.0 | +2.07 |
| GM-12 | 4/11/88 | 2 | 14.0 | 4.0 - 14.0 | 3.0 - 4.0 | 2.0 - 3.0 | 0.0 - 2.0 | +2.53 |
| GM-13 | 4/11/88 | 2 | 16.8 | 6.8 - 16.8 | 5.0 - 6.8 | 3.0 - 5.0 | 0.0 - 3.0 | +2.30 |
| GM-14A | 4/12/88 | 2 | 17.8 | 7.8 - 17.8 | 5.0 - 7.8 | 4.0 - 5.0 | 0.0 - 4.0 | +2.50 |
| GM-14B | 4/14/88 | 2 | 11.3 | 1.3 - 11.3 | 0.5 - 1.3 | 0.2 - 0.5 | 0.0 - 0.2 | +1.15 |
| GM-15 | 4/13/88 | 2 | 14.3 | 4.3 - 14.3 | 2.0 - 4.3 | 1.0 - 2.0 | 0.0 - 1.0 | -0.20 |
| GM-16 | 4/16/88 | 2 | 9.0 | +0.6 - 9.0 | 0.0 - 9.0 | ---- | ---- | +0.60 |
| GM-17 2) | 4/18/88 | 2 | 10.5 | 0.5 - 10.5 | 0.5 - 10.5 | ---- | 0.0 - 0.5 | -0.3 |

1) These wells were reportedly installed in the early 1980s by another consultant. Well construction details are deduced from field measurements and observations.

2) Well GM-17 was installed at the request of RTP as part of an expanded scope of work to obtain more information on subsurface conditions for proposed canals. Two other wells were proposed for this expanded scope of work but were cancelled due to time constraints and uncertainties.

NA Not available.

100254

Table 2. Summary of Ground-Water Elevation Data for Monitoring Wells at Li Tungsten Facility, Glen Cove, New York.

| Well Designation | Measuring Point Elevation | April 21, 1988 Depth to Water * | April 21, 1988 Water Level Elevation ** | April 26, 1988 Depth to Water * | April 26, 1988 Water Level Elevation ** |
|---|---|---|---|---|---|
| EMW-1 | 16.75 | 5.78 | 10.97 | 5.86 | 10.89 |
| EMW-2 | 6.96 | 0.35 | 6.61 | 0.41 | 6.55 |
| EMW-3 | 9.64 | 2.95 | 6.69 | 3.19 | 6.45 |
| EMW-4 | 12.56 | 5.36 | 7.20 | 5.53 | 7.03 |
| EMW-5 | 9.62 | 3.05 | 6.57 | 3.19 | 6.43 |
| GM-1 | 18.02 | 7.50 | 10.52 | 7.25 | 10.77 |
| GM-2 | 6.64 | ---- | ---- | 1.21 | 5.43 |
| GM-3D | 16.02 | 5.15 | 10.87 | 5.23 | 10.79 |
| GM-4 | 26.06 | 1.56 | 24.50 | 1.76 | 24.30 |
| GM-5 | 61.94 | 15.50 | 46.44 | 15.98 | 45.96 |
| GM-6 | 13.29 | 2.75 | 10.54 | 2.85 | 10.44 |
| GM-7 | 21.55 | 10.81 | 10.74 | 10.90 | 10.65 |
| GM-8 | 18.49 | 7.60 | 10.89 | 7.70 | 10.79 |
| GM-9 | 20.60 | 5.47 | 15.13 | 5.64 | 14.96 |
| GM-10 | 59.46 | 47.13 | 12.33 | 47.33 | 12.13 |
| GM-11 | 67.47 | 7.60 | 59.87 | 7.71 | 59.76 |
| GM-12 | 49.83 | 7.68 | 42.15 | 7.68 | 42.15 |
| GM-13 | 44.09 | 13.40 | 30.69 | 13.53 | 30.56 |
| GM-14A | 17.25 | 8.15 | 9.10 | 8.20 | 9.05 |
| GM-14B | 16.16 | 3.15 | 13.01 | 3.40 | 12.76 |
| GM-15 | 17.50 | 7.73 | 9.77 | 7.88 | 9.62 |
| GM-16 | 36.44 | 0.69 | 35.75 | 0.67 | 35.77 |
| GM-17 | ---- | 0.78 | ---- | 0.94 | ---- |

* Feet below measuring point.
* Feet above mean sea level.

Table 3. Concentrations of Volatile Organic Compounds Detected in Ground-Water Samples Collected Spring 1987 and Spring 1988, at Li Tungsten Facility, Glen Cove, New York.



| Well Designation: | | EMW-1 | EMW-1 | EMW-1 | Rep. EMW-1 | EMW-2 | Rep. EMW-2 | EMW-2 | EMW-3 |
|---|---|---|---|---|---|---|---|---|---|
| Date Sampled: | | 3/12/87 | 4/7/87 | 4/8/88 | 4/8/88 | 3/12/87 | 3/12/87 | 4/7/88 | 3/12/87 |
| Volatile Organic Compound | TOG 1) (ppb) | | | | | | | | |
| Chloroemethane | | -- | NA | -- | -- | -- | -- | -- | -- |
| Bromomethane | | -- | NA | -- | -- | -- | -- | -- | -- |
| Dichlordifluoromethane | | -- | NA | -- | -- | -- | -- | -- | -- |
| Vinyl chloride | 5 | 51 | 42 | 52 | 52 | -- | -- | -- | -- |
| Chloroethane | | -- | NA | -- | -- | -- | -- | -- | -- |
| Methylene chloride | .3 | -- | NA | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane | | -- | NA | -- | -- | -- | -- | -- | -- |
| 1,1-Dichloroethene | 0.07 | 2,000 | NA | 6 | 6 | -- | -- | -- | -- |
| 1,1-Dichloroethane | 50 | -- | NA | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloroethene | | -- | 920 | 2,100 | 2,100 | -- | -- | -- | -- |
| Chloroform | 100 | -- | NA | -- | -- | 1 | -- | -- | -- |
| 1,2-Dichloroethane | 0.8 | -- | NA | -- | 2 | -- | -- | -- | -- |
| 1,1,1-Trichloroethane | 50 | -- | NA | -- | -- | -- | -- | -- | -- |
| Carbon tetrachloride | 5 | -- | NA | -- | -- | -- | -- | -- | -- |
| Bromodichloromethane | 50 | -- | NA | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloropropane | 50 | -- | NA | -- | -- | -- | -- | -- | -- |
| trans-1,3-Dichloropropene | | -- | NA | -- | -- | -- | -- | -- | -- |
| Trichloroethylene | 10 | 1,900 | 950 | 1,600 | 1,800 | 4 | -- | -- | -- |
| Chlorodibromomethane | | -- | NA | -- | -- | -- | 1 | -- | -- |
| 1,1,2-Trichloroethane | 0.6 | -- | NA | -- | -- | -- | -- | -- | -- |
| cis-1,3-Dichloropropene | | -- | NA | -- | -- | -- | -- | -- | -- |
| 2-Chloroethvinylether | | -- | NA | -- | -- | -- | -- | -- | -- |
| Bromoform | | -- | NA | -- | -- | -- | -- | -- | -- |
| 1,1,2,2-Tetrachloroethane | 0.2 | -- | NA | -- | -- | -- | -- | -- | -- |
| Tetrachloroethene | 0.7 | 18,000 | 10,200 | 16,000 | 19,000 | 50 | 5 | -- | 7 |
| Chlorobenzene | | -- | NA | -- | -- | -- | -- | -- | -- |
| 1,3-Dichlorobenzene | | -- | NA | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | | -- | NA | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | | -- | NA | -- | -- | -- | -- | -- | -- |
| Benzene | | -- | NA | 6 | 4 | -- | -- | -- | -- |
| Toluene | 50 | -- | NA | -- | 2 | -- | -- | -- | -- |
| Ethyl benzene | 50 | -- | NA | -- | -- | -- | -- | -- | -- |
| m Xylene | | NA | NA | -- | -- | NA | NA | -- | NA |
| o+p Xylene | 50 | NA | NA | -- | -- | NA | NA | -- | NA |
| Total VOCs: | | 21,951 | 12,112 | 19,764 | 22,966 | 55 | 6 | -- | 7 |

All results in parts per billion (ppb).

-- Not detected.

FB Field blank.

TB Trip blank.

Detection limits presented in Appendix D.

Samples analyzed via USEPA Method 601, 602 by EcoTest Laboratories, Inc., North Babylon, New York.

1) TOG references in this report are used solely as reference point for comparative purposes and are not to be construed as applicable clean-up standards.

NA Not analyzed.

Table 3. Concentrations of Volatile Organic Compounds Detected in Ground-Water Samples Collected Spring 1987 and Spring 1988, at Li Tungsten Facility, Glen Cove, New York.



| Well Designation: | | EMW-3 | EMW-4 | EMW-4 | EMW-5 | GM-1 | GM-1 | GM-2 | GM-2 |
|---|---|---|---|---|---|---|---|---|---|
| Date Sampled: | | 4/8/88 | 4/20/87 | 4/8/88 | 4/8/88 | 4/22/87 | 4/7/88 | 4/22/87 | 4/7/88 |
| Volatile Organic Compound | TOG 1) (ppb) | | | | | | | | |
| Chloromethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromomethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichlordifluoromethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Vinyl chloride | 5 | 2 | -- | -- | -- | -- | -- | -- | -- |
| Chloroethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Methylene chloride | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1-Dichloroethene | 0.07 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1-Dichloroethane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloroethene | | -- | -- | -- | -- | -- | 4 | 6 | -- |
| Chloroform | 100 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloroethane | 0.3 | -- | -- | -- | -- | -- | 5 | -- | -- |
| 1,1,1-Trichloroethane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon tetrachloride | 5 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromodichloromethane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloropropane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| trans-1,3-Dichloropropene | | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichloroethylene | 10 | 1 | -- | -- | -- | 3 | 5 | 2 | -- |
| Chlorodibromomethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1,2-Trichloroethane | 0.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| cis-1,3-Dichloropropene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Chloroethylvinylether | | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1,2,2-Tetrachloroethane | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrachloroethene | 0.7 | -- | -- | -- | -- | 27 | 16 | 2 | -- |
| Chlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,3-Dichlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzene | | 9 | -- | 1 | 1 | -- | -- | -- | -- |
| Toluene | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| Ethyl benzene | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| m Xylene | | -- | NA | -- | -- | NA | -- | NA | -- |
| o+p Xylene | 50 | -- | NA | -- | -- | NA | -- | NA | -- |
| Total VOCs: | | 12 | -- | 1 | 1 | 30 | 30 | 10 | -- |

All results in parts per billion (ppb).

-- Not detected.

FB Field blank.

TB Trip blank.

Detection limits presented in Appendix D.

Samples analyzed via USEPA Method 601, 602 by EcoTest Laboratories, Inc., North Babylon, New York.

1) TOG references in this report are used solely as reference point for comparative purposes and are not to be construed as applicable clean-up standards.

NA Not analyzed.

ble 3. Concentrations of Volatile Organic Compounds Detected in Ground-Water Samples Collected Spring 1987 and Spring 1988, at Li Tungsten Facility, Glen Cove, New York.



| Well Designation: | | GM-30 | GM-30 | GM-4 | GM-4 | GM-5 | GM-5 | GM-6 | Rep. GM-6 |
|---|---|---|---|---|---|---|---|---|---|
| Date Sampled: | | 4/22/87 | 4/8/88 | 4/20/87 | 4/7/88 | 4/22/87 | 4/7/88 | 4/7/88 | 4/7/88 |
| Volatile Organic Compound | TOG 1) (ppb) | | | | | | | | |
| Chloroemethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromomethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichlordifluoromethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Vinyl chloride | 5 | 81 | 36 | -- | -- | -- | -- | 12 | 12 |
| Chloroethane | | -- | -- | -- | -- | -- | -- | 1 | 2 |
| Methylene chloride | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1-Dichloroethene | 0.07 | -- | 3 | -- | -- | -- | -- | -- | -- |
| 1,1-Dichloroethane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloroethene | | 1,500 | 860 | -- | -- | -- | -- | 430 | 400 |
| Chloroform | 100 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloroethane | 0.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1,1-Trichloroethane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| Carbon tetrachloride | 5 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromodichloromethane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloropropane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| trans-1,3-Dichloropropene | | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichloroethylene | 10 | 910 | 710 | -- | -- | -- | -- | 780 | 730 |
| Chlorodibromomethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1,2-Trichloroethane | 0.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| cis-1,3-Dichloropropene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Chloroethylvinylether | | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1,2,2-Tetrachloroethane | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrachloroethene | 0.7 | 9,000 | 7,400 | -- | -- | 1 | -- | 1,800 | 1,800 |
| Chlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,3-Dichlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzene | | -- | 2 | -- | -- | -- | -- | -- | -- |
| Toluene | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| Ethyl benzene | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| m Xylene | | NA | -- | NA | -- | NA | -- | -- | -- |
| o+p Xylene | 50 | NA | -- | NA | -- | NA | -- | -- | -- |
| Total VOCs: | | 11,491 | 9,011 | -- | -- | 1 | -- | 3,023 | 2,944 |

All results in parts per billion (ppb).

-- Not detected.

FB Field blank.

TB Trip blank.

Detection limits presented in Appendix D.

Samples analyzed via USEPA Method 601, 602 by EcoTest Laboratories, Inc., North Babylon, New York.

1) TOG references in this report are used solely as reference point for comparative purposes and are not to be construed as applicable clean-up standards.

Not analyzed.

Table 3. Concentrations of Volatile Organic Compounds Detected in Ground-Water Samples Collected Spring 1987 and Spring 1988, at Li Tungsten Facility, Glen Cove, New York.



| Volatile Organic Compound | TOG 1) (ppb) | GM-15 | GM-16 | Field Blank | Field Blank 1 | Field Blank 2 | Trip Blank | Trip Blank | Decon Water Tank |
|---|---|---|---|---|---|---|---|---|---|
| Well Designation: | | GM-15 | GM-16 | Field Blank | Field Blank 1 | Field Blank 2 | Trip Blank | Trip Blank | Decon Water Tank |
| Date Sampled: | | 4/15/88 | 4/15/88 | 3/12/87 | 4/7/88 | 4/8/88 | 3/12/87 | 4/8/88 | 4/13/88 |
| Chloroemethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromomethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Dichlorodifluoromethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Vinyl chloride | 5 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| Methylene chloride | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichlorofluoromethane | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1-Dichloroethene | 0.07 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1-Dichloroethane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloroethene | | -- | -- | -- | -- | -- | -- | -- | -- |
| Chloroform | 100 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloroethane | 0.8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1,1-Trichloroethane | 50 | -- | -- | -- | -- | -- | -- | -- | 1 |
| Carbon tetrachloride | 5 | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromodichloromethane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichloropropane | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| trans-1,3-Dichloropropene | | -- | -- | -- | -- | -- | -- | -- | -- |
| Trichloroethylene | 10 | -- | -- | -- | -- | -- | -- | -- | -- |
| Chlorodibromomethane | | -- | -- | 1 | -- | -- | 1 | -- | -- |
| 1,1,2-Trichloroethane | 0.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| cis-1,3-Dichloropropene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 2-Chloroethylvinylether | | -- | -- | -- | -- | -- | -- | -- | -- |
| Bromoform | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,1,2,2-Tetrachloroethane | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| Tetrachloroethene | 0.7 | -- | -- | 2 | -- | -- | -- | -- | -- |
| Chlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,3-Dichlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,2-Dichlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| 1,4-Dichlorobenzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzene | | -- | -- | -- | -- | -- | -- | -- | -- |
| Toluene | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| Ethyl benzene | 50 | -- | -- | -- | -- | -- | -- | -- | -- |
| m Xylene | | -- | -- | -- | NA | -- | -- | NA | -- |
| o+p Xylene | 50 | -- | -- | -- | NA | -- | -- | NA | -- |
| Total VOCs: | | -- | -- | 3 | -- | -- | 1 | -- | 1 |

All results in parts per billion (ppb).

-- Not detected.

FB Field blank.

TB Trip blank.

Detection limits presented in Appendix D.

Samples analyzed via USEPA Method 601, 602 by EcoTest Laboratories, Inc., North Babylon, New York.

1) TOG references in this report are used solely as reference point for comparative purposes and are not to be construed as applicable clean-up standards.

NA Not analyzed.

Table 4. Concentrations of Metals in Ground-Water Samples Collected Spring 1987 and Spring 1988, Li Tungsten Facility, Glen Cove, New York.



| Well Designation: | | EMW-1 | EMW-1 | EMW-1 | Rep. EMW-1 | EMW-2 | Rep. EMW-2 | EMW-2 | EMW-3 |
|---|---|---|---|---|---|---|---|---|---|
| Date Sampled: | | 3/12/87 | 4/7/87 | 4/8/88 | 4/8/88 | 3/12/87 | 3/12/87 | 4/7/88 | 3/12/87 |
| Metals | TOG 1) (ppm) | | | | | | | | |
| Calcium as Ca | | 90 | NA | 90 | 90 | 65 | NA | 70 | 110 |
| Cobalt as Co | | 0.11 | NA | 0.27 | 0.32 | 0.005 | NA | -- | 0.12 |
| Nickel as Ni | | 0.35 | NA | 0.45 | 0.40 | -- | NA | -- | 0.10 |
| Sodium as Na | | 40 | NA | 34 | 34 | 88 | NA | 100 | 140 |
| Mercury as Hg | .002 | NA | NA | -- | -- | NA | NA | -- | NA |
| Lead as Pb | .025 | NA | NA | -- | -- | NA | NA | -- | NA |
| Chromium as Cr | .050 | NA | NA | -- | -- | NA | NA | -- | NA |
| Cadmium as Cd | .010 | NA | NA | 0.034 | 0.040 | NA | NA | -- | NA |
| Arsenic as As | .025 | NA | NA | 0.002 | 0.002 | NA | NA | 0.004 | NA |
| Tantalum | | 0.3 | NA | 0.09 | 0.34 | 0.3 | NA | 0.27 | 0.2 |
| Tungsten | | -- | NA | -- | -- | 2.4 | NA | 4.69 | 4.8 |
| Copper as Cu | 1.0 | 0.30 | NA | NA | NA | -- | NA | NA | -- |
| Molybdenum as Mo | | -- | NA | NA | NA | 0.21 | NA | NA | 0.07 |
| Chloride as Cl | 250.0 | 56 | NA | 65 | 65 | 100 | NA | 91 | 200 |
| Nitrate as N | 10.0 | -- | NA | -- | -- | -- | NA | -- | -- |
| Sulfate as SO4 | 250.0 | 440 | NA | 400 | 350 | -- | NA | 8.0 | 110 |
| Specific conductance (umhos/cm) | | 1,000 | NA | 1,050 | 1,050 | 1,000 | NA | 1,000 | 1,400 |
| pH (units) | | 5.4 | NA | 5.5 | 5.5 | 6.2 | NA | 6.75 | 6.3 |

All results in parts per million (ppm).

-- Not detected.

FB Field blank.

TB Trip blank.

Detection limits presented in Appendix D.

Samples analyzed via USEPA Method 601, 602 by EcoTest Laboratories, Inc., North Babylon, New York.

1) TOG references in this report are used solely as reference point for comparative purposes and are not to be construed as applicable clean-up standards.

NA Not analyzed.

Concentrations of Metals in Ground-Water Samples Collected Spring 1987 and Spring 1988, Li Tungsten Facility, Glen Cove, New York.



| Well Designation: | | EMW-3 | EMW-4 | EMW-4 | EMW-5 | GM-1 | GM-1 | GM-2 | GM-2 |
|---|---|---|---|---|---|---|---|---|---|
| Date Sampled: | | 4/8/88 | 4/20/87 | 4/8/88 | 4/8/88 | 4/22/87 | 4/7/88 | 4/22/87 | 4/7/88 |
| etals | TOG 1) (ppm) | | | | | | | | |
| a ium as Ca | | 340 | NA | 620 | 190 | NA | 85 | NA | 65 |
| o lt as Co | | 3.5 | NA | 0.40 | 0.72 | NA | -- | NA | 0.008 |
| ickel as Ni | | 0.45 | NA | 0.35 | 0.25 | NA | -- | NA | -- |
| odium as Na | | 1,000 | NA | 2,000 | 320 | NA | 30 | NA | 100 |
| e ury as Hg | .002 | -- | NA | -- | -- | NA | -- | NA | -- |
| e as Pb | .025 | 0.060 | NA | 0.075 | -- | NA | -- | NA | -- |
| hromium as Cr | .050 | 0.006 | NA | -- | -- | NA | -- | NA | -- |
| a ium as Cd | .010 | 0.029 | NA | -- | 0.017 | NA | -- | NA | -- |
| r nic as As | .025 | 0.14 | NA | 0.39 | 0.069 | NA | -- | NA | 0.011 |
| antalum | | 1.76 | NA | 3.91 | 0.52 | NA | 0.075 | NA | 0.28 |
| ungsten | | 154.0 | NA | 1.63 | 42.8 | NA | 0.38 | NA | -- |
| c er as Cu | 1.0 | NA | NA | NA | NA | NA | NA | NA | NA |
| c bdenum as Mo | | NA | NA | NA | NA | NA | NA | NA | NA |
| hloride as Cl | 250.0 | 1,900 | NA | 2,700 | 740 | NA | 50 | NA | 110 |
| i ate as N | 10.0 | -- | NA | -- | -- | NA | -- | NA | -- |
| ulfate as SO4 | 250.0 | 1,100 | NA | 3,300 | 450 | NA | 130 | NA | 32 |
| Sp c conductance (umhos/cm) | | 4,000 | NA | 5,000 | 2,000 | NA | 975 | NA | 1,200 |
| pH (units) | | 6.17 | NA | 5.64 | 6.51 | NA | 6.57 | NA | 6.90 |

All results in parts per million (ppm).
-- Not detected.
FB Field blank.
TB Trip blank.
Detection limits presented in Appendix D.
Samples analyzed via USEPA Method 601, 602 by Ecotest Laboratories, Inc., North Babylon, New York.
1) TOG references in this report are used solely as reference point for comparative purposes and are not to be construed as applicable clean-up standards.
NA Not analyzed.

Table 4. Concentrations of Metals in Ground-Water Samples Collected Spring 1987 and Spring 1988, Li Tungsten Facility, Glen Cove, New York.



| Well Designation: | | GM-30 | GM-30 | GM-4 | GM-4 | GM-5 | GM-5 | GM-6 | Rep. GM-6 |
|---|---|---|---|---|---|---|---|---|---|
| Date Sampled: | | 4/22/87 | 4/8/88 | 4/20/87 | 4/7/88 | 4/22/87 | 4/7/88 | 4/7/88 | 4/7/88 |
| Metals | TOG 1) (ppm) | | | | | | | | |
| Calcium as Ca | | NA | 90 | NA | 19 | NA | 26 | 150 | 150 |
| Cobalt as Co | | NA | 0.10 | NA | -- | NA | -- | -- | -- |
| Nickel as Ni | | NA | 0.15 | NA | -- | NA | -- | -- | -- |
| Sodium as Na | | NA | 44 | NA | 14 | NA | 26 | 120 | 130 |
| Mercury as Hg | .002 | NA | -- | NA | -- | NA | -- | -- | -- |
| Lead as Pb | .025 | NA | -- | NA | -- | NA | -- | 0.008 | 0.005 |
| Chromium as Cr | .050 | NA | -- | NA | -- | NA | -- | -- | -- |
| Cadmium as Cd | .010 | NA | 0.020 | NA | 0.0014 | NA | -- | -- | -- |
| Arsenic as As | .025 | NA | -- | NA | -- | NA | -- | 0.003 | 0.002 |
| Tantalum | | NA | 0.33 | NA | 0.053 | NA | 0.051 | 0.14 | 0.14 |
| Tungsten | | NA | -- | NA | 0.51 | NA | 0.20 | -- | 0.29 |
| Copper as Cu | 1.0 | NA | NA | NA | NA | NA | NA | NA | NA |
| Molybdenum as Mo | | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride as Cl | 250.0 | NA | 65 | NA | 7 | NA | 59 | 260 | 260 |
| Nitrate as N | 10.0 | NA | -- | NA | -- | NA | 3.8 | -- | -- |
| Sulfate as SO4 | 250.0 | NA | 350 | NA | 16 | NA | 40 | 450 | 450 |
| Specific conductance (umhos/cm) | | NA | 875 | NA | 200 | NA | 475 | 1,600 | 1,600 |
| (units) | | NA | 5.90 | NA | 6.61 | NA | 5.30 | 6.20 | 6.20 |

All results in parts per million (ppm).

-- Not detected.

FB Field blank.

TB Trip blank.

Detection limits presented in Appendix D.

Samples analyzed via USEPA Method 601, 602 by EcoTest Laboratories, Inc., North Babylon, New York.

1) TOG references in this report are used solely as reference point for comparative purposes and are not to be construed as applicable clean-up standards.

NA Not analyzed.

Table 4. Concentrations of Metals in Ground-Water Samples Collected Spring 1987 and Spring 1988, Li Tungsten Facility, Glen Cove, New York.



| Well Designation: | | GM-7 | GM-8 | GM-9 | GM-10 | GM-11 | GM-12 | GM-13 | GM-14A |
|---|---|---|---|---|---|---|---|---|---|
| Date Sampled: | | 4/8/88 | 4/8/88 | 4/8/88 | 4/15/88 | 4/15/88 | 4/15/88 | 4/15/88 | 4/15/88 |
| Metals | TOG 1) (ppm) | | | | | | | | |
| Calcium as Ca | | 26 | 36 | 55 | 21 | 25 | 110 | 120 | 370 |
| Cobalt as Co | | -- | 0.005 | -- | 0.024 | -- | -- | 0.40 | 0.40 |
| Nickel as Ni | | -- | -- | -- | -- | -- | -- | -- | 0.20 |
| Sodium as Na | | 28 | 18 | 34 | 12 | 14 | 29 | 96 | 6,600 |
| Mercury as Hg | .002 | -- | -- | -- | -- | -- | -- | -- | -- |
| Lead as Pb | .025 | -- | -- | -- | -- | -- | -- | -- | 0.070 |
| Chromium as Cr | .050 | -- | -- | -- | -- | -- | -- | -- | 0.050 |
| Cadmium as Cd | .010 | -- | 0.013 | -- | -- | -- | -- | -- | -- |
| Arsenic as As | .025 | -- | -- | -- | -- | -- | -- | 0.002 | 0.78 |
| Tantalum | | 0.07 | 0.27 | 0.11 | -- | -- | -- | -- | 2.26 |
| Tungsten | | -- | -- | -- | 0.40 | 0.11 | -- | -- | 39.40 |
| Copper as Cu | 1.0 | NA | NA | NA | NA | NA | NA | NA | NA |
| Molybdenum as Mo | | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride as Cl | 250.0 | 14 | 26 | 43 | 14 | 22 | 65 | 25 | 700 |
| Nitrate as N | 10.0 | -- | 0.6 | 1.0 | 26 | 3.5 | -- | -- | 1.0 |
| Sulfate as SO4 | 250.0 | 68 | 230 | 150 | 48 | 50 | 150 | 430 | 11,000 |
| Specific conductance (umhos/cm) | | 400 | 575 | 625 | 260 | 240 | 790 | 1,060 | 20,200 |
| (units) | | 6.58 | 4.99 | 6.16 | 5.6 | 6.2 | 6.2 | 6.1 | 7.4 |

All results in parts per million (ppm).

-- Not detected.

FB Field blank.

TB Trip blank.

Detection limits presented in Appendix D.

Samples analyzed via USEPA Method 601, 602 by EcoTest Laboratories, Inc., North Babylon, New York.

1) TOG references in this report are used solely as reference point for comparative purposes and are not to be construed as applicable clean-up standards.

NA Not analyzed.

Table 4. Concentrations of Metals in Ground-Water Samples Collected Spring 1987 and Spring 1988, Li Tungsten Facility, Glen Cove, New York.



| Well Designation: | | GM-15 | GM-16 | Field Blank | Field Blank 1 | Field Blank 2 | Trip Blank | Trip Blank | Decon Water Tank |
|---|---|---|---|---|---|---|---|---|---|
| Date Sampled: | | 4/15/88 | 4/15/88 | 3/12/87 | 4/7/88 | 4/8/88 | 3/12/87 | 4/8/88 | 4/13/88 |
| Metals | TCG 1) (ppm) | | | | | | | | |
| Calcium as Ca | | 48 | 14 | NA | NA | NA | NA | NA | NA |
| Cobalt as Co | | 0.030 | 0.010 | NA | NA | NA | NA | NA | NA |
| Nickel as Ni | | -- | -- | NA | NA | NA | NA | NA | NA |
| Sodium as Na | | 48 | 7.9 | NA | NA | NA | NA | NA | NA |
| Mercury as Hg | .002 | -- | -- | NA | NA | NA | NA | NA | NA |
| Lead as Pb | .025 | -- | -- | NA | NA | NA | NA | NA | NA |
| Chromium as Cr | .050 | -- | -- | NA | NA | NA | NA | NA | NA |
| Cadmium as Cd | .010 | -- | 0.007 | NA | NA | NA | NA | NA | NA |
| Arsenic as As | .025 | 0.002 | -- | NA | NA | NA | NA | NA | NA |
| Tantalum | | -- | -- | NA | NA | NA | NA | NA | NA |
| Tungsten | | 0.16 | -- | NA | NA | NA | NA | NA | NA |
| Copper as Cu | 1.0 | NA | NA | NA | NA | NA | NA | NA | NA |
| Molybdenum as Mo | | NA | NA | NA | NA | NA | NA | NA | NA |
| Chloride as Cl | 250.0 | 120 | 8 | NA | NA | NA | NA | NA | NA |
| Nitrate as N | 10.0 | -- | -- | NA | NA | NA | NA | NA | NA |
| Sulfate as SO4 | 250.0 | 48 | 200 | NA | NA | NA | NA | NA | NA |
| Specific conductance (umhos/cm) | | 640 | 140 | NA | NA | NA | NA | NA | NA |
| pH (units) | | 6.2 | 6.2 | NA | NA | NA | NA | NA | NA |

All results in parts per million (ppm).

-- Not detected.

FB Field blank.

TB Trip blank.

Detection limits presented in Appendix D.

Samples analyzed via USEPA Method 601, 602 by EcoTest Laboratories, Inc., North Babylon, New York.

1) TCG references in this report are used solely as reference point for comparative purposes and are not to be construed as applicable clean-up standards.

NA Not analyzed.

Table 5. Concentrations of Selected Volatile Organic Compounds Tested for During Soil Survey of Parcels II, III, and IV.

| Sample Location | | Concentration of 1,2-Dichloroethene (ppb) | Concentration of Trichloroethene (ppb) | Concentration of Tetrachloroethene (ppb) |
|---|---|---|---|---|
| Parcel II | Stream | -- | -- | -- |
| | 1 | -- | -- | -- |
| | 2 | -- | -- | -- |
| | 3 | -- | -- | -- |
| | 4 | -- | -- | -- |
| | 5 | -- | -- | -- |
| Parcel III | 1A | -- | -- | -- |
| | 1B | -- | -- | -- |
| | 1C | -- | -- | -- |
| | 2A | -- | -- | -- |
| | 2B | -- | -- | -- |
| | 2C | -- | -- | -- |
| | 3A | -- | -- | -- |
| | 3B | -- | -- | -- |
| | 3C | -- | -- | -- |
| | 4A | -- | -- | -- |
| | 4B | -- | -- | -- |
| | 4C | -- | -- | -- |
| | 5A | -- | -- | -- |
| | 5B | -- | -- | -- |
| | 5C | -- | -- | -- |
| | PS-1 | -- | -- | 5.6 |
| | PS-2 | -- | -- | 5.1 |
| | PS-3 | -- | -- | -- |
| | PS-3A | -- | -- | -- |
| | PS-4 | -- | -- | -- |
| | PS-4A | -- | -- | -- |
| Parcel IV | 1 | -- | -- | -- |
| | 2 | -- | -- | -- |
| | 3 | -- | -- | -- |
| | 4 | -- | -- | -- |
| | 5 | -- | -- | -- |
| | 6 | -- | -- | -- |
| | 7 | -- | -- | -- |
| | 8 | -- | -- | -- |
| | 9 | -- | -- | -- |

ppb Parts per billion.
-- Not detected.

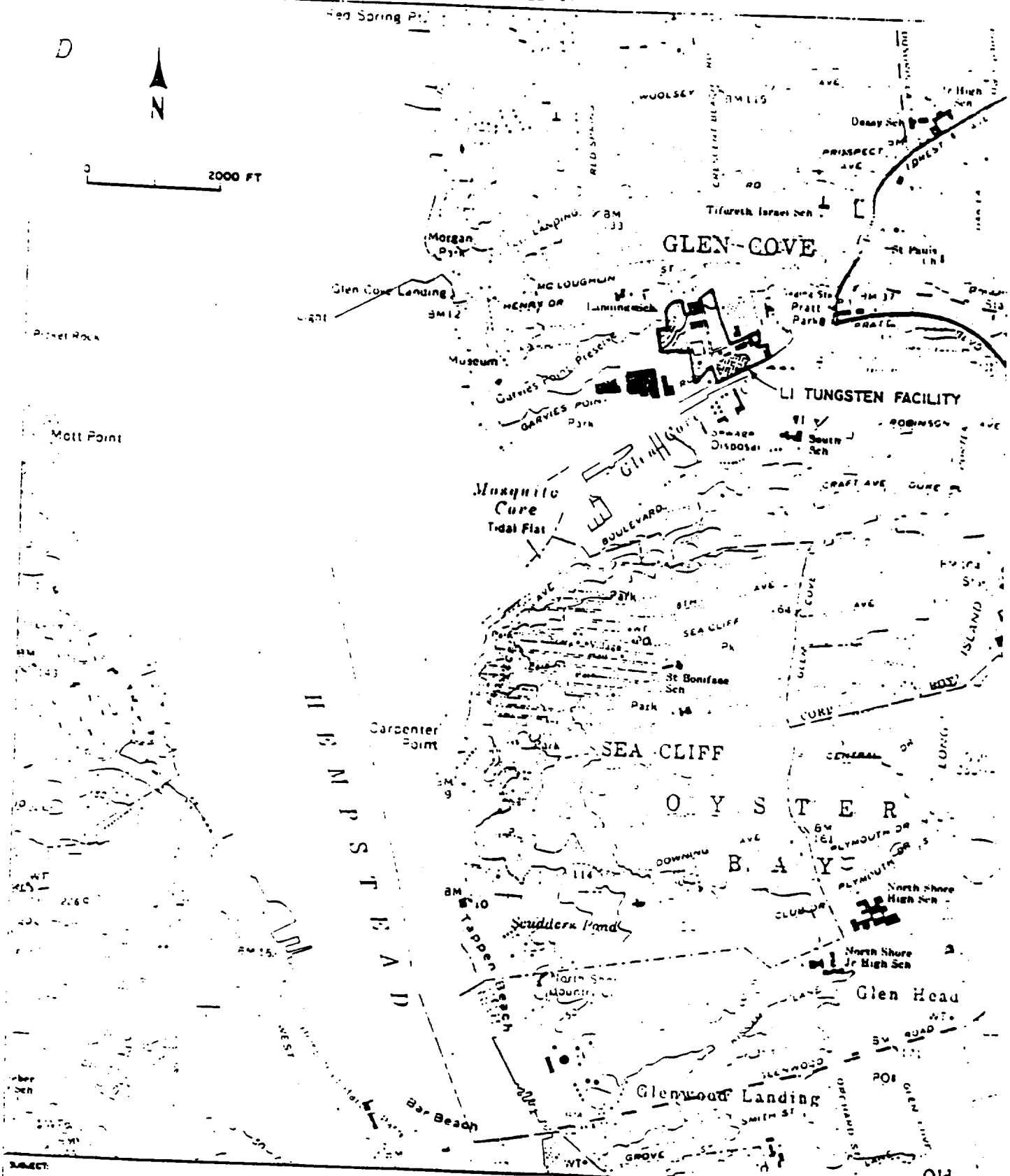
FIGURES

100267

GERAGHTY & MILLER, INC.
Ground-Water Consultants

COMPILED BY: V. GLASSER
PREPARED BY: S. SCHAFFNER
PROJECT MGR.: V. GLASSER
DATE: 4-88
SCALE: NOT SHOWN
FILE NO.: N1342L2-1047

RTP ENVIRONMENTAL ASSOC., INC.
Glen Cove, New York



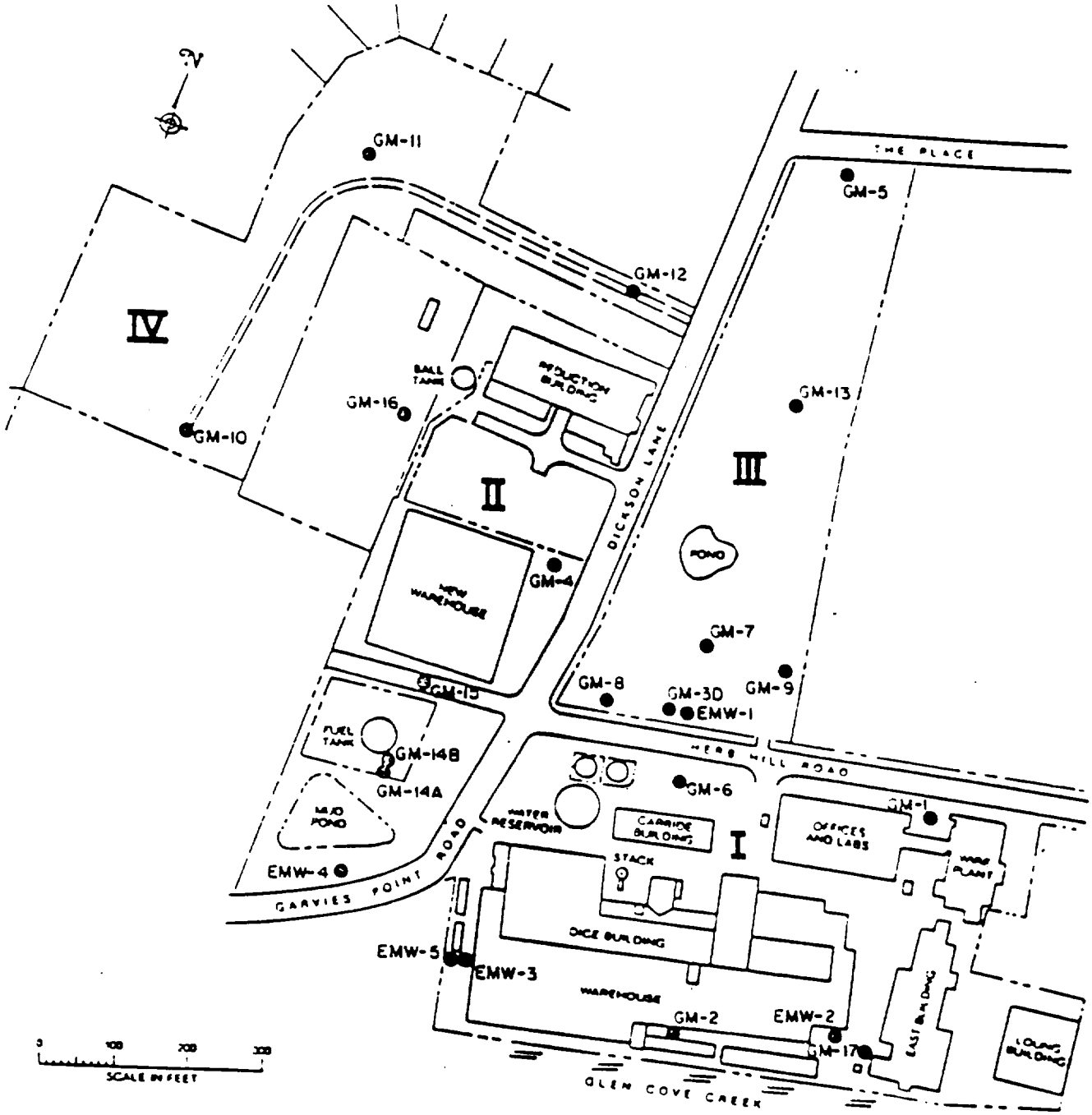

SUBJECT: SITE LOCATION, LI TUNGSTEN FACILITY, GLEN COVE, NEW YORK

Old FIGURE 1

GERAGHTY & MILLER, INC.
Groundwater Consultants

COMPILED BY: V. GLASSER
PREPARED BY: S. SCHAFFNER
PROJECT MGR.: V. GLASSER
DATE: 4-88
SCALE: SHOWN
FILE NO.: N1342L11-1047
PREPARED FOR:

RTP ENVIRONMENTAL ASSOC., INC.
Glen Cove, New York




EXPLANATION

II PARCEL NUMBER

● MONITORING WELL LOCATION

PROPERTY/PARCEL BOUNDARY

DIRT ROAD

100268

SUBJECT

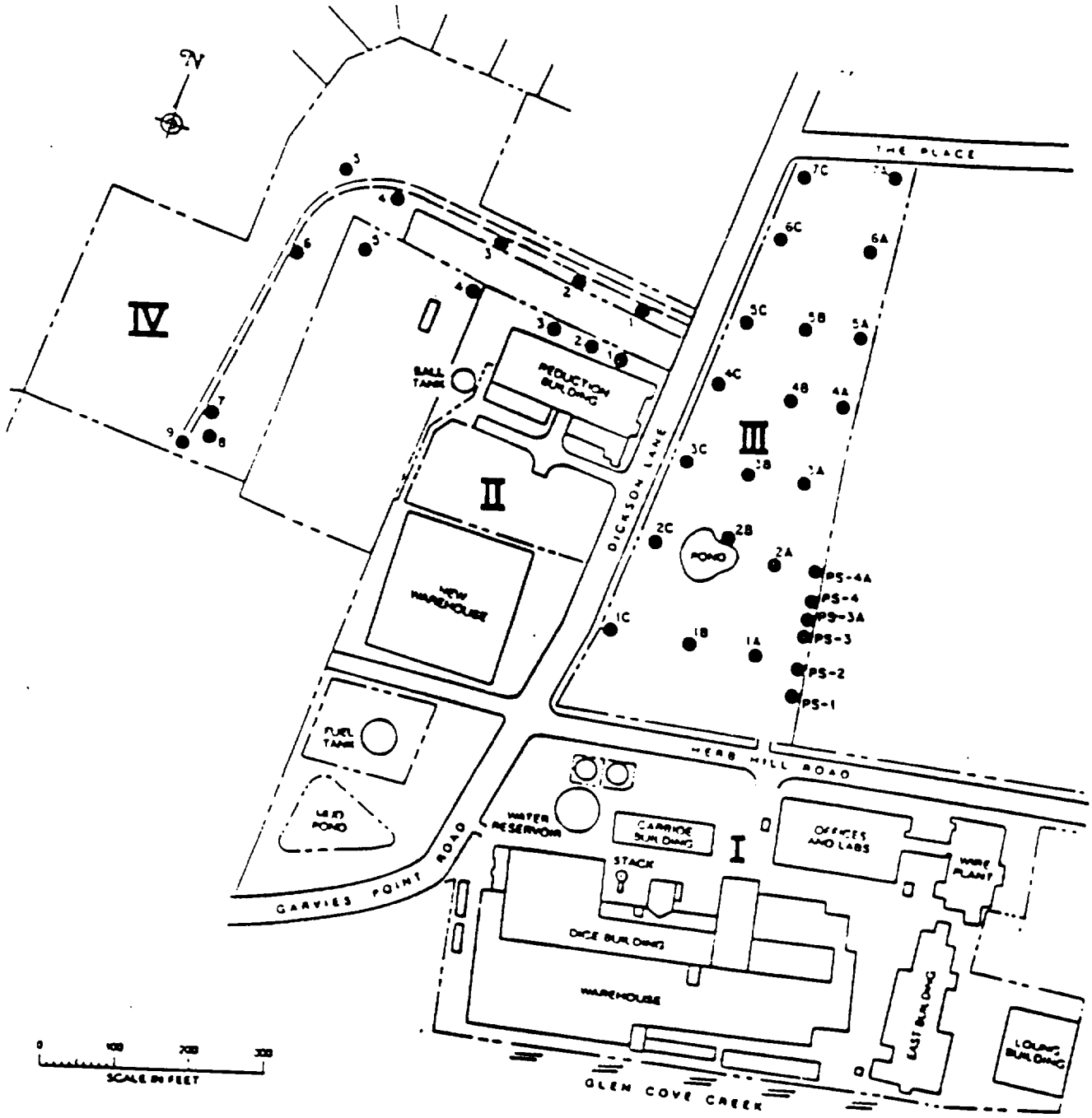
LOCATION OF MONITORING WELLS

FIGURE

GERAGHTY & MILLER, INC.
Ground-Water Consultants

| | | | |
|---|---|---|---|
| COMPILED BY: J. GLASSER | DATE: 4-88 | SCALE: SHOWN | PREPARED FOR: |
| PREPARED BY: G. SCHAFFNER | FILE NO: N1342LII-1047 | | |
| PROJECT MGR: J. GLASSER | | | |

RTP ENVIRONMENTAL ASSOC., INC.
Glen Cove, New York




EXPLANATION

| | | | |
|---|---|---|---|
| II | PARCEL NUMBER | ● 1A | SAMPLING LOCATION |
| — - - — | PROPERTY/PARCEL BOUNDARY | ═══ | DIRT ROAD |

100269

SUBJECT:

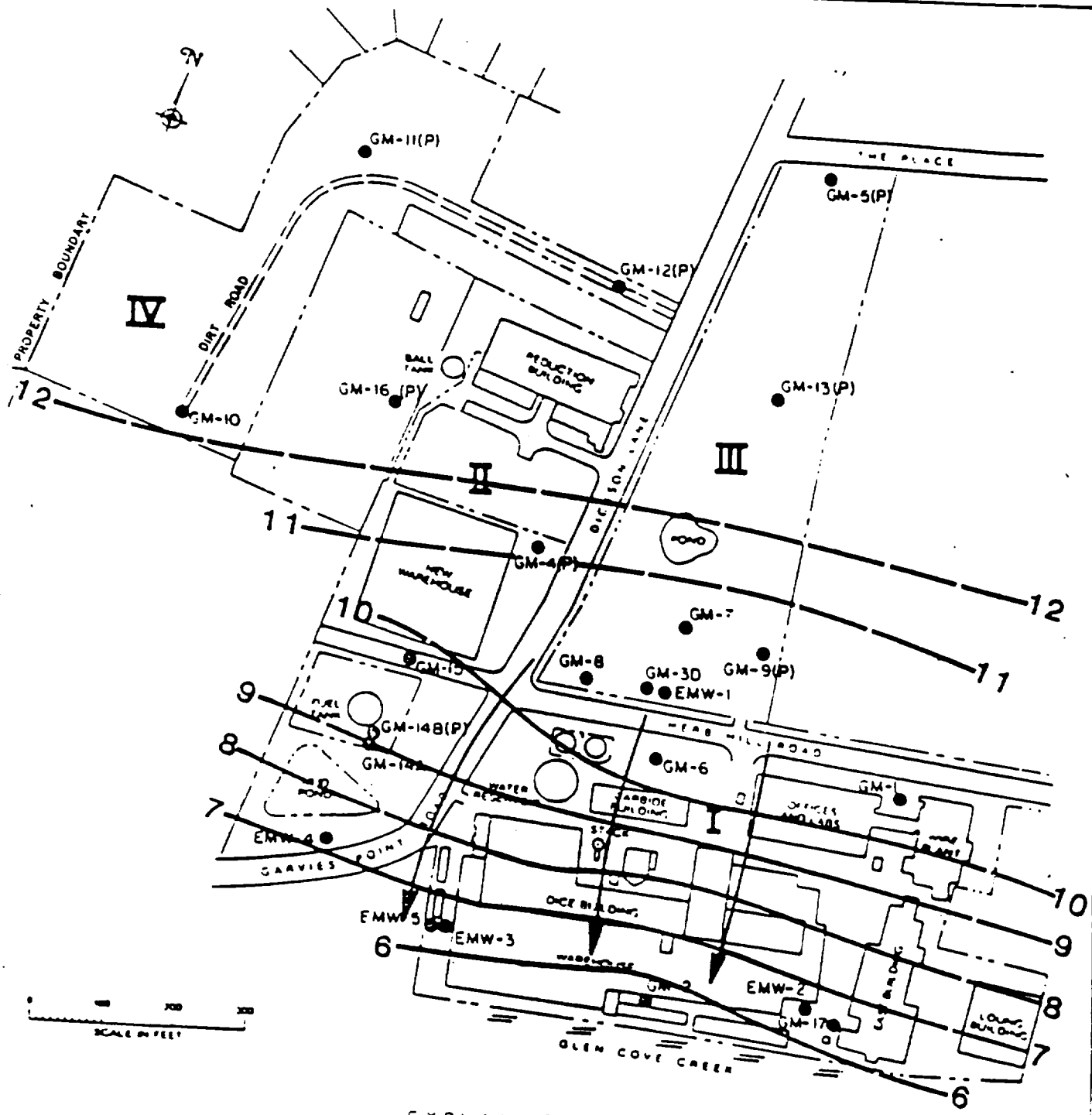
SOIL SURVEY SAMPLING LOCATIONS, LI TUNGSTEN FACILITY, GLEN COVE, NEW YORK

FIGURE 3

GERAGHTY & MILLER, INC.
Ground-Water Consultants

GLASSER
SCHAFFNER
GLASSER
4-88
SHOWN
41342L11-1047

RTP ENVIRONMENTAL ASSOC., INC.
Glen Cove, New York




EXPLANATION

II PARCEL NUMBER

DIRECTION OF HORIZONTAL COMPONENT OF GROUND-WATER FLOW

● MONITORING WELL LOCATION

(P) MONITORING WELL INSTALLED IN PERCHED GROUND-WATER SYSTEM

—6 LINE OF EQUAL WATER-TABLE ELEVATION IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE INFERRED)

NOTE REFER TO TABLE 2 FOR WATER LEVEL ELEVATIONS MEASURED IN MONITORING WELLS ON 4-26-88

CONFIGURATION OF THE WATER TABLE ON APRIL 26, 1988

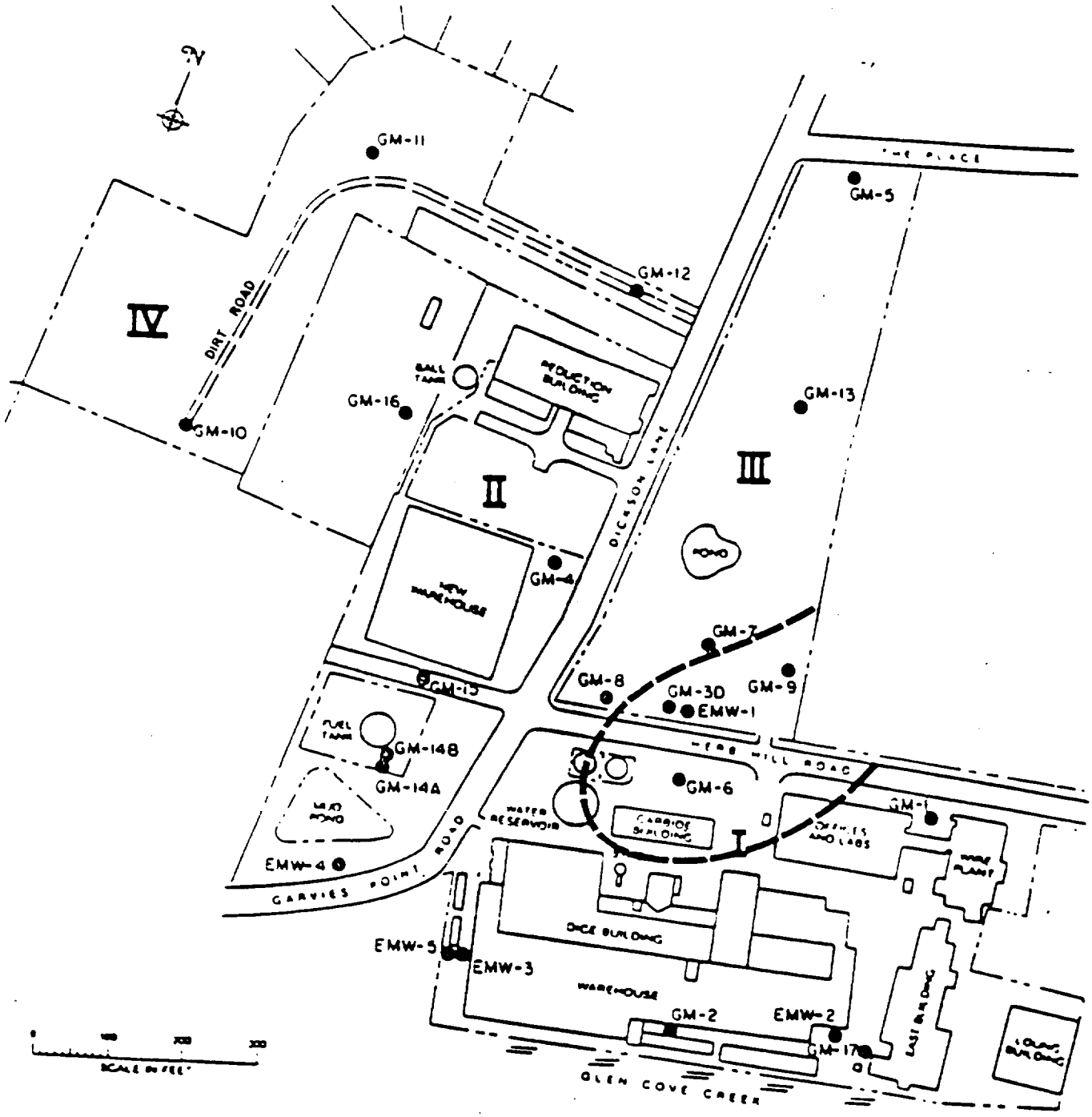
FIGURE 4

100270

GERAGHTY & MILLER, INC
Ground-Water Consultants

GLASSER | 4-88 | SHOWN
SCHAFFNER
GLASSER | N1342L11-1047

RTP ENVIRONMENTAL ASSOC., INC.
Glen Cove, New York




EXPLANATION

II PARCEL NUMBER

PROPERTY/PARCEL BOUNDARY

● MONITORING WELL LOCATION

INFERRED EXTENT OF VOC PLUME WITH CONCENTRATION OF 100 ppb OR GREATER

NOTE: REFER TO TABLE 3 FOR CONCENTRATIONS OF VOCs DETECTED IN MONITORING WELLS SAMPLED IN SPRING 1987 AND SPRING 1988

SUBJECT

INFERRED EXTENT OF PLUME OF VOCs IN SHALLOW GROUND-WATER SYSTEM IN THE VICINITY OF LI TUNGSTEN, GLEN COVE, NEW YORK

FIGURE 5

100271

APPENDIX A

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# SAMPLE/CORE LOG

Boring/Well GM-1 Project/No. N12221I Page 1 of 1

Site Location Glen Cove, NY Drilling Started 11:30 AM 4-9-87 Drilling Completed

Total Depth Drilled 15 feet Hole Diameter 6 inches Type of Sample/Coring Device split spoon

Length and Diameter of Coring Device 2' x 1.6" Sampling Interval 0-16 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used — Drilling Method Hollow stem aug Mobile B Rig

Drilling Contractor Slacke Test Boring, Inc. Driller Danny O'Shea Helper Pete + Jim (

Prepared By V. J. Glasser Hammer Weight 145 Hammer Drop 30 inches

| Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description |
|---|---|---|---|---|
| 0 | 2 | 1 | 3-2-2-4 | Top 6" = Topsoil/Fill, silty sand-fine, some clay, dark brown, moist, cohesive, soft. Bottom 6" - |
| | | | | sand f-m, some fine gravel, trace silt, tan, moist, loose. |
| 4 | 6 | 1 | 3-2-2-4 | sand f-m, gravel f-m, rounded pebbles (½-1") some silt, tr. clay, dk tan somewhat loose, wet |
| 9 | 11 | 2 | 11-11-24-31 | sand f-c, gravel f-c, pebbles (½-1.3") rounded, light tan, very loose, wet. |
| 14 | 16 | 1.5 | 6-6-8-12 | sand, f-m, on top well sorted, grading to coarse on bottom, well sorted, tan, very loose, wet |
| | | | | |
| | | | | — END BORING — |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | Note: | ① no odors or evidence of |
| | | | | contamination observed |
| | | | | ② After removing augers from |
| | | | | hole, OVA reading = 0 at land surface |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

G&M Form 03 6-86 Soundprint 87-1718

100273

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# SAMPLE/CORE LOG

Boring/Well GM-2 Project/No. N1222LI1 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 4-14-87 Drilling Completed

Total Depth Drilled 16 feet Hole Diameter ____ inches Type of Sample/Coring Device Split spoon

Length and Diameter of Coring Device 2' x 1.6" Sampling Interval 0-16 feet

Land-Surface Elev. ____ feet ☐ Surveyed ☐ Estimated Datum

Drilling Fluid Used Drilling Method Mobile B Hollow Stem auger

Drilling Contractor Slack Test Borings Driller Danny Osha Helper Jim, Pete

Prepared By V.J. Glasser Hammer Weight 145 Hammer Drop 30 inches Safety Hammer

| OVA ppm benzene | Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description |
|---|---|---|---|---|---|
| | 0 | 0.8 | | | Reinforced concrete |
| | 1 | 3 | 0.3 | 1-2-5-3 | Till-like sand rf-m, silt, some clay + f. gravel (round mottled m.dk gray + blck, soft semi-cohesive wet |
| 4-6* | 4 | 6 | 1.5 | 7-7-32 | Till-like rf sand + silt w/tr. of f. gravel and occasional pebble (1") tr-some clay, mottled lt. gray + brown, wet. |
| | | | | | |
| 20-100* | 9 | 11 | 2 | 1-1-29-32 | Top 1': Sand f-m, some silt + tr. clay + f. gravel, m.gray, soft, fairly loose, wet bottom 1ft - same orange - brown. |
| | | | | | |
| 0 | 14 | 16 | 2 | 75-50-38-27 | Sand f-c, gravel f-m, assorted pebbles (6-1") Tr. silt + clay, M. orange/brn, loose, wet |
| | | | | | |
| | | | | | |
| * | Also used charcoal filter and got reading of zero indicating reading of 20-100 ppm benzene is not methane | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | Note: | | | | no visual sign of contamination |
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# SAMPLE/CORE LOG

Boring/Well GM-30 Project/No. N1272LE1 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 4-14-87 2:40 pm Drilling Completed 4:15

Total Depth Drilled 26 feet Hole Diameter ____ inches Type of Sample/Coring Device split spoon

Length and Diameter of Coring Device 2' x 1.6" Sampling Interval 0-26 feet

Land-Surface Elev. ____ feet ☐ Surveyed ☐ Estimated Datum ____

Drilling Fluid Used — Drilling Method Hollow Stem Auger

Drilling Contractor Slack Driller Denny Helper Jim + Pete

Prepared By V. J. Glassen Hammer Weight 145 Hammer Drop 30 inches

| OVA ppm benzene | Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description |
|---|---|---|---|---|---|
| 0 | 0 | 2 | 1 | 2-9-7-7 | Top 6" - topsoil, loamy, sand f-m, some silt, tr. clay dk brn, loose, damp. Bottom: sand m-c, f-m gravel + |
| | | | | | rounded pebbles, orange, v. loose, dry. |
| 0 | 4 | 6 | 0.3 | 20-25-39-50 | Wash? similar to top 6" of 0-2' sample. wet |
| tips needle | 9 | 11 | 1.4 | 7-12-17-18 | silty sand, vf-f, tr. clay, gray/brn, dense, tight, |
| 0 | 14 | 16 | 1.8 | 9-14-18-26 | cohesive, moist. same as above (less silty) for 0.5 ft top. |
| | | | | | Bott: gravel f-c, well rounded, f-m sand, whitish |
| | | | | | tan, v. loose, wet. |
| — | 19 | 21 | 0 | 9-12-17-20 | Wash = f-c sand, white/tan, v. loose, wet. |
| 0 | 24 | 26 | 2 | 18-23-25-27 | Sand m-c, f. gravel, lt. tan, v. loose, wet. |
| | | | | | |
| | | | | | |
| | | Note: | | | no visual evidence of contamination |
| | | | | | |
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# SAMPLE/CORE LOG

Boring/Well GM-4 Project/No. N1222LE1 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 9:50 4-15-87 Drilling Completed 10:50

Total Depth Drilled 16 feet Hole Diameter 6 inches Type of Sample/Coring Device Split spoon

Length and Diameter of Coring Device 2' x 1.6" Sampling Interval 0-16 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used — Drilling Method Hollow Stem Auger Mobile B

Drilling Contractor Stack Driller Danny O'Shea Helper Jim + Pete

Prepared By V.J. Glasser Hammer Weight 140 Hammer Drop 30 inches

Safety Hammer

OVA ppm benzene

| | Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description |
|---|---|---|---|---|---|
| 0 | 1 | 3 | 1.7 | 5-6-6-7 | Till-like: sand vf-f, some silt, tr. f. gravel + clay, varies, orange brn - grayish, variable cohesiveness + looseness |
| 0 | 4 | 6 | 1.7 | 5-8-26-33 | Same as above w/ parts more homogeneous - v.f sand mottled gray + brn grades into orange f-m sand |
| | | | | | mixed w/ f. gray sand - wet @ ~ 3-4ft bls. |
| 0 | 9 | 11 | 1.5 | 5-7-8-9 | Basically silty sand, vf-f, tr-some clay, mottled gray + brownish, grades to till-like silty sand w/ some clay. |
| | | | | | tr. some f. gravel + piece of blood-red rock - nodules of different colored sands + silts (green, |
| | | | | | brown, white) variable colors, grey, red, brown, |
| | | | | | pockets of green + white etc. basically cohesive, |
| | | | | | somewhat firm + soft in spots |
| 0 | 14 | 16 | 1.6 | 6-8-10-10 | overall - clayey, silty sand, vf-m, tr. f-m gravel, |
| | | | | | gray, sample cut in half reveals greenish sand + |
| | | | | | f. gravel near top, reddish brn areas, and nodules |
| | | | | | of pink sand - some red; cohesive, somewhat |
| | | | | | firm + soft, wet. |
| | | | | NOTE: | no visual evidence of contamination |
| | | | | | such as odor, sheen etc |

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# SAMPLE/CORE LOG

Boring/Well GM-5 Project/No. N1222LI1 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 10AM 4-21-87 Drilling Completed

Total Depth Drilled 27 feet Hole Diameter 6 inches Type of Sample/Coring Device Split spoon

Length and Diameter of Coring Device 2' x 1.6" Sampling Interval 0-27 feet

Land-Surface Elev. ____ feet ☐ Surveyed ☐ Estimated Datum

Drilling Fluid Used — Drilling Method Hollow Stem Auger

Drilling Contractor Stacke Driller Danny O'Shea Helper Jim Pike

Prepared By V. J. Glasser Hammer Weight 140 Hammer Drop 30 inches

OVA ppm benzene Safety

| Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 Inches | Sample/Core Description |
|---|---|---|---|---|
| 0 | 2 | 1.5 | 1-2-4-7 | Top 0.3' = topsoil - organic material, moist, dk brown grading suddenly to sand f-m, tr. - some silt, orange/tan, moist, fairly loose |
| 4 | 6 | 1.0 | 4-6-8-12 | silty sand f-m, tr. clay + gravel, alternating orange/tan and gray, somewhat cohesive, slightly moist |
| 9 | 11 | 1.2 | 11-15-13-18 | Top 0.4' = same as above, changes to sand medium, tr. gravel, tan, v. loose, dry. |
| 14 | 16 | 1.0 | 7-9-11-13 | Sand m-c, some gravel f-m, reddish tan, v. loose, wet throughout |
| 19 | 21 | 1.3 | 1-1-2-2 | same as above - spoon tip = layered, silty sand, f, clay, alt. orange + gray fairly firm sticky + fairly dry |
| 24 | 26 | 1.5 | 2-2-6-8 | Top 1' = wash probably = f-c sand, tr. gravel Bott. 1' = clayey silt, v.f sand gray - streaks of orange - mottled, soft to med. firm, slightly moist. |
| 26 | 27 | 1.0 | Hand pushed | silt, tr. - some clay, dk gray. soft, wet. |

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# SAMPLE/CORE LOG

Boring/Well GM-6 Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 3:00 PM 3-31-88 Drilling Completed 5 pm

Total Depth Drilled 13 feet Hole Diameter 8" inches Type of Sample/Coring Device split spoon

Length and Diameter of Coring Device 2 ft x 2" Sampling Interval 0-12 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used _____ Drilling Method Hollow Stem Auger

Drilling Contractor Empire Soils Investigations, Inc. Driller Boo Helper Jim + Greg

Prepared By A. Baker Hammer Weight _____ Hammer Drop _____ inches

Rig = CME-45C
Auger size - 4¼" ID x 8" OD

| Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description |
|---|---|---|---|---|
| 0 | 2' | 1' | 7-12-17-12 | organic debris + fill, black, fill material, dark brown, sand, f to c, silt, some gravel, orange + dark brown, loose, dry |
| 5' | 7' | 0.5' | 4-4-5-2 | sand, fine to med, silt, trace gravel, some slag, dark tan, loose, wet. |
| 10' | 12' | 0.5' | 30-15-14-12 | sand f-m, silt, trace fine gravel, pebbles. med. tan, loose, trace clay in water |
| | | | | |
| | | | | END BORING |

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# SAMPLE/CORE LOG

Boring/Well GM-7 Project/No. N1342LE01 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 8 30 AM 4/1/92 Drilling Completed 10 AM

Total Depth Drilled 15 feet Hole Diameter 8 inches Type of Sample/Coring Device split spoon

Length and Diameter of Coring Device 2ft x 2in Sampling Interval 0-14' feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used _____ Drilling Method Hollow stem Augers

Drilling Contractor Empire Driller Boo Helper Greg + Jim

Prepared By A. Baker Hammer Weight _____ Hammer Drop _____ inches

| Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 Inches | Sample/Core Description |
|---|---|---|---|---|
| 0 | 2' | 1' | 4-8-8-12 | Sand f-vf, silt, some clay, trace pebbles, dark orange cohesive, damp. |
| 4' | 6' | 1.5' | 12-16-16-22 | Sand vf, some silt, gray clay cohesive, damp. Sharp change to fill material - sand f-c, some gravel, orange, loose, wet |
| 8' | 10' | 1' | 15-40-20-12 | silt, light gray, cohesive, wet, tr. pebbles. Sharp change to dark green to black dry sand, red clayey silt, wet |
| 12' | 14' | 1.5 | 20-15-18-12 | sand m-c, trace gravel, tan to light orange, wet. |
| | | | | |
| | | | | End of boring |

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# SAMPLE/CORE LOG

Boring/Well GM-8 Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 4-6-88 10 AM Drilling Completed 10 50

Total Depth Drilled 13 feet Hole Diameter 8 inches Type of Sample/Coring Device Split Spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval 0-12 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Empire Driller Boo Helper Jim + Greg

Prepared By A. Baker Hammer Weight _____ Hammer Drop _____ inches

| Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description |
|---|---|---|---|---|
| 0 | 2' | 0.5 | 10-25-20-19 | Sand, m-c, some gravel, trace pebbles. Dark orange, semi-cohesive, damp. |
| 5' | 7' | 1.0 | 25-15-15-12 | Sand, f-m, dark brown, dry, then sand m-c, gravel, some pebbles, orange, wet |
| 10' | 12' | 1.5 | 5-10-12-16 | Sand, m-c, some gravel, trace pebbles, brown to orange, loose, wet |
| | | | | |
| | | | | END BORING |

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# SAMPLE/CORE LOG

Boring/Well GM-9 Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove NY Drilling Started 3:30 4-4-88 Drilling Completed 4:00

Total Depth Drilled 12 feet Hole Diameter ____ inches Type of Sample/Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval 0-12 feet

Land-Surface Elev. ____ feet ☐ Surveyed ☐ Estimated Datum ____

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Empire Driller Boo Helper Jim + Greg

Prepared By A. Baker Hammer Weight ____ Hammer Drop ____ inches

| Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description | OVA |
|---|---|---|---|---|---|
| 0 | 2' | 1.5 | 5-7-9-9 | Sand, f-vf, silt, tan, cohesive, damp. Black sand at top and bottom of sample w/ spots in middle | 0 |
| 5' | 7' | 1.5 | 5-5-7-7 | Sand f-m, silt, trace gravel, then sand f-c. Bright orange, loose, wet, trace clay in water | |
| 10' | 12' | 1' | 4-4-4-7 | Sand, f-c, grey clay (6"), trace gravel; orange; loose, wet. | |
| | | | | END BORING | |

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# SAMPLE/CORE LOG

Boring/Well GM-10 Project/No. N1342LE01 Page 1 of 1

Site Location Glen Cove Drilling Started 4-6-88 8:45 Drilling Completed 5:00 pm

Total Depth Drilled 54 feet Hole Diameter 8 inches Type of Sample/Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval 0-52 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used None Drilling Method Hollow-Stem Auger

Drilling Contractor Empire Driller Boo Helper Jim

Prepared By A. Baker Hammer Weight 140 lbs Hammer Drop 30 inches

| OVA Reading out of hole | Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description | |
|---|---|---|---|---|---|---|
| | 0 | 2 | 2" | | organic debris, topsoil, dark brown, loose, dry. | 9ppm |
| | 5 | 7 | 2' | 2-5-15-15 | wash, sand, f, silt, clay, grey, cohesive, damp. Sand m-c orange. loose, damp | 0 |
| | 10 | 12 | 1.5' | 4-6-6-10 | silt, clay, grey. cohesive, damp then sand-f-light grey loose to cohesive, damp. | 0 |
| | 15 | 17 | 1.5' | 4-6-6-8 | Sand f-m, orange, cohesive, damp. Some areas of rusty color at 16.5'-17' -red | 10ppm |
| | 20 | 22 | 2' | 6-9-12-12 | Sand f-m, some clay pockets (red) deep orange, loose, damp | 0 |
| | 25 | 27 | 1.5' | 7-8-9-12 | sand - f, orange to tan, loose, damp | 0 |
| | 30 | 32 | 1' | 6-10-10-12 | sand - f-m, tr. gravel, tr. pebbles, orange, loose, dry | |
| | 35 | 37 | 1' | 10-8-8-6 | sand m-c, sand f, orange to tan, loose, dry | |
| 10ppm | 40 | 42 | 1.5' | 10-10-8-8 | sand f-m, tan, some silt, cohesive, damp. | |
| 3ppm | 45 | 47 | 2' | 10-8-9-18 | Sand m-c, silt, orange, cohesive, damp. Then sand, tan, orange + black, tr clay deposits. wet | |
| 5-7ppm | 50 | 52 | 2' | 6-10-20-50 | Sand f-m, orange, wet. Then sand-m, tan, wet, some silt. | |
| | | | | | | |
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| | | | | | — END BORING — | |
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4-7-88

# SAMPLE/CORE LOG

Boring/Well GM-11 Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 4:00 pm Drilling Completed 4:30 pm

Total Depth Drilled 14 feet Hole Diameter 8 inches Type of Sample/Coring Device Split spoon

Length and Diameter of Coring Device 2'x2" Sampling Interval 0-12 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used _____ Drilling Method Hollow-Stem Auger

Drilling Contractor Empire Driller Boo Helper Jim

Prepared By A Baker Hammer Weight 140 lbs Hammer Drop 30 inches

* VOC samples from each spoon
OVA background = 0

| Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description | OVA |
|---|---|---|---|---|---|
| 0 | 2 | 1 | 2-4-6-8 | Sand, m-c, some gravel, tr. pebbles, orange, loose, damp | 0 |
| 5 | 7 | 1 | 6-8-10-10 | Sand m-c, tr. silt, orange, damp, loose. Then sand, gravel, some pebbles, tan, wet, loose | 2ppm |
| 10 | 12 | 0.5 | 1-2-3-4 | Water at 6.3'. Sand f-m, tr. silt, tr. pebbles, tan, cohesive, saturated. | |
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| | | | | END BORING | |
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# SAMPLE/CORE LOG

Boring/Well GM-12 Project/No. N1342 LI01 Page 1 of 1

Site Location Glen Cove Drilling Started 9:40 4-11-88 Drilling Completed 11:15

Total Depth Drilled 15 feet Hole Diameter 8 inches Type of Sample/Coring Device split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval 0-17 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used none Drilling Method Hollow-Stem Augu

Drilling Contractor Empire Driller Boo Helper Jim

Prepared By A. Baker Hammer Weight 140 lbs Hammer Drop 30 inches

OVA background 1-2 ppm

| OVA headspace | Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description | OVA of o bore |
|---|---|---|---|---|---|---|
| 10ppm | 0 | 2 | 1.5 | 3-13-23-23 | sand m-c, some gravel, some pebbles, dark brown, loose, damp. Some black pieces - old asphalt? | |
| 20ppm | 5 | 7 | 1.5 | 12-12-12-12 | silt, clay, sand - light grey, tr. pebbles. cohesive damp, wood chip. | 100 |
| 2ppm | 10 | 12 | 1.5 | 18-10-15-18 | 12" of clay - grey, tr. silt Top 6" of sandy silt, grey, saturated. | .0 |
| | 15 | 17 | 1 | 11-5-7-13 | clay, some wood | .0 |
| ▽ 8.8' | | | | | | |
| | | | | | END BORING | |

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# SAMPLE/CORE LOG

Boring/Well GM-13 Project/No. N1342LE01 Page 1 of 1

Site Location Glen Cove NY Drilling Started 3:00 pm 4-11-88 Drilling Completed 4:15

Total Depth Drilled 17 feet Hole Diameter 8 inches Type of Sample/Coring Device Split Spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval 0 - 17 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used none Drilling Method Hollow Stem Auger

Drilling Contractor Empire Driller Boo Helper Jim

Prepared By A Baker Hammer Weight 140 Hammer Drop 30 inches

Background OVA 3-5 ppm

| Head space OVA | Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description | OVA over hole |
|---|---|---|---|---|---|---|
| 0 | 0 | 2' | 1 | 2-3-6-8 | Sand, silt, clay, tr. pebbles. yellow/orange, m-f, cohesive damp. | 0 |
| 10ppm | 5 | 7' | 1 | 10-10-12-10 | silt, clay, light grey, tr. pebbles, one red spot toward top of spoon. Lesh orange clay too. | 0 |
| 10ppm | 10 | 12' | 0.5' | 25-15-15-20 | Sand, coarse, gravel, black, grey, some pebbles loose saturated | 2ppm out hole |
| | 15' | 17' | 1.5' | 4-6-8-8 | clay, ~~tr silt~~, dk grey to - pinkish brown. | 3ppm |

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# SAMPLE/CORE LOG

Boring/Well GM-14A Project/No. N1342LE01 4-12-88 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 12 22 pm Drilling Completed 1 15

Total Depth Drilled 18 feet Hole Diameter _____ inches Type of Sample/Coring Device Split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval 0 - 17 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used None Drilling Method Hollow - Stem Auger

Drilling Contractor Empire Driller Boo Helper Jim

Prepared By A. Baker Hammer Weight 140 lbs Hammer Drop 30 inches

OVA background 2-3 ppm

OVA headspace

| | Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 Inches | Sample/Core Description |
|---|---|---|---|---|---|
| 8-10ppm | 0' | 2' | 1 | 2-4-5-? | Silty sand, pitch black w/a sheen to it and odor of petroleum trace gravel + pebbles, cohesive, damp. |
| 100ppm | 5' | 7' | 1 | 1-1-2-2 | Silt some sand, some clay tr. pebbles, black, oily, cohesive, odorous, wet. |
| 100ppm | 10' | 12' | 2 | 10-10-10-10 | Silt, clay, fine sand light grey, damp, cohesive, trace pebbles. Still oily silt at top of spoon |
| 10ppm | 15' | 17' | 2 | 3-5-8-10 | oily silt, black, then grey silty clay, light grey then sand - v fine, silt, tr. gravel, tr. pebble. odorous, loose wet. |
| | | | | | |
| | | | | | |
| * | note - cuttings from 0-10' were blue-black, w/ an oily sheen - + smelled of petroleum. May have floating product in this well | | | | |
| * | at 9' matrix 'firmed up' | | | | |
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.03 % of hole (black be 3" fr top)

0 = hole

.05' out hole

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# SAMPLE/CORE LOG

Boring/Well GM-15 Project/No. N1342LE01 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 4-13-88 10:15 Drilling Completed 2:32

Total Depth Drilled _____ feet Hole Diameter 8 inches Type of Sample/Coring Device split spoon

Length and Diameter of Coring Device 2'x2" Sampling Interval 0-16 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used none Drilling Method Hollow Stem Auger

Drilling Contractor Empire Driller Boo Helper Jim

Prepared By G. Baker Hammer Weight 140 lbs Hammer Drop 30 inches

Background OVA - 5 ppm

| headspace | Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 Inches | Sample/Core Description | ppm per borehole |
|---|---|---|---|---|---|---|
| | 1 | 3 | 0.5' | 5-1-4-4 | silt, sand, some clay, tr. gravel, tr. pebbles, brownish-black, damp, cohesive tr. muscovite | |
| 50ppm | 5 | 7 | 2 | 4-6-8-10 | sand f-vf, silt, some clay, light grey, damp, cohesive | |
| 0 | 10 | 12 | 1 | 7-10-14-20 | sand f-m, silt, some gravel, orange, some black, loose, wet. | 10 ppm |
| 0 | 14 | 16 | 1 | 25-14-7-7 | sand f-c, gravel, loose, wet. Then clay (5") both light gray. | |

END BORING

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# SAMPLE/CORE LOG

Boring/Well GM-16 Project/No. N1342 LI01 4-15-88 Page 1 of 1

Site Location Glen Cove, NY Drilling Started 10 40 Drilling Completed 3 45

Total Depth Drilled 9 feet Hole Diameter 4 inches Type of Sample/Coring Device split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval 0-7 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used Water Drilling Method Wash Boring Tripod

Drilling Contractor Empire Driller Boo Helper Jim

Prepared By A. Baker Hammer Weight 140 lbs Hammer Drop 30 inches

Background OVA 1-2 ppm

| | Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 Inches | Sample/Core Description | OVA headsp |
|---|---|---|---|---|---|---|
| 0.3' | 0 | 2' | 3" | 1-2-6-4 | Sand, f-m, some gravel tr. silt, organic debris. Tan, loose, saturated. | 0 |
| -▽- | 5' | 7' | 0.5' | 10-12-18-10 | Sand f-vf, silt, tr. clay, tr. gravel + pebbles. light grey, cohesive, wet | 0 |
| | | | | | | |
| | | | | | | |
| | | | | | END BORING | |
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G&M Form 03 6-86 Southprint 87-1718

100288

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# SAMPLE/CORE LOG

Boring/Well GM-17 Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove NY Drilling Started 1 20 4-18-88 Drilling Completed 300

Total Depth Drilled 11 feet Hole Diameter 8 inches Type of Sample/Coring Device split spoon

Length and Diameter of Coring Device 2' x 2" Sampling Interval Continuous 1-10 feet

Land-Surface Elev. _____ feet ☐ Surveyed ☐ Estimated Datum _____

Drilling Fluid Used None Drilling Method Hollow Stem Auger

Drilling Contractor Empire Driller Bob Helper Jim

Prepared By A. Baker Hammer Weight 140lbs Hammer Drop 30 inches

.03% out of open 10' spoon-hole

| Sample/Core Depth (feet below land surface) From | To | Core Recovery (feet) | Time/Hydraulic Pressure or Blows per 6 inches | Sample/Core Description | OVA headspace |
|---|---|---|---|---|---|
| 1 | 2 | 0.5 | -- 13-13 | Sand m-c, gravel, pebbles black, loose, wet | 0 |
| 2 | 4 | 0.5 | 8-8-3-3 | Sand m-c, gravel, pebbles, black, loose, wet | 30p |
| 4 | 6 | 2 | 2-2-2-2 | Sand m-c, silty clay (tan) tr. gravel + pebbles, black, loose, wet | 0.15 |
| 6 | 8 | 2 | 1-1-1-1- | Sand + gravel, loose, wet, black then grey silty clay, clay | 0.1 |
| 8 | 10 | 2 | 1-2-3-3 | Sand, c, gravel, pebbles, black, loose, wet | 0.4 |
| | | | | | |
| | | | | | |
| | | | | * Note - all cuttings pitch black - no | |
| | | | | obvious odor except a whiff or two | |
| | | | | of solvent. | |
| | | | | | |
| | | | | End Boring | |
| | | | | | |
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1.5' ▽

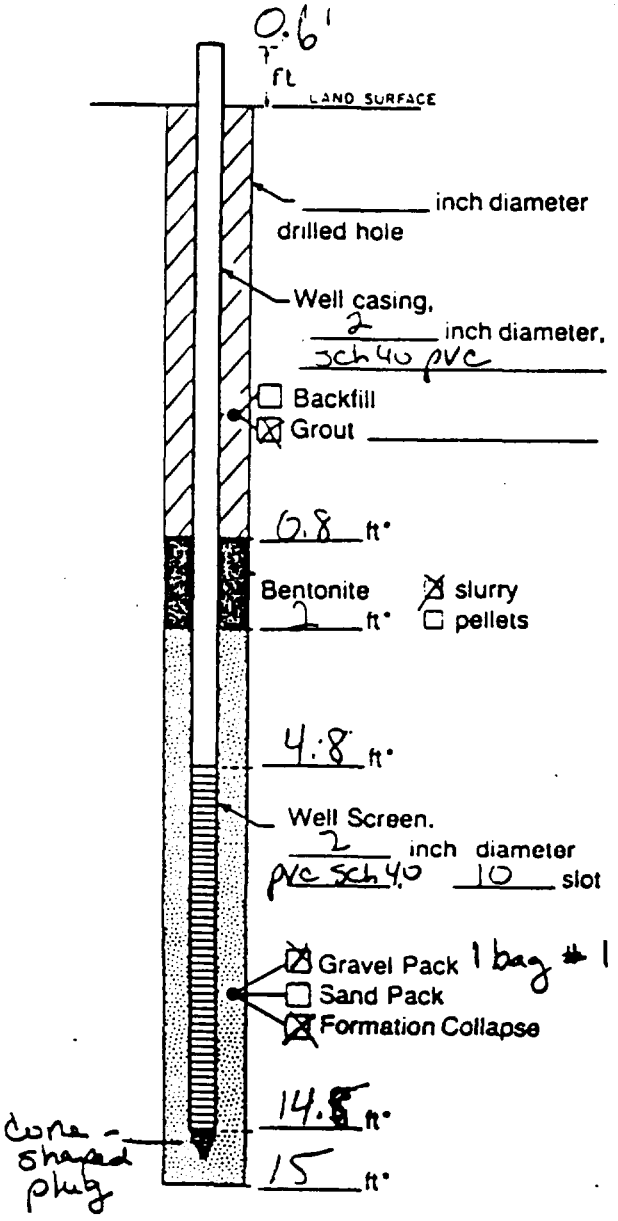
C&M Form 03 6-88 Southpoint 87-1718

100289

APPENDIX B

MIGHTY
MILLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project NIZZZ LI 1 Well GM-1
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed
☐ Estimated
Installation Date(s) 4-09-87
Drilling Method Hollow Stem Auger Mobile B
Drilling Contractor Slacke
Drilling Fluid —

Development Technique(s) and Date(s)

Fluid Loss During Drilling _____ gall
Water Removed During Development _____ gall
Static Depth to Water _____ feet below M
Pumping Depth to Water _____ feet below M
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks

Prepared by V.J. Glasser

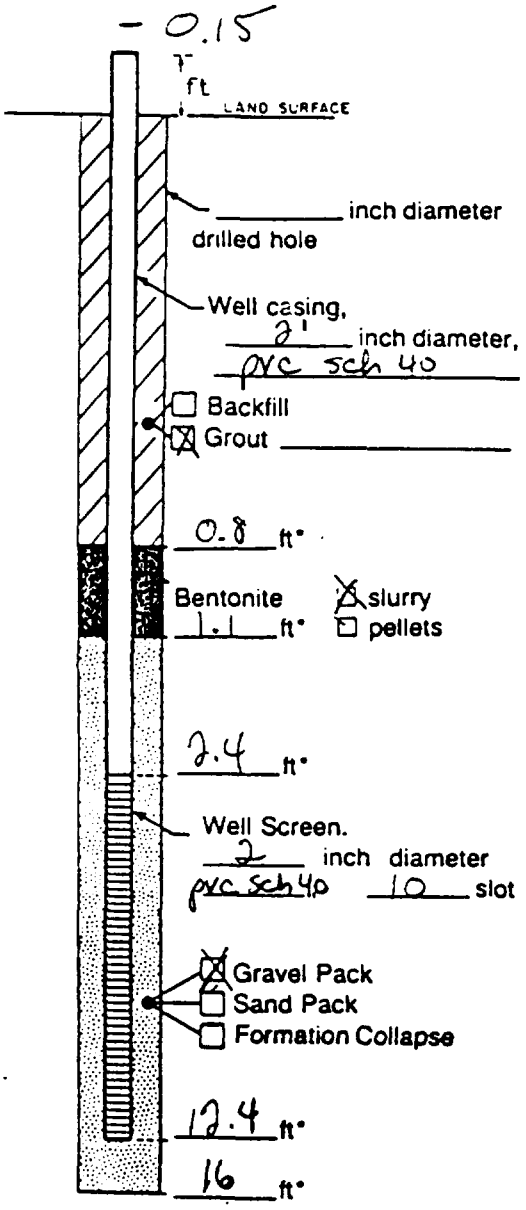
M Form 05 5 87

100291

Sourform 87 1776

AGHTY
ER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N1222LI1 Well GM-2
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-14-87
Drilling Method Hollow Stem Auger Mobile B
Drilling Contractor Slack
Drilling Fluid —

Development Technique(s) and Date(s)

Fluid Loss During Drilling _____ gallo
Water Removed During Development _____ gallo
Static Depth to Water _____ feet below M.
Pumping Depth to Water _____ feet below M.
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks

Prepared by V. J. Glassy

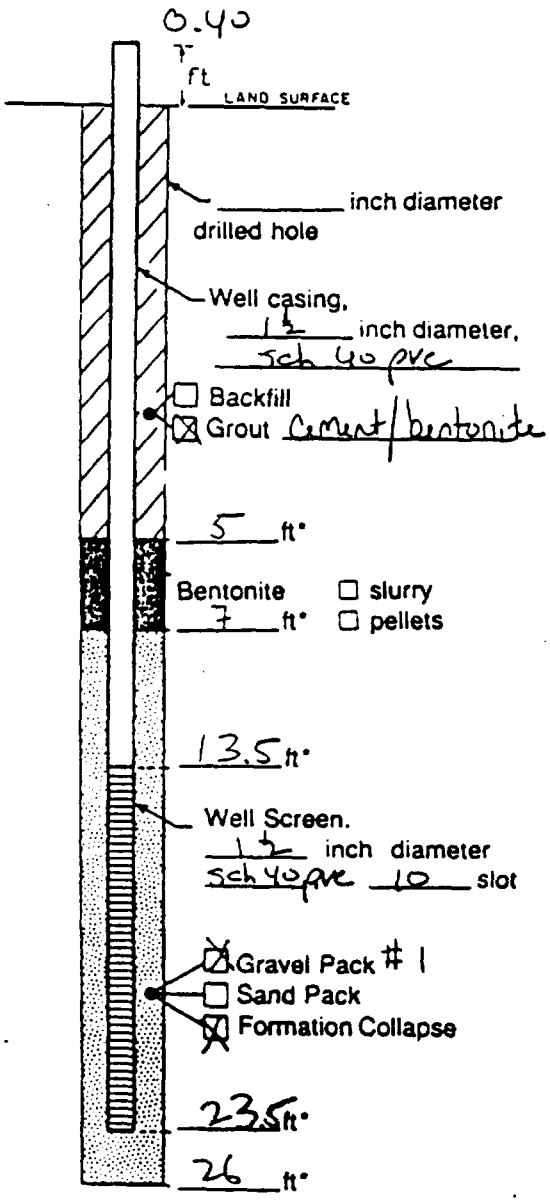
M Form 05 5 87

Southprint 87 1776

100292

PAGHTY
...LER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N1222 LI1 Well GM-3D
Town/City Glen Cove
County Nassau State NY
Permit No. _____
Land-Surface Elevation and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-14-87
Drilling Method Hollow Stem Auger Mobile B
Drilling Contractor Slecker
Drilling Fluid —

Development Technique(s) and Date(s)

Fluid Loss During Drilling _____ gallo
Water Removed During Development _____ gallo
Static Depth to Water _____ feet below M.
Pumping Depth to Water _____ feet below M.
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks

Prepared by V. J. Glasser

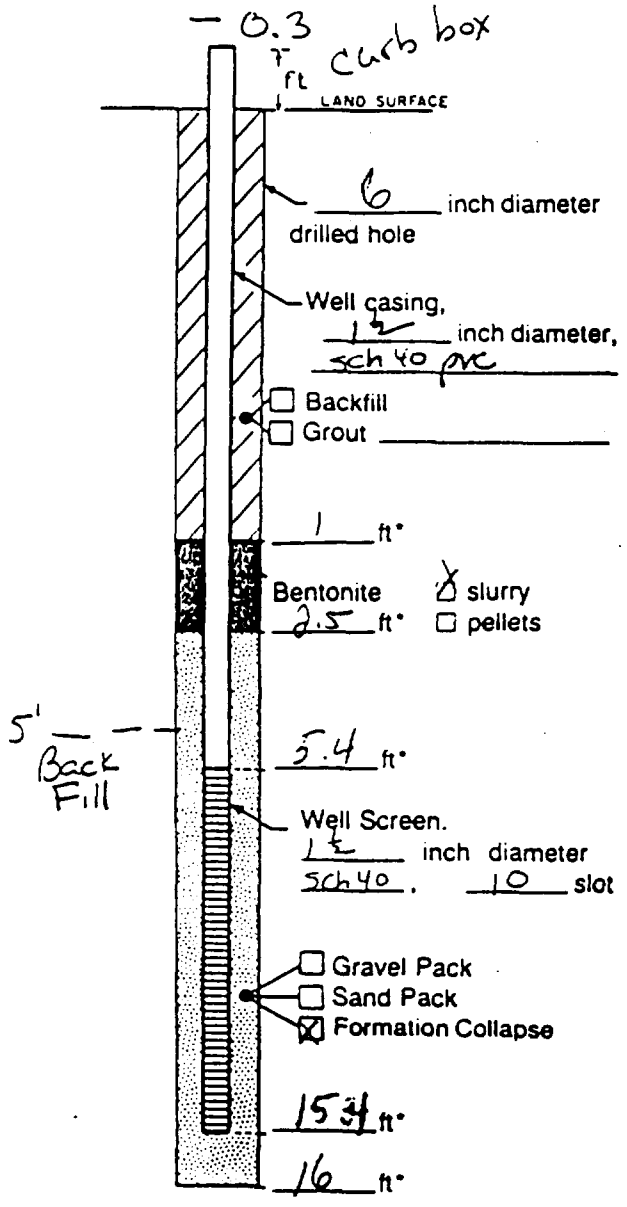
SM Form 05 5 87

Southpoint 87 1776

100293

TRAGHTY
...LLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N1222LE1 Well GM-4
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-15-87
Drilling Method Hollow Stem Auger Mobile B
Drilling Contractor Slecka
Drilling Fluid —

Development Technique(s) and Date(s)

Fluid Loss During Drilling _____ ga
Water Removed During Development _____ ga
Static Depth to Water _____ feet below
Pumping Depth to Water _____ feet below
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks

Prepared by V. J. Glasser

.M Form 05 5-87

Southgate 87 177

100294

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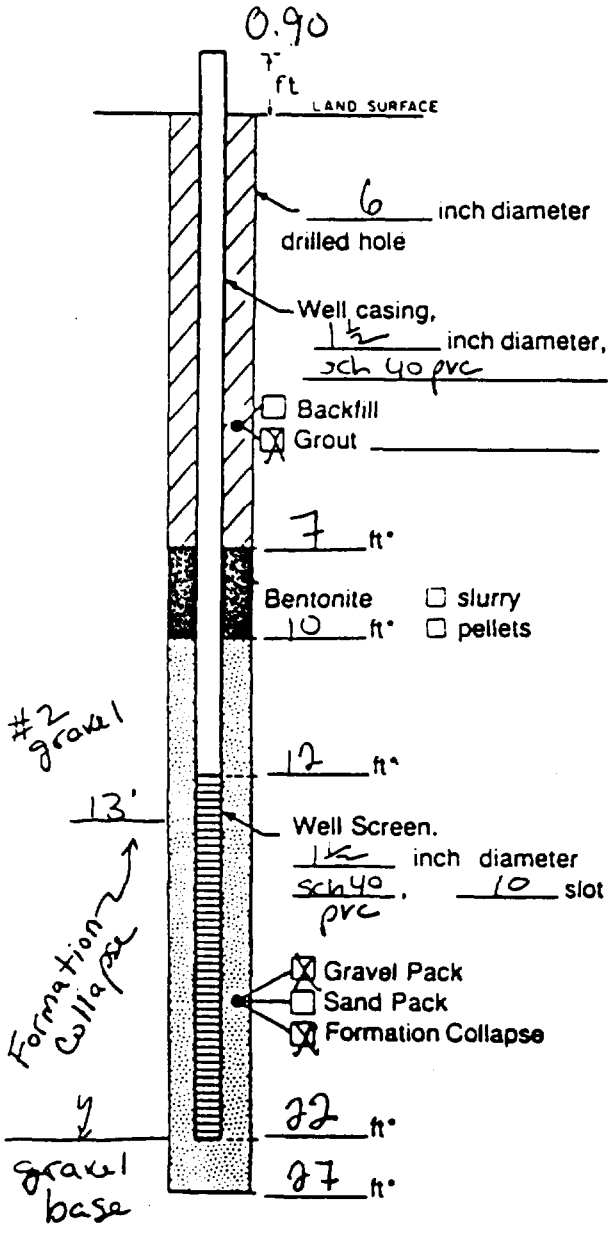
...LER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project NI222LI1 Well GM-5
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed
☐ Estimated
Installation Date(s) 4-21-87
Drilling Method Hollow Stem Auger - Mobile B
Drilling Contractor Slacke
Drilling Fluid —

Development Technique(s) and Date(s)

Fluid Loss During Drilling _____ gall
Water Removed During Development _____ gall
Static Depth to Water _____ feet below M
Pumping Depth to Water _____ feet below M
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks

Prepared by V. J. Glasser

AM Form 05 5 87

Southpine 87 1776

100295

RAGHTY
LER, INC.
Ground-Water Consultants

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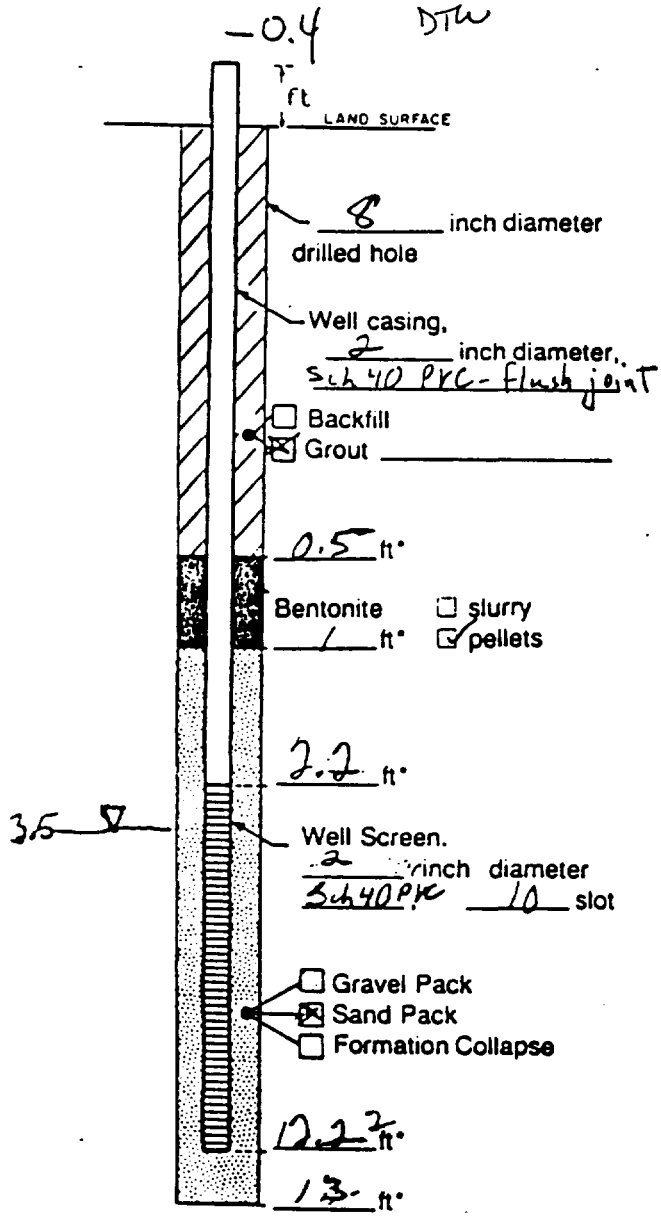
# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-6
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 3/31/88
Drilling Method Hollow Stem Auger 4¼"ID X 8"O
Drilling Contractor Empire
Drilling Fluid None

Development Technique(s) and Date(s)

Fluid Loss During Drilling _____ ga
Water Removed During Development _____ ga
Static Depth to Water 3.5 ft bls 3-31-88 feet below
Pumping Depth to Water _____ feet below
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose monitoring leading edge of alleged plume

Remarks No odors or visual evidence of contamination

Prepared by AB + VG

GSM Form 05 5 87

Southpine 97 1776

100296

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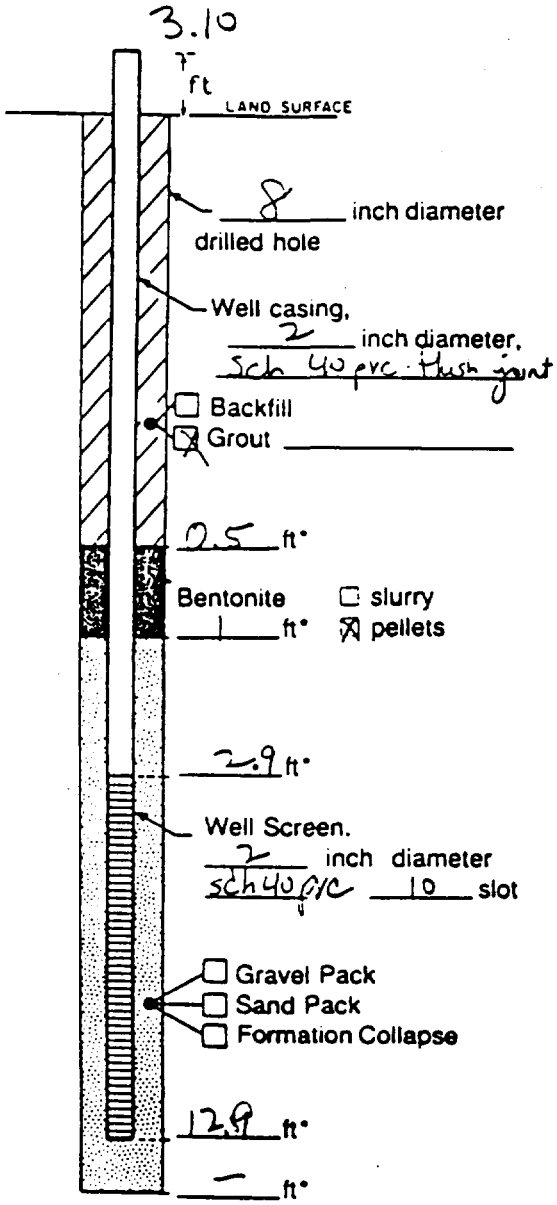
...LLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-7
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4/1/88
Drilling Method Hollow Stem Auger
Drilling Contractor Empire
Drilling Fluid None

Development Technique(s) and Date(s)
Centrifugal pump 4-5-88

Fluid Loss During Drilling _____ gall
Water Removed During Development 90 gall
Static Depth to Water 7.5' on 4/1/88 feet below M
Pumping Depth to Water _____ feet below M
Pumping Duration 0.5 hours
Yield 3.0 gpm Date 4-5-8
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks Water table is most likely at 3' but unable to recover quickly enough due to silt matrix. Screen was set at 2' below grade.

Prepared by _____

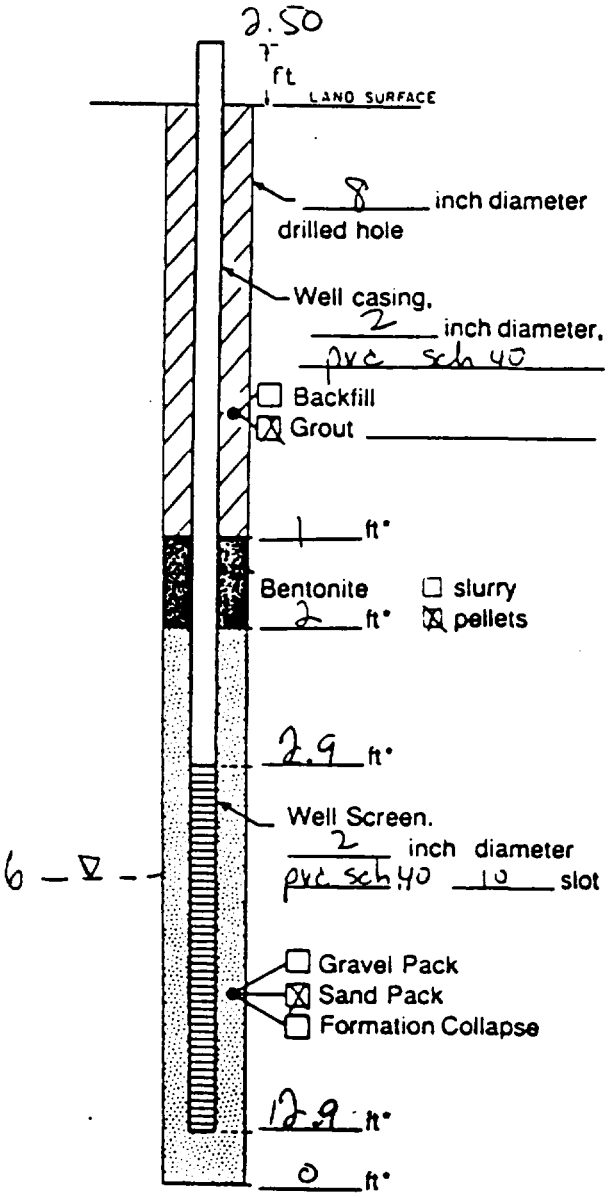
G&M Form 05 5-87

Soumprint 87 1776

100297

TRAGHTY
MILLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LE01 Well GM-8
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed
☐ Estimated
Installation Date(s) 4-4-88
Drilling Method Hollow Stem Auger
Drilling Contractor Empire
Drilling Fluid —

Development Technique(s) and Date(s)
Centrifugal pump 4-5-88

Fluid Loss During Drilling — gall
Water Removed During Development 192 gall
Static Depth to Water _____ feet below M
Pumping Depth to Water _____ feet below M
Pumping Duration 1 hours
Yield 3.2 gpm Date 4-5-8
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks

Prepared by G Baker

GAM Form 05 5 87

Southform 87 1776

100298

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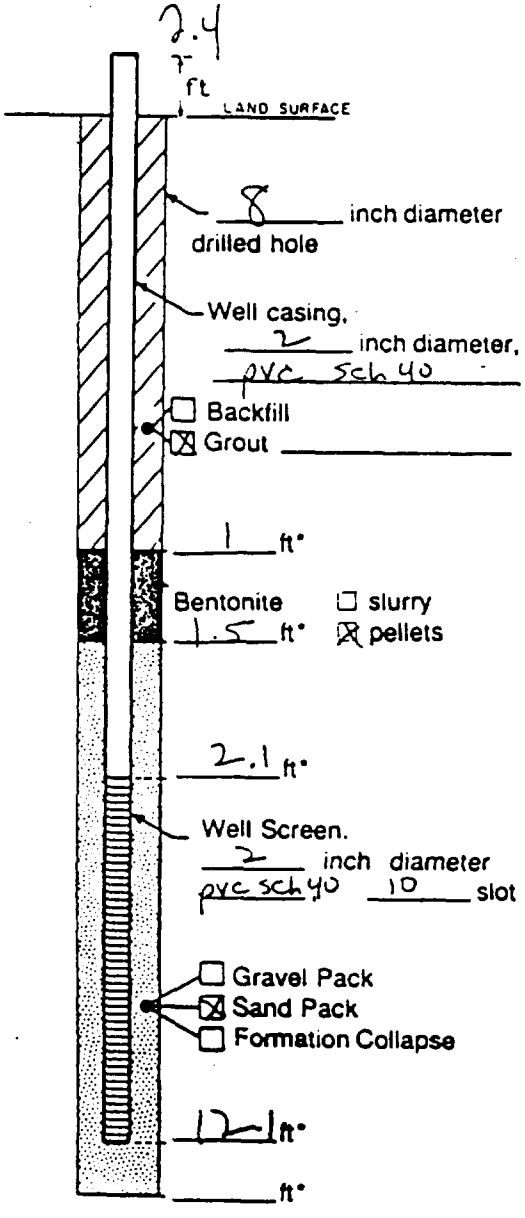
MILLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-9
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-4-88
Drilling Method Hollow Stem Auger
Drilling Contractor Empire
Drilling Fluid none

Development Technique(s) and Date(s)
Centrifugal pump 4-5-88

Fluid Loss During Drilling — gallon
Water Removed During Development 69 gallon
Static Depth to Water 4.37' (4-5-88) ~~feet below M.P~~
Pumping Depth to Water _____ feet below M.P
Pumping Duration 0.5 hours
Yield 2.3 gpm Date
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks Took VOC samples from 3 spoons.

Prepared by A. Baker

GAM Form 05 5 87

100299

Southgate 22 1776

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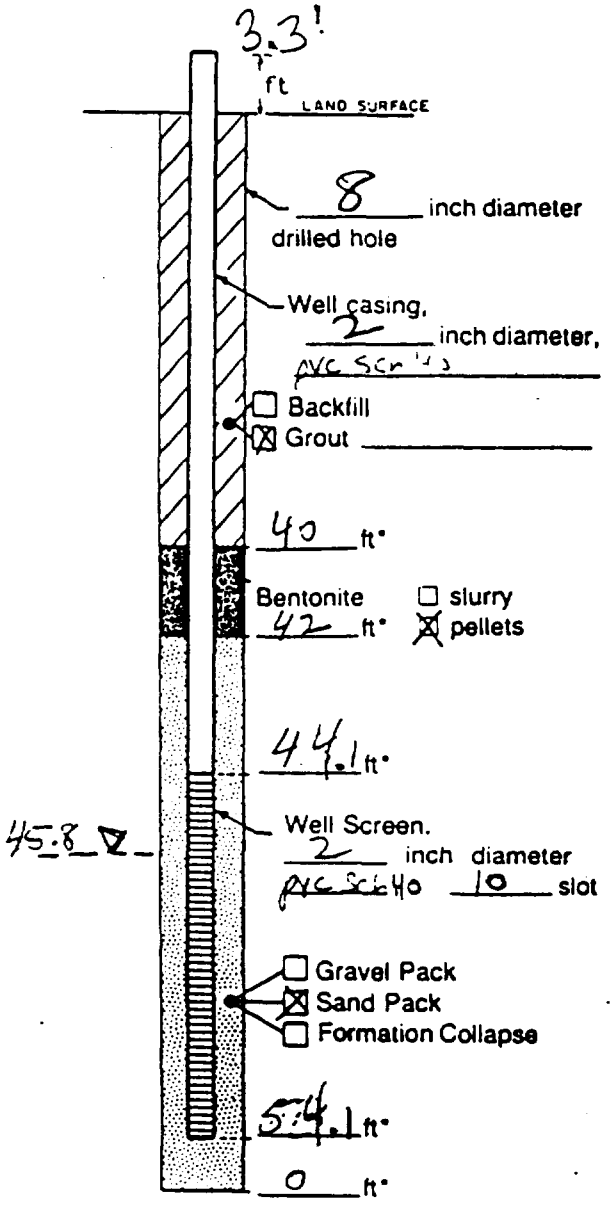
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-[illegible]
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed
☐ Estimated
Installation Date(s) 4-6-88 - 4-7-88
Drilling Method Hollow Stem Auger
Drilling Contractor Empire
Drilling Fluid none

Development Technique(s) and Date(s)
Centr. pump 4-14-88

Fluid Loss During Drilling —
Water Removed During Development 1
Static Depth to Water 45.8 (4-6-88) feet belo
Pumping Depth to Water feet belo
Pumping Duration 0.25 hours
Yield _____ gpm Date
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks [illegible]
* 4-14-88 total sounded depth = 54'
Couldn't develop - too deep for pump

Prepared by

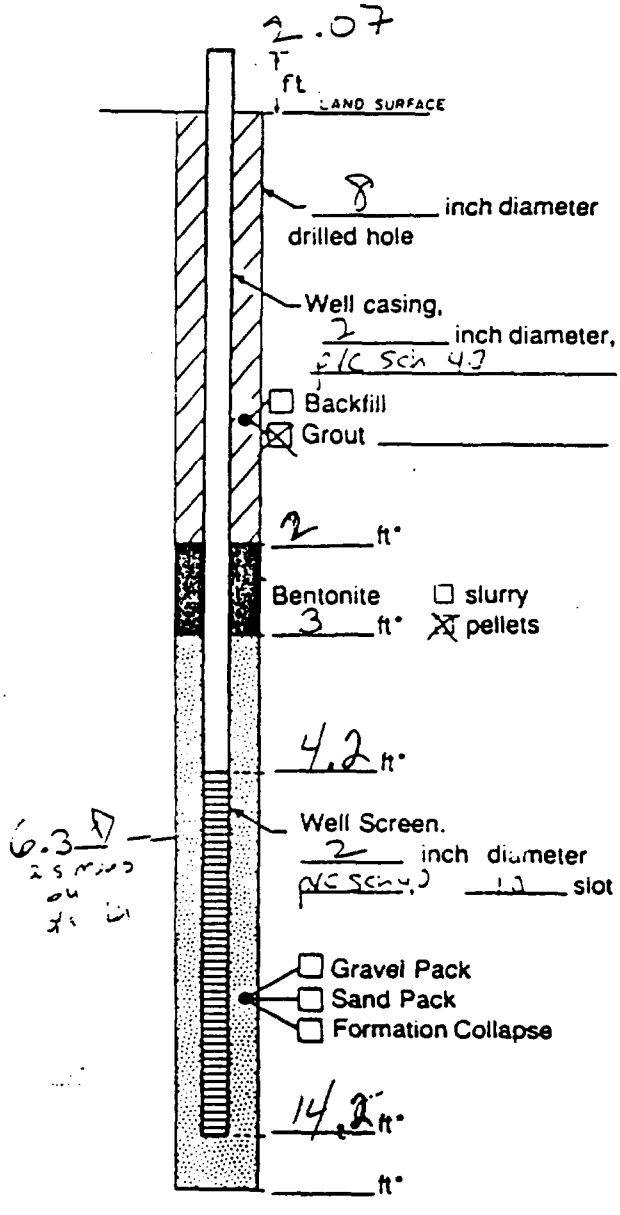
FAM Form 05 5 87

100300

Southern B

FRAGHTY & MILLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342 LI01 Well GM-11
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed
☐ Estimated
Installation Date(s) 4-7-88 + 4-8-88
Drilling Method Hollow Stem Auger
Drilling Contractor Empire
Drilling Fluid

Development Technique(s) and Date(s)
Centrifugal pump 4-14-88

Fluid Loss During Drilling _____ gal
Water Removed During Development 25.5 gal
Static Depth to Water 6.6' (4-8-88) feet below l
Pumping Depth to Water _____ feet below l
Pumping Duration 17 mins hours
Yield 1.5 gpm Date
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks + Wtr level 5.8' 4-14-88 belowgrad
Sounded depth = 14'

Prepared by

GSM Form 05 5 87

Soumanni 87 177

100301

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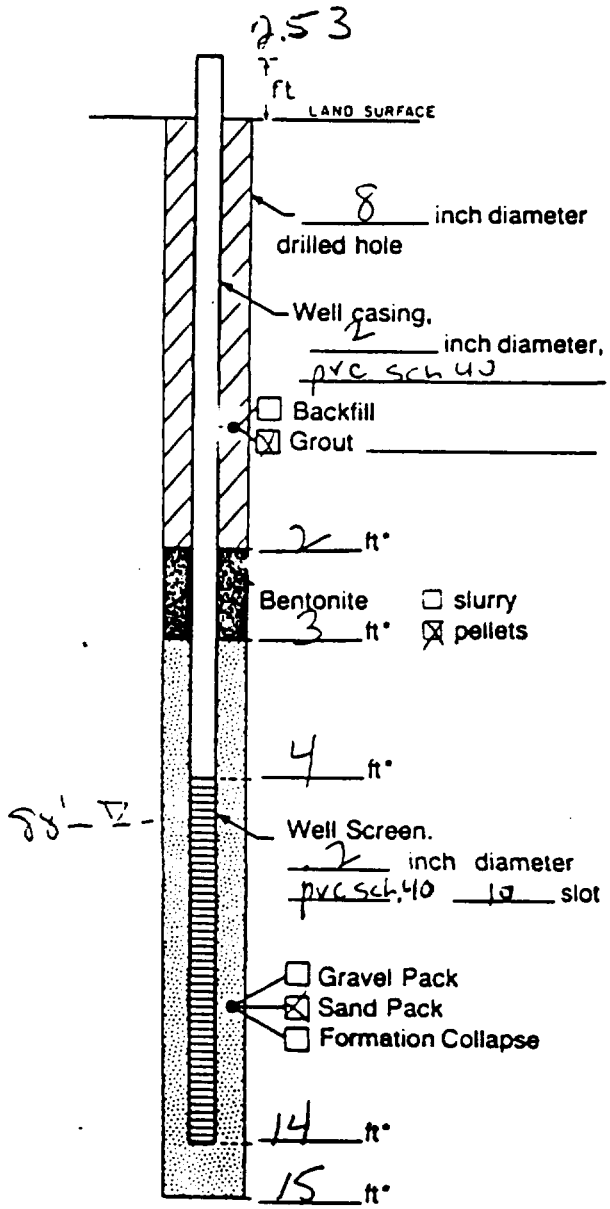
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-12
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-11-88
Drilling Method Hollow-stem Auger
Drilling Contractor Empire
Drilling Fluid None

Development Technique(s) and Date(s)
Centrifugal pump 4-14-88

Fluid Loss During Drilling _____ gall
Water Removed During Development 5 gall
Static Depth to Water 8' (4-12-88) feet below M
Pumping Depth to Water _____ feet below M
Pumping Duration 6.50 hours MP = Top PVC
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks clay from @ 9'-17'; solid clay from 15'-17', silty clay from 10'-15 Decided w/ Vince to set well 4'-14'. 4-14-88 - well pumped dry twice. depth to water 6.5'

Prepared by G. Bibby

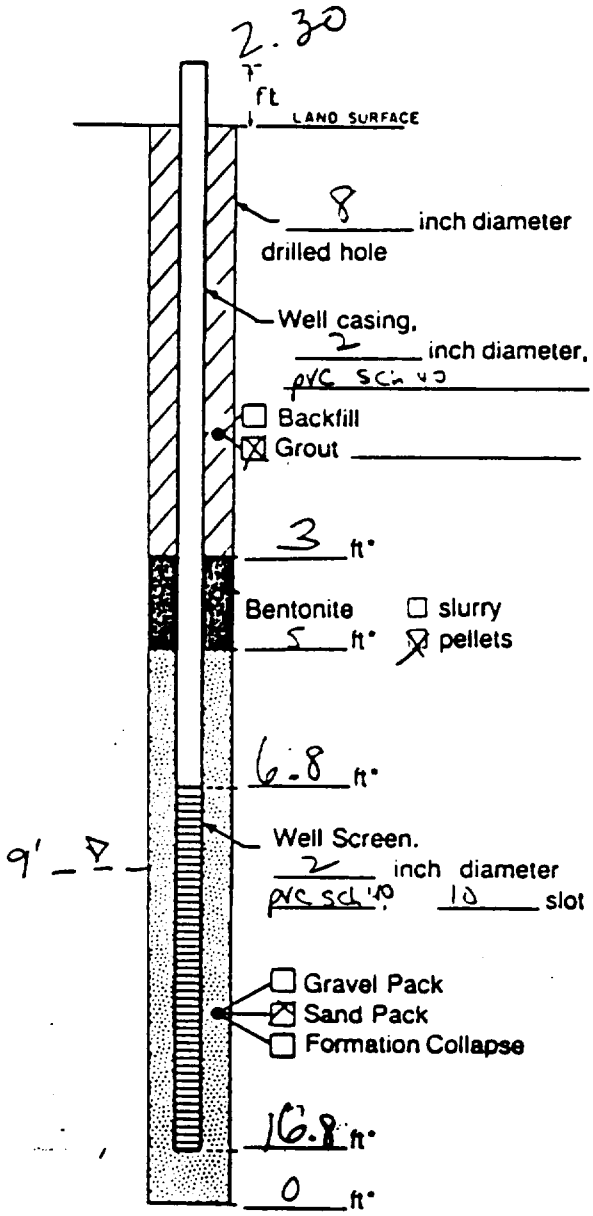
G&M Form 05 5 87

Southprint 87 1776

100302

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-13
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-11-88
Drilling Method Hollow Stem Auger
Drilling Contractor Empire
Drilling Fluid None

Development Technique(s) and Date(s)
Centrifugal pump 4-13-88

Fluid Loss During Drilling _____ gall
Water Removed During Development 22.5 gall
Static Depth to Water 11' ~~feet below~~
Pumping Depth to Water _____ feet below
Pumping Duration 45 mins ~~hours~~
Yield 0.5 gpm Date
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks during development water was gray, silty w/ settling after 10 mins

Prepared by AB

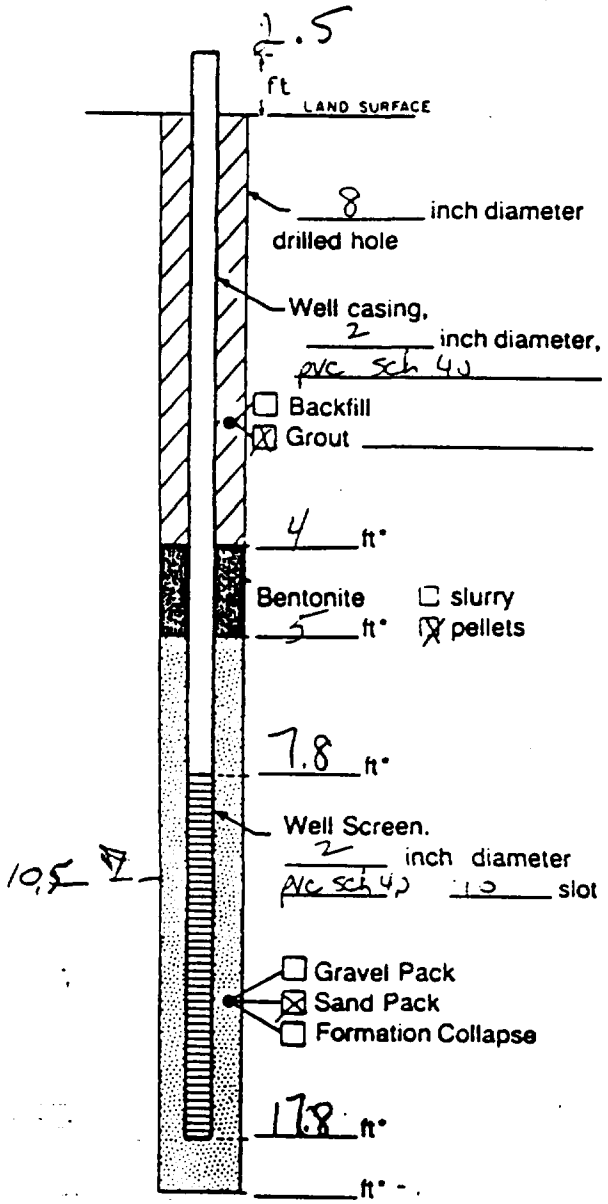
G&M Form 05 5 87

Southprint 87 1776

100303

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-14A
Town/City Glen Cove NY
County Nassau State NY
Permit No.
Land-Surface Elevation and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-12-88
Drilling Method Hollow Stem Auger
Drilling Contractor Empire
Drilling Fluid None

Development Technique(s) and Date(s)
Centrifugal pump 4-14-88

Fluid Loss During Drilling _____ ga
Water Removed During Development 3 ga
Static Depth to Water 6.3 (4-13-88) ~~feet below~~
Pumping Depth to Water _____ feet below
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks Green, foamy fluid during development. Pumped dry. Slow recovery. Water at 5.1' 4-14-88

Prepared by _____

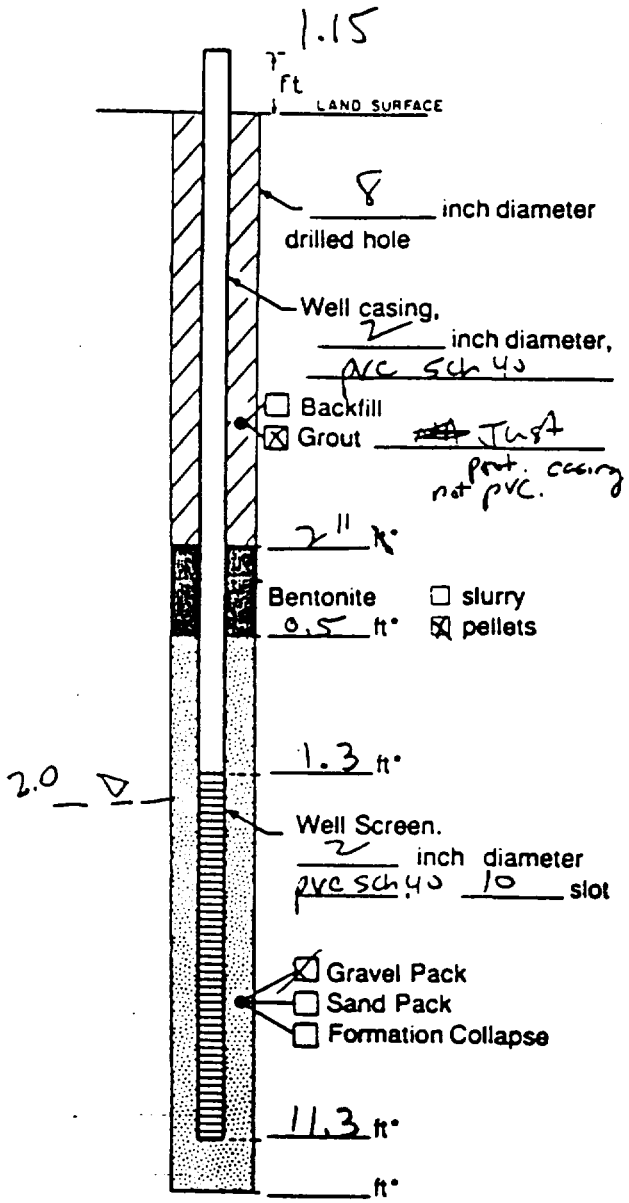
G&M Form 05 5-87

Soundprint 87 17 E

100304

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-14B
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-14-88
Drilling Method Hollow Stem Auger
Drilling Contractor Empire
Drilling Fluid none

Development Technique(s) and Date(s)
Centrifugal pump

Fluid Loss During Drilling _____ ga
Water Removed During Development _____ ga
Static Depth to Water 2.6' (1:30 4-14-88) ~~feet below~~
Pumping Depth to Water _____ feet below
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks Water table appears to be v. high. Screen 1'-11', Cut prot. casing down to Just the lid + a bit, so we could have some height + save $ on Curb box, also so bentonite seal would not be punctured. Hard one to call. Cuttings same as GM-14A

Prepared by G. B.

G&M Form 05 5 87

Soundprint 87 177

100305

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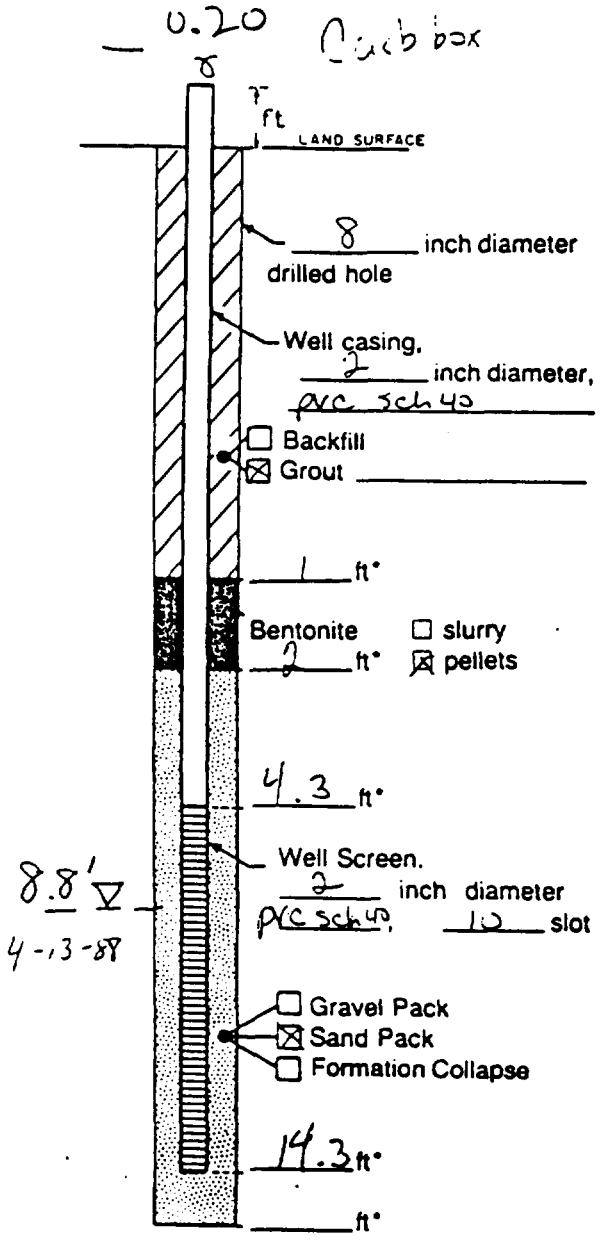
Ground-Water Consultants

$V = \pi r^2 h$

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-15
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed
☐ Estimated
Installation Date(s) 4-13-88
Drilling Method Hollow-Stem Auger
Drilling Contractor Empire
Drilling Fluid none

Development Technique(s) and Date(s)
Centrifugal pump 4-14-88

Fluid Loss During Drilling — gall
Water Removed During Development 12 gall
Static Depth to Water 8 feet below M
Pumping Depth to Water _____ feet below M
Pumping Duration 0.5 hours
Yield 1.75 gpm at first Date 4-14-88
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks Since GW moved up 4' in silty matrix of GM-14, I set this one 4.5 ft above water surface. This gives wat. 4' of play in this silty matrix

Prepared by A. Baker

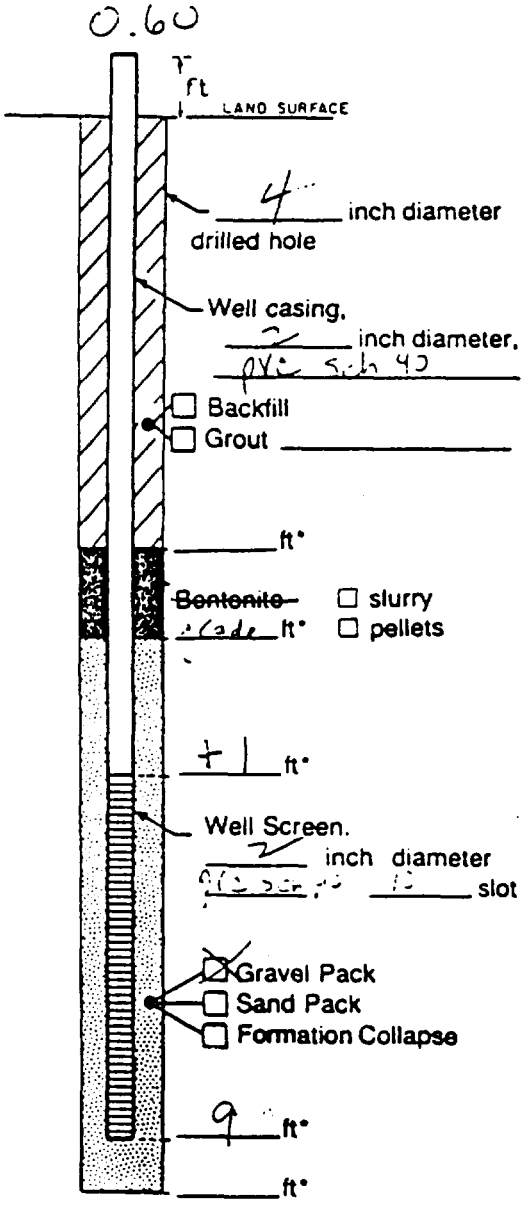
G&M Form 05 5 87

Southprint 87 1776

100306

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project N13422E01 Well GM-16
Town/City Glen Cove
County Nassau State NY
Permit No.
Land-Surface Elevation
and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-15-88
Drilling Method Wash Boring
Drilling Contractor Empire
Drilling Fluid Water

Development Technique(s) and Date(s)

Fluid Loss During Drilling _____ gal
Water Removed During Development _____ gal
Static Depth to Water _____ feet below
Pumping Depth to Water _____ feet below
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks [illegible] to [illegible] Sand pack to grade. No Grout, no protective [illegible]

Prepared by A. Baker

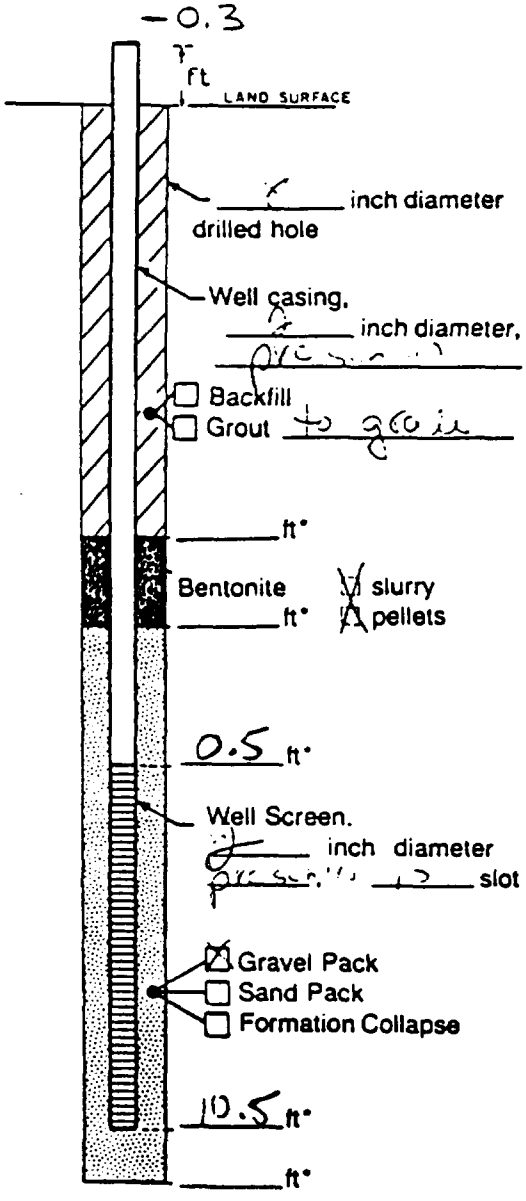
G&M Form 05 5 87

100307

Southprint 87 177

GERAGHTY & MILLER, INC.
*Ground-Water Consultants*

# WELL CONSTRUCTION LOG
(UNCONSOLIDATED)




Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project N1342LI01 Well GM-17
Town/City Glen Cove
County Nassau State NY
Permit No. _____
Land-Surface Elevation and Datum _____ feet ☐ Surveyed ☐ Estimated
Installation Date(s) 4-18-88
Drilling Method Hollow-Stem Auger
Drilling Contractor Empire
Drilling Fluid _____

Development Technique(s) and Date(s) _____

Fluid Loss During Drilling _____ gall
Water Removed During Development _____ gal
Static Depth to Water _____ feet below
Pumping Depth to Water _____ feet below
Pumping Duration _____ hours
Yield _____ gpm Date _____
Specific Capacity _____ gpm/ft
Well Purpose Monitor

Remarks Did not use bentonite because screen is above land surface but top of cement + land (0.5') no room for a seal w/out affecting screen. Wanted to be sure to get screen set above water table

Prepared by _____

G&M Form 05 5 87

Southprint 87 177

100308

APPENDIX D

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Ground-Water Consultants

# WATER SAMPLING LOG

Project/No. N1222LI1 Page 1 of 1

Site Location Glen Cove, N.Y.

Site/Well No. EMW-1 Parking Lot Well Coded/Replicate No. — Date 3-12-87

Weather Cold (30s), breezy, cloudy Time Sampling Began 11:30 Time Sampling Completed 11:45

Start Building w/ flurries = RAW @ 10:40
Stop " @ 11:00 AM

## EVACUATION DATA

Description of Measuring Point (MP) Top of 4" PVC

Height of MP Above/Below Land Surface 1.4 MP Elevation

correction factor = -0.25

Total Sounded Depth of Well Below MP 15.5-0.35=15.15 Water-Level Elevation

Held 700 Depth to Water Below MP 5.25 Diameter of Casing 4"

Wet 1.75 Water Column in Well 9.9 Gallons Pumped/Bailed Prior to Sampling ~20 = 3 well volumes

Gallons per Foot 0.65

Gallons in Well 6.4x5=32 gals Sampling Pump Intake Setting (feet below land surface)

Evacuation Method Bailer: 4'x2½" (PVC) clear out all sediment in well use new polypropylene cord

## SAMPLING DATA/FIELD PARAMETERS

Color V. light tan Odor ND Appearance fairly clear → slightly turbid Temperature 8 °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm — pH 5.4

Sampling Method and Material Teflon bailer - 3'x1½"

| Constituents Sampled | Container Description From Lab ✓ or G&M | Preservative |
|---|---|---|
| VOA | (2) 40mL | — |
| Metals (Filter 0.45u) | (1) 250mL plastic | HNO3 |
| Inorganics | (1) 250mL " | |
| NO3(?) | (1) 125mL " | H2SO4 |

Note sand flakes on tape after TD meas. → appears to be silt on bottom of well

Remarks 4" PVC plug secure upon arrival no protective casing, grouting or bentonite, not apparent

Sampling Personnel V. J. G Casser

Well bails down to near bottom
Well recovered fully at time of sampling - elapsed time = 30 min

WELL CASING VOLUMES

| GAL./FT | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 5" = 1.46 |

Note: Water bailed is v. turbid (Silty f-m sand trace clay + f-m gravel) @ first 1st gray + tan
v. dirty colored (orange) then turbid tan - clears up somewhat

100310

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# WATER SAMPLING LOG

Project/No. N1222LI1 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. EMW-1 Coded/Replicate No. — Date 4/7/87 Tues

Weather Partly Sunny clearing 45-50°F, breezy Time Sampling Began 1:05 Time Sampling Completed 1:06

Pump @ 12:35 Q = 2.5 gpm OFF @ 12:55 40 gals ÷ 2.5 gpm = 16 min

EVACUATION DATA

Description of Measuring Point (MP) Top of 4" PVC

Note: screen = 5 ft bmp - observed during pumping

Height of MP Above/Below Land Surface 1.4 MP Elevation

Total Sounded Depth of Well Below MP 15.70 Water-Level Elevation

Held 5.00 Depth to Water Below MP 3.81 Diameter of Casing

Wet 1.19 Water Column in Well 11.89 Gallons Pumped/Bailed Prior to Sampling ~4 ~45

Gallons per Foot 0.65

Gallons in Well 7.7x5=39 Sampling Pump Intake Setting (feet below land surface) on Well bottom

17
.7
7.7
3.5
38.5

Evacuation Method Aqua Bug Centrifugal Pump - new ½" dia PE
Note lift suction line slowly from well prior to removal as entire water column is evacuated

SAMPLING DATA/FIELD PARAMETERS

Color — Odor ND Appearance clear Temperature — °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm — pH —

Sampling Method and Material Teflon Bailer 3' x 1.6" use new polypropylene rope

| Constituents Sampled | Container Description From Lab ✓ or G&M | Preservative |
|---|---|---|
| VOCs | (2) 40 mL glass vials 60 ; | — |
| | | |
| | | |

Remarks Water pumps clear after initial turbidity -

Sampling Personnel Vince Glasser

WELL CASING VOLUMES

| GAL/FT | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

100311

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# WATER SAMPLING LOG

Project/No. NY1342[illegible] / [illegible]  Page ____ of ____

Site Location [illegible]

Site/Well No. EMW-1  Coded/Replicate No. Rep-2  Date [illegible]

Weather [illegible]  Time Sampling Began 10[illegible]  Time Sampling Completed 11:20

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC

Height of MP Above/Below Land Surface ____  MP Elevation ____

Total Sounded Depth of Well Below MP 15.45  Water-Level Elevation ____

Held ____  Depth to Water Below MP 5.54  Diameter of Casing 4"

Wet ____  Water Column in Well 9.91  Gallons Pumped/Bailed Prior to Sampling 19.5

Gallons per Foot .65

Gallons in Well 6.45  Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method Cent pump

## SAMPLING DATA/FIELD PARAMETERS

Color Pale Orange  Odor ——  Appearance Sl. Turbid  Temperature 10 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 1050  pH 5.50

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| Inorganic | | |

Remarks Orange particulate on filter pad

Sampling Personnel [illegible], JS

100312

WELL CASING VOLUMES

| GAL /FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

6.

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# WATER SAMPLING LOG

Project/No. M1222LI1 Page 1 of 1

Site Location Glen Cove, N.Y.

Site/Well No. [illegible] (SE corner Dr.) Coded/Replicate No. "Reps" (VOAs only) → Note do not label well # for QA nor Date 3-12-[illegible]

Weather Cold [illegible] Snow Time Sampling Began 2:15 Time Sampling Completed 2:30

Start bail @ 1:00
Stop " @ 1:15 [illegible]

## EVACUATION DATA

Description of Measuring Point (MP) Top of 4" PVC

Height of MP Above/Below Land Surface 2.0 MP Elevation

= 8.25 cleaned − 0.35 = 7.90

Total Sounded Depth of Well Below MP 7.15 Water-Level Elevation

Held 4.00 Depth to Water Below MP 2.43 Diameter of Casing 4" PVC

Wet 1.57 Water Column in Well 5.72 Gallons Pumped/Bailed Prior to Sampling ~5 gals = 1.4 well volu

Gallons per Foot 0.65

Gallons in Well 3.7 x 3 = 11.2 Sampling Pump Intake Setting (feet below land surface)

Evacuation Method PVC Bailer (4 ft x 2½ in) – clear out all sediment in well → [illegible] sand & silt gray

## SAMPLING DATA/FIELD PARAMETERS

filtered (0.45u) water is clear

Color V. light greenish Odor slight swampy Appearance V. slightly turbid Temperature 7 °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm meter NG pH 6.2

Sampling Method and Material Teflon bailer (3' x 1½")

| Constituents Sampled | Container Description From Lab ✓ or G&M | Preservative |
|---|---|---|
| Metals | (1) 250 mL plastic | $HNO_3$ |
| Inorganics | (1) 250 mL " | — |
| VOAs | (2) 40 mL vials + 2 reps = (4) | — |
| $NO_3$ | (1) 125 mL Plastic | $H_2SO_4$ |

Remarks [illegible] water & [illegible] too – Top of screen can be seen at land surface – water bailed is V. turbid & black w/ swampy organic odor

Sampling Personnel [illegible] Glasser

WELL CASING VOLUMES

| GAL./FT | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

100313

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# WATER SAMPLING LOG

Project/No. NY [illegible] Page ____ of ____

Site Location [illegible]

Site/Well No. EMW-2 Coded/Replicate No. ____ Date 4-7-77

Weather Cloudy, 40's Time Sampling Began 3:15 Time Sampling Completed 3:45

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC - [illegible]

Height of MP Above/Below Land Surface Broken Casing MP Elevation ____

Total Sounded Depth of Well Below MP 6.10 Water-Level Elevation ____

Held ____ Depth to Water Below MP Surface Diameter of Casing 4"

Wet ____ Water Column in Well 6.10 Gallons Pumped/Bailed Prior to Sampling ~~12.0~~ 4x [illegible] 10 gal

Gallons per Foot .65

Gallons in Well 3.96 Sampling Pump Intake Setting (feet below land surface) 6'

Evacuation Method Cont Pump

## SAMPLING DATA/FIELD PARAMETERS

Color Colorless Odor Petroleum Appearance Clear Temperature 9 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 1000 pH 6.75

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| INORG. | | |

Remarks ____

Sampling Personnel [illegible]

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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100314

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# WATER SAMPLING LOG

Project/No. N1222LI1 Page 1 of 1

Site Location Glen Cove, N.Y.

Site/Well No. EMU-2 Coded/Replicate No. * Take field Blank @ 4:00PM - Pass thru Date 3-12-87

Weather Cold (30s), moss Time Sampling Began 4:05 PM Time Sampling Completed 4:20 PM

Start bailing @ 3:45
Stop " 3:55

## EVACUATION DATA

Description of Measuring Point (MP) Top of 4" PVC

Height of MP Above/Below Land Surface 0.45 MP Elevation

Total Sounded Depth of Well Below MP 9.50 -0.35 = 9.15 Water-Level Elevation

Held 500 Depth to Water Below MP 3.04 Diameter of Casing 4"

Wet 1.96 Water Column in Well 6.46 Gallons Pumped/Bailed Prior to Sampling ~15

NO PRODUCT ON TAPE Gallons per Foot 0.65

Gallons in Well 4.2 x 3 = 1 Sampling Pump Intake Setting (feet below land surface)

Evacuation Method PVC Bailer - 4 ft X 2½ in - can't bail out all sediment on b.o. → well dk. brown, but good recovery

* 1st bailer = clear water - gets increasingly turbid + oil sheen develops - sediment on well bottom stained w/ Petro ODOR

## SAMPLING DATA/FIELD PARAMETERS

Color brownish gray Odor Strong Fuel Odor Appearance V. turbid Temperature 6 °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm NG pH 6.3

Sampling Method and Material Teflon bailer

| Constituents Sampled | Container Description From Lab ___ or G&M ___ | Preservative |
|---|---|---|
| Metals | (1) 250 mL plastic | $HNO_3$ |
| Inorganics | (1) 250 mL " | — |
| VOA | (2) 40 mL vials | — |
| $NO_3$ | (1) 125 mL plastic | $H_2SO_4$ |

Remarks Bailed water is v. turbid, dk gray, f-m sand, silt, oil sheen

Sampling Personnel V. J. Glasser

WELL CASING VOLUMES

| GAL./FT | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 8" = 1.46 |

* Note 1.5 ft diam caisson (oil recovery well) = ft away

100315

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# WATER SAMPLING LOG

Project/No. [illegible] Page ____ of ____

Site Location [illegible]

Site/Well No. EMW-3 Coded/ Replicate No. ____ Date 4-8-[illegible]

Weather [illegible] Time Sampling Began 12:05 Time Sampling Completed 12:45

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 10.37 Water-Level Elevation ____

Held ____ Depth to Water Below MP 2.95 Diameter of Casing 4"

Wet ____ Water Column in Well 7.42 Gallons Pumped/Bailed Prior to Sampling 14.5

Gallons per Foot .65

Gallons in Well 4.8 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method and pump

## SAMPLING DATA/FIELD PARAMETERS

Color Lt. Grey Odor ____ Appearance Clear Temperature 9 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 4000 pH 6.17

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| [illegible] | | |
| [illegible] | | |

Remarks ~~[illegible]~~ Sheen on discharge

Sampling Personnel [illegible]

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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100316

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on C-O-C as MW-4

# WATER SAMPLING LOG

Project/No. N1222LI1 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. EMW 4 Coded/ Replicate No. — Date 4/20/87

Weather _____ Time Sampling Began 2:45 Time Sampling Completed 2:50

## EVACUATION DATA

Description of Measuring Point (MP) TOP OF PVC CASING

Height of MP Above/Below Land Surface 1.57 MP Elevation _____

Total Sounded Depth of Well Below MP 20.38 Water-Level Elevation _____

Held 5 Depth to Water Below MP 3.9 Diameter of Casing 4" PVC

Wet 1.1 Water Column in Well 16.98 Gallons Pumped/Bailed Prior to Sampling 16 gallons - dry

Gallons per Foot 0.65

Gallons in Well 10.45 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method CENTRIFUGAL PUMP

## SAMPLING DATA/FIELD PARAMETERS

Color _____ Odor _____ Appearance _____ Temperature — °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm — pH —

Sampling Method and Material Teflon bailer 3' x 1.6"

| Constituents Sampled | Container Description From Lab ____ or G&M ____ | Preservative |
|---|---|---|
| | | |
| | | |
| | | |

Remarks _____

Sampling Personnel Eric Widestrom, Vince Glasser

**WELL CASING VOLUMES**

| GAL./FT | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

100317

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# WATER SAMPLING LOG

Project/No. [illegible] Page ____ of ____

Site Location [illegible]

Site/Well No. [illegible] Coded/ Replicate No. ____ Date 4-8-88

Weather [illegible] Time Sampling Began 8:50 Time Sampling Completed 12:00

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 20.75 Water-Level Elevation ____

Held ____ Depth to Water Below MP 4.92 Diameter of Casing 4"

Wet ____ Water Column in Well 15.83 Gallons Pumped/~~Bailed~~ Prior to Sampling ~~34~~

-N - 8:53 off 9:4

Gallons per Foot .65 5 min (15 gal) then dry recovered slowly

Gallons in Well 10.3 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method cent pump Q = 3.0

## SAMPLING DATA/FIELD PARAMETERS

Color [illegible] Odor — Appearance TURBID Temperature 11 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance umhos/cm 5000 pH 5.69

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| Inorga | | |

Remarks Let Recharge

Sampling Personnel [illegible], JS

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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100318

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# WATER SAMPLING LOG

Project/No. [illegible] Page ____ of ____

Site Location [illegible]

Site/Well No. [illegible] Coded/ Replicate No. ____ Date 11.5.88

Weather [illegible] Time Sampling Began 12:05 Time Sampling Completed [illegible]

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 9.77 Water-Level Elevation ____

Held ____ Depth to Water Below MP 2.67 Diameter of Casing 4"

Wet ____ Water Column in Well 7.1 Gallons Pumped/Bailed Prior to Sampling 14.0

Gallons per Foot .65

Gallons in Well 4.6 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method Centrifugal pump

## SAMPLING DATA/FIELD PARAMETERS

Color Lt. Grey Odor — Appearance Clear Temperature 9 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance umhos/cm 2000 pH 6.51

Sampling Method and Material Teflon [illegible]

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| Inorg | | |

Remarks Product came up during pumping

Sampling Personnel MC, JS

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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100319

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# WATER SAMPLING LOG

Project/No. N1222LI1 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. GM-1 Coded/Replicate No. _____ Date 4/22/87

Weather Sunny, warm 70s Time Sampling Began 2:10 Time Sampling Completed 2:15

Start bailing @ 12:45
Stop pumping @ 2:00

DTW @ 2:05 = ~7' est. (unsy ft
@ 2:17 = 10-3.02 = 6.9
← Tape/chalk

0.16
9
1.44

EVACUATION DATA

Description of Measuring Point (MP) Top of 2" PVC

Height of MP Above/Below Land Surface 0.6 ft MP Elevation _____

Total Sounded Depth of Well Below MP 15.40 Water-Level Elevation _____

Held 10.00 Depth to Water Below MP 6.90 Diameter of Casing 2" PVC

Wet 3.10 Water Column in Well 8.50 Gallons Pumped/Bailed Prior to Sampling ~15 gals added 10 gals

Gallons per Foot 0.16

Gallons in Well 1.4x5=7 gals Sampling Pump Intake Setting (feet below land surface) Well bottom

Evacuation Method PVC bailer 3'x1.7" & Aqua Bug (½" PE tubing) combine - use pump to evacuate last 4-5 gals w/o adding water -

SAMPLING DATA/FIELD PARAMETERS

Color clear Odor ND Appearance clear Temperature — °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm — pH —

Sampling Method and Material Teflon bailer

| Constituents Sampled | Container Description From Lab ____ or G&M ✓ | Preservative |
|---|---|---|
| VOCs | (2) 40 mL glass vials | — |
| | | |
| | | |

Remarks at first v. turbid - dk tan, f. sand settles out ~1pt clears up when pumped

Sampling Personnel VJG

WELL CASING VOLUMES

| GAL./FT | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

100320

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Ground-Water Consultants

# WATER SAMPLING LOG

Project/No. NY 13[illegible] LT 01 Page ____ of ____

Site Location Glen Cove NY

Site/Well No. GM-1 Coded/Replicate No. ____ Date 4-7-88

Weather Cloudy [illegible] PAIN Time Sampling Began 2:00 Time Sampling Completed 3:10

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 15.35 Water-Level Elevation ____

Held ____ Depth to Water Below MP 7.18 Diameter of Casing 2"

Wet ____ Water Column in Well 8.17 Gallons Pumped/Bailed Prior to Sampling 3.9

Gallons per Foot .16

Gallons in Well 1.31 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method Teflon Bailer 1 3/4"

## SAMPLING DATA/FIELD PARAMETERS

Color Pale white Odor — Appearance Cloudy Temperature 10° °F °C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 975 pH 6.57

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ____ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| [illegible] | | |
| [illegible] | | |

Remarks ____

Sampling Personnel MS JS

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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100321

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# WATER SAMPLING LOG

Project/No. N1822LI1 Page 1 of 1

Site Location Glen Cove, N.Y. Wed

Site/Well No. GM-2 Coded/ Replicate No. — Date 4/22/87

Weather Sunny, warm Time Sampling Began 11:15 Time Sampling Completed 11:20

Stand bailing @ 10:30 60s

## EVACUATION DATA

Description of Measuring Point (MP) Top of 2" PVC

Height of MP ~~Above~~ Below Land Surface 0.2 MP Elevation

Total Sounded Depth of Well Below MP 10.22 Water-Level Elevation

Held 2.00 Depth to Water Below MP 0.87 Diameter of Casing 2" PVC

Wet 1.13 Water Column in Well 9.33 Gallons Pumped/Bailed Prior to Sampling ~6

→ note: add ~2 gallons tap water (ie city water) to help develop

Gallons per Foot 0.16

Gallons in Well 1.6x5 = 8.0 gals Sampling Pump Intake Setting (feet below land surface)

Evacuation Method Use Aqua Burg centrifugal & bailer (1½" PVC worked up & down manually

## SAMPLING DATA/FIELD PARAMETERS

Color greenish-gray/brn Odor ND Appearance V. turbid Temperature — °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm — pH —

Sampling Method and Material Teflon bailer 3' x 1.6"

| Constituents Sampled | Container Description From Lab ___ or G&M ✓ | Preservative |
|---|---|---|
| VOCs | (2) 40 mL glass vials | — |
| | | |
| | | |

Remarks Well has very low yield

Sampling Personnel VJH

WELL CASING VOLUMES

| GAL./FT | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

100322

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# WATER SAMPLING LOG

Project/No. NY 1432 [illegible]  Page ____ of ____

Site Location Glen Cove [illegible]

Site/Well No. GM-2  Coded/ Replicate No. ____  Date 4-7-89

Weather Cloudy 40's  Time Sampling Began 3:45  Time Sampling Completed 4:15

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC

Height of MP Above/Below Land Surface ____  MP Elevation ____

Total Sounded Depth of Well Below MP 12.47  Water-Level Elevation ____

Held ____  Depth to Water Below MP .99  Diameter of Casing 2"

Wet ____  Water Column in Well 11.48  Gallons Pumped/Bailed Prior to Sampling 5.5

Gallons per Foot .16

Gallons in Well 1.84  Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method Teflon Bailer

## SAMPLING DATA/FIELD PARAMETERS

Color TAN  Odor Petroleum  Appearance SILTY  Temperature 9 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 1200  pH 6.90

Sampling Method and Material Teflon bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| Inorganics | | |

Remarks MS, MSD

Sampling Personnel ____

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. N1222LI1 Page 1 of 1

Site Location Glen Cove, New York Wed

Site/Well No. GM-3D Coded Replicate No. — Date 4-22-87

Weather Cloudy, breezy mild Time Sampling Began 3:05 Time Sampling Completed 3:08

Start pump @ 2:30
Stop pump @ 2:50

## EVACUATION DATA

Description of Measuring Point (MP) Top of Casing

Height of MP Above/Below Land Surface 0.4 MP Elevation

Total Sounded Depth of Well Below MP 23.30 Water-Level Elevation

Held 6.00 Depth to Water Below MP 4.59 Diameter of Casing 1½"

Wet 1.41 Water Column in Well 18.71 Gallons Pumped/Bailed Prior to Sampling ~40 to 50 gals

Gallons per Foot 0.1

Gallons in Well 1.9x5=10 Sampling Pump Intake Setting (feet below land surface)

Evacuation Method Aqua Rug centrifugal pump - 5 gpm
at first v. turbid - dk tan w/ 4 in band of silt → clears to pale green in bucket! appears clear in small volumes.

## SAMPLING DATA/FIELD PARAMETERS

Color pale green Odor ND Appearance fairly clear Temperature °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm — pH —

Sampling Method and Material PVC bailer 2' x 1"

| Constituents Sampled | Container Description From Lab ___ or G&M ✓ | Preservative |
|---|---|---|
| VOCs | (2) 40 mL glass vials | — |
| | | |
| | | |

Remarks

Sampling Personnel VJG

WELL CASING VOLUMES

| GAL./FT | | | | |
|---|---|---|---|---|
| | ~~1" = 0.07~~ | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. [illegible] Page ____ of ____

Site Location [illegible]

Site/Well No. [illegible]-30 Coded/Replicate No. ____ Date [illegible]

Weather Clear [illegible] Time Sampling Began [illegible] Time Sampling Completed [illegible]

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 23.74 Water-Level Elevation ____

Held ____ Depth to Water Below MP 4.95 Diameter of Casing 1.5

Wet ____ Water Column in Well 18.79 Gallons Pumped/~~Bailed~~ Prior to Sampling 7.6

Gallons per Foot .10

Gallons in Well 1.88 Sampling Pump Intake Setting (feet below land surface) 20'

Evacuation Method centpump - 7.5 gal

## SAMPLING DATA/FIELD PARAMETERS

Color Lt. Orange Odor — Appearance clear Temperature 10 °F/(°C)

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 875 pH 5.90

Sampling Method and Material 3/4 [illegible] tube

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| Inorg. | | |

Remarks ____

Sampling Personnel [illegible]

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. NY 134 [illegible] Page ____ of ____

Site Location Glen Cove, NY

Site/Well No. GM-4 Coded/Replicate No. ____ Date 4-7-88

Weather [illegible] RAIN Time Sampling Began 1:55 Time Sampling Completed 2:40

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 15.02 Water-Level Elevation ____

Held ____ Depth to Water Below MP 1.25 Diameter of Casing 1 1/2"

Wet ____ Water Column in Well 13.77 Gallons Pumped/Bailed Prior to Sampling ~~4.1~~ 3.5 deg

Gallons per Foot .10

Gallons in Well 1.38 Sampling Pump Intake Setting (feet below land surface) 14.0'

Evacuation Method cent pump

## SAMPLING DATA/FIELD PARAMETERS

Color Brown Odor — Appearance Very Turbid Temperature 10 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 200 pH 6.61

Sampling Method and Material 3/4" Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| [illegible] | 1 pint | |
| [illegible] | 1 pint | |

Remarks ____

Sampling Personnel [illegible]

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. LI TUNGSTEN  Page ____ of ____

Site Location GLEN COVE, NY

Site/Well No. GM-4  Coded/ Replicate No. ____  Date 4-20-87

Weather SUNNY ~ WARM  Time Sampling Began 1100  Time Sampling Completed 1330

## EVACUATION DATA

Description of Measuring Point (MP) TOP OF PVC CASING

Height of MP Above/Below Land Surface 1.43  MP Elevation ____

Total Sounded Depth of Well Below MP 15.69  Water-Level Elevation ____

Held 4.5  Depth to Water Below MP 2.35  Diameter of Casing 1.5"

Wet 2.15  Water Column in Well 13.34  Gallons Pumped/Bailed Prior to Sampling 10.1

Gallons per Foot 0.16

Gallons in Well 2.38  Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method CENTRIFUGAL PUMP

## SAMPLING DATA/FIELD PARAMETERS

Color TAN  Odor —  Appearance TURBID  Temperature 12 °C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm ____  pH ____

Sampling Method and Material PVC BAILER

| Constituents Sampled | Container Description From Lab ____ or G&M ____ | Preservative |
|---|---|---|
| VOC'S | 40 ML VIAL/TEFLON SEPTUM | CHILL 4°C |
| | | |
| | | |

Remarks ____

Sampling Personnel ECW

WELL CASING VOLUMES

| GAL./FT | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. N1222LI1 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. GM-5 Coded/ Replicate No. — Date Wed 4-22-87

Weather Cloudy, mild Time Sampling Began 4:00 Time Sampling Completed 4:05

Pump on @ 3:45 Q=1gpm
off @ 3:55

EVACUATION DATA

Description of Measuring Point (MP) Top of 1½" PVC

Height of MP (Above) Below Land Surface 1.0 MP Elevation

Total Sounded Depth of Well Below MP 23.6 Water-Level Elevation

Held 18.00 Depth to Water Below MP 15.6 Diameter of Casing 1½ PVC

Wet 3.40 Water Column in Well 8.00 Gallons Pumped/Bailed Prior to Sampling 10 gallons

est. → no chalk

Gallons per Foot 0.1

Gallons in Well 0.8 x 5 = 4 Sampling Pump Intake Setting (feet below land surface) Well Bottom

Evacuation Method Aqua Bug centrifugal - Q = 1gpm

SAMPLING DATA/FIELD PARAMETERS

Color Very light tan Odor NO Appearance slightly cloudy → due to clay Temperature — °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm — pH —

Sampling Method and Material PVC bailer 2' x 1"

| Constituents Sampled | Container Description From Lab ✓ or G&M | Preservative |
|---|---|---|
| VOCs | (2) 40mL glass vials | — |
| | | |
| | | |

Remarks well water is v. turbid (silt + f. sand) but clears after removing ~4 gallons

Sampling Personnel VJ Glasser

WELL CASING VOLUMES

| GAL./FT | | | | |
|---|---|---|---|---|
| | ~~1-½" = 0.077~~ | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

1/86

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# WATER SAMPLING LOG

Project/No. NY 134-[illegible]-01 Page ____ of ____

Site Location Glen Cove, NY

Site/Well No. GM-5 Coded/Replicate No. ____ Date 4-7-[illegible]

Weather Cloudy [illegible] Time Sampling Began 1:10 Time Sampling Completed 1:5[illegible]

## EVACUATION DATA

Description of Measuring Point (MP) Top of PVC

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 23.30 Water-Level Elevation ____

Held ____ Depth to Water Below MP 15.11 Diameter of Casing 1 1/2"

Wet ____ Water Column in Well 8.19 Gallons Pumped/Bailed Prior to Sampling 2.5 4 gal

Gallons per Foot .10

Gallons in Well .82 Sampling Pump Intake Setting (feet below land surface) 20'

Evacuation Method cent pump Q = 1.5 t = 2-3 min

## SAMPLING DATA/FIELD PARAMETERS

Color Brown Odor – Appearance Very Turbid Temperature 10 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 475 pH 5.30

Sampling Method and Material 3/4" Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metal | | |
| Misc. | | |

Remarks ____

Sampling Personnel MG TS

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. NY [illegible]

Page ____ of ____

Site Location Glen Cove

Site/Well No. GM-6

Coded/Replicate No. REP 1

Date 4-7-88

Weather Cloudy 41°

Time Sampling Began 4:10

Time Sampling Completed ____

## EVACUATION DATA

Description of Measuring Point (MP) Top of [illegible]

Height of MP Above/Below Land Surface ____

MP Elevation ____

Total Sounded Depth of Well Below MP 11.88

Water-Level Elevation ____

Held ____ Depth to Water Below MP 2.45

Diameter of Casing 2"

Wet ____ Water Column in Well 9.46

Gallons Pumped/Bailed Prior to Sampling 4.5

Gallons per Foot .16

Gallons in Well 1.5

Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method Teflon Bailer

## SAMPLING DATA/FIELD PARAMETERS

Color Black/green Odor — Appearance Very Turbid Temperature 9 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 1600 pH 6.20

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| TNOEC | | |

Remarks Replicate + Field Blank

Sampling Personnel [illegible] JS

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. [illegible] Page ____ of ____

Site Location ____

Site/Well No. GM-7 Coded/ Replicate No. ____ Date [illegible]

Weather [illegible] Time Sampling Began 940 Time Sampling Completed 1020

## EVACUATION DATA

Description of Measuring Point (MP) [illegible]

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 15.85 Water-Level Elevation ____

Held ____ Depth to Water Below MP 10.64 Diameter of Casing 2

Wet ____ Water Column in Well 5.21 Gallons ~~Pumped/Bailed~~ Prior to Sampling 2.5

Gallons per Foot .16

Gallons in Well .83 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method Teflon Bailer

## SAMPLING DATA/FIELD PARAMETERS

Color [illegible] Odor — Appearance Very Turbid Temperature 9 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 400 pH 6.58

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| TOC | | |

Remarks ____

Sampling Personnel [illegible]

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. [illegible] Page ____ of ____

Site Location [illegible]

Site/Well No. GW-8 Coded/ Replicate No. ____ Date [illegible]

Weather [illegible] Time Sampling Began 935 Time Sampling Completed [illegible]

## EVACUATION DATA

Description of Measuring Point (MP) [illegible]

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 15.42 Water-Level Elevation ____

Held ____ Depth to Water Below MP 7.05 Diameter of Casing 2"

Wet ____ Water Column in Well 8.37 Gallons Pumped/Bailed Prior to Sampling 4.0

Gallons per Foot .16

Gallons in Well 1.34 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method Teflon Bailer

## SAMPLING DATA/FIELD PARAMETERS

Color Brown/[illegible] Odor — Appearance Very Turbid Temperature 9 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 575 pH 4.99

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| [illegible] | | |

Remarks ____

Sampling Personnel [illegible] JS

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. [illegible] Page ____ of ____

Site Location [illegible]

Site/Well No. GM-9 Coded/Replicate No. ____ Date 4-8-[illegible]

Weather [illegible] Time Sampling Began 10:00 Time Sampling Completed 11:00

## EVACUATION DATA

Description of Measuring Point (MP) [illegible]

Height of MP Above/Below Land Surface ____ MP Elevation ____

Total Sounded Depth of Well Below MP 14.58 Water-Level Elevation ____

Held ____ Depth to Water Below MP 5.22 Diameter of Casing 2"

Wet ____ Water Column in Well 9.36 Gallons Pumped/Bailed Prior to Sampling 4.5

Gallons per Foot .16

Gallons in Well 1.5 Sampling Pump Intake Setting (feet below land surface) ____

Evacuation Method Teflon Bailer

## SAMPLING DATA/FIELD PARAMETERS

Color [illegible] Odor - Appearance [illegible] Temperature -1 °F/°C

Other (specific ion; OVA; HNU; etc.) ____

Specific Conductance, umhos/cm 625 pH 6.16

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ____ | Preservative |
|---|---|---|
| VOA | | |
| Metals | | |
| Inorganic | | |

Remarks ____

Sampling Personnel ME, JS

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. GM-10 Coded/ Replicate No. — Date 4-15-88

Weather Overcast, Cool, breezy Time Sampling Began 1:30 PM Time Sampling Completed 2:35 PM

Start bailing @ 12:55 40's
Stop @ 1:30

EVACUATION DATA

Description of Measuring Point (MP) Top of brass coupling

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 56.60 Water-Level Elevation _____

Held 50.00 Depth to Water Below MP 47.27 Diameter of Casing 2-in. PVC

Wet 2.73 Water Column in Well 10 ft Gallons Pumped/Bailed Prior to Sampling 12 gals

Gallons per Foot .16

Gallons in Well 1.6x3=4.8 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method Bailing

SAMPLING DATA/FIELD PARAMETERS silt, clay, f. sand

Color Dark Tan Odor ND Appearance V. turbid Temperature _____ °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm Lab pH Lab

Sampling Method and Material Teflon bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ___ | Preservative |
|---|---|---|
| VOCs (601, 602) | (2) 40 mL glass vial | — |
| Metals | (1) 1 pt plastic | $HNO_3$ |
| Inorganics (Cl, $SO_4$, $NO_3$, pH, S.Cond.) | (1) 1 pt plastic | — |

Remarks This well was previously not developed

Sampling Personnel VJ Gibson

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. GM-11 Coded/Replicate No. — Date 4-15-88

Weather Overcast, Cool, breezy Time Sampling Began 1:00 PM Time Sampling Completed 1:25 PM

Start bailing @ 12:43 40's
Stop " 12:55

## EVACUATION DATA

Description of Measuring Point (MP) Top of 2-in. brass coupling

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 16.4 Water-Level Elevation _____

Held 11.00 Depth to Water Below MP 7.54 Diameter of Casing 2-in. Sch 40 PVC

Wet 3.46 Water Column in Well 8.86 Gallons Pumped/Bailed Prior to Sampling 4.5

7.

Gallons per Foot 0.16

Gallons in Well 1.6x3=4.8 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method Bailing

## SAMPLING DATA/FIELD PARAMETERS

silt clay, f. sand

Color Dark Tan Odor ND Appearance V. Turbid Temperature _____ °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm Lab pH Lab

Sampling Method and Material Teflon bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ___ | Preservative |
|---|---|---|
| VOCs | (2) 40mL glass vials | — |
| Metals | (1) 1pt. plastic | $HNO_3$ |
| Inorganics (Cl, $SO_4$, $NO_3$, pH, S. Cond.) | (1) 1pt plastic | — |

Remarks _____

Sampling Personnel V J Glasser

100335

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

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# WATER SAMPLING LOG

Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. GM-12 Coded/Replicate No. — Date 4-15-88

Weather Overcast, Cool, breezy Time Sampling Began 3:30 Time Sampling Completed 3:35

Start Bailing @ 3:20 40's
Stop @ 3:28

## EVACUATION DATA

Description of Measuring Point (MP) Top of 2-in. brass coupling

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 16.60 Water-Level Elevation _____

Held 11.00 Depth to Water Below MP 7.66 Diameter of Casing 2-in. Sch 40 PVC

Wet 3.34 Water Column in Well 8.94 Gallons Pumped/Bailed Prior to Sampling _____

Gallons per Foot 0.16

Gallons in Well 1.6x3=4.8 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method Bailing

## SAMPLING DATA/FIELD PARAMETERS

Color grayish tan Odor ND Appearance Turbid Temperature _____ °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm Lab pH Lab

Sampling Method and Material Teflon bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ___ | Preservative |
|---|---|---|
| VOCs | (2) 40 mL glass vials | — |
| Metals | (1) 1 pt. plastic | $HNO_3$ |
| Inorganics (Cl, $SO_4$, $NO_3$, pH, S. Cond.) | (1) 1 pt. plastic | — |

Remarks Filter Metals - 0.45 u filter

Sampling Personnel VJ Klassen

almost Bails dry

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

G&M Form 12 6 86

100336

Southprint 87 3069

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# WATER SAMPLING LOG

Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. GM-13 Coded/ Replicate No. — Date 4-15-88

Weather Cloudy, Cool Time Sampling Began 4:15 PM Time Sampling Completed 4:20 PM

Start bailing @ 3:55 PM
Stop " @ 4:10

## EVACUATION DATA

Description of Measuring Point (MP) Top of 2-in. brass coupling

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 19.20 Water-Level Elevation _____

Held 16.00 Depth to Water Below MP 13.32 Diameter of Casing 2-in. Sch 40 PVC

Wet 2.68 Water Column in Well 5.88 Gallons Pumped/Bailed Prior to Sampling 3

1/4
3 6/9C

Gallons per Foot 0.16

Gallons in Well 1x3=3 gals Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method Bailing

## SAMPLING DATA/FIELD PARAMETERS

silt, clay, fine sand

Color med. gray Odor ND Appearance Turbid Temperature _____ °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm Lab pH Lab

Sampling Method and Material Teflon bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M — | Preservative |
|---|---|---|
| VOCs | (2) 40 mL glass vials | — |
| Metals | (1) 1 pt plastic | $HNO_3$ |
| Inorganics ($Cl$, $SO_4$, $NO_3$, pH, S.Cond) | (1) 1 pt plastic | — |

Remarks _____

Sampling Personnel VJ Klassen

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

G&M Form 12 6 86 Southprint 87 3069

100337

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# WATER SAMPLING LOG

Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. GM-14A Coded/Replicate No. — Date 4-15-88

Weather Cloudy, Cool Time Sampling Began 4:50 Time Sampling Completed 4:55

Start Bailing @ 4:35 PM
Stop " @ 4:45

## EVACUATION DATA

Description of Measuring Point (MP) Top of 2-in. brass coupling

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 20.10 Water-Level Elevation _____

Held 11.00 Depth to Water Below MP 7.89 Diameter of Casing 2-in. Sch 40 PVC

Wet 3.11 Water Column in Well 12 Gallons Pumped/Bailed Prior to Sampling ~6

Gallons per Foot 0.16

Gallons in Well 1.8x3=6.2 Sampling Pump Intake Setting (feet below land surface) _____

→ bails dry - recovers OK.

Evacuation Method Bailing

## SAMPLING DATA/FIELD PARAMETERS

Color greenish-amber Odor ? yes (can't ID.) Appearance #!*!!~ Temperature _____ °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm _____ pH _____

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ___ | Preservative |
|---|---|---|
| VOCs | (2) 40 mL glass vials | — |
| Metals | (1) 1 pt plastic | $HNO_3$ |
| Inorganics ($Cl$, $SO_4$, $NO_3$, pH, S. cond) | (1) 1 pt plastic | — |

Remarks wear safety glasses & suit - Note: filtered turns black when poured into metals w/ $HNO_3$ preserv.

Sampling Personnel J Glasser

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

G&M Form 12 6 86 Southprint 87 3069

100338

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# WATER SAMPLING LOG

Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove

Site/Well No. GM-15 Coded/ Replicate No. — Date 4-15-88

Weather Cloudy, Cool Time Sampling Began 6:10 Time Sampling Completed 6:15

Start bailing @ 6:00
stop @ 6:10

## EVACUATION DATA

Description of Measuring Point (MP) Top of Brass Coupling

Height of MP Above/Below Land Surface — MP Elevation

Total Sounded Depth of Well Below MP 14.10 Water-Level Elevation

Held 9.00 Depth to Water Below MP 7.64 Diameter of Casing 2-in. Sch 40 PVC

Wet 1.36 Water Column in Well 6.46 Gallons Pumped/Bailed Prior to Sampling 4

Gallons per Foot 0.16

Gallons in Well 1x3=3 Sampling Pump Intake Setting (feet below land surface)

6.5
x .16
390
65
1.04

Evacuation Method Bailing

## SAMPLING DATA/FIELD PARAMETERS

Color Tan Odor NS Appearance turbid Temperature °F/°C

Other (specific ion; OVA; HNU; etc.)

Specific Conductance, umhos/cm Lab pH Lab

Sampling Method and Material Teflon Bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M | Preservative |
|---|---|---|
| VOCs | (2) 40 mL glass vials | — |
| Metals | (1) 1 pt. plastic | $HNO_3$ |
| Inorganics (Cl, $SO_4$, $NO_3$, pH, S. Cond.) | (1) 1 pt plastic | — |

Remarks

Sampling Personnel J. Glasser

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

G&M Form 12 6-86 Southprint 87 3069

100339

GERAGHTY & MILLER, INC.
Ground-Water Consultants

# WATER SAMPLING LOG

Project/No. N1342LI01 Page 1 of 1

Site Location Glen Cove, New York

Site/Well No. GM-16 Coded/Replicate No. — Date 4-15-88

Weather Cloudy, cool Time Sampling Began 7:20 Time Sampling Completed 7:25

Start bailing @ 6:45 PM
Stop " ~7:20

## EVACUATION DATA

Description of Measuring Point (MP) Top of 2-in. brass coupling

Height of MP Above/Below Land Surface _____ MP Elevation _____

Total Sounded Depth of Well Below MP 9.6 Water-Level Elevation _____

Held _____ Depth to Water Below MP _____ Diameter of Casing 2-in. Sch 40 PVC

Wet _____ Water Column in Well 9 Gallons Pumped/Bailed Prior to Sampling 15 gals

Gallons per Foot 0.16

Gallons in Well 1.5x3=4.5 Sampling Pump Intake Setting (feet below land surface) _____

Evacuation Method Bailing

## SAMPLING DATA/FIELD PARAMETERS

Color tan Odor ND Appearance turbid Temperature _____ °F/°C

Other (specific ion; OVA; HNU; etc.) _____

Specific Conductance, umhos/cm Lab pH Lab

Sampling Method and Material Teflon bailer

| Constituents Sampled | Container Description From Lab ✓ or G&M ___ | Preservative |
|---|---|---|
| VOCs | (2) 40 mL glass vials | — |
| Metals | (1) 1 pt plastic | $HNO_3$ |
| Inorganics (Cl, $SO_4$, $NO_3$, pH, S. Cond.) | (1) 1 pt. plastic | — |

Remarks This well was previously not developed

Sampling Personnel VJ Glasser

100340

WELL CASING VOLUMES

| GAL./FT. | | | | |
|---|---|---|---|---|
| | 1-¼" = 0.077 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1-½" = 0.10 | 2-½" = 0.24 | 3-½" = 0.50 | 6" = 1.46 |

G&M Form 12 8 86 Southern 87 3069

APPENDIX E

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C870674 04/17/87

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Job N1222LI1
COLLECTED BY: Client DATE COL'D:04/07/87 RECEIVED:04/07/87

SAMPLE: Water sample,EMW-1

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS |
|---|---|---|---|
| Vinyl Chloride | ug/L | 42 | |
| Freon 113 | ug/L | <10 | |
| Methylene Chloride | ug/L | <20 | |
| 11 Dichloroethane | ug/L | <20 | |
| 12 Dichloroethene | ug/L | 920 | |
| Chloroform | ug/L | <10 | |
| 111 Trichloroethane | ug/L | <10 | |
| Carbon Tetrachloride | ug/L | <10 | |
| 12 Dichloroethane | ug/L | <20 | |
| Trichloroethylene | ug/L | 950 | |
| 12 Dichloropropane | ug/L | <20 | |
| Bromodichloromethane | ug/L | <10 | |
| Tetrachloroethene | ug/L | 10,200 | |
| Chlorodibromomethane | ug/L | <10 | |
| Bromoform | ug/L | <20 | |

cc:

REMARKS:

DIRECTOR Thomas R. Smith

rn= 2245

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880826/12 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, EMW-1

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 12 Dichlorobenzene | ug/L | <2 |
| Vinyl Chloride | ug/L | 52 | 14 Dichlorobenzene | ug/L | <2 |
| Chloroethane | ug/L | <1 | Benzene | ug/L | 6 |
| Methylene Chloride | ug/L | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | 6 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | 2100 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 90 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | 0.27 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | 0.45 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 34 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.00 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.00 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.00 |
| Trichloroethylene | ug/L | 1600 | Cadmium as Cd | mg/L | 0.034 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | 0.002 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.09 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | <0.10 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 65 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 400 |
| Tetrachloroethene | ug/L | 16000 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3090

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. 1780826/17 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, rep-2, EMW-1

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 12 Dichlorobenzene | ug/L | <2 |
| Vinyl Chloride | ug/L | 52 | 14 Dichlorobenzene | ug/L | <2 |
| Chloroethane | ug/L | <1 | Benzene | ug/L | 4 |
| Methylene Chloride | ug/L | <2 | Toluene | ug/L | 2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | 6 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | 2100 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 90 |
| 12 Dichloroethane | ug/L | 2 | Cobalt as Co | mg/L | 0.32 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | 0.40 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 34 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.000 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.005 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.005 |
| Trichloroethylene | ug/L | 1800 | Cadmium as Cd | mg/L | 0.040 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | 0.002 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.34 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | <0.10 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 65 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 350 |
| Tetrachloroethene | ug/L | 19000 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3095

100344

**ECOTEST LABORATORIES, INC.** *ENVIRONMENTAL TESTING*

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

LAB NO. C870479/1 03/20/87

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: V. Glaser

SOURCE OF SAMPLE: Project #N1222LI1, Glen Cove
COLLECTED BY: Client DATE COL'D: RECEIVED:03/13/87

SAMPLE: Water sample, EMW-1

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 12 Dichlorobenzene | ug/L | <2 |
| Vinyl Chloride | ug/L | 51 | 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 | 2000 | | | |
| 11 Dichloroethane | ug/L | <2 | | | |
| 12 Dichloroethene | ug/L | <2 | Chloride as Cl | mg/L | 56 |
| Chloroform | ug/L | <1 | Sulfate as SO4 | mg/L | 440 |
| 12 Dichloroethane | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 111 Trichloroethane | ug/L | <1 | Spec. Cond. umho/cm | | 1000 |
| Carbon Tetrachloride | ug/L | <1 | Molybdenum as Mo | mg/L | <0.05 |
| Bromodichloromethane | ug/L | <1 | Cobalt as Co | mg/L | 0.11 |
| 12 Dichloropropane | ug/L | <2 | Calcium as Ca | mg/L | 90 |
| t 13 Dichloropropene | ug/L | <2 | Nickel as Ni | mg/L | 0.35 |
| Trichloroethylene | ug/L | 1900 | Copper as Cu | mg/L | 0.30 |
| Chlorodibromomethane | ug/L | <1 | Sodium as Na | mg/L | 40 |
| 112 Trichloroethane | ug/L | <2 | Tungsten | mg/L* | <0.1 |
| c 13 Dichloropropene | ug/L | <2 | Tantalum | mg/L* | 0.3 |
| 2chloroethvinylether | ug/L | <2 | | | |
| Bromoform | ug/L | <2 | | | |
| 1122Tetrachloroethan | ug/L | <2 | | | |
| Tetrachloroethene | ug/L | 18000 | | | |

cc:

REMARKS: *test performed for EcoTest by Princeton Labs, Trenton NJ.

DIRECTOR [signature]

rn= 1548

100345

**ECOTEST LABORATORIES, INC.** *ENVIRONMENTAL TESTING*

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

LAB NO. C870479/2 23/20/97

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: V. Glaser

SOURCE OF SAMPLE: Project #N1222LI1, Glen Cove
COLLECTED BY: Client DATE COL'D: RECEIVED:03/13/87

SAMPLE: Water sample, EMW-2

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chloromethane | ug/L | <1 |
| Bromomethane | ug/L | <1 |
| Dichlorodifluomethane | ug/L | <1 |
| Vinyl Chloride | ug/L | <1 |
| Chloroethane | ug/L | <1 |
| Methylene Chloride | ug/L | <1 |
| 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 | 4 |
| 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 | 50 |

| 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 |
| Chloride as Cl | mg/L | 100 |
| Sulfate as SO4 | mg/L | <50 |
| Nitrate as N | mg/L | <0.5 |
| Spec. Cond. umho/cm | | 1000 |
| Molybdenum as Mo | mg/L | 0.21 |
| Cobalt as Co | mg/L | 0.005 |
| Calcium as Ca | mg/L | 65 |
| Nickel as Ni | mg/L | <0.10 |
| Copper as Cu | mg/L | <0.02 |
| Sodium as Na | mg/L | 88 |
| Tungsten | mg/L* | 2.4 |
| Tantalum | mg/L* | 0.3 |

cc:

REMARKS: *test performed for EcoTest by Princeton Labs, Trenton NJ.

DIRECTOR

cn= 1549

100346

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C870479/6 03/20/87

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: V. Glaser

SOURCE OF SAMPLE: Project #N1222LI1, Glen Cove
COLLECTED BY: Client DATE COL'D: RECEIVED: 03/13/87

SAMPLE: Water sample, replicate EMW-2

| 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 | <1 |
| 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 | 5 |

| 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 |

cc:

REMARKS:

DIRECTOR Thomas R. Fauble

rn= 1553

100347

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880826/4 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/07/88 RECEIVED:04/08/88

SAMPLE: Water sample, EMW-2

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 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 | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | <2 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 70 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | <0.00 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | <0.10 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 100 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.00 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.00 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.00 |
| Trichloroethylene | ug/L | <1 | Cadmium as Cd | mg/L | <0.00 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | 0.004 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.27 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | 4.69 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 91 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 8.0 |
| Tetrachloroethene | ug/L | <2 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3082

100348

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. CS70478/3 03/20/87

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: V. Glaser

SOURCE OF SAMPLE: Project #N1222LI1, Glen Cove
COLLECTED BY: Client DATE COL'D: RECEIVED: 03/13/87

SAMPLE: Water sample, EMW-3

| 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 | <1 |
| 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 | 7 |

| 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 |
| Chloride as Cl | mg/L | 200 |
| Sulfate as SO4 | mg/L | 110 |
| Nitrate as N | mg/L | <0.5 |
| Spec. Cond. umho/cm | | 1400 |
| Molybdenum as Mo | mg/L | 0.07 |
| Cobalt as Co | mg/L | 0.12 |
| Calcium as Ca | mg/L | 110 |
| Nickel as Ni | mg/L | 0.10 |
| Copper as Cu | mg/L | <0.02 |
| Sodium as Na | mg/L | 140 |
| Tungsten | mg/L* | 4.9 |
| Tantalum | mg/L* | 0.2 |

cc:

REMARKS: *Sent out for analysis.

DIRECTOR

cn= 1550

100349

**ECOTEST LABORATORIES, INC.** *ENVIRONMENTAL TESTING*

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

LAB NO. C880826/15 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, EMW-3

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 12 Dichlorobenzene | ug/L | <2 |
| Vinyl Chloride | ug/L | 2 | 14 Dichlorobenzene | ug/L | <2 |
| Chloroethane | ug/L | <1 | Benzene | ug/L | 9 |
| Methylene Chloride | ug/L | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | <2 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 340 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | 3.5 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | 0.45 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 1000 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.000 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | 0.060 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | 0.006 |
| Trichloroethylene | ug/L | 1 | Cadmium as Cd | mg/L | 0.029 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | 0.14 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 1.76 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | 154.0 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 1900 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 1100 |
| Tetrachloroethene | ug/L | <2 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3093

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880826/14 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, EMW-4

| 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 Dichlbropropane | 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 | <2 |

| 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 |
| Calcium as Ca | mg/L | 620 |
| Cobalt as Co | mg/L | 0.40 |
| Nickel as Ni | mg/L | 0.35 |
| Sodium as Na | mg/L | 2000 |
| Mercury as Hg | mg/L | <0.00 |
| Lead as Pb | mg/L | 0.075 |
| Chromium as Cr | mg/L | <0.00 |
| Cadmium as Cd | mg/L | <0.00 |
| Arsenic as As | mg/L | 0.39 |
| Tantalum | mg/L* | 3.91 |
| Tungsten | mg/L* | 1.63 |
| Chloride as Cl | mg/L | 2700 |
| Nitrate as N | mg/L | <0.5 |
| Sulfate as SO4 | mg/L | 3300 |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

100351

DIRECTOR:

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880826/16 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, EMW-5

| 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 | <2 |

| 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 |
| Calcium as Ca | mg/L | 190 |
| Cobalt as Co | mg/L | 0.72 |
| Nickel as Ni | mg/L | 0.25 |
| Sodium as Na | mg/L | 320 |
| Mercury as Hg | mg/L | <0.000 |
| Lead as Pb | mg/L | <0.005 |
| Chromium as Cr | mg/L | <0.005 |
| Cadmium as Cd | mg/L | 0.017 |
| Arsenic as As | mg/L | 0.069 |
| Tantalum | mg/L* | 0.52 |
| Tungsten | mg/L* | 42.8 |
| Chloride as Cl | mg/L | 740 |
| Nitrate as N | mg/L | <0.5 |
| Sulfate as SO4 | mg/L | 450 |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3094

**ECOTEST LABORATORIES, INC.** *ENVIRONMENTAL TESTING*

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

LAB NO.[illegible] 04/[illegible]/87

[illegible] & Miller, Inc.
[illegible] East Bethpage Rd.
Plainview, N.Y. 11803
ATTN: Andy [illegible]

SOURCE OF SAMPLE: N[illegible], Glen Cove
COLLECTED BY: Client DATE COL'D:04/[illegible]/87 RECEIVED:04/[illegible]/87

SAMPLE: Water sample, GM-1

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chloromethane | ug/L | <1 |
| Bromomethane | ug/L | <1 |
| Dichlorodifluomethane | 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 | 3 |
| 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 | 27- |

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chlorobenzene | ug/L | <1 |
| 13 Dichlorobenzene | ug/L | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <2 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <2 |
| Ethyl Benzene | ug/L | <1 |

cc:

REMARKS:

DIRECTOR [signature]

[illegible] [illegible]

100353

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880826/3 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/07/88 RECEIVED:04/08/88

SAMPLE: Water sample, GM-1

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 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 | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | 4 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 85 |
| 12 Dichloroethane | ug/L | 5 | Cobalt as Co | mg/L | <0.005 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | <0.10 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 30 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.0002 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.005 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.005 |
| Trichloroethylene | ug/L | 5 | Cadmium as Cd | mg/L | <0.001 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | <0.002 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.075 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | 0.38 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 50 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 130 |
| Tetrachloroethene | ug/L | 16 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3081

100354

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. [illegible] 04/27/87

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Andy Barber

SOURCE OF SAMPLE: N1222LI1, Glen Cove
COLLECTED BY: Client DATE COL'D:04/22/87 RECEIVED:04/23/87

SAMPLE: Water sample, GM-2

| 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 | 6 |
| 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 | 2 |
| 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 | 2 |

| 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 |

cc:

REMARKS:

DIRECTOR Thomas R. [illegible]

rn= 2753

100355

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880826/5 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/07/88 RECEIVED:04/08/88

SAMPLE: Water sample, GM-2

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 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 | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | <2 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 65 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | 0.008 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | <0.10 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 100 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.00025 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.005 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.005 |
| Trichloroethylene | ug/L | <1 | Cadmium as Cd | mg/L | <0.001 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | 0.011 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.28 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | <0.10 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 110 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 32 |
| Tetrachloroethene | ug/L | <2 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3083

100356

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880826/13 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, GM-3D

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 12 Dichlorobenzene | ug/L | <2 |
| Vinyl Chloride | ug/L | 36 | 14 Dichlorobenzene | ug/L | <2 |
| Chloroethane | ug/L | <1 | Benzene | ug/L | 2 |
| Methylene Chloride | ug/L | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | 3 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | 860 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 90 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | 0.10 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | 0.15 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 44 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.0002 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.005 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.005 |
| Trichloroethylene | ug/L | 710 | Cadmium as Cd | mg/L | 0.020 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | <0.002 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.33 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | <0.10 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 65 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 350 |
| Tetrachloroethene | ug/L | 7400 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3091

**ECOTEST LABORATORIES, INC.** *ENVIRONMENTAL TESTING*

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

[illegible] 04/27/87

Caraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Andy Barber

SOURCE OF SAMPLE: N1222LI1, Glen Cove
COLLECTED BY: Client DATE COL'D:04/22/87 RECEIVED:04/23/87

SAMPLE: water sample, GM-3D

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chloromethane | ug/L | <1 |
| Bromomethane | ug/L | <1 |
| Dichlorodifluomethane | ug/L | <1 |
| Vinyl Chloride | ug/L | 81 |
| 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 | 1500 |
| 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 | 910 |
| 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 | 9000 |

| 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 |

cc:

REMARKS:

100358

DIRECTOR [signature]

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880826/2 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/07/88 RECEIVED:04/08/88

SAMPLE: Water sample, GM-4

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 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 | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | <2 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 19 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | <0.00 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | <0.10 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 14 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.00 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.00 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.00 |
| Trichloroethylene | ug/L | <1 | Cadmium as Cd | mg/L | 0.001 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | <0.00 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.053 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | 0.51 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 7 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 16 |
| Tetrachloroethene | ug/L | <2 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3080

100359

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. C880826/1 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/07/88 RECEIVED:04/08/88

SAMPLE: Water sample, GM-5

| 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 | <2 |

| 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 |
| Calcium as Ca | mg/L | 26 |
| Cobalt as Co | mg/L | <0.00 |
| Nickel as Ni | mg/L | <0.10 |
| Sodium as Na | mg/L | 26 |
| Mercury as Hg | mg/L | <0.00 |
| Lead as Pb | mg/L | <0.00 |
| Chromium as Cr | mg/L | <0.00 |
| Cadmium as Cd | mg/L | <0.00 |
| Arsenic as As | mg/L | <0.00 |
| Tantalum | mg/L* | 0.051 |
| Tungsten | mg/L* | 0.20 |
| Chloride as Cl | mg/L | 59 |
| Nitrate as N | mg/L | 3.8 |
| Sulfate as SO4 | mg/L | 40 |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3079

100360

**ECOTEST LABORATORIES, INC.** ENVIRONMENTAL TESTING

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

[illegible] 04 [illegible]

[illegible]
[illegible]
[illegible]
ATTN: [illegible]

SOURCE OF SAMPLE: [illegible] Glen Cove
COLLECTED BY: Client DATE COLL'D:04/[illegible] RECEIVED:04 [illegible]

SAMPLE: Water sample: GM-5

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chloromethane | ug/L | <1 |
| Bromomethane | ug/L | <1 |
| Dichlorodifluomethane | 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 |
| Dichloroethvinylether | 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 |

cc:

REMARKS:

DIRECTOR [signature]

100361

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. C880826/6 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/07/88 RECEIVED:04/08/88

SAMPLE: Water sample, GM-6

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 12 Dichlorobenzene | ug/L | <2 |
| Vinyl Chloride | ug/L | 12 | 14 Dichlorobenzene | ug/L | <2 |
| Chloroethane | ug/L | 1 | Benzene | ug/L | <1 |
| Methylene Chloride | ug/L | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | 430 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 150 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | <0.0 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | <0.1 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 120 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.0 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | 0.00 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.0 |
| Trichloroethylene | ug/L | 780 | Cadmium as Cd | mg/L | <0.0 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | 0.00 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.14 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | <0.1 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 260 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 450 |
| Tetrachloroethene | ug/L | 1800 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3084

100362

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880826/7 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/07/88 RECEIVED:04/08/88

SAMPLE: Water sample, rep-1, GM-6

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 12 Dichlorobenzene | ug/L | <2 |
| Vinyl Chloride | ug/L | 12 | 14 Dichlorobenzene | ug/L | <2 |
| Chloroethane | ug/L | 2 | Benzene | ug/L | <1 |
| Methylene Chloride | ug/L | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | 400 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 150 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | <0.005 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | <0.10 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 130 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.0002 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | 0.005 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.005 |
| Trichloroethylene | ug/L | 730 | Cadmium as Cd | mg/L | <0.001 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | 0.002 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.14 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | 0.29 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 260 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 450 |
| Tetrachloroethene | ug/L | 1800 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

DIRECTOR

rn= 3085

100363

**ECOTEST LABORATORIES, INC.** *ENVIRONMENTAL TESTIN*

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

LAB NO. C880826/10 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, GM-7

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 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 | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | <2 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 26 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | <0.0 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | <0.1 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 28 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.0 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.0 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.0 |
| Trichloroethylene | ug/L | <1 | Cadmium as Cd | mg/L | <0.0 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | <0.0 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.07 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | <0.1 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 14 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | <0.5 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 68 |
| Tetrachloroethene | ug/L | <2 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

100364

DIRECTOR

**ECOTEST LABORATORIES, INC.** ENVIRONMENTAL TESTIN

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

LAB NO. C880826/9 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, GM-8

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 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 | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | 7 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 36 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | 0.005 |
| 111 Trichloroethane | ug/L | <1 | Nickel as Ni | mg/L | <0.1 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 18 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.0 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.0 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.0 |
| Trichloroethylene | ug/L | 5 | Cadmium as Cd | mg/L | 0.01 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | <0.0 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.27 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | <0.1 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 26 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | 0.6 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 230 |
| Tetrachloroethene | ug/L | 66 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

100365

DIRECTOR

rn= 3087

**ECOTEST LABORATORIES, INC.** *ENVIRONMENTAL TESTING*

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

LAB NO. C880826/11 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, GM-9

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 12 Dichlorobenzene | ug/L | <2 |
| Vinyl Chloride | ug/L | 32 | 14 Dichlorobenzene | ug/L | <2 |
| Chloroethane | ug/L | <1 | Benzene | ug/L | <1 |
| Methylene Chloride | ug/L | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 12 Dichloroethene | ug/L | 220 | | | |
| Chloroform | ug/L | <1 | Calcium as Ca | mg/L | 55 |
| 12 Dichloroethane | ug/L | <2 | Cobalt as Co | mg/L | <0.0 |
| 111 Trichloroethane | ug/L | 2 | Nickel as Ni | mg/L | <0.1 |
| Carbon Tetrachloride | ug/L | <1 | Sodium as Na | mg/L | 34 |
| Bromodichloromethane | ug/L | <1 | Mercury as Hg | mg/L | <0.0 |
| 12 Dichloropropane | ug/L | <2 | Lead as Pb | mg/L | <0.0 |
| t 13 Dichloropropene | ug/L | <2 | Chromium as Cr | mg/L | <0.0 |
| Trichloroethylene | ug/L | 140 | Cadmium as Cd | mg/L | <0.0 |
| Chlorodibromomethane | ug/L | <1 | Arsenic as As | mg/L | <0.0 |
| 112 Trichloroethane | ug/L | <2 | Tantalum | mg/L* | 0.11 |
| c 13 Dichloropropene | ug/L | <2 | Tungsten | mg/L* | <0.1 |
| 2chloroethvinylether | ug/L | <2 | Chloride as Cl | mg/L | 43 |
| Bromoform | ug/L | <2 | Nitrate as N | mg/L | 1.0 |
| 1122Tetrachloroethan | ug/L | <2 | Sulfate as SO4 | mg/L | 150 |
| Tetrachloroethene | ug/L | 1600 | | | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.

100366

DIRECTOR

rn= 3089

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880399/1 04/27/88

Geraghty & Miller, Inc.
105 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1343L101
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/18/88

SAMPLE: Water sample, GM-10

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chloromethane | ug/L | <1 |
| Bromomethane | ug/L | <1 |
| Dichlorodifluomethane | 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 | 11 |
| 11 Dichloroethane | ug/L | 4 |
| 12 Dichloroethene | ug/L | 65 |
| Chloroform | ug/L | <1 |
| 12 Dichloroethane | ug/L | <2 |
| 111 Trichloroethane | ug/L | 200 |
| Carbon Tetrachloride | ug/L | <1 |
| Bromodichloromethane | ug/L | <1 |
| 12 Dichloropropane | ug/L | <2 |
| t 13 Dichloropropene | ug/L | <2 |
| Trichloroethylene | ug/L | 58 |
| Chlorodibromomethane | ug/L | <1 |
| 112 Trichloroethane | ug/L | <2 |
| c 13 Dichloropropene | ug/L | <2 |
| 2Chloroethylvinylether | ug/L | <2 |
| Bromoform | ug/L | <2 |
| 1122Tetrachloroethan | ug/L | <2 |
| Tetrachloroethene | ug/L | 30 |

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

cc:

REMARKS:



100367

DIRECTOR

**ECOTEST LABORATORIES, INC.** ENVIRONMENTAL TESTING

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

LAB NO. 080899/1 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/19/88

SAMPLE: Water sample, GM-10

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Calcium as Ca | mg/L | 21 |
| Cobalt as Co | mg/L | 0.024 |
| Nickel as Ni | mg/L | <0.10 |
| Sodium as Na | mg/L | 12 |
| Mercury as Hg | mg/L | <0.00075 |
| Lead as Pb | mg/L | <0.005 |
| Chromium as Cr | mg/L | <0.005 |
| Cadmium as Cd | mg/L | <0.001 |
| Arsenic as As | mg/L | <0.002 |
| Tantalum | mg/L* | <0.01 |
| Tungsten | mg/L* | 0.40 |
| Chloride as Cl | mg/L | 14 |
| Nitrate as N | mg/L | 26 |
| Sulfate as SO4 | mg/L | 48 |
| Spec. Cond. umho/cm | | 260 |
| pH | units | 5.6 |

ANALYTICAL PARAMETERS

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.
Page 2 of 2.

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DIRECTOR

FORM 3432

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. C880899/2 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/18/88

SAMPLE: Water sample, GM-11

| 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 | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <1 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <1 |
| Ethyl Benzene | ug/L | <1 |
| m + p Xylene | ug/L | <2 |
| o Xylene | ug/L | <1 |

cc:

REMARKS:

100369



DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880899/2 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/19/88

SAMPLE: Water sample, GM-11

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS |
|---|---|---|---|
| Calcium as Ca | mg/L | 30 | |
| Cobalt as Co | mg/L | <0.005 | |
| Nickel as Ni | mg/L | <0.10 | |
| Sodium as Na | mg/L | 14 | |
| Mercury as Hg | mg/L | <0.00025 | |
| Lead as Pb | mg/L | <0.005 | |
| Chromium as Cr | mg/L | <0.005 | |
| Cadmium as Cd | mg/L | <0.001 | |
| Arsenic as As | mg/L | <0.002 | |
| Tantalum | mg/L* | <0.01 | |
| Tungsten | mg/L* | 0.11 | |
| Chloride as Cl | mg/L | 22 | |
| Nitrate as N | mg/L | 3.5 | |
| Sulfate as SO4 | mg/L | 50 | |
| Spec. Cond. umho/cm | | 240 | |
| pH | units | 6.2 | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.
Page 2 of 2.

100370

DIRECTOR Thomas R. Grant

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880899/2 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/18/88

SAMPLE: Water sample, GM-11

| 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 | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <1 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <1 |
| Ethyl Benzene | ug/L | <1 |
| m + p Xylene | ug/L | <2 |
| o Xylene | ug/L | <1 |

cc:

REMARKS:



100371

DIRECTOR

**ECOTEST LABORATORIES, INC.** ENVIRONMENTAL TESTIN

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

LAB NO. CR00899/3 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/18/88

SAMPLE: Water sample, GM-12

| 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 |
| 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 | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <1 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <1 |
| Ethyl Benzene | ug/L | <1 |
| m + p Xylene | ug/L | <2 |
| o Xylene | ug/L | <1 |

cc:

REMARKS:



100372

DIRECTOR [signature]

rn: 3360

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880899/3 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/19/88

SAMPLE: Water sample, GM-12

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS |
|---|---|---|---|
| Calcium as Ca | mg/L | 110 | |
| Cobalt as Co | mg/L | <0.005 | |
| Nickel as Ni | mg/L | <0.10 | |
| Sodium as Na | mg/L | 27 | |
| Mercury as Hg | mg/L | <0.00025 | |
| Lead as Pb | mg/L | <0.005 | |
| Chromium as Cr | mg/L | <0.005 | |
| Cadmium as Cd | mg/L | <0.001 | |
| Arsenic as As | mg/L | <0.002 | |
| Tantalum | mg/L* | <0.01 | |
| Tungsten | mg/L* | <0.01 | |
| Chloride as Cl | mg/L | 65 | |
| Nitrate as N | mg/L | <0.5 | |
| Sulfate as SO4 | mg/L | 150 | |
| Spec. Cond. | umho/cm | 790 | |
| pH | units | 6.2 | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.
Page 2 of 2.

100373

DIRECTOR Thomas R. Gault

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C833899/4 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/19/88

SAMPLE: Water sample, GM-13

| 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 | 13 |
| 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 | 5 |
| Chlorodibromomethane | ug/L | <1 |
| 112 Trichloroethane | ug/L | <2 |
| c 13 Dichloropropene | ug/L | <2 |
| 2chloroethylvinylether | 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 | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <1 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <1 |
| Ethyl Benzene | ug/L | <1 |
| m + p Xylene | ug/L | <2 |
| o Xylene | ug/L | <1 |

cc:

REMARKS:

100374

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTI

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

LAB NO. C880899/5 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342L101
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/19/88

SAMPLE: Water sample, GM-14A

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS |
|---|---|---|---|
| Calcium as Ca | mg/L | 370 | |
| Cobalt as Co | mg/L | 0.40 | |
| Nickel as Ni | mg/L | 0.20 | |
| Sodium as Na | mg/L | 6,600 | |
| Mercury as Hg | mg/L | <0.00025 | |
| Lead as Pb | mg/L | 0.070 | |
| Chromium as Cr | mg/L | 0.050 | |
| Cadmium as Cd | mg/L | <0.002 | |
| Arsenic as As | mg/L | 0.78 | |
| Tantalum | mg/L* | 2.26 | |
| Tungsten | mg/L* | 39.40 | |
| Chloride as Cl | mg/L | 700 | |
| Nitrate as N | mg/L | 1.0 | |
| Sulfate as SO4 | mg/L | 11000 | |
| Spec. Cond. umho/cm | | 20,200 | |
| pH | units | 7.4 | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.
Page 2 of 2.

100375

DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. C880899/5 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glazser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/18/88

SAMPLE: Water sample, GM-14A

| 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 | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <1 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <1 |
| Ethyl Benzene | ug/L | 3 |
| m + p Xylene | ug/L | <2 |
| o Xylene | ug/L | <1 |

cc:

REMARKS:



100376

DIRECTOR Thomas R. Scott

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880879/4 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/18/88

SAMPLE: Water sample, GM-13

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS |
|---|---|---|---|
| Calcium as Ca | mg/L | 120 | |
| Cobalt as Co | mg/L | 0.040 | |
| Nickel as Ni | mg/L | <0.10 | |
| Sodium as Na | mg/L | 96 | |
| Mercury as Hg | mg/L | <0.00025 | |
| Lead as Pb | mg/L | <0.005 | |
| Chromium as Cr | mg/L | <0.005 | |
| Cadmium as Cd | mg/L | <0.001 | |
| Arsenic as As | mg/L | 0.002 | |
| Tantalum | mg/L* | <0.01 | |
| Tungsten | mg/L* | <0.01 | |
| Chloride as Cl | mg/L | 25 | |
| Nitrate as N | mg/L | <0.5 | |
| Sulfate as SO4 | mg/L | 430 | |
| Spec. Cond. umho/cm | | 1060 | |
| pH | units | 6.1 | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.
Page 2 of 2.

100377

DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. C280399/6 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/18/88

SAMPLE: Water sample, GM-15

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chloromethane | ug/L | <1 |
| Bromomethane | ug/L | <1 |
| Dichlorodifluomethane | 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 | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <1 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <1 |
| Ethyl Benzene | ug/L | <1 |
| m + p Xylene | ug/L | <2 |
| o Xylene | ug/L | <1 |

cc:

REMARKS:



100378

DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C080079/6 04/27/09

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342L101
COLLECTED BY: Client DATE COL'D:04/15/08 RECEIVED:04/19/08

SAMPLE: Water sample, GM-15

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS |
|---|---|---|---|
| Calcium as Ca | mg/L | 48 | |
| Cobalt as Co | mg/L | 0.030 | |
| Nickel as Ni | mg/L | <0.10 | |
| Sodium as Na | mg/L | 49 | |
| Mercury as Hg | mg/L | <0.00025 | |
| Lead as Pb | mg/L | <0.005 | |
| Chromium as Cr | mg/L | <0.005 | |
| Cadmium as Cd | mg/L | <0.001 | |
| Arsenic as As | mg/L | 0.002 | |
| Tantalum | mg/L* | <0.01 | |
| Tungsten | mg/L* | 0.16 | |
| Chloride as Cl | mg/L | 120 | |
| Nitrate as N | mg/L | <0.5 | |
| Sulfate as SO4 | mg/L | 48 | |
| Spec. Cond. umho/cm | | 640 | |
| pH | units | 6.2 | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.
Page 2 of 2.

DIRECTOR Thomas Grant

3437

100379

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. C880899/7 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/18/88

SAMPLE: Water sample, GM-16

| 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 | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <1 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <1 |
| Ethyl Benzene | ug/L | <1 |
| m + p Xylene | ug/L | <2 |
| o Xylene | ug/L | <1 |

cc:

REMARKS:



100380

DIRECTOR

rn# 3384

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. C000399/7 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/15/88 RECEIVED:04/18/88

SAMPLE: Water sample, GM-16

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS |
|---|---|---|---|
| Calcium as Ca | mg/L | 14 | |
| Cobalt as Co | mg/L | 0.010 | |
| Nickel as Ni | mg/L | <0.10 | |
| Sodium as Na | mg/L | 7.9 | |
| Mercury as Hg | mg/L | <0.00025 | |
| Lead as Pb | mg/L | <0.005 | |
| Chromium as Cr | mg/L | <0.005 | |
| Cadmium as Cd | mg/L | 0.007 | |
| Arsenic as As | mg/L | <0.002 | |
| Tantalum | mg/L* | <0.01 | |
| Tungsten | mg/L* | <0.01 | |
| Chloride as Cl | mg/L | 8 | |
| Nitrate as N | mg/L | <0.5 | |
| Sulfate as SO4 | mg/L | 200 | |
| Spec. Cond. umho/cm | | 140 | |
| pH | units | 6.2 | |

cc:

REMARKS: *Analyzed for EcoTest by PTL Testing Laboratories, Trenton N.J.; report enclosed.
Page 2 of 2.

100381

DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. 0870478/5 03/20/87

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: V. Glaser

SOURCE OF SAMPLE: Project #N1222LI1, Glen Cove
COLLECTED BY: Client DATE COL'D: RECEIVED:03/13/87

SAMPLE: Water sample, field blank

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chloromethane | ug/L | <1 |
| Bromomethane | ug/L | <1 |
| Dichlorodifluomethane | ug/L | <1 |
| Vinyl Chloride | ug/L | <1 |
| Chloroethane | ug/L | <1 |
| Methylene Chloride | ug/L | <1 |
| 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 | 2 |

| 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 |

cc:

REMARKS:

DIRECTOR Thomas R. Gentile

rn= 1552

100382

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO. C880826/8 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/07/88 RECEIVED:04/08/88

SAMPLE: Water sample, field blank-1

| 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 | <2 |

| 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= 3086

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. 1780826/18 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, field blank-2

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chloromethane | ug/L | <1 |
| Bromomethane | ug/L | <1 |
| Dichlordifluometnane | 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 | <2 |

| 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= 3096

**ECOTEST LABORATORIES, INC.** ENVIRONMENTAL TESTING

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

LAB NO. C870478/4 03/20/87

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: V. Glaser

SOURCE OF SAMPLE: Project #N1222LI1, Glen Cove
COLLECTED BY: Client DATE COL'D: RECEIVED:03/13/87

SAMPLE: Water sample, trip blank

| 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 | <1 |
| 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 |

cc:

REMARKS:

DIRECTOR Thomas R. Stauffer

rn= 1551

100385

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTIN

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

LAB NO.1780826/19 04/15/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/08/88 RECEIVED:04/08/88

SAMPLE: Water sample, trip blank

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS | | |
|---|---|---|---|---|---|
| Chloromethane | ug/L | <1 | Chlorobenzene | ug/L | <1 |
| Bromomethane | ug/L | <1 | 13 Dichlorobenzene | ug/L | <2 |
| Dichlordifluomethane | ug/L | <1 | 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 | <2 | Toluene | ug/L | <2 |
| Trichlorofluomethane | ug/L | <2 | Ethyl Benzene | ug/L | <1 |
| 11 Dichloroethene | ug/L | <2 | m Xylene | ug/L | <2 |
| 11 Dichloroethane | ug/L | <2 | o+p Xylene | ug/L | <4 |
| 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 | <2 | | | |

cc:

REMARKS:

DIRECTOR

rn= 3097

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C000099/8 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/13/88 RECEIVED:04/18/08

SAMPLE: Water sample,decon water tank

| 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 | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <1 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <1 |
| Ethyl Benzene | ug/L | <1 |
| m + p Xylene | ug/L | <2 |
| o Xylene | ug/L | <1 |

cc:

REMARKS:

100387

DIRECTOR

**ECOTEST LABORATORIES, INC.** ENVIRONMENTAL TESTING

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

LAB NO. C880899/9 04/27/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Glen Cove, NY1342LI01
COLLECTED BY: Client DATE COL'D:04/13/88 RECEIVED:04/18/88

SAMPLE: Water sample, decon water tap

| 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 | <1 |
| 12 Dichlorobenzene | ug/L | <1 |
| 14 Dichlorobenzene | ug/L | <1 |
| Benzene | ug/L | <1 |
| Toluene | ug/L | <1 |
| Ethyl Benzene | ug/L | <1 |
| m + p Xylene | ug/L | <2 |
| o Xylene | ug/L | <1 |

cc:

REMARKS:

100388

DIRECTOR

APPENDIX F

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880900 04/29/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Project #N1342LI01
COLLECTED BY: Client DATE COL'D:04/13/88 RECEIVED:04/18/88

SAMPLE: Soil Sample,composite-GM-14 light & dark

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chloromethane | ug/Kg | <5 |
| Bromomethane | ug/Kg | <5 |
| Dichlordifluomethane | ug/Kg | <5 |
| Vinyl Chloride | ug/Kg | <5 |
| Chloroethane | ug/Kg | <5 |
| Methylene Chloride | ug/Kg | <10 |
| Trichlorofluomethane | ug/Kg | <10 |
| 11 Dichloroethene | ug/Kg | <10 |
| 11 Dichloroethane | ug/Kg | <10 |
| 12 Dichloroethene | ug/Kg | <10 |
| Chloroform | ug/Kg | <5 |
| 12 Dichloroethane | ug/Kg | <10 |
| 111 Trichloroethane | ug/Kg | <5 |
| Carbon Tetrachloride | ug/Kg | <5 |
| Bromodichloromethane | ug/Kg | <5 |
| 12 Dichloropropane | ug/Kg | <10 |
| t 13 Dichloropropene | ug/Kg | <10 |
| Trichloroethylene | ug/Kg | <5 |
| Chlorodibromomethane | ug/Kg | <5 |
| 112 Trichloroethane | ug/Kg | <10 |
| c 13 Dichloropropene | ug/Kg | <10 |
| 2chloroethvinylether | ug/Kg | <10 |
| Bromoform | ug/Kg | <10 |
| 1122Tetrachloroethan | ug/Kg | <10 |
| Tetrachloroethene | ug/Kg | <5 |

| ANALYTICAL PARAMETERS | | |
|---|---|---|
| Chlorobenzene | ug/Kg | <5 |
| 13 Dichlorobenzene | ug/Kg | <5 |
| 12 Dichlorobenzene | ug/Kg | <5 |
| 14 Dichlorobenzene | ug/Kg | <5 |
| Benzene | ug/Kg | <5 |
| Toluene | ug/Kg | <5 |
| Ethyl Benzene | ug/Kg | <5 |
| m + p Xylene | ug/Kg | <10 |
| o Xylene | ug/Kg | <5 |
| Arochlor 1016 | ug/Kg | <40 |
| Arochlor 1221 | ug/Kg | <40 |
| Arochlor 1232 | ug/Kg | <40 |
| Arochlor 1242 | ug/Kg | <40 |
| Arochlor 1248 | ug/Kg | <40 |
| Arochlor 1254 | ug/Kg | <40 |
| Arochlor 1260 | ug/Kg | <40 |
| Petrol. Hydrocarbons | mg/Kg | 330 |

cc:

REMARKS:

100390



DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

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

LAB NO. C880900 04/29/88

Geraghty & Miller, Inc.
125 East Bethpage Rd.
Plainview, NY 11803
ATTN: Vince Glasser

SOURCE OF SAMPLE: Project #N1342LI01 (eptox metals)
COLLECTED BY: Client DATE COL'D:04/13/88 RECEIVED:04/18/88

SAMPLE: EP Extract of composited soil

| ANALYTICAL PARAMETERS | | | ANALYTICAL PARAMETERS |
|---|---|---|---|
| Arsenic as As | mg/L* | 0.041 | |
| Barium as Ba | mg/L* | <0.05 | |
| Cadmium as Cd | mg/L* | <0.001 | |
| Chromium as Cr | mg/L* | <0.02 | |
| Lead as Pb | mg/L* | <0.005 | |
| Mercury as Hg | mg/L* | <0.001 | |
| Selenium as Se | mg/L* | <0.005 | |
| Silver as Ag | mg/L* | <0.01 | |

cc:

REMARKS: *Analysis performed on EP Extract according to USEPA EP Toxicity procedure (40 CFR Part 261-Appen.II).
Page 2 of 2.

100391

DIRECTOR

rn= 3388

# LI TUNGSTEN SITE INVESTIGATION REPORT (Volume 2)

Prepared For:

**Campon Realty Corp.**

445 Fifth Avenue

New York, NY 10016

Prepared by:

**RTP Environmental Associates, Inc.**

400 Post Avenue

Westbury, NY 11590

May, 1988

DRAFT

VOLUME 2

# TRANSFORMER REMOVAL

# EMPIRE ENVIRONMENTAL SERVICES, INC.

1613 - 63rd Street, Brooklyn, New York 11204

718-256-5000 • 718-256-5555


May 2, 1988

RTP Environmental Associates Inc
400 Post Avenue
Westbury NY 11590

Prop: 5327

Attention: Mr. Paul Eisen

Gentlemen:

This proposal refers to transformers for disposal located on property in Glen Cove, NY which were shown to us by Mr Paul Eisen. We inspected 21 liquid cooled transformers as well as two (2) oil circuit breakers. All the transformers and oil circuit breakers will be disconnected, removed and then loaded on trucks for removal and disposal according to all Federal,State and Local EPA regulations.

All transformers and the two (2) oil circiut breakers will be tested for PCB content and results forwarded to you. One primary interrupter switch and one large secondary air circuit breaker section will be removed from their location and stored on the premises.

The following prices include all aforementioned services based on parts per million of PCB content in the transformers.

| | |
|---|---|
| Total Cost for oil less the 500 PPM | $ 85,731.00 |
| Total Cost for oil more than 500 PPM and less then 10,000 PPM | $ 93,317.00 |
| Total Cost for oil more the 10,000 PPM | $119,390.00 |

Empire Environmental will arrange for disconnecting of equipment,removing same and loading on disposal vehicles.

.E ENVIRONMENTAL
SERVICES, INC.

1613 - 63rd Street, Brooklyn, New York 11204

718-256-5000 • 718-256-5555

vironmental Associates Inc
2, 1988

Price includes pick-up, transportation, labor, manifests, disposal costs and certificate of isposal
otation valid for 60 days
erms of this agreement requires a 50% deposit order and the balance upon pick up

for this removal will conform to all Local, eral Regulations. It will also conform 761.60 relating to electrical equipment erials will be transported by carriers sted, insured and licensed for hazardous ill then be made to an EPA approved incineration or chemical destruction chemical waste landfill. Upon ve and all materials are processed estruction" documenting the proper it s will be furnished to you.

opportunity to quote and should we rder it will receive our prompt

ES INC

100396

# SECTION 6.0

## TANK CLEANING, REMOVAL OF ASBESTOS AND DEMOLITION OF STRUCTURES

# TANK CLEANING PROPOSAL

PROPOSAL

# AMERICAN ENVIRONMENT TECHNOLOGIES CORP

38-40 Oak Street
Norwood, New Jersey 07648
Telephone 201-767-6757 NJ
1-800-433-5937

PROPOSAL NO. 926

| | | |
|---|---|---|
| PROPOSAL SUBMITTED TO: R.T.P. Environmental Associates, Inc. | PHONE: 516-333-4526 | DATE: 5/4/88 |
| STREET: 400 Post Avenue | ATTENTION: Mr. Kenneth Skipka | |
| CITY, STATE & ZIP CODE: Westbury, New York 11590 | JOB SITE: Li Tungsten Site, Glen Cove, N.Y. | |

**SPECIFICATIONS:**
**WE HEREBY SUBMIT SPECIFICATIONS AND ESTIMATES FOR THE FOLLOWING:**

The costs involved in supplying the manpower, equipment and materials necessary are as follows:

1. Tank will be entered, squeegee cleaned, and triple rinsed after pumping and removal of contents would be $ 203,000.00.

NOTE: R.T.P. is responsible for the disposal of liquid or to designate an environmentally sound, on site tank for the transfer or liquid for later disposal by R.T.P.

NOTE: R.T.P. is responsible for providing roll-off containers for any solids removed for tank and for properly disposing of same.

NOTE: R.T.P. is responsible for supplying vac truck to assist in the tank cleaning.

NOTE: The above price is based on using heavy equipment that will be on site for the demolition and is covered in the demolition proposal.

100399

THIS PROPOSAL IS MADE THIS 4th DAY OF May, 19 88.

AUTHORIZED REPRESENTATIVE: Tony Dalto
Tony Dalto

CONDITIONS: ALL MATERIAL AND WORKMANSHIP IS GUARANTEED TO MEET SPECIFICATIONS. ALL WORK TO BE COMPLETED IN A PROFESSIONAL WORKMANSHIP MANNER ACCORDING TO STANDARD PRACTICES. ALL WORK TO BE PERFORMED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL, STATE AND FEDERAL RULES & REGULATIONS. ANY ALTERATIONS TO AND/OR DEVIATION FROM THE ABOVE OR ATTACHED SPECIFICATIONS, INVOLVING EXTRA COSTS, WILL BE EXECUTED ONLY UPON WRITTEN ORDERS AND WILL BE BILLED AS AN EXTRA CHARGE OVER AND ABOVE THIS ESTIMATE.

TERMS: 50% UPON SIGNING OF THIS CONTRACT
BALANCE-NET UPON COMPLETION OF WORK
INTEREST-1½% PER MONTH ON ANY UNPAID BALANCE.

After 30 days-1½% interest.
After 60 days-all legal fees for collection will be your responsibility.

ACCEPTANCE OF PROPOSAL: THE ABOVE PRICES, SPECIFICATIONS AND CONDITIONS ARE SATISFACTORY AND ARE HEREBY ACCEPTED. PAYMENT WILL BE MADE AS OUTLINED ABOVE. YOU ARE AUTHORIZED TO PROCEED WITH THE WORK AS SPECIFIED.

DATE _____ ORDER NO. _____ SIGNATURE _____

NOTE: THIS PROPOSAL MAY BE WITHDRAWN BY US IF NOT ACCEPTED WITHIN 30 DAYS.

AMERICAN ENVIRONMENT TECHNOLOGIES CORP.
38-40 OAK STREET
NORWOOD, NEW JERSEY 07648
NJ (201) 767-6757 USA 1-800-433-5937
FAX (201) 767-1889

April 7, 1988

RTP Environmental Associates Inc.
400 Post Avenue
Westbury, New York 11500

Attention: Mr. Ken Skipka

Reference: Li Tungsten Site
Glen Cove, New York

Dear Mr. Skipka:

Enclosed please find our inventory of known tanks at the Li Tungsten facility. All tanks with reasonable access were measured for quantity but there were some tanks that were sealed and our count is based on previous information provided by RTP.

Please note that before work commenced entire area, then specific tanks were tested for oxygen, toxicity and flammability with the Neotronics Exotox Portable Multi-Gas Monitor. Readings fell within safe guidelines except for obvious ammonia and acid tanks. As part of our normal operational procedures and especially because of large amount of asbestos, all our personnel wore full face respirator masks equipped with appropriate filter cartridges, full protective suits, boots, gloves and hard hats.

Due to the general run down condition of this abandoned facility, we recommend immediate measures be taken in order to protect against serious environmental problems:

1. Asbestos abatement should commence immediately. There are several areas of free falling asbestos.
2. Many of the storage tanks and associated piping are corroded, or linings collapsed and are not safe. All flowable liquids should be disposed of as soon as possible. If final disposal poses a logistics problem at this time, please consider the following. The most sound tank of each individual product may be used as a holding tank if a protective berm is constructed around perimeter of the tank. Then liquid from unsafe tank could be

AMERICAN ENVIRONMENT TECHNOLOGIES CORP.
38-40 OAK STREET
NORWOOD, NEW JERSEY 07648
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pumped into holding tank, sludge and solids can be removed into approved containers, tank can then be cleaned and demolished.

3. The underground storage tanks should be cleaned, excavated and disposed of soon. Leaks are much more likely and environmental liability must be assessed.
4. Structural damage due to neglect and corrosion throughout the buildings and especially ladders, catwalks etc. is extensive. If other work is going on at the site, probability of disturbance and damage to these structures could result. We recommend demolition work begin in conjunction with above mentioned phases in order that work can be completed in the safest, most expedient manner.

Thank you for using American Environment Technologies Corp. If you have any questions or would like to schedule beginning of your project, please give me a call.

Sincerely,

Peter Melber

AMERICAN ENVIRONMENT TECHNOLOGIES CORP.
38-40 Oak Street
Norwood, New Jersey 07648
Telephone 201-767-8757 NJ
1-800-433-5937 USA

# SUMMARY OF TANK INVENTORY

## LOUNG BUILDING (OUTSIDE)

| Tank I.D. No. | Capacity | Current Condition | Description |
|---|---|---|---|
| L-9E Steel Tank | 5,800 | 1' | NH4WO4 solution |
| L-8A NH3 Scrubber Tank | 12,000 | Empty | |
| L-8 " | 12,000 | 1' | |
| L-6 Steel Tank | 12,000 | 1/2 full | APT Mother Liquor |
| L-5 " | 12,000 | 3/4 full | " |
| L-9 " | " | Empty | " |
| L-10 " | " | Empty | " |
| L-13A " | 12,000 | 1/2 full | ACR Leaching Sol. |
| L-13B " | | 1/2 full | " |
| L-550 " | 2,000 | full | water |
| L-550A " | | 3/4 full | |
| L-611 " | 2,000 | 1000 | solid |
| L-568 " | " | full | |
| *L-101 " | | | ammonia? |
| *L-102 " | | empty | |
| *L-103 " | | empty | |
| *L-104 " | | empty | |
| *L-105 " | | empty | |
| *L-106 " | | empty | |
| *L-107 " | | empty | |
| *old 9C " | | empty | |
| *old 9D " | | empty | |
| #85 unknown | | | |
| #86 unknown | | | |

## LOUNG BUILDING (INSIDE)

| Tank I.D. No. | Capacity | Current Condition | Description |
|---|---|---|---|
| L-9A APT Crystallizer | 2,400 | | |
| L-9B " | " | | |
| L-9C " | " | | |
| L9-D " | " | Empty | |
| L-9R-1 Steel Tank | 1,000 | Empty | |
| L-9R-2 | 5,000 | | |
| L-9F | 2,800 | Empty | |
| L-11 | 12,000 | " | |

* ( ) designates unable to open

100402

EAST BUILDING (OUTSIDE)

| Tank I.D. No. | Capacity | Current Condition | Description |
|---|---|---|---|
| 233 Wooden Tank | 20,000 | 18,000 | Spent HCl Acid |
| 231 " | 20,000 | 15,000 | " |
| 232 " | " | 15,000 | |
| 235 Steel Tank | 8,000 | 2,000 | Aqua NH3 |
| 1213-1 Fiberglass Tank | 17,000 | (Empty) Gauge shows 1-1/2' | HCl Acid Stor. Tank |
| 1213-2 " | " | " | " |
| 1213-3 " | " | (Empty) Broken | " |
| 1330 Lime Silo | 64 ton | Gauge Indicates 10% | " |
| 237 Steel Tank | 8,500 | full | lime & water mixer |
| 1329 " | 13,000 | empty | |
| 1328 Thickener | 19,000 | 1/2 full dirt | solution & precipitate from neutraliz |
| 1332 Vertical Steel Tank | 8,000 | full | water |
| 1333 " | 7,000 | (5,500) | water & scheelite |
| 1334 " | 3,500 | ( 250) | spent HCl acid |
| 1335 " | 24,000 | (Empty) | " |
| 1345 " | 12,000 | (Empty) | " |
| E-3 Steel Tank | | (Empty) | |
| 245 | 16,000 | 12,000 | FM residue |
| 246 " | " | 15,000 | ACR Leaching sol. |
| 1302 Aqua NH3 | 9,000 | (1,700) | Aqua NH3 |
| 1303 Enrichment Tank | | 1' | |
| 1306 Absorber Tank | 1,000 | 3' | NH3 Solution |
| 1307 " | " | 3 1/2' | " |
| 1308 " | " | 4' | " |
| 1336 Vertical tank | 9,000 | 4,500 | ACR Residue |
| 244 Steel tank | 16,000 | 8,000 | water |
| 248 " | 5,500 | 2,500 | P.D. Residue |
| 249 " | 23,000 | full | P.D. Leaching sol. |
| 242 Concial Tank | 5,500 | (100) | NaOH solution |
| *79 Fiberglass Tank | | 3' | |
| *80 " | | 6" | |
| #84 VAT | | 1' | |
| #9 Steel Tank | | (Unknown) | |

*( ) designates unable to open



100403

EAST BULDING (INSIDE)

| Tank I.D. # | Capacity | Current Condition | Description |
|---|---|---|---|
| 262 Steel Tank | 17,000 | 70 g. | Stathetic Sheelite |
| 263 " | " | " | " |
| 264 " | " | " | " |
| 265 " | " | " | " |
| 266 " | " | 36" | " |
| 268 Haveg Tank | " | 7" | |
| 269 " | " | 39" | |
| 270 " | " | 40" | |
| 271 " | " | Empty | |
| 274 " | " | 28" | |
| 275 " | " | Empty | |
| 276 " | " | " | |
| 277 " | " | " | |
| 278 " | " | " | |
| 279 " | " | " | |
| 280 " | " | " | |
| 281 " | " | " | |
| 282 " | " | " | |
| 1341 " | | " | |
| 1342 " | | 47" | |
| 1343 " | | 51" | |
| 1344 " | | Empty | |
| 285 R & B Lined Tank | 6,000 | 3" | Tungsten Acid |
| 286 Steel Tank | 16,000 | 2" | |
| 287 " | 16,000 | 10,000 | P.D. Sol. & Residue |
| 616 Glass lined tank | 4,000 | 2' | |
| 617 Rubber lined tank | 6,000 | Empty | |
| 618 Surge tank | 1,100 | (Empty) | |
| 619 Rubber lined tank | 5,000 | (Empty) | |
| 620 Residue Digester | 4,000 | 2" | |
| 1337 Vertical Steel Tnk | 1,700 | 40" | |
| 1338 Rubber lined | 3,000 | 8" | |
| 1339 " | " | 8" solid | |
| 1340 " | " | 2,200 | |
| 255 Steel Tank 6'x3' | | (unknown) | |
| *1 Underground 5' x 8' | | full | |
| *2 By tank 555 | | (unknown) | |
| *3 9 x 5 | | (unknown) | |
| *4 underground pit 5' deep | | full | |
| *5 sealed | | (unknown) | |
| *6 | | empty | |
| *78 sealed | | (unknown) | |

* ( ) designates unable to open



100404

PRESSURE DIGESTER SYSTEM

| Tank I.D. No. | Capacity | Current Condition | Description |
|---|---|---|---|
| #60 Jacketed Digester | | Empty | |
| #64 " | | Empty | |
| 56 Dilution tank | 4,000 | 2,000 | P.D. Sol & Residue |
| 58 " | 4,000 | 1,000 | " |
| P-1 Mixer | | 1/2 full | |
| 83 | | full | |
| 82 | | empty | |
| 89 | | empty | |
| 88 | | empty | |
| 41 underground gasoline tank | | contents unknown | |
| 89A unknown | | | |

DICE BUILDING (OUTSIDE)

| Tank I.D. No. | Capacity | Current Condition | Description |
|---|---|---|---|
| 22 | | empty | |
| 23 | | empty | |
| 24 550g. oil tank | 6" | | |
| 25 10,000g. oil tank | 7" | | |
| 26 10,000g. oil tank | 7" | | |
| 27 | | empty | |
| 31 | | empty | |
| 19 | | empty | |
| 20 outside boiler room | 3" | | |
| 21 " | | unknown | |
| A underground storage tank | 10,000 g. | 4" | |
| B " | 1,000 g. | unknown | |
| 30 | | empty | |
| 32 | | full | |
| 33 | | 1/2 full | |
| 34 | | empty | |
| 35 NaOH Storage Tank | 95,000 | 3,000 | 50% NaOH |
| 36 CaC12 Storage Tank | 95,000 | 2,000 | 30% CaC12 |
| 37 | | empty | |
| 38 | | empty | |
| 39 | | empty | |
| 40 | | empty | |
| Ball Tank | 13,000 | (Empty) | |
| Propane Tank | 8,000 | (Empty) | |
| Fuel Oil Tank | 500,000 | (Empty) | |
| Water Reservoir | 150,000 | 1/4 full | |

* ( ) designates unable to open



100405

DICE BUILDING (OUTSIDE) Con't

| Tank I.D. No. | Capacity | Current Condition | Description |
|---|---|---|---|
| Oil Change Pit | | Full of Liquid | |
| 45-55 Warehouse Area | | empty | |
| C 10,000 g. underground storage tank | | | |
| D 550 storage tank | 1-1/2' | | |
| 41-44 | | empty | |
| 2 acid trucks | | | |
| 56-59 | | | |
| 59A | | | |
| underground gasoline tank - contents unknown | | | |

DICE BUILDING INSIDE
A - Mixer Room Section

| Tank I.D. No. | Capacity | Current Condition | Description |
|---|---|---|---|
| M-1-A Steel Tank | 200 | Empty | |
| M-1 Steel Tank | 2,000 | 500 | Residue & Leach. |
| Sol | | | |
| M-2 " | 2,900 | 1,100 | |
| M-3 " | 1,500 | Empty | |
| M-4 " | 3,000 | 1,800 | Cobalt Chloride So |
| M-5 " | 3,000 | 1,800 | |
| M-6 " | 1,700 | Empty | |
| M-7 " | " | Empty | |
| M-8 " | " | (Empty) | |
| M-9 " | " | Empty | |
| M-10 " | 1,400 | " | |
| M-11 " | " | 700 | Sodium Tungstate Solution & Residue |
| (B) K-Tanks Section | | | |
| K-1 Steel Tank | 12,000 | 7,000 | Sodium Tungstate So |
| K-2 " | " | 11,000 | " |
| K-3 " | " | 11,000 | " |
| K-4 " | " | 7,000 | " |
| K-5 " | " | 500 sludge | NF Residue |
| K-6 " | " | 2,000 | Sodium Tungstage So |
| K-7 " | " | 6,000 solid | NF Residue |
| K-8 " | " | 2' | |
| K-9 " | " | 7,000 g. | |
| W-1 Underground Tank | " | full - sludge | |
| W-2 Steel Tank | " | 600 g. | |
| W-3 " | " | full | |

* ( ) designates unable to open



100406

DICE BUILDING INSIDE
(B) K-Tanks Section

| Tank I.D. No. | Capacity | Current Condition | Description |
|---|---|---|---|
| W-4 Steel Tank | | full | |
| (C) Cobalt Process Section | | | |
| 833 Brick lined | 4,500 | Empty | |
| 832 Thickener | 20,000 | 2,000 | |
| 840 Acid Tank | 11,000 | (Empty) | |
| C-1 | 3,000 | Empty | |
| C-2 | " | " | |
| C-3 | 1,200 | full | Cobalt Sulfate Sol. & FM Residue |
| C-4 | 5,500 | full | Cobalt Sulfate Sol |
| C-5 | " | full | " |
| C-6 | 3,000 | 700 | " |
| C-7 | " | 2,500 | " |
| C-8 | 6,000 | Empty | " |
| C-9 | " | Empty | " |
| C-10 | 3,000 | full | |
| C-11 | " | full | " |
| C-12 | " | full | " |
| C-13 | " | 1,500 | " |
| C-14 | " | full | |
| C-15 | " | Empty | |
| *16 | Blg. | 50% full | |
| *17 | sealed | (unknown) | |
| *18 | | full | |
| *19 | sealed | (unknown) | |
| *667 | " | " | |

Boiler Room

#120 oil tank -small
#121 oil tank - small
Far west end of Dice Bldg.
#28 Ball tank - empty
#29 " empty

* ( ) designates unable to open



100407

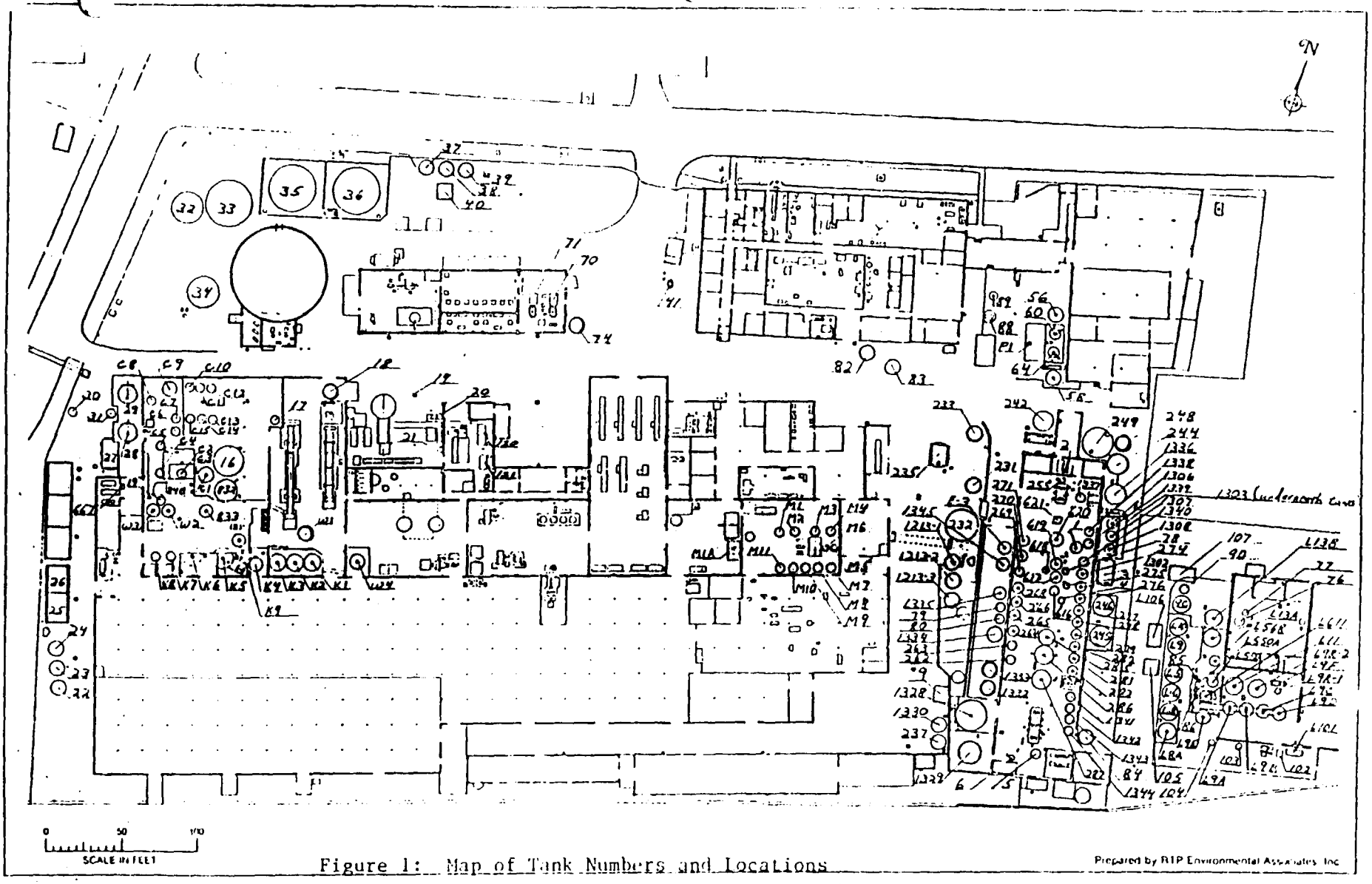



Figure 1: Map of Tank Numbers and Locations

100408

Peter Melber - President

ENVIRONMENT TECHNOLOGIES CORP.

38-40 OAK STREET
NORWOOD, NEW JERSEY 07648

NJ (201) 767-6757 USA 1-800-433-5937
FAX (201) 767-1889

May 9, 1988

Kenneth Skipka
P. Environmental Associates, Inc.
Post Avenue
ry, New York

Ken:

please find the revised proposals for the Li Tungsten Site. note that all three stages of work depend on each other in ays. Tank cleaning, asbestos, demolition, should any one of liminated add 10% to other work.

scope of work concerning other sub-contractors must be order to avoid costly hold-ups of job progression. Any red will be billed on a time and material basis.

noted job will be completed in the following amounts of

| | |
|---|---|
| Tank cleaning | 3 months |
| Asbestos | 2 months |
| Demolition | 6 months |

o expedite completing as much as possible entire leted in seven or eight months.

s due up front and balance upon completion of that xt phase.

RECEIVED MAY 1 0 1988

REFERENCE NO. 5

# PRELIMINARY ASSESSMENT
# OFF SITE RECONNAISSANCE
# INFORMATION REPORTING FORM

Date: 7/20/89

Site Name: LI TUNGSTEN TDD: 02-8807-28

Site Address: 63 HERB HILL ROAD
Street, Box, etc.

GLEN COVE
Town

NASSAU
County

NEW YORK
State

NUS Personnel:

| Name | Discipline |
|---|---|
| STEVEN OKULEWICZ | GEOLOGIST |
| DEBORAH COHEN | CHEMICAL ENGINEER |
| | |

Weather Conditions (clear, cloudy, rain, snow, etc.):
OVERCAST

Estimated wind direction and wind speed: NONE

Estimated temperature: 75°F

Signature: [signature] Date: 7/20/89

Countersigned: [signature] Date: 7/20/89

# PRELIMINARY ASSESSMENT

## INFORMATION REPORTING FORM

Date: 7/20/89

Site Name: LI TUNGSTEN

TDD: 02-8907-28

Site Sketch:

Indicate relative landmark locations (streets, buildings, streams, etc.). Provide locations from which photos are taken.

SEE ATTACHED SHEET

Signature: [illegible]

Date: 7/20/89

Countersigned: [illegible]

Date: 7/20/89

# PRELIMINARY ASSESSMENT

## INFORMATION REPORTING FORM

Date: 7/20/89

Site Name: LI TUNGSTEN TDD: 02-8907-28

Notes (Periodically indicate time of entries in military time):

ARRIVED ON SITE AT 12:00 PM. BACKGROUND READING ON MINI-RAD = 0.01 mR/HR.. PARKED VEHICLE ON HERB HILL ROAD NEAR LARGE ABOVE GROUND TANKS, WHICH ARE FENCED OFF WITH 6-CHAIN LINK AND YELLOW CAUTION TAPE. TOOK PHOTO (S1P1) (OJC) F1. WALKED TO PLANT MAIN ENTRANCE GATE WHICH WAS PADLOCKED. SAW RUSTING STACKED 55-GALLON DRUMS AND WOODEN PALLETS. BUILDINGS WINDOWS ARE BOARDED UP BUT SOME DOORS ARE OPEN. TOOK PHOTOS OF SIGN (S2P2) (F2) AND STACKED DRUMS (S3P3) (F3), STARTING TO RAIN. MOVED VEHICLE TO GARVIES POINT ROAD ACROSS FROM HAWKINS FUEL COMPANY. PARKED NEXT TO MUD POND WHICH IS FENCED OFF FROM VIEW BY 6' WOODEN FENCE. SOIL ~~[illegible]~~ BETWEEN FENCE AND ROADWAY IS BLACKENED AND STAINED, ALSO SMELLS "ORGANIC". TOOK PHOTO OF MONITORING WELL IN FRONT OF FENCE AND MUD POND (S4P4) (F4). PHOTO OF WAREHOUSE BUILDING NEXT TO HAWKINS FUEL OIL COMPANY (S5P5) (F5), WELL # EMW-4, PADLOCKED. MOVED VEHICLE TO CORNER OF HERB HILL ROAD AND DICKSON LANE. PHOTO OF MONITORING WELL GM-8 IN AREA OF ABOVE GROUND TANKS - FENCED OFF. PHOTO (F6) S6P6. NO PILES SEEN IN THIS AREA. STORM DRAINS ALONG HERB HILL ROAD.

Signature: [signature] Date: 7/20/89

Countersignature: [signature] Date: 7/20/89

# PRELIMINARY ASSESSMENT

## INFORMATION REPORTING FORM

Date: 7/20/89

Site Name: LI TUNGSTEN TDD: 02-8907-78

Notes (Cont'd):

TOOK PHOTO OF ENTRANCE TO NEW WAREHOUSE BUILDING THROUGH CHAINLINK FENCE (PHOTO 5117 F7), PHOTO (5118 F8) OF GREY 30-GALLON DRUMS STACKED ABOVE WOODEN FENCE ON CORNER OF HARRY HILL ROAD (SE CORNER) AT INTERSECTION. MOVED VEHICLE NORTH ALONG DICKSON LANE AND PARKED ACROSS FROM REDUCTION BUILDING. TOOK PHOTO OF (5120 F10) UNCOVERED, BLACK, FINE GRAINED PILES (3 IN NUMBER) APPROXIMATELY 50 FEET FROM ROADWAY (DICKSON LANE) ON EAST SIDE OF ROAD. PHOTO (5119 F9) OF ENTRANCE TO OPEN REDUCTION BUILDING SHOWING 55-GALLON RUSTED DRUMS. NO READINGS ABOVE BACKGROUND ON MINI-RAD. LEFT SITE AT 1:00 P.M. (EASIER ACCESS TO SITE ALONG LANDING ROAD AND MAKE LEFT TURN TO ELLWOOD AVE).

Attach additional sheets if necessary. Provide site name, TDD number, signature, and countersignature on each.

Signature: Tom O'Reilly Date: 7/20/89

Countersignature: [illegible] Date: 7/20/89

# PRELIMINARY ASSESSMENT

## INFORMATION REPORTING FORM

Date: 7/30/89

Site Name: LI TUNGSTEN TDD: 07-8907-38

Photolog: DEBORAH COHEN - PHOTOGRAPHER

| Frame/Photo Number | Date | Time | Photographer | Description |
|---|---|---|---|---|
| F1 (STP1) | 7/30/89 | 2:05 | D.C. | VIEW OF HAULE GROUND TANKS LOOKING NORTH ON MAB HILL ROAD. |
| F2 (STP2) | 7/30/89 | 17:09 | D.C. | MAIN ENTRANCE OF LI TUNGSTEN-SIGN - SOUTH VIEW |
| F3 (STP3) | 7/30/89 | 17:10 | D.C. | STACKED DRUMS, MONITOR WELL IN MAIN ENTRANCE, SOUTH VIEW |
| F4 (STP4) | 7/30/89 | 17:20 | D.C. | MUD POND, MONITORING WELL SCARRED VEGETATION, NORTH VIEW |
| F5 (STP5) | 7/30/89 | 2:21 | D.C. | LI WAREHOUSE AND ADJACENT HAWKINS FUEL CO. SE VIEW |
| F6 (STP6) | 7/30/89 | 2:30 | D.C. | EAST VIEW OF AREA IN FRONT OF TANKS AND MONITORING WELL GM-9 |
| F7 (STP7) | 7/30/89 | 17:31 | D.C. | ENTRANCE TO NEW WAREHOUSE BLDG. SHOWING OPEN DOORS - DRUMS GREY STACKED DRUMS ON CONCRETE |
| F8 (STP8) | 7/30/89 | 17:37 | D.C. | SE VIEW OF HAWKINS CONCRETE |
| F9 (STP9) | 7/30/89 | 2:53 | D.C. | ENTRANCE TO REDUCTION PLANT LOOKING EAST SHOWING DRUMS |
| F10 (STP10) | 7/30/89 | 2:40 | D.C. | OPEN WATER PIPE ON EAST SIDE OF DICKSON LANE |

Attach additional sheets if necessary. Provide site name, TDD number, signature, and countersignature on each.

Signature: [signature] Date: 7/30/89

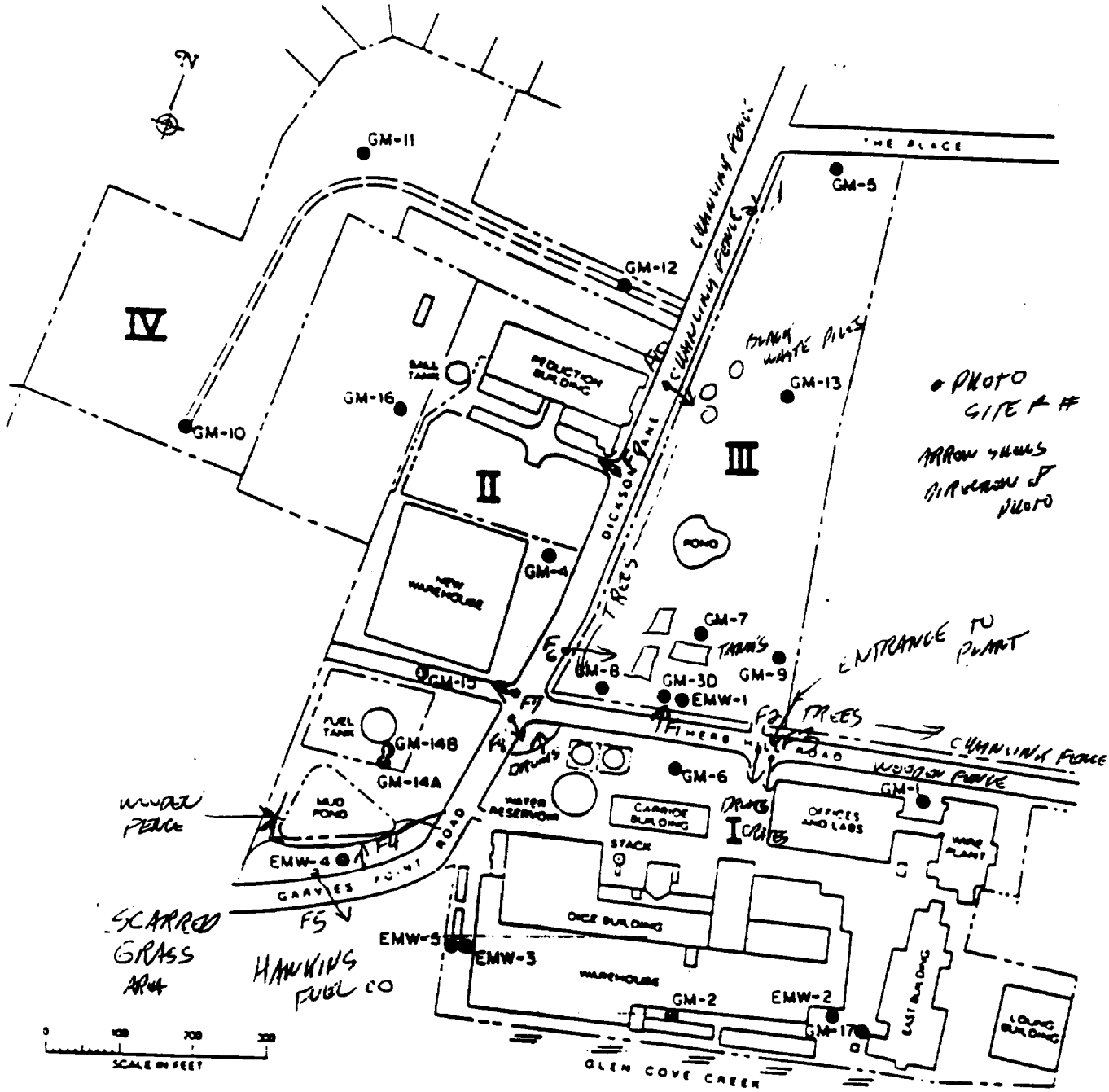
Countersignature: [signature] Date: 7/30/89

100415

LI TUNGSTEN 22-3907-78
1/20/89

GERAGHTY & MILLER, INC.
Ground-Water Consultants

| | | | |
|---|---|---|---|
| COMPILED BY: V. GLASSER | DATE: 4-88 | SCALE: SHOWN | PREPARED FOR: RTP ENVIRONMENTAL ASSOC., INC. Glen Cove, New York |
| PREPARED BY: G. SCHAFFNER | FILE NO: N1342LI1-1047 | | |
| PROJECT MGR: V. GLASSER | | | |




EXPLANATION

II PARCEL NUMBER

● MONITORING WELL LOCATION

PROPERTY/PARCEL BOUNDARY

DIRT ROAD

100416

SUBJECT

LOCATION OF MONITORING WELLS, LI TUNGSTEN FACILITY, GLEN COVE, NEW YORK

FIGURE 2

REFERENCE NO. 6

# EPA REGION II
# SCANNING TRACKING SHEET

DOC ID # 36752

DOC TITLE/SUBJECT:
**THREE MILE VICINITY MAP**

THIS DOCUMENT IS OVERSIZED AND CAN BE LOCATED IN THE ADMINISTRATIVE RECORD FILE AT THE

**SUPERFUND RECORDS CENTER**
290 BROADWAY, 18TH FLOOR
NEW YORK, NY 10007

REFERENCE NO. 7

# New York

N. Y.—CONN.—N. J.

1:250 000-scale map of

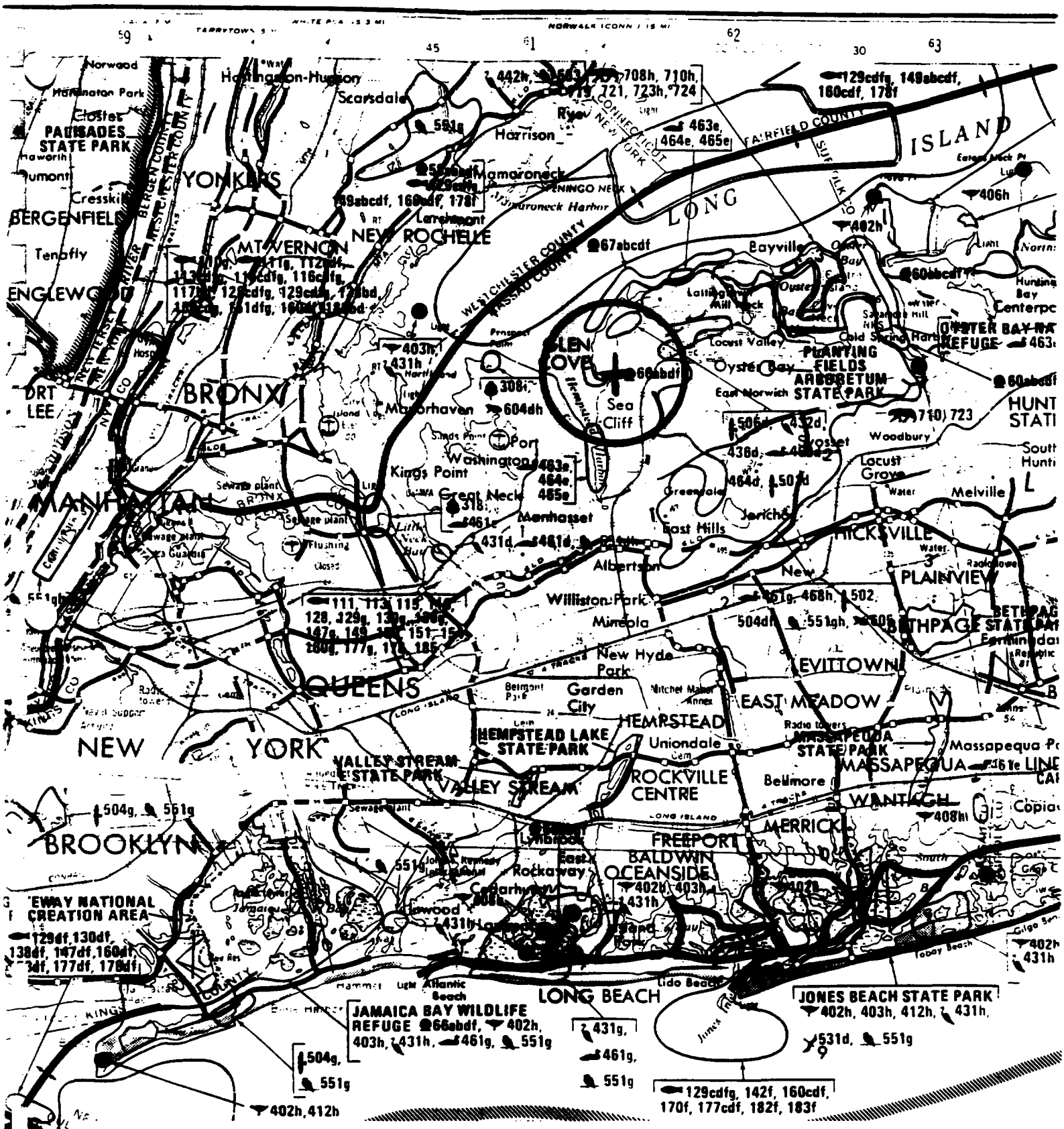
# Atlantic Coast Ecological Inventory

Produced by

U. S. FISH AND WILDLIFE SERVICE

1980

100420




TRANSVERSE MERCATOR PROJECTION

BLACK NUMBERED LINES INDICATE THE 10,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 18

100421

436 Bitterns
437 Great blue heron (S)
438 Wood ibis (S)
439 Anhinga
440 Little blue heron (S)
441 Yellow-crowned night heron (S)
442 Black-crowned night heron
443 Florida sandhill crane (S)
444 Louisiana heron (S)
445 Limpkin (S)
446 Roseate spoonbill (S)
447 Snowy egret (S)
448 Magnificent frigate-bird (S)
449 Reddish egret (S)
450 Clapper rail
451 King rail
452 Virginia rail
453 Sora rail

WATERFOWL (461-500)

461 Waterfowl
462 Swans
463 Geese
464 Dabbling ducks
465 Diving ducks
466 Common eider
467 Harlequin duck
468 Wood duck
469 Fulvous tree duck
470 Loons
471 Grebes
472 Brant geese
473 Snow goose
474 Gadwall
475 Black duck

RAPTORS (501-530)

501 Raptors
502 Owls
503 Kites
504 Hawks
505 Bald eagle (F)
506 Osprey (S)
507 Peregrine falcon (F)
508 Cooper's hawk (S)
509 Swallow-tailed kite
510 Marsh hawk (S)
511 Southeastern American kestrel (S)
512 Florida burrowing owl (S)

SEABIRDS (531-550)

531 Seabirds
532 Petrels, shearwaters, and albatrosses
533 Pelican and allies
534 Alcids
535 Brown pelican (F)
536 Black guillemot
537 Leach's petrel
538 Razorbill
539 Common puffin
540 Double-crested cormorant
541 Gannet
542 Wilson's petrel
543 Northern phalarope
544 Audubon's shearwater
545 Greater shearwater
546 Shearwaters
547 Petrels
548 Jaegers
549 White pelican

SONGBIRDS AND OTHERS (551-600)

551 Songbirds and others
552 Red-cockaded woodpecker (F)
553 Chachalaca
554 Bachman's warbler (F)
555 Wild turkey
556 American woodcock
557 Pileated woodpecker
558 Swainson's warbler
559 Ruffed grouse
560 Bobwhite
561 Mourning dove
562 Warblers
563 Ring-necked pheasant
564 Bank swallow
565 Dusky seaside sparrow (F)
566 White-crowned pigeon (S)

REPTILES AND AMPHIBIANS (601-700)

601 Eastern narrow-mouthed toad (S)
602 Eastern indigo snake (F)
603 American alligator (F)
604 Northern diamondback terrapin
605 Amphibians
606 Greater siren
607 Bog turtle (S)
608 Gopher tortoise (S)
609 Eastern tiger salamander (S)
610 Northern fence lizard
611 Five-lined skink
612 Map turtle
613 Plymouth red-bellied turtle (F)
614 Eastern diamondback rattlesnake
615 Carolina gopher frog
616 Florida gopher frog (S)
617 Atlantic salt marsh watersnake (F)
618 American crocodile (F)
619 Florida Keys mole skink (S)
620 Florida black-headed snake (S)
621 Pine barrens tree frog (S)
622 Northern pine snake (S)
623 Corn snake (S)
624 Timber rattlesnake (S)
625 Southern gray tree frog (S)

MAMMALS (701-800)

701 Beaver
702 Whitetail deer

## AQUATIC ORGANISMS

Shown in BLUE; species with special status shown in RED-(F) or (S) indicates species protected by Federal or State Legislation (see text)

SYMBOL SPECIES

PLANTS (1-50)

1 Irish moss
2 Rockweed

INVERTEBRATES (51-100)

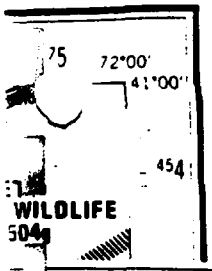
51 Crabs
52 Mussels
53 Oysters
54 Scallops
55 Clams
56 Worms
57 Shrimp
58 American lobster
59 Blue crab
60 Eastern oyster
61 European oyster
62 Bay scallop
63 Deep-sea scallop
64 Calico scallop
65 Surf clam
66 Hard clam
67 Soft shell clam
68 Brackish-water clam
69 Bloodworm
70 Sandworm
71 White shrimp
72 Brown shrimp
73 Northern shrimp
74 Rock crab
75 Jonah crab
76 Whelk
77 Ocean quahog
78 Pink shrimp
79 Stone crab
80 Spiny lobster

FISH (101-200)

101 Sharks, skates, rays
102 Herring
103 Salmon and trout
104 Catfish
105 Cod
106 Sunfish and bass
107 Drum
108 Flatfish
109 Longnose gar
110 Shortnose sturgeon (F)
111 Atlantic sturgeon (S)
112 American eel
113 Blueback herring
114 Hickory shad
115 Alewife
116 American shad (S)
117 Atlantic menhaden
118 Atlantic herring
119 Gizzard shad
120 Tarpon
121 Atlantic salmon
122 White catfish
123 Channel catfish
124 Yellow bullhead
125 Brown bullhead
126 Flat bullhead
127 Sea catfish
128 White perch
129 Striped bass
130 Black sea bass
131 Redbreast sunfish
132 Warmouth
133 Bluegill
134 Largemouth bass
135 Black crappie
136 Sheepshead
137 Spotted seatrout
138 Weakfish
139 Spot
140 Atlantic croaker
141 Southern kingfish
142 Northern kingfish
143 Gulf kingfish
144 Red drum
145 Star drum
146 Black drum
147 Summer flounder
148 Southern flounder
149 Winter flounder
150 Rainbow smelt
151 Atlantic tomcod
152 Threadfin shad
153 Carp
154 Atlantic mackerel
155 Chain pickerel
156 White bass
157 Northern puffer
158 Silver perch
159 Florida pompano
160 Bluefish
161 Spanish mackerel
162 Cobia
163 Mullet
164 White crappie
165 Redear sunfish
166 Smallmouth bass
167 Yellow perch
168 Pumpkinseed
169 Atlantic halibut
170 Atlantic cod
171 Pollock
172 Haddock

000-00

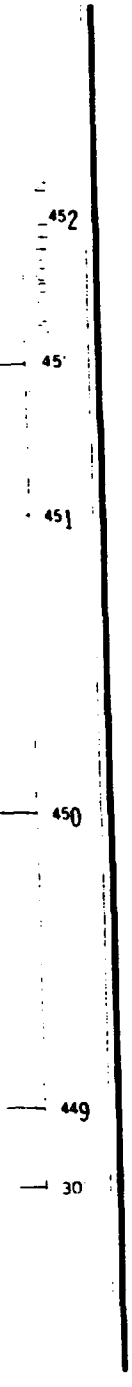
100422




## HABITAT USE

Shown in RED for species with special status, BLUE for aquatic organisms and BROWN for terrestrial organisms

| | | | |
|---|---|---|---|
| a | Spawning ground | f | Sport fishing/hunting area |
| b | Nursery | g | Migratory area |
| c | Commercial harvesting area | h | Nesting area |
| d | Adult concentration | i | Unusual distribution or specimen |
| e | Overwintering area | | |




## TERRESTRIAL ORGANISMS

Shown in BROWN; species with special status shown in RED-(F) or (S) indicates species protected by Federal or State Legislation (see text)

| SYMBOL | SPECIES |
|---|---|
| | PLANTS (301-350) |
| | 301 Eastern hemlock |
| | 302 Spleenwort (S) |
| | 303 Spider lily (S) |
| | 304 Pond bush (S) |
| | 305 Watermilfoil (S) |
| | 306 Hooded pitcher plant (S) |
| | 307 Tree |
| | 308 Prickly pear cactus (S) |
| | 309 Trailing arbutus (S) |
| | 310 Eastern bumelia |
| | 311 Pitcher plant |
| | 312 Baldcypress |
| | 313 Redbay |
| | 314 Seaside alder |
| | 315 Box huckleberry |
| | 316 Purple fringeless orchid |
| | 317 Pink lady's slipper |
| | 318 Ebony spleenwort (S) |
| | 319 Orchids (S) |
| | 320 Golden club (S) |
| | 321 Florida beargrass |
| | 322 East-coast coontie |
| | 323 Fall-flowering ixia |
| | 324 Jackson-vine |
| | 325 Spoon-flower |
| | 326 Curtiss milkweed |
| | 327 Sea lavender |
| | 328 Hand fern |
| | 329 Needle palm |
| | 330 Yellow squirrel-banana |
| | 331 Beach creeper |
| | 332 Florida coontie |
| | 333 Four-petal pawpaw |
| | 334 Bird's nest spleenwort |
| | 335 Burrowing four-o clock |
| | 336 Beach star |
| | 337 Silver palm |
| | 338 Dancing lady orchid |
| | 339 Tamarindillo |
| | 340 Fuch's bromeliad |
| | 341 Everglades peperomia |
| | 342 Buccaneer palm |
| | 343 Slender spleenwort |
| | 344 Pineland jacquemontia |
| | 345 Mahogany mistletoe |
| | 346 Florida thatch |
| | 347 Twisted air plant |
| | 348 Long's bittercress |
| | 349 Venus's flytrap |
| | INVERTEBRATES (351-400) |
| | 351 Monarch butterfly |
| | 352 Zebra butterfly |
| | BIRDS (401-600) |
| | SHOREBIRDS (401-430) |
| | 401 Shorebirds |
| | 402 Terns |
| | 403 Gulls |
| | 404 Forster's tern |
| | 405 Arctic tern |
| | 406 Least tern (S) |
| | 407 Roseate tern (S) |
| | 408 Common tern |
| | 409 Great black-backed gull |
| | 410 Herring gull |
| | 411 Laughing gull |
| | 412 Black skimmer (S) |
| | 413 Turnstones |
| | 414 Plovers |
| | 415 Piping plover |
| | 416 American oystercatcher (S) |
| | WADING BIRDS (431-460) |
| | 431 Wading birds |
| | 432 Herons |
| | 433 Egrets |
| | 434 Rails |
| | 435 Ibises |
| | 436 Bitterns |
| | 437 Great blue heron (S) |
| | 438 Wood ibis (S) |
| | 439 Anhinga |
| | 440 Little blue heron (S) |
| | 441 Yellow-crowned night heron (S) |
| | 442 Black-crowned night heron |
| | 443 Florida sandhill crane (S) |
| | 444 Louisiana heron (S) |
| | 445 Limpkin (S) |
| | 446 Roseate spoonbill (S) |
| | 447 Snowy egret (S) |
| | 448 Magnificent frigate-bird (S) |
| | 449 Reddish egret (S) |
| | 450 Clapper rail |
| | 451 King rail |
| | 452 Virginia rail |
| | 453 Sora rail |
| | WATERFOWL (461-500) |
| | 461 Waterfowl |
| | 462 Swans |
| | 463 Geese |
| | 464 Dabbling ducks |
| | 465 Diving ducks |
| | 466 Common eider |
| | 467 Harlequin duck |
| | 468 Wood duck |
| | 469 Fulvous tree duck |

100423

REFERENCE NO. 8

# EPA REGION II
# SCANNING TRACKING SHEET

DOC ID # 36752

DOC TITLE/SUBJECT:
**SITE MAP**

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**SUPERFUND RECORDS CENTER**
290 BROADWAY, 18TH FLOOR
NEW YORK, NY 10007

# EPA REGION II
# SCANNING TRACKING SHEET

DOC ID # 36752

DOC TITLE/SUBJECT:

**TRANSFORMER LOCATION AND ID NUMBERS**
**PARCEL A**
**DRAWING NUMBER A**

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NEW YORK, NY 10007

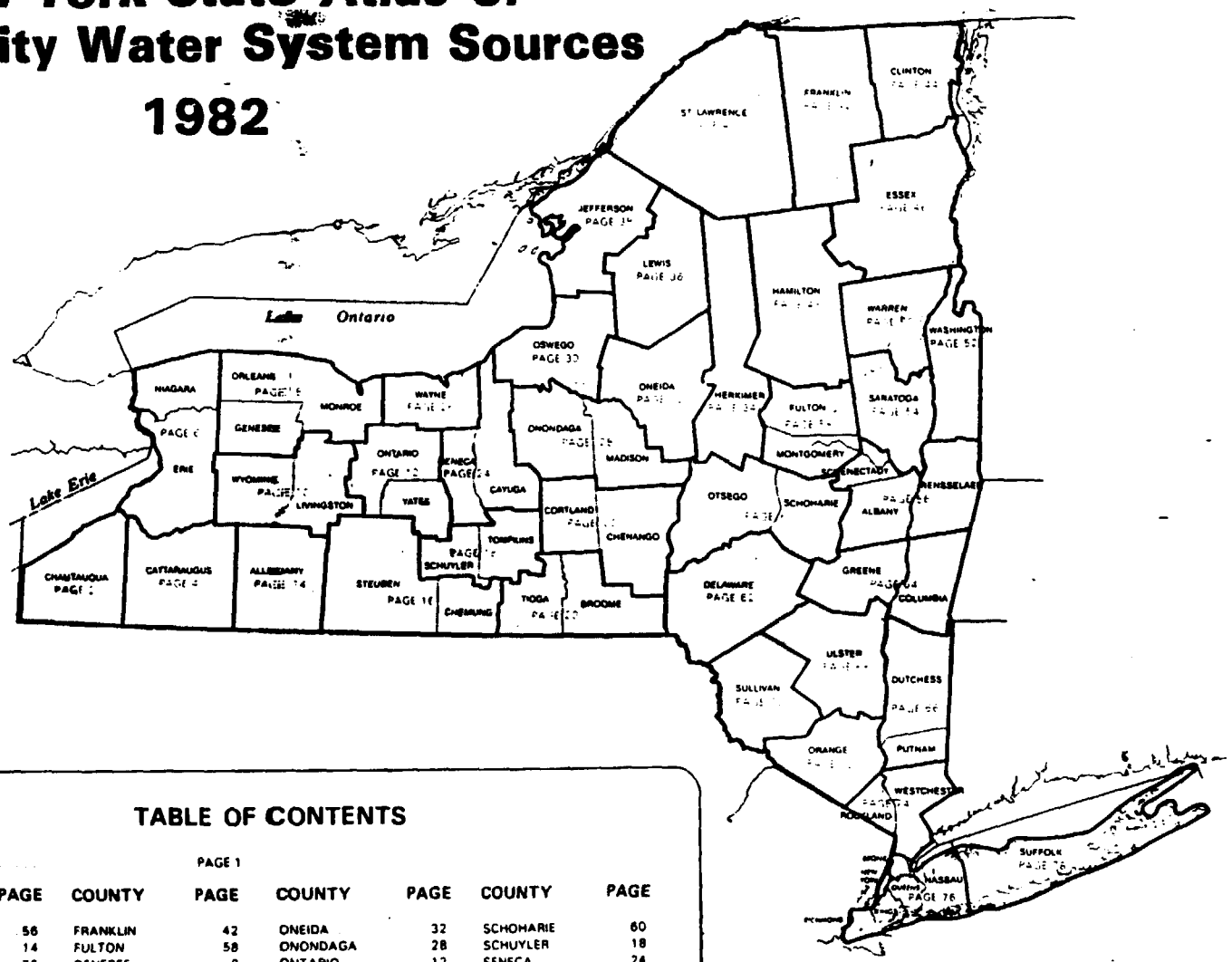
REFERENCE NO. 9

# New York State Atlas of Community Water System Sources 1982

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

100428

# ew York State Atlas of
# nity Water System Sources
# 1982

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| | 20 | GREENE | 64 | ORANGE | 72 | STEUBEN | 16 |
| JGUS | 4 | HAMILTON | 48 | ORLEANS | 8 | SUFFOLK | 78 |
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## LEGEND

### BOUNDARIES AND PLACES

International
State
County
Town
Indian Reservation
City — Village
Unincorporated Place — Federal Reservation
Built-up Area (Over 25 000 population including any contiguous city or village)

### CLASSIFICATION OF POPULATED PLACES

| | |
|---|---|
| 100 000 or more | YONKERS |
| 50 000 to 100 000 | Levittown |
| 12 500 to 50 000 | Poughkeepsie |
| 2 500 to 12 500 | Hampton Bays |
| 250 to 2 500 | Boiceville |
| 250 or less | Colbert |

### TRANSPORTATION

**Highways**

Divided Highways — UNDER CONSTRUCTION
Full Control of Access
Partial or No Control of Access
Undivided Highway
Interchange — FULL — PARTIAL
Touring Route (State U S Interstate) or State Parkway
Touring Route Markers
State U S Interstate

**Railroads**

Operating Line — Service Discontinued
Operator — DELAWARE AND HUDSON
Owner (If Other than Operator) — (PENN CENTRAL)
Company Having Trackage Rights — (CONRAIL)

**Airports (Open to the Public Military)**

Runway under 4000' — Runway over 4000'

**Rest Areas**

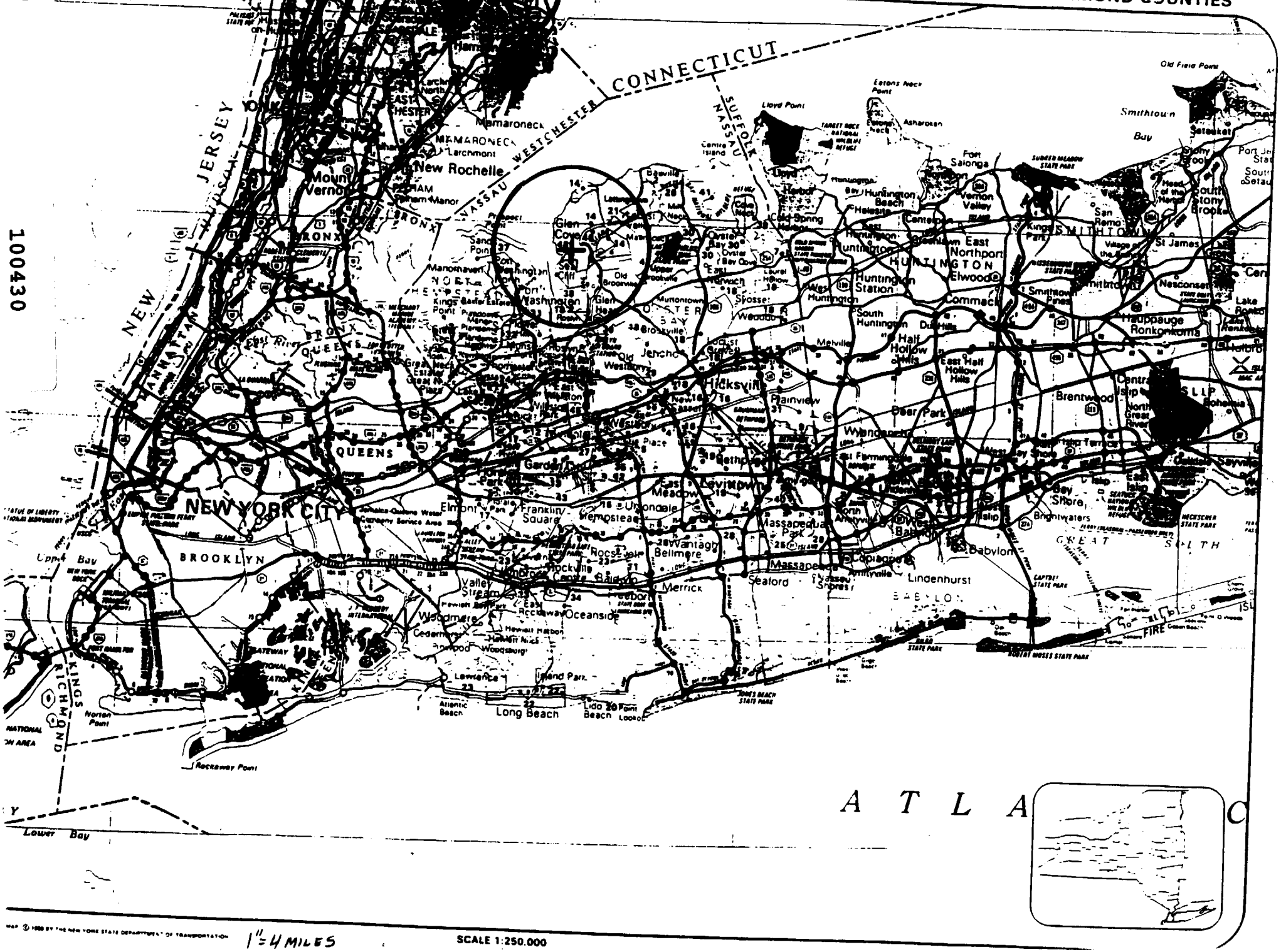
Food Gas Rest Rooms — Rest Rooms
Gas Rest Rooms — Parking Only

### RECREATION FACILITIES

State or National Recreation Area
State Campground
State Boat Launching Site
State Canal Park
State Fish Hatchery
Other State Recreation Site

100429

# ...RONX, KINGS, NASSAU, NEW YORK, QUEENS and RICHMOND COUNTIES




100430

# NASSAU COUNTY

| ID NO | COMMUNITY WATER SYSTEM | POPULATION | SOURCE |
|---|---|---|---|
| | **Municipal Community** | | |
| 1 | Albertson Water District | 13500 | Wells |
| 2 | Bayville Village | 7500 | Wells |
| 3 | Bethpage Water District | 32000 | Wells |
| 4 | Bowling Green Water District | 12000 | Wells |
| 5 | Carle Place Water District | 11000 | Wells |
| 6 | Citizens Water Supply Company | 30000 | Wells |
| 7 | Deforest Drive Association | 25 | Wells |
| 8 | East Meadow Water District | 52000 | Wells |
| 9 | Farmingdale Village | 7946 | Wells |
| 10 | Franklin Square Water District | 20000 | Wells |
| 11 | Freeport Village | 38272 | Wells |
| 12 | Garden City Park Water District | 22596 | Wells |
| 13 | Garden City Village | 22927 | Wells |
| 14 | Glen Cove City | 24618 | Wells |
| 15 | Hempstead Village | 40404 | Wells |
| 16 | Hicksville Water District | 58000 | Wells |
| 17 | Jamaica Water Supply Company | 128448 | Wells |
| 18 | Jericho Water District | 64000 | Wells |
| 19 | Levittown Water District | 50000 | Wells |
| 20 | Lido-Point Lookout Water District | 10000 | Wells |
| 21 | Locust Valley Water District | 8500 | Wells |
| 22 | Long Beach City | 34073 | Wells |
| 23 | Long Island Water Corporation | 258936 | Wells |
| 24 | Manhasset-Lakeville Water District | 44730 | Wells |
| 25 | Massapequa Water District | 52000 | Wells |
| 26 | Mill Neck Estates Water Supply | 240 | Wells |
| 27 | Mineola Village | 20600 | Wells |
| 28 | New York Water Service | 172180 | Wells |
| 29 | Old Westbury Village | 3100 | Wells |
| 30 | Oyster Bay Water District | 10225 | Wells |
| 31 | Plainview Water District | 40000 | Wells |
| 32 | Plandome Village | 2616 | Wells |
| 33 | Port Washington Water District | 35000 | Wells |
| 34 | Rockville Centre Village | 25405 | Wells |
| 35 | Roosevelt Field Water District | 1640 | Wells |
| 36 | Roslyn Water District | 27500 | Wells |
| 37 | Sands Point Village | 3002 | Wells |
| 38 | Sea Cliff Water Company | 17850 | Wells |
| 39 | Sel-Bra Acres Water Supply | 80 | Wells |
| 40 | South Farmingdale Water District | 49900 | Wells |
| 41 | Split Rock Water Supply | 25 | Wells |
| 42 | Uniondale Water District | 25000 | Wells |
| 43 | West Hempstead-Hempstead Garden Water District | 32000 | Wells |
| 44 | Westbury Water District | 20050 | Wells |
| 45 | Williston Park Village | 8216 | Wells |
| | **Non Municipal Community** | | |
| 46 | Community Hospital at Glen Cove | 1350 | Wells |
| 47 | Planting Fields Arboretum | 90 | Wells |
| 48 | Stuart, Walker, Zimmer Water Supply | 41 | Wells |

100431



## NEW YORK CITY WATER SUPPLY

The majority of New York City residents receive their drinking water from the New York City Aqueduct System. Only a portion of the borough of Queens is supplied by a separate ground-water system, the Jamaica Water Supply.

The New York City Aqueduct System consists of the Croton, Delaware, and Catskill branches. It is supplied by reservoirs and lakes in Westchester, Putnam, Ulster, Schoharie, Delaware, and Sullivan Counties. The reservoirs and lakes supplying the respective aqueduct branches are designated in those counties.

CROTON SYSTEM - The Croton supply is the oldest system which has a safe yield of about 240 MGD*. The Croton System embodies 12 reservoirs and 4 controlled lakes, situated in Westchester and Putnam Counties, which impound about 95 billion gallons of water from 375 square miles of the Croton River drainage area. The principal structures in the present Croton System are the New Croton Dam and the New Croton Aqueduct which supplemented the Old Croton Aqueduct now out of service. Croton water is delivered via the New Croton Aqueduct to the Jerome Park Reservoir in the Bronx and then via aqueduct and conduits to the Central Park Reservoir in Manhattan. The delivery capacity of the Aqueduct from the New Croton Reservoir to the Jerome Park Reservoir is 275 MGD.

CATSKILL SYSTEM - The Catskill supply is the second major system which has a safe yield of about 470 MGD. Its principal structures are the Schoharie, Ashokan, Kensico, and Hill View Reservoirs.

The Ashokan Reservoir impounds 128 billion gallons of available storage, at Elevation 590 in the West Basin and at Elevation 587 in the East Basin, from 257 square miles of drainge area in the Catskill Mountains west of Kingston. The Ashokan Reservoir feeds directly into the Catskill Aqueduct.

The Schoharie Reservoir, placed in service in 1924, impounds 19.6 billion gallons of available storage, at Elevation 1130, from 314 square miles of drainage area.

The Catskill Aqueduct is 92 miles long overall, extending 75 miles from the Ashokan Reservoir to the upstream influent chamber of the Kensico Reservoir, with a 2-mile bypass, then continuing 15 miles from the Kensico Reservoir effluent chamber to the Hill View Distributing Reservoir in Yonkers.

The Kensico Reservoir was originally constructed as an equalizing basin on the Catskill Aqueduct. The reservoir, having a safe yield of 5 MGD from its own drainage area, is formed by the Kensico Dam.

DELAWARE SYSTEM - The Delaware supply is the latest system which has a safe yield of about 580 MGD. The supply from the Delaware watershed, which is stored in the Neversink, Pepacton, and Cannonsville Reservoirs, has a safe yield of about 480 MGD. The Rondout Reservoir, serving as a collecting reservoir for these three reservoirs, has a safe yield of about 100 MGD from its own drainage area of 95 square miles which is part of the Hudson watershed. This reservoir impounds 50 billion gallons of available storage at the flow line, Elevation 840.

The Delaware Aqueduct is a pressure tunnel deep in bed rock for its entire length of 85 miles.

JAMAICA WATER SUPPLY - The Jamaica-Queens Water Company serves the Jamaica section of the borough of Queens. This system utilizes 76 wells located in 46 separate well fields. A map depicting the Jamaica-Queens service area is included on Page 77.

* Millions of Gallons per Day

REFERENCE NO. 10

# MONTHLY FLUCTUATIONS IN THE QUALITY OF GROUND WATER NEAR THE WATER TABLE IN NASSAU AND SUFFOLK COUNTIES, LONG ISLAND, NEW YORK

by Brian G. Katz, Stephen E. Ragone, and Juli B. Lindner

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations 78-41

Prepared in cooperation with the

Nassau County Department of Public Works
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# MONTHLY FLUCTUATIONS IN THE QUALITY OF WATER NEAR THE WATER TABLE IN NASSAU AND SUFFOLK COUNTIES, LONG ISLAND, NEW YORK

By

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## ABSTRACT

Water samples from wells in a sewered and an unsewered suburban area and an unsewered rural area on Long Island, N.Y., were collected and analyzed monthly from August 1975 to July 1976 to determine the concentrations of chloride, sulfate, and nitrate in ground water near the water table. Short-term and seasonal fluctuations in concentrations of these substances were evaluated to determine their relation to nonpoint discharges.

Major factors that may cause concentrations of these substances to fluctuate at any particular site are precipitation, lawn fertilizer, dissolved salts in storm runoff, and effluent from septic tanks and cesspools. Chloride concentrations during the study fluctuated by as little as 2 milligrams per liter (mg/L) at some sites and as much as 300 mg/L at others. Nitrate and sulfate concentrations showed essentially no change at some sites but fluctuated by as much as 8 and 40 mg/L, respectively, at others. Short-term fluctuations in the concentrations of these substances in ground water seem to have no consistent correlation with type of land use (suburban or agricultural) or precipitation but seem to be related to seasonal variations in input from specific nonpoint sources.



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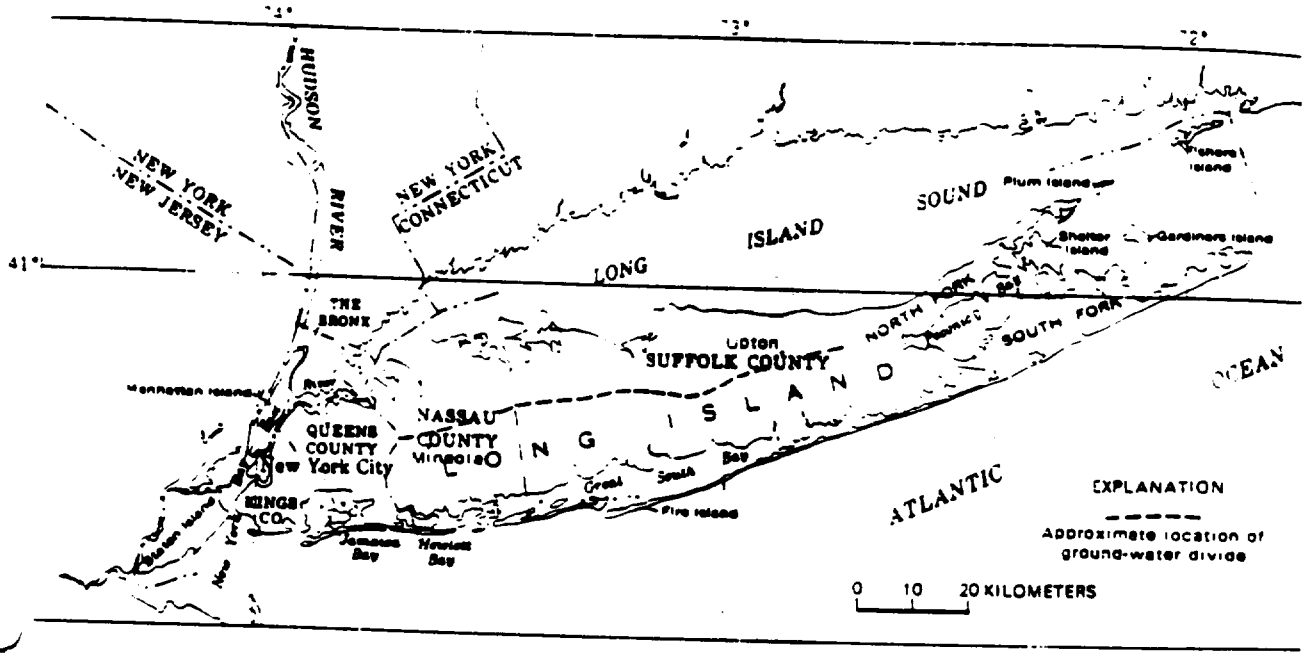


Figure 1.--Location and major geographic features of Long Island, New York.



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# INTRODUCTION

Ground water is the sole source of freshwater for more than 2.7 million residents of Nassau and Suffolk Counties, Long Island, New York (fig. 1). Under natural conditions, the ground-water reservoir is recharged only by precipitation. Population growth and urbanization on Long Island have caused a steady increase in the demand for fresh ground water and have affected its quality through the discharge of wastes and other contaminating products to the ground-water reservoir. A significant amount of the changes in water quality are attributed to the increased discharge of dissolved chloride, nitrate, and sulfate to the aquifer from nonpoint sources such as wastewater from cesspools and septic tanks, salts for road deicing, and fertilizers for lawns and agriculture. Precipitation and storm-water runoff are the principal agents in moving these substances through the ground to the water table.

In general, the upper glacial aquifer is the water-table aquifer in most of Long Island. As the uppermost aquifer on the island, it is the most susceptible to contamination.

## Purpose and Scope of Study

To date, information on short-term fluctuations in quality of shallow ground water in Nassau and Suffolk Counties is incomplete. To obtain data on short-term fluctuations in water quality in these counties and to correlate them with their probable main controlling factors, the U.S. Geological Survey collected water samples monthly from August 1975 to July 1976 from 30 wells screened in the upper glacial aquifer. The data obtained from these samples are described, summarized, and interpreted in the sections that follow. Air and ground-water temperatures during the sampling period are correlated to determine the effect of seasonal changes in the temperature of precipitation entering the aquifer. Chloride, nitrate, and sulfate were selected for analysis in this report because they are the major inorganic ions in ground water and can be indicative of ground-water contamination.

## Previous Studies

Short-term fluctuations and seasonal variations in ground-water quality have recently received an increasing amount of attention in the literature. Pluhowski and Kantrowitz (1964) reported on factors affecting monthly ground-water temperatures over a 2-year period. Pettyjohn (1971, 1975, 1976) reported that nitrate and chloride concentrations in ground water increase substantially after periods of precipitation. Walker (1973, 1973a) reported that nitrate in soil moves downward to shallow aquifers during recharge periods in the late fall and early spring. Toler and Pollock (1974) stated that deicing salt that has accumulated in the unsaturated zone is eventually flushed from the soil to the water table by spring recharge. Schmidt (1972, 1977) described short-term variations and seasonal trends of nitrate and chloride



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in ground water and discussed factors that possibly control these variations. Piskin (1973) discussed factors that affect seasonal variations of nitrate in ground water.

## Method of Study

Ground-water near the water table was monitored at wells along three north-south and two east-west trending lines in a sewered and an unsewered area in Nassau County (fig. 2A) and a rural area in Suffolk County (fig. 2B). These wells range in diameter from 3.2 cm to 15 cm, and the screened interval is generally 0.9 m in the small-diameter wells and 3.0 m in the large-diameter wells. The range in depth to water over the period of sampling, and the average depth of the top of the screens below the water table, are presented in table 1.

## Field Sampling

At 24 of the shallow wells in this study (where depth to water was less than 8 m from land surface), a rubber hose was inserted down the casing to below water level. Before water samples were taken by centrifugal pump, three times the volume of water in the well casing was removed to insure a representative ground-water sample. Specific conductance and pH were measured at discharge; dissolved oxygen and temperature were measured in the well.

At the six deeper wells (where depth to water was greater than 8 m from land surface), water samples were taken by submersible pump lowered down the casing to between 3 and 6 m below water level. Again, three times the volume of water in the well casing was cleared before the samples were taken. Specific conductance, pH, and temperature were measured at discharge.

## Data Treatment

Water-quality data from the 30 wells sampled on a monthly basis were entered in the U.S. Geological Survey's computer in Reston, Va. The data were retrieved as tables, and analyses in which cation anion balances differed by 20 percent or more were deleted. Chloride, nitrate, and sulfate were selected for analysis because they are the major inorganic ions in ground water.

Analytical accuracy and precision for the principal anionic constituents of water--chloride, nitrate, and sulfate ($Cl^-$, $NO_3^-$, and $SO_4^{2-}$)--are presented in table 2 (L. C. Friedman, U.S. Geol. Survey, written commun., 1976). These analyses of standard reference samples were made by the U.S. Geological Survey Laboratory in Albany, N.Y. The standard-deviation values (table 2) were used to determine whether fluctuations above analytical noise were observed in the water-quality data.



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Table 1.--Sampling depths at wells monitored during study, August 1975 to July 1976, Nassau and Suffolk Counties, New York

[All depths are in meters]

| Well number | Depth to water[1/] | Average depth to top of screen[2/] |
|---|---|---|
| | SEWERED AREA, NASSAU COUNTY | |
| N1129 | 7.1 - 7.6 | 5.2 |
| N1143 | 5.9 - 6.4 | 14.7 |
| N1164 | 5.5 - 6.3 | 5.3 |
| N1165 | 5.1 - 5.9 | 6.2 |
| N1167 | 4.1 - 4.7 | 2.1 |
| N1168 | 2.6 - 3.1 | 4.7 |
| N8235 | 4.3 - 5.0 | 10.4 |
| N8598 | 6.7 - 7.4 | 5.8 |
| | UNSEWERED AREA, NASSAU COUNTY | |
| N1160 | 7.1 - 9.6 | 0.15 |
| N1176 | 34.4 - 35.0 | 24.2 |
| N1183 | 4.1 - 4.9 | 4.7 |
| N1194 | 24.0 - 24.7 | 4.6 |
| N1201 | 4.4 - 5.1 | 3.0 |
| N1250 | 3.0 - 4.4 | 5.6 |
| N1251 | 2.4 - 3.1 | 2.1 |
| N1252 | 1.2 - 2.2 | 4.7 |
| N1253 | 3.6 - 5.1 | 3.7 |
| N1254 | 2.6 - 3.7 | 5.0 |
| N7397 | 23.8 - 24.9 | 4.9 |
| N8669 | 2.3 - 3.8 | 7.0 |
| N8789 | 3.0 - 4.0 | 4.7 |
| N8888 | 22.6 - 26.6 | 7.8 |
| S29778 | 34.5 - 35.1 | 13.4 |
| | RURAL AREA, SUFFOLK COUNTY | |
| S46913 | 1.2 - 1.5 | 0.9 |
| S46914 | 1.8 - 2.3 | 0.3 |
| S47226 | 1.0 - 1.5 | 3.3 |
| S47227 | 0.9 - 1.6 | 25.2 |
| S48946 | 2.1 - 3.1 | 7.0 |
| S51583 | 6.1 - 6.9 | 5.2 |
| S51592 | 3.4 - 4.0 | 5.5 |

1/ In meters below land surface.
2/ In meters below water table.



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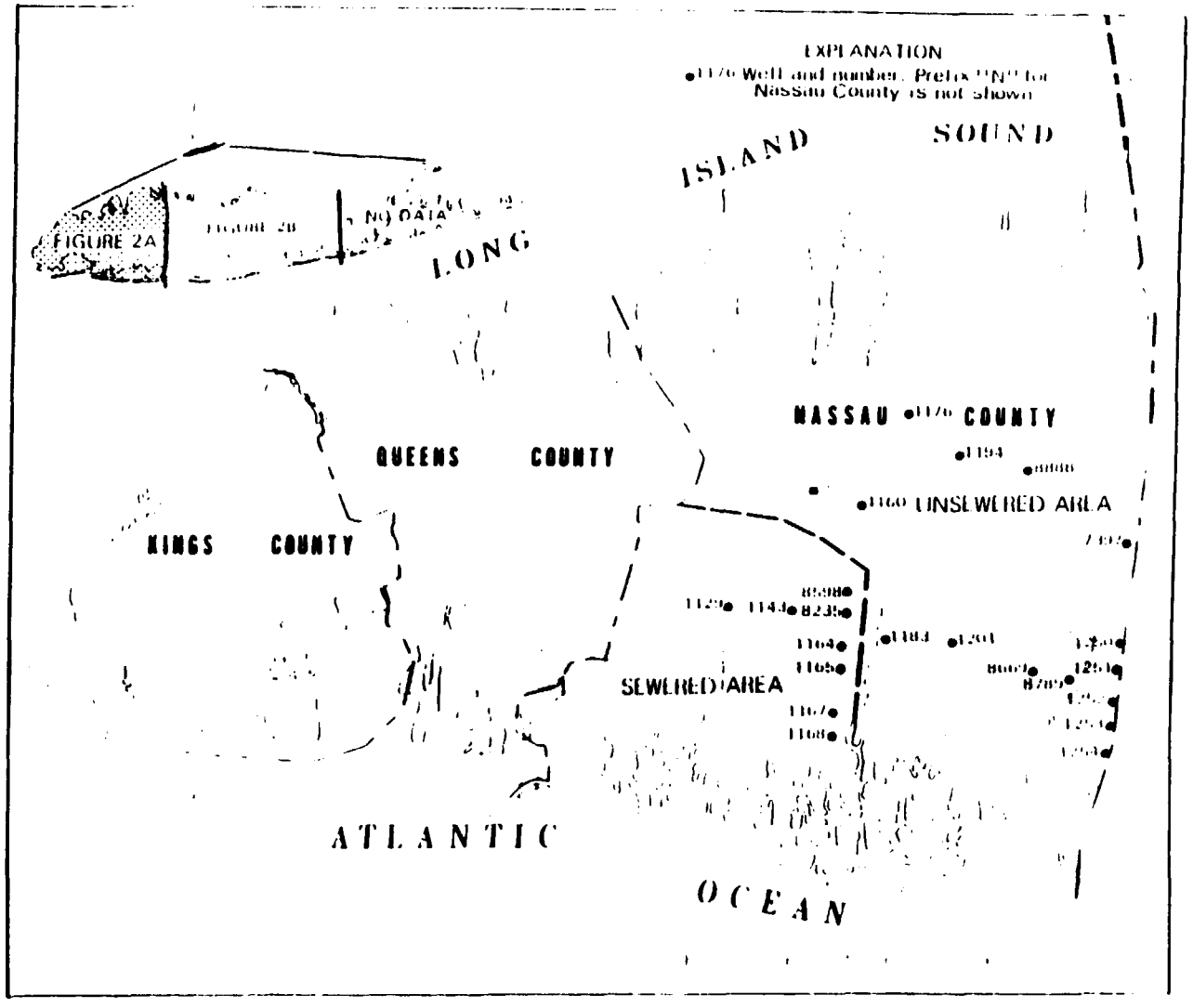


Figure 2A.--Location of wells in sewered and unsewered areas of Nassau County.



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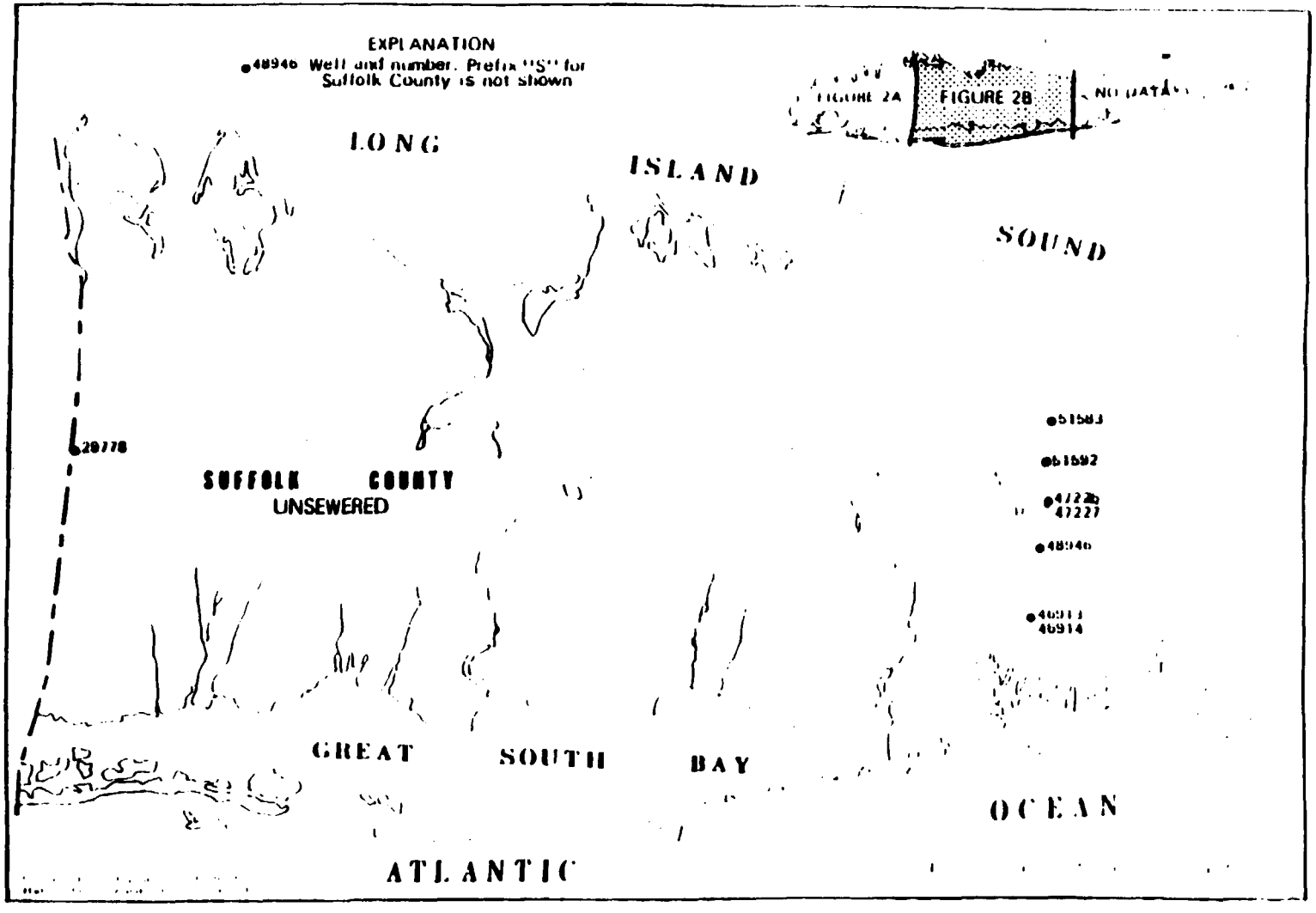


Figure 2B.--Location of wells in a rural area of Suffolk County.



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The wells were selected, in part, according to location. The three types of areas represented include a suburban sewered area and a suburban unsewered area (fig. 2A) and a rural unsewered area (fig. 2B). Nonpoint sources from natural and (or) urbanizing factors, specifically sewage, fertilizer, road salt, and precipitation, were evaluated as to their effect on water quality in each of the three areas.

The sewered part of Nassau County includes Sewage Disposal Districts 1 and 2, which cover an area of about 207 $km^2$ (fig. 2A). The unsewered section of Nassau County contains Sewage Disposal Districts 3 and 4 and covers an area of about 544 $km^2$. Domestic wastes in this area are currently (1976) disposed of by shallow septic-tank systems as in the rural area, in eastern Suffolk County, which is unsewered and predominantly agricultural.

Table 2.--Accuracy and precision of analyses for selected ground-water constituents

| Constituent | Mean value of standard reference sample (mg/L) | Standard deviation (mg/L) | Percent standard deviation |
|---|---|---|---|
| Chloride (Cl) | 1.84 | ± 0.34 | ± 18.5 |
| | 8.17 | .61 | 7.5 |
| | 74.0 | 1.8 | 2.4 |
| | 124 | 5 | 4 |
| | 179 | 3 | 1.6 |
| Nitrate ($NO_2$+$NO_3$-N) | 0.097 | ± 0.013 | ± 13.4 |
| | .49 | .04 | 8.2 |
| | 1.19 | .03 | 2.5 |
| | 2.94 | .08 | 2.7 |
| | 12.5 | .6 | 4.8 |
| Sulfate ($SO_4$) | 16.3 | ± 1.2 | ± 7.4 |
| | 22.0 | 1.8 | 8.2 |
| | 67.8 | 1.3 | 1.9 |
| | 98.1 | 1.3 | 1.3 |
| | 105 | 10 | 9.5 |

All analyses performed by U.S. Geological Survey Laboratory in Albany, N.Y.



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## HYDROGEOLOGY

The hydrogeology of the water-table aquifer is described only generally in this report. More detailed descriptions are given in reports by McClymonds and Franke (1972) and Franke and Cohen (1972). Figure 3 depicts the hydrogeologic system of Long Island and the position of the upper glacial aquifer.

The upper glacial (water-table) aquifer is composed of Pleistocene-age deposits (fig. 3). These consist of (1) till deposits, which are composed of clay, sand, gravel, and boulders and occur in the northern half of the island in moraines; (2) outwash deposits, which consist of quartzose sand and gravel and occur between and south of morainal deposits (fig. 4), and (3) glacio-lacustrine deposits, which consist of silt and clay and are scattered but found mostly in eastern Long Island (McClymonds and Franke, 1972).

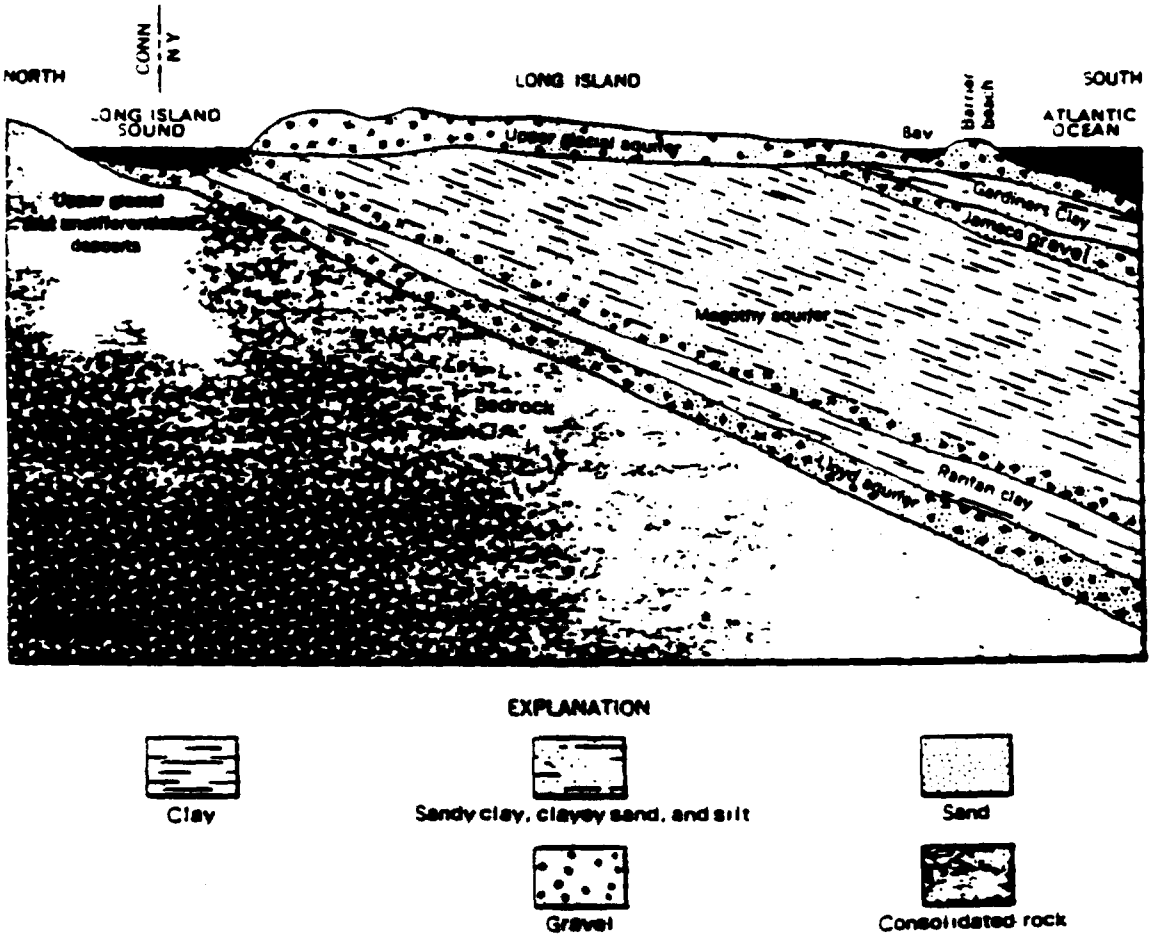


**Figure 3.--Schematic representation of aquifers on Long Island (vertical scale greatly exaggerated).**



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The water-bearing properties of these deposits range from poorly permeable (till) to highly permeable (outwash deposits). Specific capacities of wells tapping these deposits range from very low (almost no yield) in the till to more than 41 (L/s)/m in the outwash (McClymonds and Franke, 1972). Hydraulic conductivities range from 41 to 82 m/d (McClymonds and Franke, 1972). In the northern half of Long Island (fig. 4), depth to water may be as much as 36 m in these poorly permeable deposits, but in the southern half (outwash deposits), depth to water can range from less than 1 m to about 9 m.

Recharge to the upper glacial aquifer results mainly from infiltration of precipitation, infiltration of storm runoff, injection of water used for industrial purposes, and discharge of domestic and industrial wastewater from cesspools and septic-tank systems (Franke and Cohen, 1972). Depending upon factors such as lithology and soil moisture, the time required for water to move through the unsaturated zone to the water table ranges from a few hours (Seaburn and Aronson, 1974) to an estimated maximum of 16 months (Isbister, 1966, p. 49). Consequently, short-term variations in water quality due to cyclic variations in input rate, and concentration of typical substances, may be difficult to predict.

In general, north of the regional ground-water divide (fig. 1), ground-water movement is toward Long Island Sound. South of this divide, regional ground-water movement is generally toward the south shore of Long Island (Franke and Cohen, 1972).

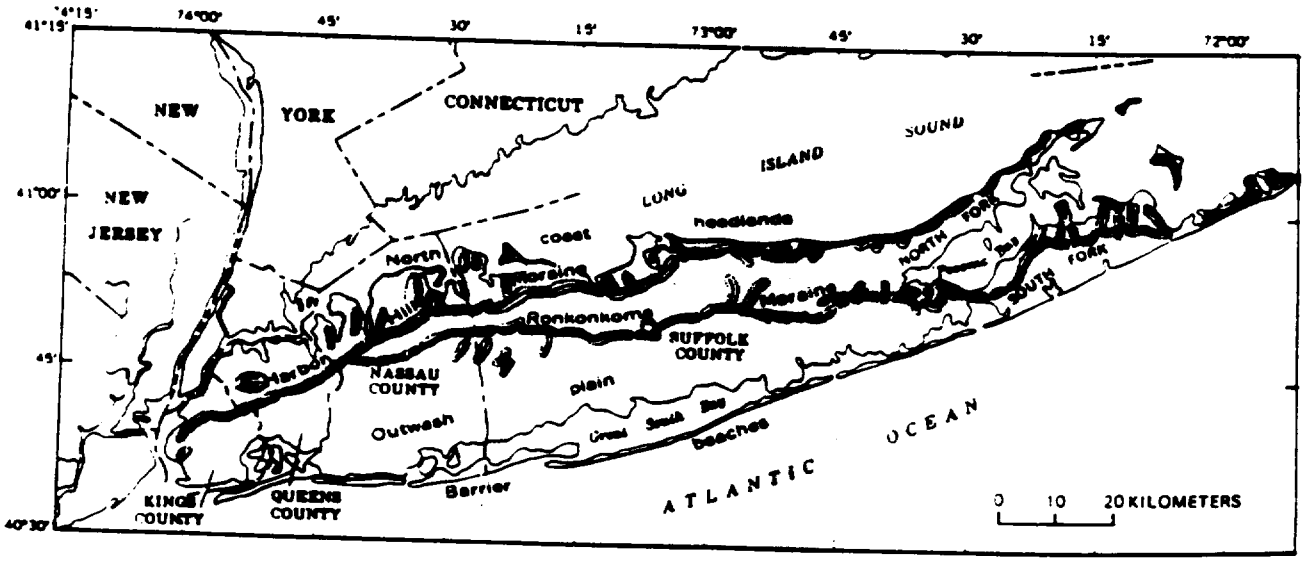


Figure 4.--Major physiographic features of upper glacial aquifer on Long Island.



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## SUMMARY AND CONCLUSIONS

Concentrations of chloride, nitrate and sulfate in shallow ground water were monitored for 1 year in areas receiving these dissolved constituents from nonpoint sources. Samples were collected monthly in sewered and unsewered suburban areas and in a rural unsewered area. During the period of sampling, maximum fluctuations of chloride concentrations in any particular well ranged from 2 to 300 mg/L; nitrate, from 0.2 to 10 mg/L; and sulfate, from 1 to 40 mg/L. Factors giving rise to these fluctuations include variations in (1) quality of precipitation, (2) application rates of fertilizers, (3) concentration of dissolved constituents in storm runoff, and (4) quality of sewage discharged to the ground.

The monthly and seasonal fluctuation of chloride, nitrate, and sulfate concentrations in ground water seems to correlate with temporal variations in discharge from specific nonpoint sources such as fertilizers, sewage, and storm runoff. No consistent correlation was noted between monthly variations of these substances in ground water and seasonal fluctuations in temperature or of the concentration of these substances in precipitation.

When long-term trends in ground-water quality are derived from scant data, it is of utmost importance to observe the magnitude of the short-term variations that may result from nonpoint sources. The magnitude of these short-term fluctuations could be larger than the actual long-term change in concentration, and this would lead to an incorrect assessment of possible trends toward an improvement or degradation in water quality.



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## SELECTED REFERENCES


Baier, J. H., and Rykbost, K. A., 1976, The contribution of fertilizer to the ground water of Long Island: Ground Water, v. 14, no. 6, p. 439-447.

Cohen, Philip, Franke, O. L., and Foxworthy, B. L., 1968, An atlas of Long Island's water resources: New York State Water Resources Commission Bulletin 62, 117 p.

DeLuca, F. A., Hoffman, J. C., and Lubke, E. R., 1965, Chloride concentration and temperature of the waters of Nassau County, Long Island, New York: New York State Water Resources Commission Bulletin 55, 35 p.

Franke, O. L., and Cohen, Philip, 1972, Regional rates of ground-water movement on Long Island, New York, in U.S. Geological Survey Professional Paper 800-C, p. C271-C277.

Hoffman, J. F. and Spiegel, S. J., 1958, Chloride concentration and temperature of water from wells in Suffolk County, Long Island, New York, 1928-53: New York State Water Power and Control Commission Bulletin GW-38, 55 p.

Isbister, John, 1966, Geology and hydrology of northeastern Nassau County, Long Island, New York: U.S. Geological Survey Water-Supply Paper 1825, 89 p.

McClymonds, N. E., and Franke, O. L., 1972, Water-transmitting properties of aquifers on Long Island, New York: U.S. Geological Survey Professional Paper 627-E, 24 p.

Nassau-Suffolk Regional Planning Board, 1976, Population estimates and projections, 1975 to 1995; interim report series 1: Hauppauge, N.Y., 58 p.

Nassau-Suffolk Research Task Group, 1969, The Long Island water pollution study: New York State Department of Health, 395 p.

Pearson, F. J., Jr., and Fisher, D. W., 1971, Chemical composition of atmospheric precipitation in the northeastern United States: U.S. Geological Survey Water-Supply Paper 1535-P, 23 p.

Perlmutter, N. M., and Guerrera, A. A., 1970, Detergents and associated contaminants in ground water at three public-supply well fields in southwestern Suffolk County, Long Island, New York: U.S. Geological Survey Water-Supply Paper 2001-B, 22 p.




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Pettyjohn, W. A., 1971, Water pollution by oil field brines and related industrial wastes in Ohio: Ohio Journal of Science, v. 71, no. 5, p. 257-269.

_____ 1975, Chloride contamination in Alum Creek, central Ohio: Ground Water, v. 13, no. 4, p. 332-339.

_____ 1976, Monitoring cyclic fluctuations in ground-water quality: Ground Water, v. 14, no. 6, p. 472-480.

Piskin, Rauf, 1973, Evaluation of nitrate content of ground water in Hall County, Nebraska: Ground Water, v. 11, no. 6., p. 4-13.

Pluhowski, E. J., and Kantrowitz, I. H., 1964, Hydrology of the Babylon-Islip Area, Suffolk County, Long Island, New York: U.S. Geological Survey Water-Supply Paper 1768, 119 p.

Schmidt, K. D., 1972, Nitrate in ground water of the Fresno-Cloris metropolitan area, California: Ground water, v. 10, no. 1, p. 50-64.

_____ 1977, Water-quality variations for pumping wells: Ground Water, v. 15, no. 2, p. 130-137.

Saffigna, P. G. and Keeney, D. R., 1977, Nitrate and chloride in ground water under irrigated agriculture in central Wisconsin: Ground Water, v. 15, no. 2, p. 170-177.

Seaburn, G. E. and Aronson, D. A., 1974, Influence of recharge basins on the hydrology of Nassau and Suffolk Counties, Long Island, N.Y: U.S. Geological Survey Water-Supply Paper 2031, 66 p.

Stevens, H. H., Jr., Ficke, J. F., and Smoot, G. F., 1975, Water temperature, influential factors, field measurement, and data presentation: U.S. Geol. Survey Techniques of Water-Resources Investigations, Book 1, Chap. D1, 65 p.

Sumi, L., Corkery, A., and Monkman, J. L., 1959, Calcium sulfate content of urban air: Baltimore, Md., American Geophysical Union, Geophysics Monograph 3, p. 69-80.

Toler, L. G., and Pollock, S. J., 1974, Retention of chloride in the unsaturated zone: U.S. Geological Survey Journal of Research, v. 2, no. 1, p. 119-123.



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U.S. Environmental Protection Agency, 1975, National interim primary drinking water regulations: Federal Register, v. 40, no. 248, p. 59566-59574.

U.S. Geological Survey, 1976, Water resources data for New York, Water year 1975: U.S. Geological Survey Water-Data Report NY-75-1, 735 p.

Walker, W. H., 1973, Ground-water nitrate pollution in rural areas: Ground Water, v. 11, no. 5, p. 19-22.

_____ 1973a, Where have all the toxic chemicals gone?: Ground Water, v. 11, no. 2, p. 11-20.



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# Soil Survey of Nassau County New York

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winter the average temperature is 33 degrees F, and the average daily minimum temperature is 27 degrees. The lowest temperature on record, which occurred at Mineola on January 27, 1976, is -1 degree. In summer the average temperature is 72 degrees, and the average daily maximum temperature is 81 degrees. The highest recorded temperature, which occurred at Mineola on July 3, 1966, is 103 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 42 inches. Of this, 21 inches, or 50 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 16 inches. The heaviest 1-day rainfall during the period of record was 8.2 inches at Mineola on August 12, 1955 . Thunderstorms occur on about 22 days each year, and most occur in summer.

The average seasonal snowfall is 27 inches. The greatest snow depth at any one time during the period of record was 29 inches. On the average, 15 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 70 percent. The sun shines 65 percent of the time possible in summer and 50 percent in winter. The prevailing wind is from the west-northwest. Average windspeed is highest, 14 miles per hour, in spring.

## Physiography and Geology

Bernard S. Ellis, geologist, Soil Conservation Service, assisted with this section.

Nassau County is part of the Coastal Plain physiographic province. The county is characterized by undulating or rolling landscapes in the northern part and a flat plain with a gently southward tilt in the southern part. A lobe of rolling topography protrudes farther to the south along the eastern edge of the county. Extensive tidal areas and marshes are just south of the plain, and a barrier beach and dunes form the southern outline of the county.

Elevation in the county ranges from sea level to about 300 feet above sea level near the eastern edge of the county, just south of NY Route 25. The landforms at the higher elevations were deposited as a terminal moraine. These areas have irregular topography that is crossed by deep glacial drainage channels near the north shore. These channels empty into deep bays on the north shore. The steepest relief is along drainage channels or on the side slopes adjacent to the bays. An outwash plain, which is to the south of the terminal moraine, has a maximum elevation of about 180 feet just northeast of Hicksville and slopes gradually to the south some 8 to 10 miles, finally reaching tidal areas at sea level.

Nassau County is underlain by bedrock, but most of it is at a depth of several hundred feet. The closest surficial bedrock is to the west in the boroughs of Bronx and Queens in New York City and areas to the northwest in Westchester County, near Long Island Sound. From these areas of surface exposure, the rock surface dips to the southeast to form a solid basement below Nassau County. Most of the bedrock consists of Cretaceous sedimentary layers (*3*). Some of the older rocks in the area are the 200-million-year-old Triassic red beds and lava flows off New Jersey and Connecticut and the Cambrian metamorphic rocks in the New York City area that are 450 million years old.

During the Late Cretaceous Period the sediments from the eroding Appalachian Highlands were carried by streams and rivers to low-lying coastal areas. The sand, silt, and clay of the Raritan and Magothy formations, which form the foundation of Long Island, were deposited as deltas in areas of shallow water. The Raritan formation is below sea level, and the Magothy formation is at the surface of several sites along the north shore.

During the Tertiary Period the area of Long Island was uplifted above sea level and the Cretaceous sediments were eroded and dissected by streams and rivers. The valley now occupied by Long Island Sound was cut by a major river, and smaller tributary streams formed valleys which are now the north shore bays.

During the Pleistocene Epoch of the Quaternary Period, several major glacial advances into the northern United States occurred. This epoch is divided into four major glacial stages. From oldest to youngest, they are: Nebraskan, Kansan, Illinoian, and Wisconsin. During the Illinoian advance, the ice sheet reached a position just north of the Long Island area. Outwash sand and gravel, of the Jameco gravel formation, was deposited by meltwater streams. Following the Illinoian stage, sea level rose close to its present level and a clay (Gardiners clay) containing marine fossils was deposited in the shallow coastal waters surrounding Long Island.

During the Wisconsin glacial advance, the ice reached a position represented on most of Long Island by the Ronkonkoma terminal moraine. In the latter part of this stage, the ice sheet receded from a point east of Lake Success and established a new position along the north shore marked by the Harbor Hill terminal moraine. West of Lake Success this lobe of ice overrode the Ronkonkoma moraine and pushed as far south as Staten Island. This caused the terminal moraine deposits in Nassau County to form a wide band of irregular topography occupying the northern half of the county, while in adjacent Suffolk County the terminal moraine

deposits were far enough apart to be two distinct landforms separated by a flat plain. During the Wisconsin advance, sea level dropped about 350 feet below its current elevation to expose a broad, flat coastal plain.

As the climate again warmed about 11,000 years ago, the Wisconsin period ended and the Holocene, or present, period began. The ice sheet receded to its present polar limits, and sea level rose to its present level. Currents and wave action modified the outwash plain to create the present-day shoreline.

## Drainage

A few perennial streams drain the county. The longer streams carry runoff water to the estuaries of the south shore. From west to east, they are Valley Stream, Mill River, East Meadow Brook, Bellmore Creek, and Massapequa Creek. A few shorter creeks, such as Hook, Motts, Powell, and Seaford Creeks, also drain toward the south shore.

Most of the drainage to the north shore is intermittent. Glen Cove Creek and Mill Neck Creek are the longest creeks that drain toward the north shore; other shorter, mostly intermittent creeks drain into the bays of the north shore. A sizable portion of the runoff that originates between NY Routes 25 and 25A enters the ground water by collecting in natural closed depressions and landlocked ponds.

Much of the runoff on paved surfaces in recently developed areas is recharged into the ground water system by routing it into dug pits or recharge basins.

## Water Supply

The primary water supply in the county is underground aquifers. This source is in a saturated wedge-shaped mass of unconsolidated deposits that overlie nearly impermeable consolidated bedrock. There are two major types of aquifers: a confined aquifer with ground water under artesian pressure and an unconfined aquifer in a water table (*4*).

The contour of the surface of the water table of Nassau County is roughly the same as that of the landscape topography. The water table is closest to the surface at the terminal moraine and is deeper toward the coasts. The artesian pressure surfaces generally are a few feet lower than the water table near the middle of the island, and they are a few feet higher than the water table near the coasts.

The aquifer system is in recognizable separate units. The upper glacial, or water table, aquifer is at the least depth and is made up primarily of sand and gravel deposits from the most recent glacial period. Deeper in the unconsolidated deposits are layers of good water-bearing strata. These are the Jameco, Magothy, and Lloyd aquifers. The Lloyd is the deepest and rests on bedrock.

Initially most wells were drilled into the shallower strata. As the population increased and supplying water became a municipal effort, wells were drilled into deeper strata and the shallower aquifers became more polluted as the amount of cesspool discharge reaching those aquifers increased.

Since much of the county borders saltwater, the encroachment of salt into the freshwater layers is a hazard. This intrusion results because the fresh ground water, salty ground water, and salty sea water are interconnected. Generally, if the freshwater reservoir is pumped out at rates that exceed natural recharge from surface precipitation, saltwater will occupy the void.

## Effects of Man and Urbanization

The landscape of Nassau County has changed drastically over the past 50 years. Extensive housing developments, shopping centers, industrial complexes, and business corridors now dominate areas where vast acreages of potatoes and other crops were once grown for markets in New York City. The large areas of well drained, nearly level soils have provided suitable sites for development. Rapid urbanization has created an ever-increasing demand for public services, waste-disposal facilities, and recreation areas.

The main relatively undisturbed open areas are in the southern part of the county. Most are in golf courses, municipal parks, greenbelts bordering parkways, scattered wildlife preserves along drainageways, tidal marshes, and barrier beaches. The soils immediately along the slope that are sites for houses, marinas, and park facilities, such as at Wantaugh Cow Meadow, Oceanside, Baldwin Harbor, and Bay Park, largely consist of dredgings from the bays and the ocean. These areas are mostly sandy soils that are variable in drainage due to the shallow depth of the water table. Many of these areas, including residences and small parks, experience inundation during abnormal high spring tides and winter storms. Soils in small parks, picnic areas, and athletic fields have often become compacted through intensive use, making planting and maintenance of grasses and shrubs difficult. Many areas within the larger parks, including Eisenhower Park, Bethpage State Park, and Restoration Village, the upper reaches of Valley Stream Park, and Hempstead Lake State Park, have retained much of their native quality, partly because of soil management to control erosion.

Some areas in the northern part of the county are still open and undisturbed. These areas are in a few vegetable and horse farms, areas of abandoned farms, large estates, partially wooded areas, preserve properties, and low-density or cluster subdivisions. The undulating to steep rolling glacial tills common to the north-central part of the county are variable in drainage, depending upon whether they are at the top of ridges or in low-lying pockets, and many of these soils have a

# SOIL LEGEND

Publication symbols consist of letters or a combination of letters and a number (e.g., At, MkB, or RdD). The first letter, always a capital, is the initial letter of the soil name. The second letter is lower case and separates map units, except those that are slope phases, having names that begin with the same letter. The third letter, always a capital A, B, C, or D, indicates the slope. Symbols without a slope letter are for nearly level soils, soils named for higher categories, or for miscellaneous areas.

| SYMBOL | NAME |
|---|---|
| At | Atsion loamy sand |
| Bc | Beaches |
| Bd | Berryland mucky loamy sand |
| Du | Duneland Udipsamments complex |
| EnA | Enfield silt loam, 0 to 3 percent slopes |
| EnB | Enfield silt loam, 3 to 8 percent slopes |
| Fr | Freetown muck |
| He | Hempstead silt loam |
| Ip | Ipswich mucky peat |
| Ma | Manahawkin muck |
| Mc | Molunuck mucky peat |
| MhA | Montauk fine sandy loam, 0 to 3 percent slopes |
| MhB | Montauk fine sandy loam, 3 to 8 percent slopes |
| MhC | Montauk fine sandy loam, 8 to 15 percent slopes |
| MhD | Montauk fine sandy loam, 15 to 25 percent slopes |
| MkA | Montauk silt loam, 0 to 3 percent slopes |
| MkB | Montauk silt loam, 3 to 8 percent slopes |
| Pa | Pawcatuck mucky peat |
| Pg | Pits, ground-water recharge |
| Pk | Pits, sand and gravel |
| PlB | Plymouth loamy sand, 3 to 8 percent slopes |
| PlC | Plymouth loamy sand, 8 to 35 percent slopes |
| PrD | Plymouth-Riverhead complex, 15 to 35 percent slopes |
| RdA | Riverhead sandy loam, 0 to 3 percent slopes |
| RdB | Riverhead sandy loam, 3 to 8 percent slopes |
| RdC | Riverhead sandy loam, 8 to 15 percent slopes |
| RdD | Riverhead sandy loam, 15 to 25 percent slopes |
| Sc | Scio silt loam |
| SdA | Scio silt loam, till substratum, 0 to 3 percent slopes |
| SdB | Scio silt loam, till substratum, 3 to 8 percent slopes |
| Su | Sudbury sandy loam |
| Ua | Udifluvents, rarely flooded |
| UdA | Udipsamments, nearly level |
| UdE | Udipsamments, steep |
| Ue | Udipsamments, wet substratum |
| Uf | Udorthents, refuse substratum |
| Ug | Urban land |
| Uh | Urban land-Hempstead complex |
| Um | Urban land-Minoa complex |
| UnB | Urban land-Montauk complex, 3 to 8 percent slopes |
| UnC | Urban land-Montauk complex, 8 to 15 percent slopes |
| UpA | Urban land-Plymouth complex, 0 to 3 percent slopes |
| UpB | Urban land-Plymouth complex, 3 to 8 percent slopes |
| UpC | Urban land-Plymouth complex, 8 to 15 percent slopes |
| UpD | Urban land-Plymouth complex, 15 to 25 percent slopes |
| UrA | Urban land-Riverhead complex, 0 to 3 percent slopes |
| UrB | Urban land-Riverhead complex, 3 to 8 percent slopes |
| UrC | Urban land-Riverhead complex, 8 to 15 percent slopes |
| Us | Urban land-Sudbury complex |
| Uu | Urban land-Udipsamments complex |
| Uw | Urban land-Udipsamments, wet substratum complex |
| Ws | Wellington silt loam |
| Wd | Walpole sandy loam |

# CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

## CULTURAL FEATURES

BOUNDARIES

- National, state or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline & neatline

AD HOC BOUNDARY (label)

- Small airport, airfield, park, oilfield, cemetery, or flood pool

STATE COORDINATE TICK

LAND DIVISION CORNERS (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS

- Interstate
- Federal
- State
- County, farm or ranch

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or small

PITS

- Gravel pit
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Indian mound (label)
- Located object (label)
- Tank (label)
- Wells, oil or gas
- Windmill
- Kitchen midden

## WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label)
  - Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial
- Intermittent

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

## SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS

ESCARPMENTS

- Bedrock (points down slope)
- Other than bedrock (points down slope)

SHORT STEEP SLOPE

GULLY

DEPRESSION OR SINK

SOIL SAMPLE SITE (normally not shown)

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar non soil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot
- Groundwater recharge pit less than 2 ac.
- Area of Histosol ½ to 2 acres

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JMBER 2

000 4000 3000 2000 1000 0 5000 10000 Fe

.5 0 1 2 3 Kilome

Scale 1:24000

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## LEGEND

- IPSWICH-UDIPSAMMENTS: Dominantly nearly level, very poorly drained, organic soils and nearly level, moderately well drained to excessively drained, coarse-textured soils; on tidal flats
- MONTAUK-ENFIELD: Dominantly nearly level to strongly sloping, well drained, medium-textured and moderately coarse textured soils; on knolls and hills
- RIVERHEAD-ENFIELD-URBAN LAND: Dominantly nearly level to strongly sloping, well drained, moderately coarse textured and medium-textured soils and Urban land; on low hills and ridges
- 4 RIVERHEAD-PLYMOUTH: Dominantly moderately steep or steep, well drained and excessively drained, moderately coarse textured and coarse-textured soils; on hillsides
- UDIPSAMMENTS-BEACHES-URBAN LAND: Dominantly nearly level or gently sloping, excessively drained to moderately well drained, coarse-textured soils, Beaches, and Urban land; on barrier beaches
- 6 URBAN LAND: Dominantly nearly level or gently sloping areas that are covered by buildings, roads, sidewalks, and parking lots; on plains and low hills
- 7 URBAN LAND-HEMPSTEAD: Dominantly Urban land and nearly level, well drained, medium-textured soils; on plains
- URBAN LAND-MONTAUK-RIVERHEAD: Dominantly Urban land and nearly level to strongly sloping, well drained, medium-textured and moderately coarse textured soils; on low hills
- 9 URBAN LAND-RIVERHEAD: Dominantly Urban land and nearly level, well drained, moderately coarse textured soils; on plains
- 10A URBAN LAND-UDIPSAMMENTS-SUDBURY: Dominantly Urban land and nearly level, excessively drained to moderately well drained, coarse-textured and moderately coarse textured soils; on plains

COMPILED 1985

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U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION

# GENERAL SOIL MAP
## NASSAU COUNTY, NEW YORK

Scale 1:126,720

1 0 1 2 3 4 Miles

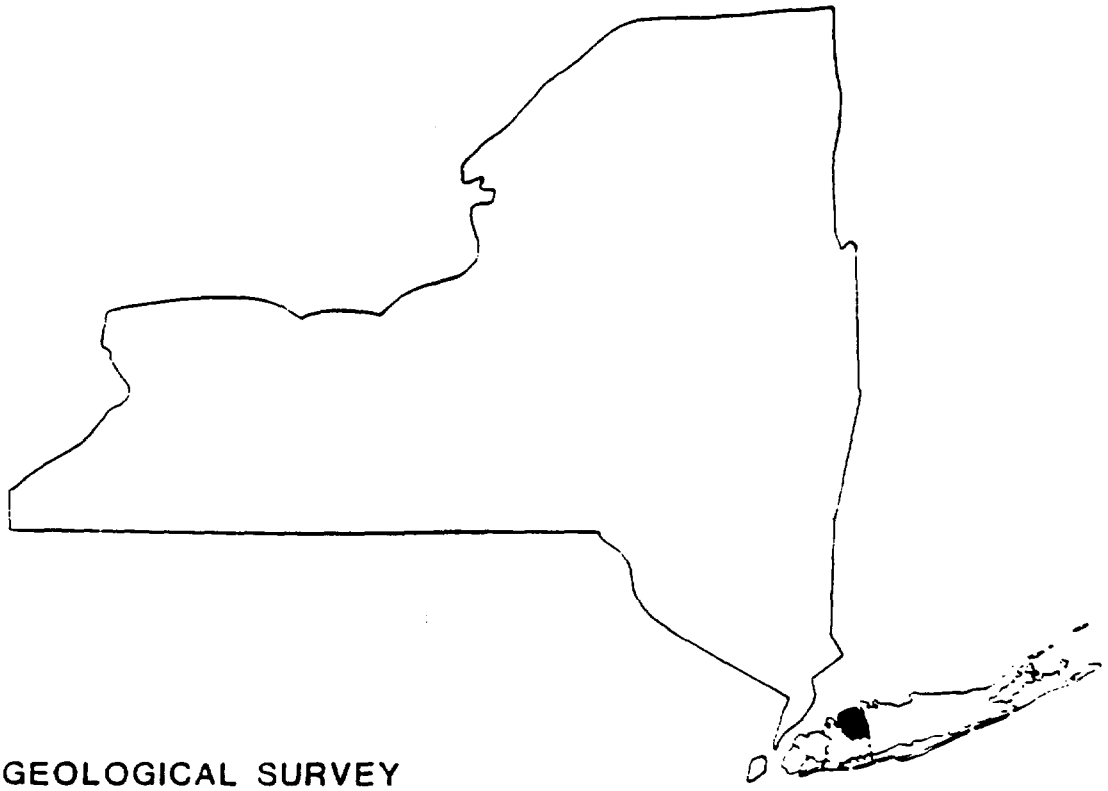
1 0 3 6 Km

REFERENCE NO. 11

REFERENCE NO. 12

100455

# Hydrogeology and Ground-Water Quality of the Northern Part of the Town of Oyster Bay, Nassau County, New York, in 1980



U.S. GEOLOGICAL SURVEY
Water-Resources Investigations
Report 85-4051

Prepared in cooperation with

NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS

100456

# HYDROGEOLOGY AND GROUND-WATER QUALITY OF THE NORTHERN PART OF THE TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK, IN 1980

By Chabot Kilburn and Richard K. Krulikas

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U.S. GEOLOGICAL SURVEY

Water-Resources Investigations
Report 85-4051

Prepared in cooperation with the

NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS

Syosset, New York

1987

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## HYDROGEOLOGY

The ground-water reservoir underlying the northern part of the Town of Oyster Bay consists of unconsolidated glacial deposits of Pleistocene age and coastal-plain deposits of continental and marine origin of Late Cretaceous age. These unconsolidated deposits consist of gravel, sand, silt, and clay and are underlain by bedrock of early Paleozoic and (or) Precambrian age. The bedrock, which is relatively impermeable, forms the base of the ground-water reservoir.

The thickness, character, and water-bearing properties of the aquifer and the relationships between hydrogeologic and geologic units underlying the study area are depicted in table 1. The correlations should be considered direct relationships as implied in the tables. The upper and lower boundaries of the hydrogeologic units are determined mainly from gross lithologic differences between units rather the age of the deposits, which forms the basis for geologic correlations. For example, the upper and lower limits of the confining units (Port Washington confining unit and Raritan clay) are placed at intervals where the lithologic sequence changes from predominantly clay to sand or sand and gravel, and these positions may have no time-stratigraphic significance. For this reason, and because differentiation between sediments of Pleistocene and Cretaceous age is difficult and uncertain, it is possible that some deposits of Pleistocene age have been included in the upper part of the Magothy aquifer, which, by present definition, is approximately equivalent to the Magothy Formation-Matawan Group, undifferentiated, of Late Cretaceous age. The three hydrogeologic sections (pl. 1B) show the inferred extent, lateral and vertical relationships, and the variations in depth, thickness, lithology, and structure of these units.

### Description of Hydrogeologic Units

#### *Bedrock*

Bedrock of early Paleozoic and(or) Precambrian age underlies all of western Long Island (Fisher and others, 1962). The bedrock generally consists of metamorphic and igneous crystalline rocks--schist, gneiss, and granite--and lies at depths ranging from about 350 ft below sea level along the north shore to about 950 ft below sea level in the southeast part of the study area (pl. 2A, and hydrogeologic sections, pl. 1B).

Bedrock is generally regarded as the base of the ground-water reservoir on Long Island because of its density and low permeability. No wells in the Town of Oyster Bay are known to obtain water from bedrock.

#### *Lloyd Aquifer*

The Lloyd aquifer is the equivalent of the Lloyd Sand Member of the Raritan Formation of Late Cretaceous age (Cohen and others, 1968, p. 18). It consists of discontinuous layers of gravel, sand, sandy clay, silt, and clay, and lies roughly parallel to the bedrock surface at depths ranging from about



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200 ft below sea level along the north shore to about 700 ft below sea level in the southeast part of the study area (pl. 2B). Its thickness ranges from 0 to 250 ft from northwest to southeast, respectively.

The Lloyd aquifer is a major aquifer in the Town of Oyster Bay. It is probably hydraulically continuous with the adjacent Port Washington aquifer and upper glacial aquifer in the northern part of the study area. Water in the Lloyd aquifer is confined under artesian pressure beneath the Raritan clay.

Well yields during test pumping of large-capacity public-supply wells screened in the Lloyd aquifer have ranged from 500 gal/min to as much as 1600 gal/min.

### *Raritan Clay*

The Raritan clay is a distinct hydrogeologic unit that extends throughout much of the Town of Oyster Bay (pl. 3A). In this area, the Raritan clay may be equivalent to the unnamed clay member of the Raritan Formation of Late Cretaceous age. The Raritan clay consists mainly of light to dark gray, red, white, or yellow clay and variable amounts of silt, and clayey silty fine sand. Sandy beds of varying thickness are common. The top of the Raritan clay is roughly parallel to that of the underlying Lloyd sand member. The upper-surface altitude of the Raritan clay ranges from 150 ft below sea level along the north shore to about 550 ft below sea level in the southeastern part of the study area. Its thickness ranges from 0 to 200 ft from northwest to southeast, respectively.

The Raritan clay is a significant hydrogeologic unit because it confines water in the underlying Lloyd aquifer. Although its hydraulic conductivity is very low, it does not entirely prevent movement of water between the Magothy and Lloyd aquifers. Some public-supply and other wells obtain part of their water supply from the sandy zones in the upper part of the Raritan clay.

### *Magothy Aquifer*

The Magothy aquifer is the equivalent of the Matawan Group-Magothy Formation undifferentiated of upper Cretaceous age. Deposits in this unit consist of beds and lenses of light-gray, fine to coarse sand with some interstitial clay. Detailed lithologic descriptions are given in Soren (1978); Ku and others (1975); and Jensen and Soren (1974).

The top of the Magothy aquifer is not planar, unlike the surfaces of the underlying units. The Magothy surface was deeply eroded during Tertiary time and probably was considerably eroded in Pleistocene time. The upper surface altitude of the Magothy ranges from as high as 200 ft above sea level in the center of the study area to 200 ft below sea level along the northeast edge of the study area (pl. 3B). Its thickness ranges from 0 to 650 ft from northwest to southeast, respectively.

The Magothy aquifer is the principal aquifer underlying Long Island and is the island's main source of water for public supply. The sand beds within the aquifer are moderately to highly permeable. The reported yields during



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pumping tests of several public-supply wells screened in the Magothy aquifer in the Town of Oyster Bay ranged from 300 gal/min to as much as 1,500 gal/min. The average yield was about 1,000 gal/min.

The large amount of clay in the upper half of the aquifer causes the water to become increasingly confined with depth. Along the north shore, the Magothy aquifer is probably in hydraulic continuity with the adjacent Port Washington aquifer. The Magothy also has a generally high degree of hydraulic continuity with the overlying upper glacial aquifer, but the degree of continuity may vary considerably from place to place.

### *Port Washington Aquifer*

Two previously unrecognized hydrogeologic units in the northern part of the Town of Oyster Bay are defined as the Port Washington aquifer and Port Washington confining unit. The units were first recognized in the northern part of the Town of North Hempstead (Kilburn, 1979). The inferred limits of the units are shown in plates 4A and 4B, and their relationships to the other hydrologic units are shown on the hydrogeologic sections on plate 1B.

The Port Washington aquifer is a sequence of deposits of Pleistocene and (or) Late Cretaceous age that underlie the north-shore area of the Town of Oyster Bay. The deposits form a distinct hydrogeologic unit that rests upon bedrock and is overlain by a thick sequence of confining clay. The south edge of the deposits overlap and abut the adjacent Cretaceous units. The sediments of the Port Washington aquifer form part of the valley fill in the channels cut into the Cretaceous deposits. These deposits consist largely of sand or sand and gravel and varying amounts of interbedded clay, silt, and sandy clay.

The altitude of the top of the Port Washington aquifer ranges from 150 ft below sea level along the north shore to 450 ft below sea level along the south shore (pl. 4A). Its thickness ranges from 0 to more than 150 ft in the central parts of the study area.

The Port Washington aquifer is moderately to highly permeable and is a major aquifer in the northern parts of the Town of Oyster Bay. The reported yields during pumping tests of public-supply wells screened in the aquifer range from 300 gal/min to 1,200 gal/min. Water in the aquifer is confined beneath the Port Washington confining unit. The hydrogeologic relationships between the Port Washington aquifer and the abutting Lloyd, Magothy, and upper glacial aquifers, as shown in the hydrogeologic sections on plate 1B, suggest that these deposits could be in lateral hydraulic continuity. Potentiometric studies of the head in the Lloyd aquifer made by Swarzenski (1963), Kimmel (1973), and Kilburn (1979) tend to verify a lateral hydraulic continuity between the Port Washington and Lloyd aquifers.

### *Port Washington Confining Unit*

The Port Washington confining unit is a sequence of deposits of Pleistocene or Late Cretaceous to Holocene(?) age that locally underlies the north shore. The unit consists mainly of clay and silt, with scattered lenses



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of sand or sand and gravel. (See Kilburn, 1979, for a more detailed description.) The deposits that form the Port Washington confining unit overlie the Port Washington aquifer or overlap the adjacent Cretaceous units and may form part of the valley fill that occupies channels cut into the other Cretaceous deposits. The unit may locally include or consist of erosional remnants of the clay member of the Raritan Formation.

The altitude of the top of the Port Washington confining unit ranges from 100 ft above sea level in the central part of the study area to 300 ft below sea level along the northeastern part (pl. 4B). Its thickness ranges from 0 to more than 150 ft in the central part of the study area.

### *Upper Glacial Aquifer*

The upper glacial aquifer consists of deposits of late Pleistocene and Holocene age that overlie the Magothy aquifer and the Port Washington confining unit and locally abut against or overlie the Port Washington aquifer. The extent and relationships of these deposits to the adjacent hydrogeologic units are shown on plate 1B.

The upper deposits consist mainly of stratified beds of fine to coarse sand and of sand and gravel but also contain thin beds of silt and clay interbedded with coarse-grained material. The outwash that constitutes the bulk of the upper Pleistocene deposits is yellow and brown or, in some places, gray. (See Perlmutter, 1949, and Kilburn, 1979, for further descriptions.)

The upper glacial aquifer, which contains the water table in most of the area, transmits all recharge to the underlying aquifers. Precipitation filtering downward to the water table is the principal source of ground-water recharge. In the past, the upper glacial aquifer was tapped as a water supply by many public-supply wells. Because it has become contaminated by cesspool effluents, fertilizers, and other substances, however, its use for public supply has decreased. Wells tapping the aquifer are now used mainly to supply water for domestic use, irrigation, and commercial and industrial purposes.

The sand and gravel deposits in the upper glacial aquifer are highly permeable and yield large amounts of water to properly constructed wells. The yields of large-capacity public-supply wells screened in the aquifer have been reported to range from 400 gal/min to 1,400 gal/min.

The recent deposits of Holocene age along beaches, streams, swamps, and the bottoms of bays and lakes have not been differentiated from the upper glacial aquifer because they are too thin.

## Correlation of Units

The differentiation between deposits of Pleistocene and Cretaceous age throughout most of the northern part of the Town of Oyster Bay is uncertain. On Long Island, the contact between Pleistocene and Cretaceous deposits is an erosional unconformity that is commonly marked by an abrupt lithologic and



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## Water Movement

The lateral direction of ground-water flow can be estimated from water-table and potentiometric-surface maps. Ground water moves in the direction of decreasing head and perpendicular to the potentiometric contours. A vertical component of ground-water flow may also develop where differences in hydrostatic head are present with depth in an aquifer or between aquifers.

### *Upper Glacial Aquifer*

The regional and local directions of lateral ground-water movement near the water table in the northern part of the Town of Oyster Bay are controlled from the regional and local ground-water divides (pl. 6A). Other smaller, local ground-water divides (not shown) are present on Mill Neck, Centre Island, and Cove Neck.

The lateral direction of ground-water movement near the water table is indicated on plate 6A by arrows. Water on the south side of the regional divide moves southward to discharge areas along the south shore; water north of the regional divide moves in two directions. Ground water east of the principal local divide shown on plate 6A moves toward discharge areas along or underlying Long Island Sound, Mill Neck Creek, Oyster Bay Harbor, or Cold Spring Harbor, and ground water west of the principal local divide moves westward to discharge areas along Glen Cove Creek or into Hempstead Harbor. Some water along the divides moves directly downward until it meets a zone of low permeability (for example, a clay bed or the top of the Port Washington confining unit or the Raritan confining unit), where it is diverted laterally.

Hydrostatic head differences between the water table (pl. 6A) and the potentiometric surface in the lower part of the Magothy aquifer (pl. 5A) during March and April 1980 ranged from less than 1 ft to more than 20 ft throughout most of the area except near the shore. The head differences were such that recharge from the water table could move downward into the Magothy aquifer over most of the area. Cones of depression due to local ground-water pumpage are not shown on plate 6A because the observation wells in the area are spaced too broadly to provide adequate definition.

### *Magothy Aquifer*

The directions of lateral and vertical ground-water movement in the Magothy aquifer are controlled by the position of the regional and local potentiometric divides and by the hydraulic gradients. (See pl. 5A.) Some of the ground water along the divides moves downward to the bottom of the aquifer, where it then moves laterally toward areas of natural discharge or active pumping wells.

The areas of natural discharge from the Magothy aquifer can be inferred from plates 5A and 6A. Discharge occurs wherever the hydrostatic head in the Magothy is greater than that in the adjacent or overlying units. Water discharges from the Magothy aquifer into the upper glacial aquifer in areas adjacent to Hempstead Harbor and Oyster Bay Harbor, and into the Port Washington confining unit elsewhere.



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Hydrostatic heads in the Magothy aquifer in 1980 exceeded those in the Lloyd aquifer by as much as 50 ft throughout a large part of the area. This is due largely to the low permeability of the Raritan confining unit, which confines water in the Lloyd aquifer but does not prevent water from the areas of higher head in the Magothy from moving in the direction of decreasing head and perpendicular to the potentiometric contours.

### *Lloyd Aquifer*

The Lloyd aquifer is recharged by water moving downward from the Magothy and upper glacial aquifers through the Raritan clay and Port Washington confining unit in response to the higher hydrostatic heads in the upper aquifers. The confining units impede but do not prevent this downward movement. The principal areas of recharge of the Lloyd aquifer are those underlying and adjacent to the regional and local potentiometric divides, where flow is predominantly downward (pl. 5B).

Areas of natural discharge of water from the Lloyd aquifer can be inferred from a comparison of heads in the Lloyd (pl. 5B), the Magothy (pl. 6A), and the water table (pl. 6A). Natural discharge from the Lloyd may occur in areas where the head in the Lloyd exceeds heads in overlying or adjacent units. These comparisons indicate that water from the Lloyd aquifer can move laterally and upward through the Port Washington aquifer (where present) and into the upper glacial aquifer, and thence into Hempstead Harbor (section C-C', pl. 1B). Other areas of discharge are along and beneath Long Island Sound (section A-A', pl. 1B). Some discharge may also occur in the Oyster Bay Harbor area (section C-C', pl. 1B) by movement of water upward through the Port Washington aquifer and Port Washington confining unit into the upper glacial aquifer and then into the harbor.

## GROUND-WATER QUALITY

Data on ground-water quality in the northern part of the Town of Oyster Bay during 1950-79 are available mainly from analyses made by the Nassau County Department of Health. These analyses, together with those made by the U.S. Geological Survey, represent 155 wells. The number of samples per well during this period ranged from 1 to 37. The frequency of sampling varied, as did the constituents for which analyses were made. It was beyond the scope of this study to make a detailed study of water quality or to review the 2,168 analyses for obvious errors. It was assumed that the number of analyses in error was small enough to not significantly affect general interpretations of water quality that could be made from the analyses.

### General Water Quality

Table 3 (p. 22) lists the median and range of the principal constituents and summarizes the general water quality of the three aquifers during 1950-79; Table 4 summarizes the ground-water quality in the northern part of the Town of Oyster Bay in 1979. The analyses are arranged by aquifer to facilitate comparison and to demonstrate changes with depth.



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*Table 4.--Chemical analyses of ground water from wells in northern part of Town of Oyster Bay, N. Y.*

[Concentrations in milligrams per liter unless otherwise indicated. Analyses by Nassau County Department of Health except as indicated. Dashes indicate no measurement recorded.]

| Well data | | | | Constituents | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Well number[1] | Date of sample | Depth of well (ft) | Use of well[3] | Specific conductance (umho) | pH | Hardness (as $CaCO_3$) | Calcium dissolved (as Ca) | Magnesium dissolved (as Mg) | Sodium dissolved (as Na) |
| | | | | Upper Glacial aquifer | | | | | |
| N1194A[2] | 6- 7-79 | 100 | Obs. | 360 | 5.7 | 90 | 26 | 6.1 | 40 |
| N1209A | 8-21-79 | 64 | Obs. | -- | 5.9 | 72 | 18 | .5 | 33 |
| N2072[2] | 9- 9-75 | 159 | P.S. | 25 | 5.2 | 8 | 2.0 | .8 | 2.9 |
| N3892 | 6-28-77 | 251 | P.S. | 170 | 6.4 | 42 | 9.6 | .4 | 10 |
| N5792 | 12-27-76 | 300 | P.S. | 50 | 6.4 | 56 | 14 | .4 | 10 |
| N7034 | 9-19-79 | 232 | Irr. | -- | 6.3 | 80 | 18 | .7 | 11 |
| N7643 | 4- 5-78 | 218 | P.S. | 320 | 5.7 | 64 | 11 | .7 | 50 |
| N7665 | 4-10-79 | 375 | P.S. | -- | 6.3 | 60 | 14 | .5 | 12 |
| N8183 | 1- 2-79 | 230 | P.S. | 150 | 6.3 | 47 | 11 | .4 | 10 |
| | | | | Magothy aquifer | | | | | |
| N3475 | 10-12-77 | 487 | P.S. | 65 | 6.4 | 15 | 2.8 | 0.2 | 5.1 |
| N4097 | 3-26-79 | 470 | P.S. | 95 | 5.3 | 20 | 5.2 | .1 | 7.4 |
| N4400 | 1- 2-79 | 302 | P.S. | 88 | 7.0 | 25 | 5.2 | .2 | 6.0 |
| N5762 | 6-28-77 | 283 | P.S. | 140 | 6.6 | 38 | 8.8 | .3 | 7.0 |
| N6093 | 1-23-79 | 612 | P.S. | 40 | 5.6 | 8 | 1.6 | .1 | 3.0 |
| N6768 | 3-13-78 | 208 | Inst. | -- | 6.3 | 54 | 12 | .5 | 6.0 |
| N7030 | 1-23-79 | 531 | P.S. | 140 | 6.3 | 44 | 11 | .3 | 10 |
| N7772 | 2-16-79 | 568 | P.S. | 70 | 6.4 | 20 | 5.6 | .1 | 5.0 |
| N8355 | 8- 9-78 | 595 | P.S. | -- | 6.2 | 30 | 5.6 | .3 | 6.0 |
| N8713 | 7-31-78 | 377 | P.S. | 70 | 6.5 | 16 | 4.0 | .1 | 4.0 |
| | | | | Lloyd aquifer | | | | | |
| N 118 | 7-11-79 | 477 | P.S. | 65 | 6.9 | 18 | 4.0 | 0.2 | 4.9 |
| N2920 | 9-12-77 | --- | P.S. | 75 | 6.9 | 22 | 4.8 | .2 | 10 |
| N5201 | 7-31-78 | 509 | P.S. | 55 | 6.6 | 12 | 3.2 | .1 | .0 |
| N7614 | 2-26-79 | 393 | Ind. | -- | 6.6 | 14 | 2.4 | .2 | 4.0 |
| N7857 | 8-10-79 | 614 | P.S. | 41 | 6.1 | 14 | 4.0 | .1 | -- |
| N8776 | 8-28-79 | 459 | P.S. | 46 | 6.5 | 10 | 2.4 | .1 | 3.8 |

[1]Well locations are shown in plate 1.
[2]Analyses by U.S. Geological Survey.



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| Well number[1] | Carbonate (as $CO_3$) | Alkalinity total (as $CaCO_3$) | Sulfate dissolved (as $SO_4$) | Chloride dissolved (as Cl) | Silica dissolved (as $SiO_2$) | Solids residue at 180°C | Solids (sum of dissolved constituents | Nitrogen Nitrate, dissolved (as N) | Iron total (µg/L as Fe) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Upper Glacial aquifer | | | | | |
| N1194A[2] | 0 | 25 | 29 | 82 | 13 | -- | 214 | 2.3 | 810 |
| N1209A | 28 | 14 | 35 | 44 | -- | 267 | -- | 12 | 1,580 |
| N2072[2] | 0 | 4 | .4 | 3.0 | 6.8 | -- | 22 | .71 | 60 |
| N3892 | 14 | 16 | 11 | 17 | -- | 155 | -- | 3.2 | 230 |
| N5792 | 20 | 20 | 9.0 | 13 | -- | 153 | -- | 4.4 | 60 |
| N7034 | 28 | 14 | 36 | 23 | -- | 209 | -- | 8.7 | 200 |
| N7643 | 17 | 10 | 54 | 41 | -- | 302 | -- | 19 | 0 |
| N7665 | 20 | 14 | 32 | 11 | -- | 190 | -- | 4.4 | 110 |
| N8183 | 17 | 20 | 7.0 | 14 | -- | 113 | -- | 6.4 | 0 |
| | | | | Magothy aquifer | | | | | |
| N3475 | 4 | 12 | 0.0 | 6.5 | -- | 33 | -- | 2.0 | 100 |
| N4097 | 8 | 4 | .0 | 11 | -- | 28 | -- | 6.3 | 0 |
| N4400 | 8 | 24 | 4.0 | 5.0 | -- | 75 | -- | 2.1 | 150 |
| N5762 | 13 | 20 | 12 | 9.2 | -- | 102 | -- | 2.8 | 280 |
| N6093 | 2 | 2 | .0 | 4.0 | -- | 53 | -- | 1.3 | 60 |
| N6768 | 18 | 14 | 33 | 7.8 | -- | 116 | -- | 2.9 | 260 |
| N7030 | 17 | 10 | 18 | 10 | -- | 102 | -- | 4.5 | 190 |
| N7772 | 8 | 12 | .0 | 7.4 | -- | 56 | -- | 1.9 | 0 |
| N8355 | 8 | 24 | .0 | 10 | -- | 67 | -- | 3.5 | 0 |
| N8713 | 6 | 9 | .0 | 5.6 | -- | 66 | -- | 1.7 | 0 |
| | | | | Lloyd aquifer | | | | | |
| N 118 | 6 | 17 | 3.0 | 5.0 | -- | 56 | -- | 2.0 | 50 |
| N2920 | 7 | 16 | .0 | 4.8 | -- | 71 | -- | .73 | 130 |
| N5201 | 5 | 13 | .0 | 4.6 | -- | 58 | -- | .02 | 100 |
| N7614 | 4 | 12 | .0 | 5.0 | -- | 53 | -- | 1.0 | 210 |
| N7857 | 6 | 15 | .0 | 8.0 | -- | 76 | -- | .00 | -- |
| N8776 | 4 | 12 | .0 | 2.5 | -- | 33 | -- | .00 | 0 |

[3] Obs., observation well; P.S., public supply well; Irr., irrigation well; Inst., institutional well; Ind., industrial well.



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Table [illegible]-4 [illegible] north part of Te[illegible] of [illegible]er [illegible] that are closed or restricted because of contamination by [illegible]rates or volatile organic chemicals.

(Locations of wells are shown in pl. 1 and pl. 6B; dashes indicate data unavailable).

| Well number | Well owner or user[1] | Screened interval or depth (feet below land surface) | Aquifer | Date: Closed or abandoned | Date: Restricted or reopened | Contaminants |
|---|---|---|---|---|---|---|
| N 149 | Hicksville W.D. | 153 | Upper Glacial | 1967 | -- | Nitrate |
| 150 | Hicksville W.D. | 148 | Upper Glacial | 1953 | -- | Nitrate |
| 2072 | Hicksville W.D. | 138-159 | Upper Glacial | 1967 | -- | Nitrate |
| 2316 | Pall Corp. | 170 | Upper Glacial | -- | 07/13/77 | 1,1,2 Trichloroethylene |
| 3466 | City of Glen Cove | 148-173 | Upper Glacial | 06/23/77 | -- | 1,1,2 Trichloroethylene |
| N 3892 | City of Glen Cove | 139-172 | -- | -- | -- | -- |
| | | 225-246 | Upper Glacial | 07/07/77 | -- | Tetrachloroethylene |
| 3953 | Hicksville W.D. | 169-213 | -- | -- | -- | -- |
| | | 371-419 | Magothy | -- | 07/06/79 | Nitrate |
| 4097 | Plainview W.D. | 413-463 | Magothy | 12/28/76 | 06/13/77 | 1,1,2 Trichloroethylene, 1,1,1 Trichloroethane |
| 4246 | Jericho W.D. | 403-453 | Magothy | 05/06/77 | -- | 1,1,1 Trichloroethane |
| 5261 | City of Glen Cove | 131-170 | -- | -- | -- | -- |
| | | 185-195 | Port Washington | -- | -- | -- |
| | | 220-230 | confining unit | 08/14/78 | -- | Tetrachloroethylene |
| N 6191 | Hicksville W.D. | 489-550 | Magothy | -- | 1973 | Nitrate |
| 6531 | Riverside Plastics | 114-119 | Upper Glacial | -- | 09/06/78 | 1,1,1 Trichloroethane Trichloroethylene |
| 6579 | Glen Components | 130-146 | Upper Glacial | -- | 08/10/77 | Trichloroethylene |
| 7427 | Photocircuits | 120-161 | Upper Glacial | -- | 07/25/77 | Trichloroethylene |
| 7643 | Village of Bayville | 159-218 | Upper Glacial | -- | 1967 | Nitrate |
| N 7664 | Engineer's Country Club | 58-79 | Upper Glacial | -- | 06/06/78 | Tetrachloroethylene |
| 8326 | City of Glen Cove | 120-165 | Upper Glacial | 06/13/77 | -- | 1,1,2 Trichloroethylene Tetrachloroethylene |
| 8327 | City of Glen Cove | 118-168 | Upper Glacial | 06/23/77 | -- | 1,1,2 Trichloroethylene Tetrachloroethylene |
| 8880 | Metco Inc. | 221-247 | Magothy | -- | 05/05/78 | Trichloroethylene |
| 8887 | Slater Electric | 105-130 | Upper Glacial | -- | 07/13/77 | Trichloroethylene |

[1] W.D. = Water District



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## EXPLANATION OF COLUMN HEADINGS AND ABBREVIATIONS USED IN TABLE 6

### Well Number

Well numbers are assigned by the New York State Department of Environmental Conservation. The prefix N designates Nassau County.

### Owner or Well User

The owner or well user is in most cases the name shown on the completion report that was sent to the New York State Department of Environmental Conservation by the driller. During this study, it was found that many of the wells have changed ownership or user. New owners or well users are listed if known.

The following abbreviations are used in the "owner/user" column:

| | |
|---|---|
| AM. PHYSICS INST | American Institute of Physics |
| ASSOC | Associates |
| BAYVILLE | Village of Bayville |
| BEAVER DAM CLUB | Beaver Dam Winter Sports Club |
| CC | Country Club |
| CERRO WIRE | Cerro Wire and Cable Co. |
| CERTIFIED IND | Certified Industries |
| CERT. REDI MIX | Certified Redi-Mix Co., Inc. |
| CL | Club |
| CO | Company |
| C.W. POST COLL. | C.W. Post Center of Long Island University |
| FABRIC LEATHER | Fabric Leather Corp. |
| FAIRCHILD CORP. | Fairchild Space and Defense Systems |
| GENERAL INST. | General Instrument Corp. |
| GLEN COVE | City of Glen Cove |
| GLEN COVE BOT. | Glen Cove Bottling Co. |
| GLEN COVE HOSP. | The Community Hospital at Glen Cove |
| INC | Incorporated |
| KOLLSMAN INST. | Kollsman Instrument Co. |
| LOCUST VLY WD | Locust Valley Water District |
| L.I. LIGHTING CO. | Long Island Lighting Co. |
| L.I. RAILROAD CO. | Long Island Railroad Co. |
| L.I. STATE PARK | Long Island State Park and Recreation Commission Planting Field Arboretum |
| L.I. TUNGSTEN | Li Tungsten Corp. |
| MILL NECK ESTS. | Association of Owners of Mill Neck Estates |
| NASSAU CO DPW | Nassau County Department of Public Works |
| NASSAU CO WTR | Nassau County Water Co. |
| NATL. PARK SERV | National Park Service |
| NEW YORK STATE | New York State Conservation Department Cold Spring Harbor Hatchery |
| OLD WESTBURY | Village of Old Westbury |
| OYSTER BAY | Town of Oyster Bay |
| PIPING ROCK WTR | Piping Rock Water Co. |
| POWERS CHEMCO | Powers Chemco, Inc. |
| REG. PLAN. BOARD | Nassau-Suffolk Regional Planning Board |
| RIVESIDE PLAS. | Riverside Plastics Corp. |
| ST. PATRICKS | Saint Patrick's Roman Catholic Church |
| ST. UNIV. AT O.W. | State University of New York College at Old Westbury |



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EXPLANATION OF COLUMN HEADINGS AND ABBREVIATIONS USED IN TABLE 6 (Continued)

| | |
|---|---|
| SEA CLIFF WTR | Sea Cliff Water Co. |
| SEL-VRA ACRES | Association of Property Owners of SEL-VRA Acres |
| U.S. GEOL. SURV | U.S. Geological Survey |
| WD | Water District |

## Map Coord

Locations of wells are given by map coordinates, based on a latitude and longitude grid system, to aid the reader in locating the wells shown in plate 1. In this system, 5-minute intervals of latitude are lettered consecutively from south to north, and 5-minute intervals of longitude are numbered consecutively from west to east. The grid coordinates are shown along the margins of plate 1.

## Year Completed

Year completed refers to the year in which the well was reported to have been completed or accepted by the original well owner. It may not always be the year in which the well was actually drilled, however.

## Altitude of Land-Surface Datum (LSD)

The altitude of land surface at the well was estimated from U.S. Geological Survey 7-1/2-minute quadrangle topographic maps. At most observation wells, however, land-surface elevation was estimated from spirit leveling of the altitude of the measuring points of the wells and is probably accurate to the nearest foot.

## Use of Water

The following abbreviations indicate the primary purpose for which water from the well is used:

| | | | |
|---|---|---|---|
| ARCD | air conditioning | IRR | irrigation |
| COM | commercial | OTHR | other |
| DOM | domestic | P.S. | public supply |
| INST | institutional | RECH | recharge |
| IND | industrial | UNSD | unused |

## Use of Well

The following abbreviations indicate the principal use of the well or the purpose for which the well or hole was drilled:

| | | | |
|---|---|---|---|
| DEST | well or hole destroyed | TEST | test hole |
| OBS | observation well | UNSD | well unused |
| RECH | recharge water | WTDR | withdrawal of water |

## Depth of Well

The figures give well depth or total depth of the drilled test hole, in feet below land surface.



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EXPLANATION OF COLUMN HEADINGS AND ABBREVIATIONS USED IN TABLE 6 (Continued)

## Screen Setting and Total Screen Length

The altitudes of the top and bottom of the screened interval are given in feet above or below (-) sea level. The total length of screen or perforated pipe in that interval is given in feet. In some wells, screen was set at two or more intervals; in such cases the differences between the altitudes of the two screen settings is different from the total screen length.

## Diameter of Well

The diameter of the well is the nominal inside diameter of the smallest or innermost casing at land surface, in inches.

## Water Level (feet below land-surface datum)

The water level given is the reported original static water level, in feet above or below land surface, when the well was completed.

## Date of Measurement

Date of water-level measurement is by month (M), day (D), and year (Y).

## Lift Type

The following abbreviations indicate the type of pump or other conveyance used to bring water to the surface:

| | | | |
|---|---|---|---|
| CENT | centrifugal | TURB | turbine |
| JET | jet | NONE | no pump in well |
| SUBM | submersible | OTHR | some other type of lift |

## Aquifer Developed

The following abbreviations indicate the hydrogeologic unit that yields water to the well. Where two or more units yield water to the well, the probable principal unit is given:

| | | | |
|---|---|---|---|
| UPGLAC | Upper glacial aquifer | MAGOTHY | Magothy aquifer |
| PTWCU | Port Washington confining unit | LLOYD | Lloyd aquifer |
| PTWAQ | Port Washington aquifer | | |

## Specific Capacity

The value in this column is the number of gallons per minute pumped from the well per foot of drawdown in the well, as reported by drillers.

## Abbreviations

| | | | |
|---|---|---|---|
| COORD | coordinates | IN | inches |
| D | day | LSD | land surface datum |
| DIAM | diameter | M | month |
| FT | feet | MEAS | measurement |
| GPM/FT | gallons per minute pumped per foot of drawdown in well | SL | sea level |
| | | Y | year |



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Wells within 3 miles of Li Tungsten are marked as such --

TABLE 6.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST HOLES IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK.

| | WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 107 | OLD WESTBURY | D 6 | 1935 | 212 | P.S. | WTDR | 506 | -243 TO -279 | 36 | 16 | 132 | 08-18-35 | TURB | MAGOTHY | 1 |
| N | 109 | JERICHO WD | D 6 | 1925 | 48 | UNSD | DEST | 529 | -384 TO -465 | 59 | 16 | 26 | 06-27-24 | NONE | LLOYD | 20 |
| N | 110 | JERICHO WD | D 6 | 1924 | 56 | UNSD | OBS | 519 | -389 TO -459 | 70 | 16 | 24.0 | 07-05-24 | NONE | LLOYD | 13 |
| N | 112 | GLEN COVE | E 6 | 1930 | 53 | UNSD | DEST | 169 | -79 TO -116 | 37 | 15 | | | NONE | UPGLAC | |
| N | 114 | NASSAU CC | E 6 | 1910 | 123 | IRR | WTDR | 117 | 30 TO 10 | 20 | 10 | | | | MAGOTHY | |
| N | 115 | LOCUST VLY WD | E 6 | 1925 | 75 | UNSD | UNSD | 416 | -265 TO -332 | 67 | 18 | | | TURB | PTWAD | 7 |
| N | 116 | LOCUST VLY WD | E 6 | 1925 | 80 | UNSD | UNSD | 256 | | | | | | NONE | UPGLAC | |
| N | 117 | LOCUST VLY WD | E 6 | | 77 | UNSD | UNSD | 155 | | | 16 | | | NONE | UPGLAC | |
| N | 118 | LOCUST VLY WD | E 6 | 1932 | 45 | P.S. | WTDR | 477 | -347 TO -406 | 59 | 24 | | | TURB | LLOYD | 19 |
| N | 119 | LOCUST VLY WD | E 6 | 1935 | 80 | P.S. | WTDR | 572 | -417 TO -491 | 74 | 18 | | | TURB | LLOYD | 29 |
| N | 120 | LOCUST VLY WD | E 6 | 1933 | 80 | UNSD | TEST | 558 | | | | | | NONE | | |
| N | 121 | CREEK CLUB | E 6 | 1933 | 120 | UNSD | TEST | 415 | | | | | | NONE | | |
| N | 121A | CREEK CLUB | E 6 | 1933 | 120 | IRR | WTDR | 219 | -29 TO -87 | 42 | 12 | 56.5 | 10-00-33 | TURB | UPGLAC | 25 |
| N | 124 | CREEK CLUB | E 6 | 1920 | 9 | UNSD | OBS | 390 | | | 12 | | | NONE | LLOYD | |
| N | 149 | HICKSVILLE WD | D 7 | | 161 | UNSD | UNSD | 153 | | | | | | | UPGLAC | |
| N | 150 | HICKSVILLE WD | D 7 | | 161 | UNSD | DEST | 148 | | | | | | | UPGLAC | 14 |
| N | 166 | PIPING ROCK WTR | E 7 | 1936 | 56 | UNSD | UNSD | 114 | -43 TO -63 | 20 | 6 | 4.8 | 11-19-36 | NONE | MAGOTHY | 28 |
| N | 167 | PIPING ROCK WTR | E 7 | 1936 | 55 | UNSD | UNSD | 123 | -45 TO -65 | 20 | 6 | | | NONE | MAGOTHY | |
| N | 173 | W.C.TAYLOR | E 7 | 1920 | 34 | DOM | WTDR | 398 | | 11 | 6 | 19.5 | 03-00-20 | TURB | LLOYD | |
| N | 198 | JERICHO WD | D 8 | 1930 | 240 | P.S. | WTDR | 629 | -327 TO -377 | 50 | 18 | | | TURB | MAGOTHY | 37 |
| N | 199 | JERICHO WD | D 8 | 1930 | 235 | P.S. | WTDR | 611 | -309 TO -365 | 56 | 18 | | | TURB | MAGOTHY | 28 |
| N | 202 | OYSTER BAY WD | E 7 | | 18 | UNSD | UNSD | 420 | | | | | | NONE | LLOYD | |
| N | 486 | A.HUTCHINSON | E 7 | | 3 | | | 190 | | | 5 | | | | | |
| N | 511 | W.P.WOODBRIDGE | E 7 | 1905 | 11 | UNSD | OBS | 359 | | 6 | 3 | | | NONE | PTWAD | |
| N | 551 | NATL. PARK SERV | E 7 | | 154 | UNSD | UNSD | 325 | | | | | | | PTWCU | |
| N | 570 | JERICHO WD | D 8 | 1937 | 237 | P.S. | WTDR | 600 | -323 TO -363 | 40 | 18 | 178 | 07-15-37 | TURB | MAGOTHY | 66 |
| N | 576 | L.I.RAILROAD CO | D 7 | 1936 | 144 | UNSD | | 409 | -255 TO -265 | 10 | 8 | | | NONE | MAGOTHY | |
| N | 585 | OYSTER BAY WD | E 7 | 1937 | 18 | P.S. | WTDR | 78 | -39 TO -59 | 20 | 12 | 2 | 09-03-37 | OTHR | UPGLAC | 15 |
| N | 590 | NATL. PARK SERV | E 8 | 1937 | 120 | DOM | WTDR | 165 | -32 TO -42 | 10 | 8 | 130 | 07-21-37 | | PTWCU | 6 |
| N | 613 | PIPING ROCK WTR | E 7 | 1937 | 55 | UNSD | DEST | 140 | -61 TO -81 | 20 | 6 | 5.5 | 12-10-37 | NONE | MAGOTHY | 18 |
| N | 614 | PIPING ROCK WTR | E 7 | 1937 | 55 | UNSD | UNSD | 122 | -44 TO -64 | 20 | 6 | 4.5 | 12-28-37 | NONE | MAGOTHY | 28 |
| N | 638 | OLD WESTBURY CC | D 6 | 1938 | 295 | IRR | WTDR | 560 | -250 TO -265 | 15 | 12 | 209 | 00-00-62 | TURB | MAGOTHY | 3 |
| N | 660 | POWERS CHEMCO | E 6 | | 58 | IND | WTDR | 404 | | | 15 | | | TURB | LLOYD | |
| N | 661 | POWERS CHEMCO | E 6 | 1939 | 60 | UNSD | UNSD | 403 | -264 TO -340 | 70 | 10 | | | NONE | LLOYD | 11 |
| N | 733 | OYSTER BAY WD | E 7 | | 19 | UNSD | DEST | 350 | | | 6 | | | NONE | PTWAD | |
| N | 734 | OYSTER BAY WD | E 7 | | 18 | UNSD | UNSD | 420 | | | 10 | | | NONE | LLOYD | 12 |
| N | 735 | OYSTER BAY WD | E 7 | | 18 | P.S. | WTDR | 100 | | | | | | OTHR | UPGLAC | |
| N | 736 | OYSTER BAY WD | E 7 | | 20 | P.S. | WTDR | 70 | | | 6 | | | OTHR | UPGLAC | |
| N | 801 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 36 | | | 10 | | | NONE | UPGLAC | |
| N | 802 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 162 | | | 8 | | | NONE | UPGLAC | |



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TABLE 3.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST HOLES IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK.

| | WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | A03 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 162 | | | 8 | | | NONE | UPGLAC | |
| N | A04 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 151 | | | 8 | | | NONE | UPGLAC | |
| N | A05 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 120 | | | 6 | | | NONE | UPGLAC | |
| N | A06 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 122 | | | 6 | | | NONE | UPGLAC | |
| N | A07 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 146 | | | 8 | | | NONE | UPGLAC | |
| N | A08 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 55 | | | 8 | | | NONE | UPGLAC | |
| N | A09 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 49 | | | 8 | | | NONE | UPGLAC | |
| N | A10 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 52 | 17 TO 1 | 16 | 10 | | | NONE | UPGLAC | |
| N | A11 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 42 | | | 8 | | | NONE | UPGLAC | |
| N | A11 | GLEN COVE | E 6 | 1951 | 53 | UNSD | DEST | 58 | 11 TO -5 | 16 | | | | NONE | UPGLAC | |
| N | A12 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 52 | | | 8 | | | NONE | UPGLAC | |
| N | A13 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 55 | | | 8 | | | NONE | UPGLAC | |
| N | A14 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 146 | | | 8 | | | NONE | UPGLAC | |
| N | A15 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 161 | | | 6 | | | NONE | UPGLAC | |
| N | A16 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 169 | | | 6 | | | NONE | UPGLAC | |
| N | A17 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 164 | | | 10 | | | NONE | UPGLAC | |
| N | A18 | GLEN COVE | E 6 | | 53 | UNSD | DEST | 159 | | | 10 | | | NONE | UPGLAC | |
| N | B34 | GLEN COVE | E 6 | | 10 | UNSD | UNSD | 302 | -272 TO -292 | 20 | 8 | | | NONE | UPGLAC | |
| N | A35 | GLEN COVE | E 6 | 1931 | 10 | P.S. | WTDR | 303 | -266 TO -290 | 24 | 10 | | | | LLOYD | |
| N | A42 | SEA CLIFF WATER | E 6 | 1940 | 8 | UNSD | UNSD | 420 | -357 TO -407 | 50 | 20 | FLOWING | 07-19-40 | NONE | LLOYD | |
| N | A44 | L.I.RAILROAD CO | D 7 | | 149 | UNSD | | 258 | | | 10 | | | NONE | MAGOTHY | |
| N | 901 | SEA CLIFF WATER | E 6 | 1915 | 9 | UNSD | DEST | 84 | | | 10 | | | NONE | UPGLAC | |
| N | 901 | SEA CLIFF WATER | E 6 | 1951 | 9 | P.S. | WTDR | 68 | -37 TO -59 | 22 | 8 | | | OTHR | UPGLAC | |
| N | 902 | SEA CLIFF WATER | E 6 | 1921 | 9 | UNSD | DEST | 84 | | | | | | NONE | UPGLAC | |
| N | 902 | SEA CLIFF WATER | E 6 | 1946 | 9 | P.S. | WTDR | 60 | | | 10 | | | OTHR | UPGLAC | |
| N | 903 | SEA CLIFF WATER | E 6 | 1921 | 9 | P.S. | WTDR | 184 | | | 10 | | | OTHR | UPGLAC | |
| N | 904 | SEA CLIFF WATER | E 6 | 1917 | 9 | UNSD | UNSD | 80 | | | 10 | | | NONE | UPGLAC | |
| N | 905 | SEA CLIFF WATER | E 6 | 1921 | 9 | UNSD | DEST | 80 | | | 8 | | | NONE | UPGLAC | |
| N | 905 | SEA CLIFF WATER | E 6 | 1951 | 9 | P.S. | WTDR | 67 | -37 TO -58 | 21 | 8 | | | OTHR | UPGLAC | |
| N | 906 | SEA CLIFF WATER | E 6 | 1927 | 9 | P.S. | WTDR | 419 | | | | | | OTHR | LLOYD | |
| N | 907 | SEA CLIFF WATER | E 6 | | 9 | P.S. | WTDR | 134 | | | 10 | | | OTHR | PTWCU | |
| N | 908 | SEA CLIFF WATER | E 6 | | 9 | P.S. | WTDR | 293 | | | 10 | | | OTHR | PTWCU | |
| N | 909 | SEA CLIFF WATER | E 6 | | 9 | P.S. | WTDR | 196 | | | 10 | | | OTHR | PTWCU | |
| N | 1037 | SEA CLIFF WATER | E 6 | 1940 | 10 | P.S. | WTDR | 68 | -35 TO -55 | 20 | 24 | 8 | 01-25-40 | OTHR | UPGLAC | 34 |
| N | 1149 | NASSAU CO DPW | E 6 | 1941 | 89 | UNSD | OBS | 82 | | | 2.50 | 48.25 | 09-25-41 | NONE | PTWCU | |
| N | 1150 | NASSAU CO DPW | E 6 | 1938 | 53 | UNSD | DEST | 21 | | | 1.25 | 15.29 | 06-09-38 | NONE | UPGLAC | |
| N | 1150 | NASSAU CO DPW | E 6 | 1966 | 56 | UNSD | OBS | 28 | 31 TO 28 | 3 | 1.25 | 19.57 | 05-27-66 | TURB | UPGLAC | |
| N | 1151 | NASSAU CO DPW | E 6 | 1938 | 34 | UNSD | DEST | 26 | | | 1.25 | 11.89 | 06-09-38 | NONE | UPGLAC | |
| N | 1151 | NASSAU CO DPW | E 6 | 1965 | 33 | UNSD | OBS | 23 | 13 TO 10 | 3 | 1.25 | 10.08 | 04-09-65 | NONE | UPGLAC | |
| N | 1152 | NASSAU CO DPW | E 6 | 1940 | 154 | UNSD | DEST | 130 | | | 4 | 102.94 | 08-06-40 | NONE | UPGLAC | |

CLOSEST WELL USED FOR DRINKING FROM AQUIFER OF CONCERN



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TABLE 6.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST HOLES IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK.

| WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N 1152 | NASSAU CO DPW | E 6 | 1965 | 154 | UNSD | OBS | | | | 4 | 107.74 | 06-07-65 | NONE | UPGLAC | |
| N 1153 | NASSAU CO DPW | F 6 | 1940 | 122 | UNSD | OBS | 86 | | | 2.50 | 59.70 | 09-09-40 | NONE | MAGOTHY | |
| N 1170 | NASSAU CO DPW | E 6 | 1938 | 10 | UNSD | OBS | 49 | | | 1.25 | | | NONE | UPGLAC | |
| N 1170 | NASSAU CO DPW | E 6 | 1976 | 10 | UNSD | OBS | 16 | -1 TO -6 | 5 | 4 | | | NONE | UPGLAC | |
| N 1171 | NASSAU CO DPW | E 6 | 1938 | 68 | UNSD | DEST | 41 | | | 1.25 | | | NONE | UPGLAC | |
| N 1171 | NASSAU CO DPW | E 6 | 1942 | 83 | UNSD | DEST | 38 | | | 2.50 | 20.90 | 09-11-42 | NONE | UPGLAC | |
| N 1172 | NASSAU CO DPW | E 6 | 1940 | 144 | UNSD | OBS | 102 | | | 2.50 | 83.35 | 09-24-40 | NONE | UPGLAC | |
| N 1173 | NASSAU CO DPW | E 6 | 1941 | 145 | UNSD | DEST | 97 | 53 TO 48 | 5 | 2.50 | 78.65 | 09-11-41 | NONE | UPGLAC | |
| N 1174 | NASSAU CO DPW | E 6 | 1940 | 113 | UNSD | DEST | 60 | | | 2.50 | 38.69 | 09-13-40 | NONE | MAGOTHY | |
| N 1175 | NASSAU CO DPW | D 6 | 1940 | 177 | UNSD | DEST | 158 | | | 4 | 92.50 | 10-24-40 | NONE | MAGOTHY | |
| N 1176 | NASSAU CO DPW | D 6 | 1940 | 195 | UNSD | OBS | 198 | | | 4 | 109.28 | 10-08-40 | NONE | MAGOTHY | |
| N 1187 | NASSAU CO DPW | E 7 | 1938 | 6 | UNSD | DEST | 25 | | | 1.25 | | | NONE | UPGLAC | |
| N 1188 | NASSAU CO DPW | E 7 | 1938 | 37 | UNSD | DEST | 34 | | | 1.25 | 17.03 | 07-25-38 | NONE | UPGLAC | |
| N 1188 | NASSAU CO DPW | E 7 | 1961 | 35 | UNSD | OBS | 29 | 9 TO 6 | 3 | 1.25 | 10.20 | 11-22-61 | NONE | UPGLAC | |
| N 1189 | NASSAU CO DPW | E 7 | 1940 | 67 | UNSD | OBS | 33 | | | 1.25 | 12.78 | 11-26-40 | NONE | PTWCU | |
| N 1190 | NASSAU CO DPW | E 7 | 1940 | 128 | UNSD | OBS | 99 | | | 4 | 67.62 | 11-06-40 | NONE | UPGLAC | |
| N 1191 | NASSAU CO DPW | E 7 | 1940 | 154 | UNSD | DEST | 97 | | | 2.50 | 77.76 | 11-22-40 | NONE | UPGLAC | |
| N 1192 | NASSAU CO DPW | D 7 | 1941 | 143 | UNSD | OBS | 78 | 70 TO 65 | 5 | 2.50 | 55.73 | 08-11-41 | NONE | MAGOTHY | |
| N 1193 | NASSAU CO DPW | D 7 | 1940 | 231 | UNSD | DEST | 161 | | | 2.50 | 141.40 | 10-18-40 | NONE | MAGOTHY | |
| N 1194 | NASSAU CO DPW | D 7 | 1940 | 174 | UNSD | DEST | 104 | | | 2.50 | 85.60 | 10-31-40 | NONE | UPGLAC | |
| N 1194 | NASSAU CO DPW | D 7 | 1961 | 148 | UNSD | OBS | 100 | | | 4 | 79.20 | 12-14-61 | NONE | UPGLAC | |
| N 1195 | NASSAU CO DPW | D 7 | 1941 | 147 | UNSD | DEST | 84 | 68 TO 63 | 5 | 2.50 | 64.45 | 09-16-41 | NONE | UPGLAC | |
| N 1195 | NASSAU CO DPW | D 7 | 1961 | 148 | UNSD | TEST | 155 | | | | | | NONE | | |
| N 1195 | NASSAU CO DPW | D 7 | 1961 | 148 | UNSD | DEST | 77 | | | 1.25 | 61.85 | 11-30-61 | NONE | UPGLAC | |
| N 1195 | NASSAU CO DPW | D 7 | 1966 | 148 | UNSD | DEST | 93 | | | 1.25 | 58.00 | 11-22-66 | NONE | UPGLAC | |
| N 1195 | NASSAU CO DPW | D 7 | 1976 | 148 | UNSD | OBS | 116 | 37 TO 32 | 5 | 4 | 63.70 | 08-18-76 | NONE | MAGOTHY | |
| N 1206 | NASSAU CO DPW | E 7 | 1938 | 9 | UNSD | DEST | 30 | | | 1.25 | | | NONE | UPGLAC | |
| N 1207 | NASSAU CO DPW | E 7 | 1938 | 23 | UNSD | OBS | 24 | | | 1.25 | | | NONE | UPGLAC | |
| N 1208 | NASSAU CO DPW | E 7 | 1938 | 59 | UNSD | DEST | 31 | | | 1.25 | 15.21 | 07-28-38 | NONE | UPGLAC | |
| N 1208 | NASSAU CO DPW | E 7 | 1959 | 59 | UNSD | DEST | 31 | | | 1.25 | | | NONE | UPGLAC | |
| N 1208 | NASSAU CO DPW | E 7 | 1963 | 58 | UNSD | OBS | 33 | 28 TO 25 | 3 | 1.25 | 13.45 | 02-19-63 | NONE | UPGLAC | |
| N 1209 | NASSAU CO DPW | E 7 | 1941 | 126 | UNSD | DEST | 68 | 63 TO 58 | 5 | 2.50 | 49.03 | 06-10-41 | NONE | UPGLAC | |
| N 1209 | NASSAU CO DPW | E 7 | 1942 | 126 | UNSD | DEST | 133 | | | 2.50 | 49.31 | 11-20-42 | NONE | UPGLAC | |
| N 1209 | NASSAU CO DPW | E 7 | 1943 | 126 | UNSD | DEST | 129 | | | 2.50 | 50.20 | 06-23-43 | NONE | UPGLAC | |
| N 1209 | NASSAU CO DPW | E 7 | 1943 | 126 | UNSD | DEST | 174 | | | 4 | 27.44 | 12-16-42 | NONE | UPGLAC | |
| N 1209 | NASSAU CO DPW | E 7 | 1961 | 122 | UNSD | OBS | 64 | | | 4 | 38.07 | 12-29-61 | NONE | UPGLAC | |
| N 1210 | NASSAU CO DPW | E 7 | 1941 | 188 | UNSD | DEST | 108 | | | 2.50 | 96.25 | 06-24-41 | NONE | MAGOTHY | |
| N 1210 | NASSAU CO DPW | E 7 | 1942 | 188 | UNSD | DEST | 140 | 53 TO 48 | 5 | 2.50 | 93.90 | 07-30-42 | NONE | MAGOTHY | |
| N 1210 | NASSAU CO DPW | E 7 | 1965 | 187 | UNSD | OBS | 143 | 47 TO 44 | 3 | 1.25 | 98.84 | 04-06-65 | NONE | MAGOTHY | |
| N 1211 | NASSAU CO DPW | D 7 | 1941 | 217 | UNSD | OBS | 156 | 66 TO 61 | 5 | 2.50 | 141.55 | 06-03-41 | NONE | UPGLAC | |



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TABLE 6.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST[illegible]S IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NE[illegible]K.

| WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N 1212 | NASSAU CO DPW | D 7 | 1941 | 227 | UNSD | DEST | 125 | | | 4 | 96.18 | 04-25-41 | NONE | MAGOTHY | |
| N 1212 | NASSAU CO DPW | D 7 | 1942 | 227 | UNSD | OBS | 185 | 48 TO 42 | 6 | 4 | 143.48 | 07-20-42 | NONE | MAGOTHY | |
| N 1213 | NASSAU CO DPW | D 7 | 1941 | 175 | UNSD | DEST | 109 | 71 TO 66 | 5 | 2.50 | 89.98 | 05-15-41 | NONE | UPGLAC | |
| N 1214 | NASSAU CO DPW | D 7 | 1938 | 149 | UNSD | DEST | 80 | | | 1.25 | 68.78 | 10-13-38 | NONE | UPGLAC | |
| N 1214 | NASSAU CO DPW | D 7 | 1950 | 149 | UNSD | DEST | 77 | | | 1.25 | 62.00 | 02-18-50 | NONE | UPGLAC | |
| N 1214 | NASSAU CO DPW | D 7 | 1965 | 148 | UNSD | OBS | 85 | 66 TO 63 | 3 | 1.25 | 73.14 | 09-22-65 | NONE | UPGLAC | |
| N 1224 | NASSAU CO DPW | E 7 | 1941 | 25 | UNSD | OBS | 39 | -10 TO -13 | 3 | 1.25 | 22.37 | 10-06-41 | NONE | UPGLAC | |
| N 1225 | NASSAU CO DPW | E 7 | 1938 | 8 | UNSD | OBS | 20 | | | 1.25 | 5.32 | 07-29-38 | NONE | UPGLAC | |
| N 1226 | NASSAU CO DPW | E 7 | 1941 | 34 | UNSD | OBS | 62 | -26 TO -28 | 2 | 1.25 | 9.18 | 10-09-41 | NONE | PTWCU | |
| N 1227 | NASSAU CO DPW | E 8 | 1941 | 172 | UNSD | OBS | 136 | 43 TO 38 | 5 | 2.50 | 120.17 | 07-23-41 | NONE | MAGOTHY | |
| N 1228 | NASSAU DO DPW | D 8 | 1941 | 224 | UNSD | DEST | 189 | 41 TO 35 | 6 | 4 | 156.59 | 03-13-41 | NONE | UPGLAC | |
| N 1228 | NASSAU CO DPW | D 8 | 1941 | 224 | UNSD | DEST | 179 | 51 TO 45 | 6 | 4 | 156.88 | 09-06-41 | NONE | UPGLAC | |
| N 1228 | NASSAU CO DPW | D 8 | 1962 | 227 | UNSD | OBS | 174 | 54 TO 51 | 3 | 4 | 158.27 | 02-06-62 | NONE | UPGLAC | |
| N 1229 | NASSAU CO DPW | D 8 | 1941 | 251 | UNSD | OBS | 201 | | | 4 | 173.17 | 01-09-41 | NONE | MAGOTHY | |
| N 1230 | NASSAU CO DPW | D 8 | 1940 | 174 | UNSD | DEST | 144 | | | 2.50 | 90.52 | 12-13-40 | NONE | MAGOTHY | |
| N 1231 | NASSAU CO DPW | D 8 | 1940 | 143 | UNSD | DEST | 83 | | | 2.50 | 61.46 | 11-27-40 | NONE | MAGOTHY | |
| N 1231 | NASSAU CO DPW | D 8 | 1962 | 139 | UNSD | OBS | 81 | | | 2.50 | 53.72 | 03-30-62 | NONE | MAGOTHY | |
| N 1242 | NASSAU CO DPW | E 8 | 1938 | 41 | UNSD | DEST | 31 | | | 1.25 | | | NONE | UPGLAC | |
| N 1242 | NASSAU CO DPW | E 8 | 1953 | 41 | UNSD | OBS | 32 | | | 1.25 | 14.69 | 01-05-53 | NONE | UPGLAC | |
| N 1243 | NASSAU CO DPW | E 8 | 1939 | 65 | UNSD | DEST | 22 | | | 1.25 | | | NONE | UPGLAC | |
| N 1243 | NASSAU CO DPW | E 8 | 1953 | 65 | UNSD | DEST | 24 | 44 TO 41 | 3 | 1.25 | 7.15 | 01-07-53 | NONE | UPGLAC | |
| N 1243 | NASSAU CO DPW | E 8 | 1959 | 67 | UNSD | DEST | | | | 1.25 | | | NONE | UPGLAC | |
| N 1243 | NASSAU CO DPW | E 8 | 1966 | 64 | UNSD | DEST | 28 | 39 TO 36 | 3 | 1.25 | 16.08 | 12-08-66 | NONE | MAGOTHY | |
| N 1243 | NASSAU CO DPW | E 8 | 1975 | 64 | UNSD | OBS | 28 | 39 TO 36 | 3 | 1.25 | 6.44 | 09-22-75 | NONE | MAGOTHY | |
| N 1244 | NASSAU CO DPW | D 8 | 1940 | 249 | UNSD | | 262 | -8 TO -11 | 3 | 4 | 171.65 | 04-03-40 | NONE | MAGOTHY | |
| N 1245 | NASSAU CO DPW | D 8 | 1940 | 260 | UNSD | OBS | 202 | | | 2.50 | 175.58 | 01-02-40 | NONE | MAGOTHY | |
| N 1246 | NASSAU CO DPW | D 8 | 1940 | 186 | UNSD | OBS | 124 | | | 4 | 102.77 | 04-30-40 | NONE | MAGOTHY | |
| N 1327 | SEA CLIFF WATER | E 6 | 1940 | 10 | P.S. | WTDR | 126 | -91 TO -116 | 25 | 24 | FLOWING | 05-22-40 | OTHR | UPGLAC | |
| N 1476 | NASSAU CO DPW | E 7 | 1944 | 130 | UNSD | OBS | 83 | | | 4 | | | NONE | MAGOTHY | |
| N 1477 | NASSAU CO DPW | E 7 | 1944 | 216 | UNSD | OBS | 194 | | | 4 | | | NONE | UPGLAC | |
| N 1481 | NASSAU CO DPW | D 7 | 1944 | 149 | UNSD | DEST | 77 | | | 4 | 67.55 | 04-18-44 | NONE | UPGLAC | |
| N 1486 | J.A.SOLERWITZ | E 8 | 1927 | 5 | DOM | WTDR | 500 | | | 8 | | | NONE | LLOYD | |
| N 1595 | SEA CLIFF WATER | E 6 | 1940 | 11 | P.S. | WTDR | 125 | -84 TO -114 | 30 | 16 | 2 | 09-23-40 | | UPGLAC | 15 |
| N 1651 | LOCUST VLY WD | E 6 | 1941 | 162 | P.S. | WTDR | 470 | -223 TO -303 | 80 | 18 | 145 | 01-19-41 | TURB | LLOYD | 24 |
| N 1767 | OYSTER BAY | D 8 | 1941 | 251 | DOM | WTDR | 562 | -310 TO -331 | 21 | 10 | 180 | 10-10-41 | | MAGOTHY | 10 |
| N 1768 | OYSTER BAY | D 8 | | 250 | | | 260 | | | 8 | | | | MAGOTHY | |
| N 1773 | ST.UNIV.AT O.W. | D 7 | 1942 | 228 | UNSD | UNSD | 293 | -53 TO -65 | 12 | 8 | 151 | 01-14-42 | TURB | MAGOTHY | |
| N 1774 | ST.UNIV.AT O.W. | D 7 | | 241 | UNSD | UNSD | 136 | | | 8 | | | NONE | UPGLAC | |
| N 1775 | ST.UNIV.AT O.W. | D 7 | | 188 | UNSD | UNSD | 286 | | | 6 | | | TURB | MAGOTHY | |
| N 1917 | LI TUNGSTEN | E 6 | 1943 | 15 | IND | WTDR | 307 | -281 TO -291 | 10 | 8 | | | TURB | LLOYD | |



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TABLE 6.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST HOLES IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK

| WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N 2017 | FRIEDMAN | E 7 | 1945 | 10 | DOM | WTDR | 395 | -375 TO -384 | 9 | 8 | FLOWING | 04-25-45 | | LLOYD | |
| N 2027 | SORENSON LUMBER | E 6 | 1945 | 21 | UNSD | DEST | 74 | -39 TO -54 | 15 | 6 | FLOWING | 04-10-45 | NONE | UPGLAC | 12 |
| N 2060 | GLEN COVE BOT. | E 6 | 1946 | 26 | UNSD | UNSD | 82 | -34 TO -44 | 10 | 8 | 8 | 06-01-46 | | UPGLAC | 13 |
| N 2072 | HICKSVILLE WD | D 7 | 1946 | 162 | UNSD | DEST | 159 | 24 TO 3 | 21 | 10 | 80 | 05-15-46 | TURB | UPGLAC | 28 |
| N 2087 | POWERS CHEMCO | E 6 | 1946 | 50 | UNSD | DEST | 75 | -9 TO -25 | 16 | 8 | 15 | 02-25-46 | NONE | UPGLAC | 2 |
| N 2087 | POWERS CHEMCO | E 6 | 1946 | 50 | IND | WTDR | 345 | -284 TO -295 | 11 | 8 | 20 | 07-15-52 | TURB | LLOYD | 6 |
| N 2088 | F.M.GOULD | E 8 | 1932 | 159 | | | 605 | | | 8 | | | | LLOYD | |
| N 2113 | G.CARDELLI | E 7 | 1946 | 10 | DOM | WTDR | 449 | -417 TO -439 | 22 | 8 | FLOWING | 05-16-46 | | LLOYD | |
| N 2132 | KOENIG | E 7 | 1907 | 10 | UNSD | DEST | 469 | | | 5 | FLOWING | 00-00-14 | NONE | LLOYD | |
| N 2208 | NEW YORK STATE | E 8 | 1903 | 15 | IND | WTDR | 74 | | | 6 | | | NONE | UPGLAC | |
| N 2209 | NEW YORK STATE | E 8 | 1903 | 15 | IND | WTDR | 86 | | | 6 | | | NONE | UPGLAC | |
| N 2210 | NEW YORK STATE | E 8 | 1903 | 15 | IND | WTDR | 86 | | | 5 | | | NONE | UPGLAC | |
| N 2211 | NEW YORK STATE | E 8 | 1903 | 15 | IND | WTDR | 66 | | | 6 | | | NONE | UPGLAC | |
| N 2238 | L.I.RAILROAD CO | E 7 | | 10 | | | 198 | | | 8 | | | | PTWCU | |
| N 2241 | BAKER-CAMPBELL | E 7 | 1947 | 18 | DOM | WTDR | 374 | -346 TO -358 | 12 | 8 | +6 | 10-01-47 | | LLOYD | 25 |
| N 2316 | PALL CORP | E 6 | 1930 | 157 | IND | WTDR | 170 | | | 6 | | | TURB | UPGLAC | |
| N 2409 | NEW YORK STATE | E 8 | 1947 | 15 | IND | WTDR | 93 | -51 TO -71 | 20 | 10 | FLOWING | 09-10-47 | NONE | UPGLAC | 18 |
| N 2410 | NEW YORK STATE | E 8 | 1947 | 15 | IND | WTDR | 90 | -50 TO -70 | 20 | 10 | FLOWING | 09-12-47 | NONE | UPGLAC | 25 |
| N 2528 | NASSAU CO DPW | E 7 | 1946 | 92 | UNSD | TEST | 343 | | | | | | NONE | | |
| N 2528 | NASSAU CO DPW | E 7 | 1947 | 93 | UNSD | OBS | 328 | -185 TO -189 | 4 | 6 | | | NONE | UPGLAC | |
| N 2616 | GLEN HEAD CC | E 6 | 1931 | 75 | IRR | WTDR | 232 | -109 TO -146 | 37 | 12 | 8 | 01-30-30 | TURB | UPGLAC | 59 |
| N 2920 | SFL-VRA ACRES | E 8 | 1948 | 10 | P.S. | WTDR | | | | 10 | | | | LLOYD | |
| N 3310 | L.I.LIGHTING CO | D 6 | 1949 | 27 | IND | WTDR | 151 | -93 TO -124 | 31 | 12 | 4.9 | 06-27-49 | TURB | UPGLAC | 43 |
| N 3444 | JERICHO WD | D 7 | 1949 | 263 | UNSD | TEST | 460 | | | | | | NONE | | |
| N 3466 | GLEN COVE | E 6 | 1950 | 53 | P.S. | WTDR | 177 | -95 TO -120 | 25 | 12 | FLOWING | 04-25-50 | | UPGLAC | 9 |
| N 3474 | JERICHO WD | D 7 | 1951 | 244 | P.S. | WTDR | 517 | -208 TO -268 | 60 | 18 | 153 | 06-02-50 | TURB | MAGOTHY | 31 |
| N 3475 | JERICHO WD | D 7 | 1950 | 208 | P.S. | WTDR | 487 | -224 TO -274 | 50 | 18 | 121 | 07-22-50 | TURB | MAGOTHY | 36 |
| N 3486 | OYSTER BAY WD | E 7 | 1950 | 18 | P.S. | WTDR | 102 | -52 TO -84 | 32 | 12 | | | | UPGLAC | |
| N 3561 | OYSTER BAY WD | E 7 | 1950 | 18 | P.S. | WTDR | 120 | -70 TO -100 | 30 | 12 | FLOWING | 08-31-50 | | UPGLAC | |
| N 3569 | CERRO WIRE | D 7 | 1951 | 181 | IND | WTDR | 402 | -172 TO -221 | 49 | 16 | 95 | 06-04-51 | TURB | MAGOTHY | 10 |
| N 3838 | SPIEGEL ASSOC. | D 7 | 1951 | 195 | UNSD | DEST | 163 | 42 TO 32 | 10 | 8 | 105 | 12-03-51 | NONE | MAGOTHY | 4 |
| N 3850 | FAIRCHILD CORP | D 7 | | 185 | UNSD | TEST | 501 | | | | | | NONE | | |
| N 3850 | FAIRCHILD CORP | D 7 | 1953 | 185 | UNSD | UNSD | 445 | -215 TO -255 | 40 | 16 | 104 | 02-08-52 | TURB | MAGOTHY | 39 |
| N 3860 | FAIRCHILD CORP | D 7 | 1953 | 183 | UNSD | UNSD | 445 | -217 TO -257 | 40 | 16 | 101 | 03-25-52 | SUBM | MAGOTHY | 43 |
| N 3874 | FAIRCHILD CORP | D 7 | 1952 | 183 | UNSD | UNSD | 335 | -127 TO -147 | 20 | 16 | 106 | 11-06-52 | TURB | MAGOTHY | 8 |
| N 3877 | HICKSVILLE WD | D 7 | 1952 | 152 | UNSD | TEST | 555 | | | | | | NONE | | |
| N 3878 | HICKSVILLE WD | D 7 | 1952 | 150 | UNSD | TEST | 606 | | | | | | NONE | | |
| N 3878 | HICKSVILLE WD | D 7 | 1952 | 150 | P.S. | WTDR | 428 | -225 TO -278 | 53 | 18 | 67 | 07-22-52 | TURB | MAGOTHY | 53 |
| N 3892 | GLEN COVE | E 6 | 1953 | 145 | UNSD | TEST | 445 | | | | | | NONE | | |
| N 3892 | GLEN COVE | E 6 | 1953 | 145 | P.S. | WTDR | 251 | 6 TO -101 | 54 | 16 | 87 | 10-07-53 | | UPGLAC | 40 |



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TABLE 6.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST [illegible] IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW [illegible]K.

| WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N 3925 | COCA COLA CO | D 7 | 1952 | 158 | UNSD | UNSD | 143 | 36 TO 15 | 21 | 8 | 63 | 08-14-52 | TURB | UPGLAC | |
| N 3953 | HICKSVILLE WD | D 7 | 1952 | 152 | UNSD | TEST | 514 | | | | | | NONE | | |
| N 3953 | HICKSVILLE WD | D 7 | 1953 | 152 | P.S. | WTDR | 419 | -17 TO -267 | 92 | 18 | 66 | 11-14-52 | TURB | MAGOTHY | 69 |
| N 3982 | A.DAVIS | E 7 | 1952 | 20 | DOM | WTDR | 419 | -376 TO -399 | 23 | 6 | FLOWING | 10-07-52 | TURB | LLOYD | |
| N 4058 | CERTIFIED IND | E 7 | 1952 | 75 | UNSD | DEST | 200 | | | | | | NONE | MAGOTHY | |
| N 4095 | PLAINVIEW WD | D 8 | 1954 | 150 | P.S. | WTDR | 495 | -290 TO -340 | 50 | 18 | 72 | 08-03-54 | TURB | MAGOTHY | 31 |
| N 4096 | PLAINVIEW WD | D 8 | 1954 | 150 | P.S. | WTDR | 499 | -294 TO -344 | 50 | 18 | 68 | 08-02-54 | TURB | MAGOTHY | 37 |
| N 4097 | PLAINVIEW WD | D 8 | 1954 | 158 | P.S. | WTDR | 470 | -255 TO -305 | 50 | 18 | 75 | 08-04-54 | TURB | MAGOTHY | 36 |
| N 4133 | JERICHO WD | D 7 | 1954 | 192 | P.S. | WTDR | 445 | -208 TO -258 | 50 | 18 | 102 | 05-24-54 | TURB | MAGOTHY | 17 |
| N 4136 | OYSTER BAY WD | E 7 | 1953 | 18 | UNSD | UNSD | 310 | | | | | | NONE | PTWAQ | |
| N 4137 | OYSTER BAY WD | F 7 | 1953 | 18 | UNSD | UNSD | 188 | -145 TO -170 | 25 | 12 | FLOWING | 04-28-53 | NONE | PTWCU | |
| N 4245 | JERICHO WD | D 7 | 1955 | 222 | P.S. | WTDR | 571 | -303 TO -343 | 40 | 18 | 150 | 11-12-53 | TURB | MAGOTHY | 30 |
| N 4246 | JERICHO WD | D 7 | 1954 | 200 | UNSD | UNSD | 458 | -203 TO -253 | 50 | 18 | 110 | 11-05-54 | TURB | MAGOTHY | 31 |
| N 4376 | MARY G.BURKE | E 7 | 1953 | 58 | DOM | WTDR | 367 | -298 TO -308 | 10 | 6 | 50 | 12-07-53 | TURB | LLOYD | 15 |
| N 4400 | OYSTER BAY WD | E 8 | 1954 | 36 | UNSD | TEST | 400 | | | | | | NONE | | |
| N 4400 | OYSTER BAY WD | E 8 | 1957 | 36 | P.S. | WTDR | 302 | -178 TO -266 | 88 | 20 | 2 | 09-04-56 | TURB | MAGOTHY | 50 |
| N 4431 | CERTIFIED IND | D 7 | 1953 | 98 | UNSD | DEST | 30 | 79 TO 68 | 11 | 4 | 4 | 06-00-53 | NONE | UPGLAC | 11 |
| N 4432 | DYCKMAN LAUNDRY | E 6 | 1955 | 28 | COM | WTDR | 352 | -304 TO -320 | 16 | 6 | FLOWING | 04-00-55 | TURB | LLOYD | 2 |
| N 4440 | F.MARMORALE | E 7 | 1954 | 16 | DOM | WTDR | 316 | -290 TO -300 | 10 | 6 | 0 | 07-16-54 | | LLOYD | 10 |
| N 4462 | NORTH SHORE CC | E 6 | 1954 | 69 | UNSD | TEST | 271 | | | | | | NONE | | |
| N 4462 | NORTH SHORE CC | E 6 | 1954 | 69 | IRR | WTDR | 181 | -80 TO -112 | 32 | 12 | 46 | 05-25-54 | TURB | PTWCU | 10 |
| N 4633 | MEADOWBROOK CL | D 7 | | 176 | UNSD | TEST | 308 | | | | | | NONE | | |
| N 4633 | MEADOWBROOK CL | D 7 | 1954 | 174 | IRR | WTDR | 216 | 13 TO -39 | 52 | 16 | 94 | 08-25-54 | TURB | MAGOTHY | 83 |
| N 4639 | NASSAU CC | E 6 | 1911 | 123 | | WTDR | 250 | | | 10 | | | | MAGOTHY | |
| N 4740 | PINE HOLLOW CC | E 7 | 1954 | 220 | IRR | WTDR | 247 | 5 TO -27 | 32 | 12 | 172 | 09-15-54 | TURB | UPGLAC | 51 |
| N 4891 | PINE HOLLOW CC | E 7 | 1933 | 230 | UNSD | UNSD | 245 | | | 10 | 183 | 05-00-33 | TURB | UPGLAC | 9 |
| N 5058 | WM.J.LEVITT | D 7 | 1955 | 238 | UNSD | UNSD | 255 | 3 TO -17 | 20 | 8 | 151 | 11-17-54 | TURB | MAGOTHY | 25 |
| N 5071 | NASSAU CC | E 6 | 1954 | 143 | IRR | WTDR | 242 | -67 TO -99 | 32 | 12 | 90 | 10-26-54 | TURB | MAGOTHY | 29 |
| N 5086 | S.L.LANG | D 7 | 1955 | 225 | UNSD | DEST | 193 | 36 TO 32 | 4 | 4 | 170 | 00-00-55 | NONE | MAGOTHY | |
| N 5152 | LOCUST VLY WD | E 6 | 1956 | 44 | P.S. | WTDR | 360 | -261 TO -311 | 50 | 18 | 18 | 08-10-56 | TURB | PTWAQ | 11 |
| N 5188 | P.SAMRAD | E 7 | 1955 | 22 | DOM | WTDR | 375 | -340 TO -350 | 10 | 6 | | | TURB | LLOYD | 3 |
| N 5201 | JERICHO WD | D 6 | 1956 | 48 | P.S. | WTDR | 509 | -386 TO -456 | 70 | 18 | 36 | 06-12-56 | TURB | LLOYD | 27 |
| N 5250 | NASSAU CO DPW | E 6 | 1944 | 128 | UNSD | DEST | 89 | | | 2.50 | 71.48 | 06-23-44 | NONE | UPGLAC | |
| N 5250 | NASSAU CO DPW | E 6 | 1967 | 123 | UNSD | OBS | 101 | | | 1.25 | 79.80 | 01-24-67 | NONE | UPGLAC | |
| N 5261 | GLEN COVE | E 6 | 1955 | 145 | UNSD | TEST | 302 | | | | | | NONE | | |
| N 5261 | GLEN COVE | E 6 | 1955 | 145 | P.S. | WTDR | 235 | 14 TO -85 | 59 | 18 | 97 | 05-14-55 | SUBW | PTWCU | 43 |
| N 5332 | CERTIFIED IND | E 7 | 1955 | 73 | UNSD | DEST | 162 | -44 TO -89 | 45 | 12 | 28 | 11-26-55 | NONE | UPGLAC | 34 |
| N 5335 | CERT.READI MIX | D 7 | 1955 | 170 | UNSD | DEST | 144 | 47 TO 26 | 21 | 6 | 80 | 00-00-55 | NONE | MAGOTHY | |
| N 5450 | ENGINEERS CC | D 6 | 1955 | 57 | IRR | WTDR | 80 | -1 TO -23 | 22 | 12 | 7.5 | 06-29-55 | TURB | UPGLAC | 15 |
| N 5672 | BEAVER DAM CLUB | E 7 | 1955 | 25 | COM | WTDR | 121 | -76 TO -96 | 20 | 8 | FLOWING | 12-06-55 | TURB | UPGLAC | |



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TABLE 6.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST HOLES IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK.

| WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N 5677 | KOLLSMAN INST. | D 7 | 1955 | 218 | UNSD | TEST | 429 | | | | | | NONE | | |
| N 5677 | KOLLSMAN INST. | D 7 | 1956 | 218 | | WTDR | 257 | 47 TO -39 | 60 | 12 | 130 | 06-22-56 | TURB | MAGOTHY | 44 |
| N 5762 | GLEN COVE | E 6 | 1956 | 145 | UNSD | TEST | 310 | | | | | | NONE | | |
| N 5762 | GLEN COVE | E 6 | 1956 | 145 | P.S. | WTDR | 283 | -76 TO -135 | 59 | 18 | 81 | 07-05-56 | SUBM | MAGOTHY | 58 |
| N 5792 | SEA CLIFF WATER | E 6 | 1956 | 140 | UNSD | TEST | 361 | | | | | | NONE | | |
| N 5792 | SEA CLIFF WATER | E 6 | 1957 | 140 | P.S. | WTDR | 300 | -115 TO -155 | 40 | 20 | 84.4 | 11-07-57 | TURB | UPGLAC | 175 |
| N 5851 | ST.UNIV.AT O.W. | D 7 | 1956 | 218 | DOM | WTDR | 177 | 47 TO 41 | 6 | 6 | 128 | 08-31-56 | SUBM | MAGOTHY | 2 |
| N 5901 | CENT.REDI-MIX | D 7 | 1956 | 179 | UNSD | DEST | 148 | 42 TO 31 | 11 | 4 | 90 | 06-02-56 | NONE | MAGOTHY | |
| N 5994 | GLEN COVE HOSP | E 6 | 1957 | 130 | INST | WTDR | 226 | -43 TO -96 | 36 | 16 | 73 | 09-22-56 | TURB | MAGOTHY | 43 |
| N 6042 | MILL NECK ESTS. | E 7 | | 10 | P.S. | WTDR | 347 | -318 TO -330 | 12 | 8 | | | | PTWAQ | |
| N 6076 | PLAINVIEW WD | D 8 | 1956 | 158 | UNSD | TEST | 694 | | | | | | NONE | | |
| N 6076 | PLAINVIEW WD | D 8 | 1957 | 158 | P.S. | WTDR | 358 | -138 TO -200 | 62 | 20 | 73 | 02-11-57 | TURB | MAGOTHY | 41 |
| N 6077 | PLAINVIEW WD | D 8 | 1956 | 158 | UNSD | TEST | 692 | | | | | | NONE | | |
| N 6077 | PLAINVIEW WD | D 8 | 1957 | 158 | P.S. | WTDR | 465 | -240 TO -302 | 62 | 20 | 75 | 03-06-57 | TURB | MAGOTHY | 45 |
| N 6092 | JERICHO WD | D 8 | 1958 | 241 | P.S. | WTDR | 637 | -320 TO -390 | 70 | 18 | 194 | 06-25-57 | TURB | MAGOTHY | 52 |
| N 6093 | JERICHO WD | D 8 | 1957 | 259 | P.S. | WTDR | 512 | -287 TO -347 | 60 | 18 | 171 | 09-09-57 | TURB | MAGOTHY | 54 |
| N 6190 | HICKSVILLE WD | D 7 | 1957 | 177 | UNSD | TEST | 642 | | | | | | NONE | | |
| N 6190 | HICKSVILLE WD | D 7 | 1958 | 177 | P.S. | WTDR | 605 | -373 TO -423 | 50 | 20 | 94 | 08-22-57 | TURB | MAGOTHY | 41 |
| N 6191 | HICKSVILLE WD | D 7 | 1957 | 176 | UNSD | TEST | 676 | | | | | | NONE | | |
| N 6191 | HICKSVILLE WD | D 7 | 1958 | 176 | P.S. | WTDR | 555 | -313 TO -374 | 61 | 20 | 93.5 | 06-26-57 | TURB | MAGOTHY | 37 |
| N 6289 | PIPING ROCK CL | E 6 | 1957 | 162 | UNSD | TEST | 385 | | | | | | NONE | | |
| N 6289 | PIPING ROCK CL | E 6 | 1957 | 162 | IRR | WTDR | 219 | 40 TO -57 | 37 | 12 | 71 | 09-19-57 | TURB | UPGLAC | 19 |
| N 6294 | U.S. GEOL SURV | E 7 | 1957 | 93 | UNSD | DEST | 28 | | | 1.25 | 22.81 | 06-17-57 | TURB | UPGLAC | |
| N 6294 | U.S. GEOL SURV | E 7 | 1966 | 93 | UNSD | | 37 | | | 1.25 | | | NONE | UPGLAC | |
| N 6416 | ZARA ASPHALT CO | E 6 | 1958 | 15 | UNSD | TEST | 295 | | | | | | NONE | | |
| N 6416 | ZARA ASPHALT CO | E 6 | 1958 | 15 | UNSD | UNSD | 107 | -83 TO -92 | 9 | 6 | 6.5 | 06-06-58 | TURB | UPGLAC | 1 |
| N 6435 | LAVISTA | E 7 | 1958 | 58 | DOM | WTDR | 438 | -360 TO -380 | 15 | 6 | 38.5 | 06-00-58 | SUBM | LLOYD | |
| N 6444 | BROOKVILLE CC | E 6 | 1958 | 170 | IRR | WTDR | 257 | -51 TO -87 | 36 | 12 | 75 | 06-30-58 | TURB | MAGOTHY | 37 |
| N 6531 | RIVERSIDE PLAS. | D 7 | 1959 | 178 | UNSD | DEST | 119 | 64 TO 59 | 5 | 6 | 99 | 09-25-58 | NONE | UPGLAC | 8 |
| N 6531 | METCO INC | D 7 | 1966 | 178 | IRR | WTDR | 174 | 17 TO 5 | 12 | 6 | 102 | 05-05-66 | SUBM | UPGLAC | 10 |
| N 6549 | POWERS CHEMCO | E 6 | 1958 | 32 | IND | MECH | 425 | -292 TO -393 | 60 | 8 | 20 | 08-13-58 | NONE | LLOYD | 14 |
| N 6579 | GLEN COMPONENTS | E 6 | 1958 | 57 | | WTDR | 146 | -73 TO -89 | 16 | 4 | | | TURB | UPGLAC | |
| N 6580 | PLAINVIEW WD | D 8 | 1958 | 158 | UNSD | TEST | 702 | | | | 75 | 08-13-58 | TURB | | |
| N 6580 | PLAINVIEW WD | D 8 | 1958 | 158 | P.S. | WTDR | 601 | -365 TO -438 | 63 | 20 | 75 | 08-13-58 | TURB | MAGOTHY | 54 |
| N 6587 | ZARA ASPHALT | E 6 | 1958 | 15 | UNSD | UNSD | 56 | -25 TO -41 | 16 | 6 | 7 | 06-06-58 | TURB | UPGLAC | |
| N 6651 | JERICHO WD | D 7 | 1960 | 232 | P.S. | WTDR | 615 | -328 TO -378 | 50 | 18 | 133.7 | 05-17-60 | TURB | MAGOTHY | 27 |
| N 6655 | METCO INC | D 7 | 1959 | 122 | UNSD | UNSD | 236 | -74 TO -114 | 40 | 8 | 47 | 04-24-59 | NONE | MAGOTHY | 15 |
| N 6665 | U.S. GEOL SURV | D 6 | 1959 | 97 | UNSD | | 29 | 70 TO 68 | 2 | 1.25 | | | NONE | UPGLAC | |
| N 6666 | U.S. GEOL SURV | D 6 | 1959 | 97 | UNSD | | 12 | | | 1.25 | | | NONE | UPGLAC | |
| N 6667 | U.S. GEOL SURV | D 6 | 1959 | 94 | UNSD | | 43 | 53 TO 51 | 2 | 1.25 | | | NONE | UPGLAC | |



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TABLE 6.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST HOLES IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK.

| WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N 6668 | U.S. GEOL SURV | E 6 | 1959 | 103 | UNSD | OBS | 43 | | | 1.25 | | | NONE | UPGLAC | |
| N 6669 | U.S. GEOL SURV | E 6 | 1959 | 89 | UNSD | OBS | 44 | | | 1.25 | | | NONE | UPGLAC | |
| N 6670 | U.S. GEOL SURV | E 6 | 1959 | 81 | UNSD | OBS | 13 | | | 1.25 | | | NONE | UPGLAC | |
| N 6675 | PAR ARNEBERG | E 7 | 1959 | 7 | DOM | WTDR | 460 | -448 TO -453 | 5 | | | | SURM | LLOYD | |
| N 6708 | ZARA ASPHALT CO | E 6 | 1959 | 13 | UNSD | OBS | 50 | -33 TO -37 | 4 | 4 | 5.5 | 06-00-59 | NONE | UPGLAC | |
| N 6741 | CERRO WIRE | D 7 | 1959 | 191 | IND | WTDR | 423 | -192 TO -242 | 50 | 18 | 102 | 09-04-59 | TURB | MAGOTHY | 35 |
| N 6768 | L.I. STATE PARK | F 7 | 1914 | 208 | INST | WTDR | 175 | 45 TO 33 | 12 | 8 | | | | MAGOTHY | |
| N 6806 | CEDAR BROOK CC | E 6 | 1960 | 154 | IRR | WTDR | 323 | -133 TO -163 | 30 | 12 | 86 | 02-18-60 | TURB | MAGOTHY | 33 |
| N 6860 | GENERAL INST. | D 7 | 1960 | 138 | UNSD | DEST | 94 | 52 TO 42 | 10 | 8 | 57 | 04-04-60 | NONE | UPGLAC | 10 |
| N 6876 | U.S. GEOL SURV | E 8 | 1960 | 146 | UNSD | TEST | 113 | | | | | | NONE | | |
| N 6877 | U.S. GEOL SURV | E 7 | 1960 | 130 | UNSD | TEST | 133 | | | | | | NONE | | |
| N 6878 | U.S. GEOL SURV | E 7 | 1960 | 35 | UNSD | | 23 | 15 TO 12 | 3 | 1.25 | | | NONE | UPGLAC | |
| N 6879 | U.S. GEOL SURV | E 7 | | 131 | UNSD | OBS | 131 | 2 TO 0 | 2 | 1.25 | | | NONE | MAGOTHY | |
| N 6880 | U.S. GEOL SURV | E 7 | 1960 | 115 | UNSD | TEST | 133 | | | | | | NONE | | |
| N 6881 | U.S. GEOL SURV | D 6 | | 94 | UNSD | | 75 | 22 TO 19 | 3 | 1.25 | | | NONE | UPGLAC | |
| N 6882 | U.S. GEOL SURV | D 6 | 1960 | 148 | UNSD | | 77 | 66 TO 63 | 3 | 1.25 | | | NONE | UPGLAC | |
| N 6883 | U.S. GEOL SURV | D 6 | 1960 | 118 | UNSD | | 82 | 39 TO 36 | 3 | 1.25 | | | NONE | UPGLAC | |
| N 6884 | U.S. GEOL SURV | E 7 | 1960 | 191 | UNSD | | 108 | 86 TO 83 | 3 | 1.25 | | | NONE | UPGLAC | |
| N 6885 | U.S. GEOL SURV | E 7 | 1960 | 165 | UNSD | | 114 | 54 TO 51 | 3 | 1.25 | | | NONE | UPGLAC | |
| N 6886 | U.S. GEOL SURV | E 7 | 1960 | 164 | UNSD | | 98 | 69 TO 66 | 3 | 1.25 | | | NONE | UPGLAC | |
| N 6887 | U.S. GEOL SURV | F 8 | 1960 | 160 | UNSD | | 90 | 73 TO 70 | 3 | 1.25 | | | NONE | UPGLAC | |
| N 6888 | U.S. GEOL SURV | E 8 | 1960 | 86 | UNSD | | 56 | 33 TO 30 | 3 | 1.25 | | | NONE | MAGOTHY | |
| N 6889 | U.S. GEOL SURV | D 8 | 1960 | 290 | UNSD | TEST | 135 | | | | | | NONE | | |
| N 6973 | NASSAU CO DPW | D 7 | 1960 | 48 | UNSD | DEST | 34 | 17 TO 14 | 3 | 1.25 | 8.23 | 08-02-60 | NONE | UPGLAC | |
| N 7030 | JERICHO WD | D 7 | 1962 | 158 | P.S. | WTDR | 531 | -322 TO -372 | 50 | 20 | 75 | 04-23-62 | TURB | MAGOTHY | 10 |
| N 7034 | WOODCREST CLUB | D 7 | 1961 | 219 | IRR | WTDR | 232 | 18 TO -13 | 31 | 12 | 145 | 03-16-61 | TURB | UPGLAC | 42 |
| N 7045 | ST.UNIV.AT O.W. | D 7 | 1961 | 241 | UNSD | UNSD | 151 | 105 TO 90 | 15 | 8 | 143 | 05-21-61 | TURB | MAGOTHY | |
| N 7047 | L.I. STATE PARK | E 7 | 1962 | 223 | INST | WTDR | 264 | 11 TO -41 | 52 | 12 | 169 | 06-09-61 | SURM | MAGOTHY | 39 |
| N 7066 | MEYER GOLDSTEIN | E 7 | 1961 | 9 | UNSD | UNSD | 89 | -65 TO -80 | 15 | 6 | 2 | 05-15-61 | SURM | PTWCU | 7 |
| N 7115 | MUTTONTOWN CC | E 7 | 1961 | 205 | IRR | WTDR | 274 | -29 TO -69 | 40 | 12 | | | TURB | MAGOTHY | |
| N 7152 | U.S. GEOL SURV | E 7 | 1961 | 14 | UNSD | OBS | 370 | -346 TO -356 | 10 | 6 | 6 | 08-17-61 | NONE | LLOYD | |
| N 7190 | U.S. GEOL SURV | E 7 | 1961 | 14 | UNSD | OBS | 240 | -223 TO -226 | 3 | 2 | 8.24 | 09-07-61 | NONE | PTWCU | |
| N 7191 | U.S. GEOL SURV | E 7 | 1961 | 14 | UNSD | OBS | 142 | -125 TO -128 | 3 | 2 | 3.94 | 09-07-61 | NONE | PTWCU | |
| N 7192 | U.S. GEOL SURV | E 7 | 1961 | 14 | UNSD | OBS | 40 | -23 TO -26 | 3 | 2 | 14.31 | 09-07-61 | NONE | UPGLAC | |
| N 7193 | U.S. GEOL SURV | E 7 | 1961 | 14 | UNSD | UNSD | 18 | -1 TO -4 | 3 | 1.25 | 10.88 | 09-07-61 | NONE | UPGLAC | |
| N 7277 | CERTIFIED IND | E 7 | 1962 | 77 | UNSD | UNSD | 235 | -122 TO -157 | 35 | 12 | | | NONE | UPGLAC | |
| N 7419 | OYSTER BAY | D 8 | 1963 | 243 | UNSD | UNSD | 325 | -57 TO -82 | 25 | 10 | 173 | 08-14-63 | SURM | MAGOTHY | 9 |
| N 7420 | AM.PHYSICS INST | D 8 | 1963 | 283 | COM | WTDR | 265 | 33 TO 18 | 15 | 6 | 211 | 10-09-63 | SURM | MAGOTHY | 4 |
| N 7427 | PHOTOCIRCUITS | E 6 | 1963 | 58 | IND | WTDR | 161 | -62 TO -103 | 41 | 12 | 3 | 05-13-63 | TURB | UPGLAC | 57 |
| N 7439 | GLEN COVE | E 6 | 1963 | 22 | | WTDR | 212 | -182 TO -188 | 6 | 4 | | | SURM | LLOYD | |



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TABLE 6.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST HOLES IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK.

| WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N 7446 | JERICHO WD | D 7 | 1964 | 222 | P.S. | WTDR | 498 | -221 TO -271 | 50 | 20 | 146 | 05-26-64 | TURB | MAGOTHY | 30 |
| N 7450 | NASSAU CO DPW | D 6 | 1975 | 176 | UNSD | OBS | 134 | 47 TO 42 | 5 | 4 | | | NONE | MAGOTHY | |
| N 7478 | NASSAU CO DPW | D 7 | 1963 | 217 | UNSD | OBS | 165 | | | 4 | 131.40 | 07-18-63 | NONE | MAGOTHY | |
| N 7510 | F.F.PASSARELLA | E 7 | 1964 | 19 | DOM | WTDR | 329 | -302 TO -310 | 8 | 8 | 12 | 04-21-64 | SUBM | LLOYD | 2 |
| N 7526 | PLAINVIEW WD | D 8 | 1964 | 228 | P.S. | WTDR | 691 | -342 TO -468 | 73 | 20 | 140 | 08-03-64 | SUBM | MAGOTHY | 43 |
| N 7546 | NASSAU CO DPW | E 7 | 1964 | 11 | UNSD | OBS | 364 | -348 TO -353 | 5 | 4 | | | NONE | LLOYD | |
| N 7547 | NASSAU CO DPW | E 6 | 1966 | 9 | UNSD | TEST | 322 | | | 6 | | | NONE | | |
| N 7549 | OLD WESTBURY | D 6 | 1965 | 198 | P.S. | WTDR | 504 | -251 TO -301 | 50 | 20 | 126 | 06-03-65 | TURB | MAGOTHY | 22 |
| N 7562 | HICKSVILLE WD | D 7 | 1964 | 163 | P.S. | WTDR | 550 | | | 20 | 80 | 06-01-64 | TURB | MAGOTHY | 28 |
| N 7570 | BAYVILLE | E 7 | 1964 | 125 | UNSD | TEST | 522 | | | | | | NONE | | |
| N 7593 | JERICHO WD | E 8 | 1965 | 253 | P.S. | WTDR | 473 | -155 TO -215 | 60 | 20 | 205 | 05-24-65 | TURB | MAGOTHY | 40 |
| N 7614 | POWERS CHEMCO | E 6 | 1964 | 32 | IND | WTDR | 393 | -319 TO -368 | 41 | 10 | 32 | 08-28-64 | TURB | LLOYD | 4 |
| N 7620 | BAYVILLE | E 7 | 1964 | 125 | P.S. | WTDR | 448 | -287 TO -355 | 68 | 16 | 113.36 | 09-09-64 | TURB | LLOYD | 19 |
| N 7643 | BAYVILLE | E 7 | 1964 | 125 | P.S. | WTDR | 218 | -34 TO -93 | 59 | 20 | 121.6 | 09-18-64 | TURB | UPGLAC | 169 |
| N 7644 | J.D.MOONEY | E 7 | 1964 | 19 | DOM | WTDR | 328 | -286 TO -301 | 15 | 4 | 13 | 09-04-64 | SUBM | LLOYD | 5 |
| N 7664 | ENGINEERS CC | D 6 | 1965 | 53 | IRR | WTDR | 85 | -5 TO -26 | 21 | 12 | | | TURB | UPGLAC | 22 |
| N 7665 | LOCUST VLY WD | E 6 | 1966 | 218 | P.S. | WTDR | 374 | -102 TO -152 | 50 | 20 | 172 | 12-11-65 | TURB | UPGLAC | 30 |
| N 7672 | NASSAU CO DPW | D 7 | 1964 | 177 | UNSD | OBS | 159 | 20 TO 18 | 2 | 2 | 98.00 | 11-02-64 | NONE | MAGOTHY | |
| N 7719 | BAYVILLE | E 7 | 1964 | 20 | UNSD | OBS | 400 | -378 TO -380 | 2 | 4 | | | NONE | BEDROCK | |
| N 7745 | W.J.LEVITT | E 7 | 1965 | 150 | DOM | WTDR | 215 | -40 TO -65 | 25 | 16 | 105 | 02-24-65 | TURB | PTWCU | 6 |
| N 7772 | JERICHO WD | E 7 | 1966 | 258 | P.S. | WTDR | 568 | -245 TO -305 | 60 | 20 | 194 | 05-19-66 | TURB | MAGOTHY | 23 |
| N 7773 | JERICHO WD | E 7 | 1966 | 230 | P.S. | WTDR | 565 | -270 TO -330 | 60 | 20 | 188 | 05-24-66 | TURB | MAGOTHY | 30 |
| N 7781 | JERICHO WD | D 7 | 1965 | 217 | P.S. | WTDR | 459 | -177 TO -237 | 60 | 20 | 140 | 06-29-65 | TURB | MAGOTHY | 42 |
| N 7782 | ST. PATRICKS | E 6 | 1965 | 95 | ARCD | WTDR | 226 | -105 TO -131 | 26 | 8 | 40.2 | 03-14-65 | TURB | MAGOTHY | |
| N 7830 | MILL RIVER CLUB | E 7 | 1965 | 118 | IRR | WTDR | 197 | -48 TO -79 | 31 | 12 | 67 | 05-05-65 | TURB | MAGOTHY | 33 |
| N 7834 | GLEN HEAD CC | E 6 | 1965 | 150 | IRR | WTDR | 202 | -21 TO -52 | 31 | 12 | 116 | 05-25-65 | TURB | UPGLAC | 27 |
| N 7857 | SEA CLIFF WATER | E 6 | 1966 | 195 | P.S. | WTDR | 614 | -365 TO -419 | 54 | 20 | 195 | 05-10-66 | SUBM | LLOYD | 13 |
| N 7858 | TAM OSMANTER CC | D 7 | 1966 | 219 | IRR | WTDR | 375 | -92 TO -142 | 50 | 16 | 140 | 03-01-66 | TURB | MAGOTHY | 80 |
| N 8043 | JERICHO WD | D 8 | 1966 | 222 | P.S. | WTDR | 688 | -293 TO -466 | 173 | 20 | 153 | 06-10-66 | TURB | MAGOTHY | 48 |
| N 8048 | POWERS CHEMCO | E 6 | 1966 | 68 | | RECH | 370 | -266 TO -310 | 44 | 12 | | | NONE | LLOYD | |
| N 8123 | WINSTON GUEST | E 7 | 1966 | 263 | OTHR | WTDR | 324 | -56 TO -63 | 7 | 6 | 215 | 09-00-66 | SUBM | MAGOTHY | |
| N 8183 | OYSTER BAY WD | E 7 | 1966 | 98 | UNSD | TEST | 487 | | | | | | NONE | | |
| N 8183 | OYSTER BAY WD | E 7 | 1968 | 98 | P.S. | WTDR | 238 | -91 TO -140 | 49 | 16 | 54.5 | 11-17-67 | TURB | UPGLAC | 30 |
| N 8224 | PHOTOCIRUITS | E 6 | 1970 | 58 | IND | WTDR | 155 | -46 TO -97 | 51 | 12 | 11.5 | 01-29-70 | TURB | UPGLAC | 254 |
| N 8249 | HICKSVILLE WD | D 7 | 1967 | 163 | P.S. | WTDR | 495 | -237 TO -327 | 90 | 20 | 89 | 02-25-67 | SUBM | MAGOTHY | 71 |
| N 8259 | NASSAU CO DPW | E 6 | 1967 | 70 | UNSD | OBS | 42 | 30 TO 28 | 2 | 1.25 | 35.50 | 01-17-67 | NONE | UPGLAC | |
| N 8326 | GLEN COVE | E 6 | 1967 | 53 | UNSD | TEST | 507 | | | | | | NONE | | |
| N 8326 | GLEN COVE | E 6 | 1965 | 53 | P.S. | WTDR | 169 | -67 TO -112 | 45 | 20 | 6.5 | 07-26-67 | SUBM | UPGLAC | 33 |
| N 8327 | GLEN COVE | E 6 | 1967 | 53 | UNSD | TEST | 362 | | | | | | NONE | | |
| N 8327 | GLEN COVE | E 6 | 1965 | 53 | P.S. | WTDR | 168 | -65 TO -115 | 50 | 20 | 13.5 | 09-06-67 | SUBM | UPGLAC | 41 |



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TABLE .. WELL COMPLETION DATA ON SELECTED WELLS AND TEST HOLES IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK.

| WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N 8355 | JERICHO WD | D 7 | 1969 | 258 | P.S. | WTDR | 595 | -272 TO -332 | 60 | 20 | 194 | 04-25-69 | TURB | MAGOTHY | 42 |
| N 8394 | GLEN COVE HOSP. | E 6 | 1969 | 138 | | RECH | 580 | -379 TO -442 | 63 | 8 | | | NONE | LLOYD | |
| N 8426 | MILL NECK ESTS. | E 7 | 1968 | 10 | P.S. | WTDR | 360 | -335 TO -350 | 15 | 8 | FLOWING | 05-20-68 | SUBM | PTWAQ | 3 |
| N 8430 | NASSAU CO DPW | E 7 | 1968 | 190 | UNSD | OBS | 145 | 50 TO 45 | 5 | 4 | 133.17 | 04-10-68 | NONE | MAGOTHY | |
| N 8432 | C.W.POST COLL. | D 6 | 1968 | 165 | IRR | WTDR | 250 | -55 TO -85 | 30 | 10 | 107 | 05-07-68 | SUBM | MAGOTHY | 26 |
| N 8492 | MRS.G.PELLICORO | D 7 | 1969 | 178 | DOM | WTDR | 150 | 34 TO 29 | 5 | 6 | | | SUBM | UPGLAC | |
| N 8493 | J.GIANETTO | D 7 | 1968 | 175 | DOM | WTDR | 255 | -75 TO -80 | 5 | 6 | | | SUBM | MAGOTHY | |
| N 8542 | MUTTONTOWN CC | E 7 | 1969 | 175 | IRR | WTDR | 335 | -119 TO -160 | 41 | 12 | 116 | 04-30-69 | SUBM | UPGLAC | 24 |
| N 8583 | NASSAU CO DPW | D 8 | 1969 | 194 | UNSD | | 177 | 22 TO 17 | 5 | 4 | | | NONE | MAGOTHY | |
| N 8597 | G.VAN AKEN | E 8 | 1969 | 108 | DOM | WTDR | 228 | -116 TO -126 | 10 | 6 | | | SUBM | UPGLAC | |
| N 8606 | NASSAU CO DPW | D 8 | 1969 | 197 | UNSD | | 80 | 121 TO 117 | 4 | 2 | 71.60 | 08-20-69 | NONE | UPGLAC | |
| N 8610 | NASSAU CO DPW | E 6 | 1969 | 8 | UNSD | OBS | 22 | -12 TO -14 | 2 | 1.25 | 8.27 | 08-06-69 | NONE | UPGLAC | |
| N 8642 | GLEN OAKES CC | D 7 | 1970 | 243 | IRR | WTDR | 400 | -126 TO -157 | 31 | 12 | 185 | 05-14-70 | SUBM | MAGOTHY | 27 |
| N 8658 | OLD WESTBURY | D 7 | 1970 | 325 | UNSD | TEST | 670 | | | | | | NONE | | |
| N 8658 | OLD WESTBURY | D 7 | 1972 | 320 | P.S. | WTDR | 615 | -230 TO -290 | 60 | 20 | 248.4 | 03-30-72 | TURB | MAGOTHY | 49 |
| N 8681 | FOX RUN CC | E 7 | 1970 | 200 | IRR | WTDR | 370 | -117 TO -169 | 52 | 12 | 133 | 08-12-70 | | MAGOTHY | 32 |
| N 8690 | FABRIC LEATHER | E 6 | 1970 | 25 | | WTDR | 347 | -292 TO -317 | 25 | 8 | | | | LLOYD | |
| N 8709 | FABRIC LEATHER | E 6 | 1970 | 22 | IND | RECH | 312 | -218 TO -290 | 72 | 6 | 8 | 10-07-70 | NONE | LLOYD | |
| N 8713 | JERICHO WD | D 6 | 1970 | 168 | UNSD | TEST | 412 | | | | | | NONE | | |
| N 8713 | JERICHO WD | D 6 | 1972 | 168 | P.S. | WTDR | 377 | -144 TO -204 | 60 | 20 | 113.1 | 03-23-72 | TURB | MAGOTHY | 51 |
| N 8716 | NASSAU CO DPW | E 6 | 1970 | 47 | UNSD | OBS | 25 | | | 1.25 | 7.60 | 09-29-70 | NONE | UPGLAC | |
| N 8776 | BAYVILLE | E 7 | 1972 | 98 | P.S. | WTDR | 459 | -301 TO -361 | 60 | 20 | 106.3 | 06-24-71 | TURB | LLOYD | 29 |
| N 8805 | G.E.RODUIT | E 7 | 1971 | 63 | DOM | WTDR | 457 | -384 TO -394 | 10 | 5 | 53.5 | 09-10-71 | SUBM | LLOYD | 6 |
| N 8807 | CERTIFIED IND | D 7 | 1971 | 118 | IND | WTDR | 140 | 9 TO -22 | 31 | 8 | 17 | 10-25-71 | TURB | MAGOTHY | 9 |
| N 8880 | METCO INC | D 7 | 1972 | 122 | IND | WTDR | 247 | -99 TO -125 | 26 | 8 | 51 | 10-03-72 | SUBM | MAGOTHY | 19 |
| N 8887 | SLATER ELECTRIC | E 6 | 1972 | 65 | IND | WTDR | 130 | -40 TO -65 | 25 | 8 | 12 | 10-17-72 | SUBM | UPGLAC | 6 |
| N 8888 | NASSAU CO DPW | D 7 | 1972 | 174 | UNSD | OBS | 111 | 68 TO 63 | 5 | 4 | 91.38 | 10-25-72 | NONE | UPGLAC | |
| N 8899 | L.I.LIGHTING CO | D 6 | 1973 | 18 | UNSD | TEST | 223 | | | | | | NONE | | |
| N 8928 | NASSAU CO DPW | E 7 | 1973 | 10 | UNSD | OBS | 31 | -18 TO -21 | 3 | 1.25 | 8.06 | 01-18-73 | NONE | UPGLAC | |
| N 8937 | L.I.LIGHTING CO | D 6 | 1973 | 18 | COM | WTDR | 164 | -103 TO -143 | 40 | 12 | 3 | 10-10-73 | TURB | UPGLAC | 24 |
| N 8962 | MRS.S.PRATT | E 6 | 1973 | 6 | DOM | WTDR | 420 | -365 TO -414 | 41 | 4 | | | | LLOYD | |
| N 8995 | THURSTON SMITH | E 7 | 1974 | 41 | DOM | WTDR | 405 | -354 TO -364 | 10 | 6 | | | SUBM | LLOYD | |
| N 9023 | PINE HOLLOW CC | E 7 | 1974 | 219 | IRR | WTDR | 247 | 2 TO -28 | 30 | 12 | 175 | 07-09-74 | TURB | UPGLAC | 50 |
| N 9059 | NASSAU CO DPW | D 7 | 1974 | 228 | UNSD | OBS | 175 | 58 TO 53 | 5 | 4 | 117.90 | 10-31-74 | NONE | MAGOTHY | |
| N 9066 | GLEN COVE | E 6 | 1975 | 143 | UNSD | TEST | 651 | | | | | | NONE | | |
| N 9066 | GLEN COVE | E 6 | 1975 | 143 | UNSD | TEST | 460 | -277 TO -317 | 40 | | | | | LLOYD | |
| N 9066 | GLEN COVE | E 6 | 1975 | 143 | UNSD | OBS | 270 | -77 TO -127 | 50 | 12 | 92 | 09-00-75 | | MAGOTHY | |
| N 9068 | NATL. PARK SERV | E 8 | | 154 | | WTDR | 325 | | | 6 | | | | PTWCU | |
| N 9076 | NATL. PARK SERV | E 8 | 1975 | 154 | | WTDR | 199 | -35 TO -45 | 10 | 8 | | | | PTWCU | |
| N 9087 | NASSAU CO DPW | E 7 | 1975 | 157 | UNSD | OBS | 111 | 51 TO 46 | 5 | 4 | 93.60 | 08-08-75 | NONE | UPGLAC | |



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TABLE 6.--WELL COMPLETION DATA ON SELECTED WELLS AND TEST HOLES IN NORTHERN PART OF TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK.

| WELL NUMBER | OWNER OR WELL USER | MAP COORD. | YEAR COMP-LETED | ALTITUDE OF LSD (FT ABOVE SEA LEVEL) | USE OF WATER | USE OF WELL | DEPTH OF WELL (FT) | SCREEN SETTING (FT ABOVE OR BELOW (-) SEA LEVEL | TOTAL SCREEN LENGTH (FT) | DIAM OF WELL (IN) | WATER LEVEL (FT BELOW LSD) | DATE OF MEAS. (M-D-Y) | LIFT TYPE | AQUIFER DEVEL-OPED | SPECIFIC CAPACITY [(GAL/MIN)/FT] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N 9089 | NASSAU CO DPW | D 8 | 1975 | 173 | UNSD | OBS | 178 | 0 TO -5 | 5 | 4 | 93.20 | 11-19-75 | NONE | MAGOTHY | |
| N 9100 | NASSAU CO DPW | E 6 | 1976 | 54 | UNSD | OBS | 70 | -11 TO -16 | 5 | 4 | 13.85 | 02-27-76 | NONE | PTWCU | |
| N 9115 | NASSAU CO DPW | E 6 | 1976 | 145 | UNSD | OBS | 110 | 40 TO 35 | 5 | 4 | | | NONE | MAGOTHY | |
| N 9117 | NASSAU CO DPW | E 6 | 1976 | 112 | UNSD | OBS | 73 | 44 TO 39 | 5 | 4 | 40.73 | 04-05-76 | NONE | MAGOTHY | |
| N 9127 | NASSAU CO DPW | E 7 | 1976 | 10 | UNSD | OBS | 41 | -26 TO -31 | 5 | 4 | 6.32 | 07-09-76 | NONE | UPGLAC | |
| N 9152 | NASSAU CO DPW | E 8 | 1976 | 40 | UNSD | OBS | 58 | -13 TO -18 | 5 | 4 | | | NONE | UPGLAC | |
| N 9154 | NASSAU CO DPW | E 7 | 1976 | 34 | UNSD | OBS | 66 | -27 TO -32 | 5 | 4 | | | NONE | PTWCU | |
| N 9170 | REG.PLAN.BOARD | D 7 | 1977 | 184 | UNSD | TEST | 553 | | | | | | NONE | | |
| N 9170 | REG.PLAN.BOARD | D 7 | 1977 | 184 | UNSD | OBS | 510 | -321 TO -326 | 5 | 1.25 | 95.5 | 01-00-77 | NONE | MAGOTHY | |
| N 9189 | NASSAU CO CPW | E 7 | 1977 | 59 | UNSD | OBS | 42 | 22 TO 17 | 5 | 4 | 13.05 | 03-02-77 | NONE | UPGLAC | |
| N 9210 | GLEN COVE | E 6 | 1979 | 142 | P.S. | WTDR | 275 | -67 TO -128 | 61 | 20 | 99.2 | 08-19-77 | | MAGOTHY | |
| N 9211 | GLEN COVE | E 6 | 1979 | 142 | P.S. | WTDR | 269 | -60 TO -122 | 62 | 20 | | | TURB | MAGOTHY | 34 |
| N 9249 | HENRY R. STERN | E 7 | 1977 | 58 | IRR | UNSD | 5 10 | | 3 1 | 0 | 55.5 | 09-02-77 | SUBM | UPGLAC | 15 |
| N 9276 | D.HOLTERBOSCH | E 7 | 1978 | 10 | UNSD | TEST | 321 | | | | | | NONE | | |
| N 9300 | NASSAU CO WTR | E 7 | | 45 | UNSD | DEST | | | | | | | NONE | UPGLAC | |
| N 9301 | NASSAU CO WTR | E 7 | | 45 | UNSD | DEST | | | | | | | NONE | UPGLAC | |
| N 9302 | NASSAU CO WTR | E 7 | | 45 | UNSD | DEST | | | | | | | NONE | UPGLAC | |
| N 9303 | NASSAU CO WTR | E 7 | | 45 | UNSD | DEST | | | | | | | NONE | UPGLAC | |
| N 9314 | NASSAU CO DPW | E 7 | 1977 | 32 | UNSD | OBS | 54 | -17 TO -22 | 5 | 4 | | | NONE | PTWCU | |
| N 9315 | NASSAU CO DPW | E 6 | 1977 | 9 | UNSD | OBS | 41 | -27 TO -32 | 5 | 4 | 3.40 | 05-04-77 | NONE | UPGLAC | |
| N 9316 | NASSAU CO DPW | E 7 | 1977 | 25 | UNSD | OBS | 58 | -28 TO -33 | 5 | 4 | 21.36 | 07-13-77 | NONE | UPGLAC | |
| N 9317 | NASSAU CO DPW | D 7 | 1977 | 218 | UNSD | OBS | 194 | 29 TO 24 | 5 | 4 | | | NONE | MAGOTHY | |
| N 9334 | GLEN COVE | E 6 | 1978 | 143 | UNSD | TEST | 631 | | | | | | NONE | | |
| N 9334 | GLEN COVE | E 6 | 1978 | 143 | UNSD | TEST | 603 | -417 TO -460 | 43 | | | | TURB | LLOYD | |
| N 9334 | GLEN COVE | E 6 | | 143 | P.S. | WTDR | | | | | | | | MAGOTHY | |
| N 9353 | NASSAU CO DPW | D 7 | 1978 | 143 | UNSD | OBS | 101 | 47 TO 42 | 5 | 4 | 57.82 | 05-11-78 | NONE | MAGOTHY | |
| N 9455 | REG.PLAN.BOARD | D 7 | 1977 | 184 | UNSD | OBS | 195 | -6 TO -11 | 5 | 1.25 | 95.5 | 01-00-77 | NONE | UPGLAC | |
| N 9456 | REG.PLAN.BOARD | D 7 | 1977 | 184 | UNSD | OBS | 361 | -172 TO -177 | 5 | 1.25 | 95.5 | 01-00-77 | NONE | MAGOTHY | |
| N 9463 | HICKSVILLE WD | D 7 | 1979 | 141 | P.S. | WTDR | 638 | -419 TO -497 | 70 | 20 | | | | MAGOTHY | 14 |
| N 9464 | MARVIN SCHUR | E 7 | 1979 | 22 | DOM | WTDR | 330 | -298 TO -308 | 10 | 4 | 20 | 03-00-79 | SUBM | LLOYD | |
| N 9478 | NASSAU CO DPW | E 6 | 1978 | 9 | UNSD | OBS | 24 | -10 TO -15 | 5 | 2 | 3.47 | 11-13-78 | NONE | UPGLAC | |
| N 9488 | HICKSVILLE WD | D 7 | 1979 | 161 | UNSD | TEST | 638 | | | | | | NONE | | |
| N 9498 | HICKSVILLE WD | D 7 | 1979 | 161 | P.S. | WTDR | 583 | | 60 | 20 | | | | MAGOTHY | 21 |
| N 9489 | S.L.LANG | D 7 | 1979 | 225 | DOM | WTDR | 198 | 32 TO 27 | 5 | 6 | 150 | 04-00-79 | SUBM | MAGOTHY | |
| N 9520 | OYSTER BAY WD | E 7 | 1979 | 90 | UNSD | TEST | 556 | | | | | | NONE | | |
| N 9520 | OYSTER BAY WD | E 7 | | 90 | P.S. | WTDR | | -361 TO -422 | 61 | | | | | PTWAQ | |
| N 9593 | H.D.KOHLER | E 7 | 1979 | 5 | DOM | WTDR | 370 | -353 TO -365 | 12 | 6 | | | | LLOYD | |
| N 9595 | F.H.GILLMORE | E 7 | 1980 | 20 | DOM | WTDR | 467 | -416 TO -447 | 31 | 6 | +3 | 09-15-80 | CENT | LLOYD | |
| N 9606 | MICHAEL HURLEY | E 8 | | 121 | UNSD | TEST | 203 | | | | | | NONE | | |
| N 9606 | MICHAEL HURLEY | E 8 | 1980 | 121 | DOM | WTDR | 134 | -8 TO -13 | 5 | 4 | 106 | 12-00-79 | SUBM | UPGLAC | |



100480

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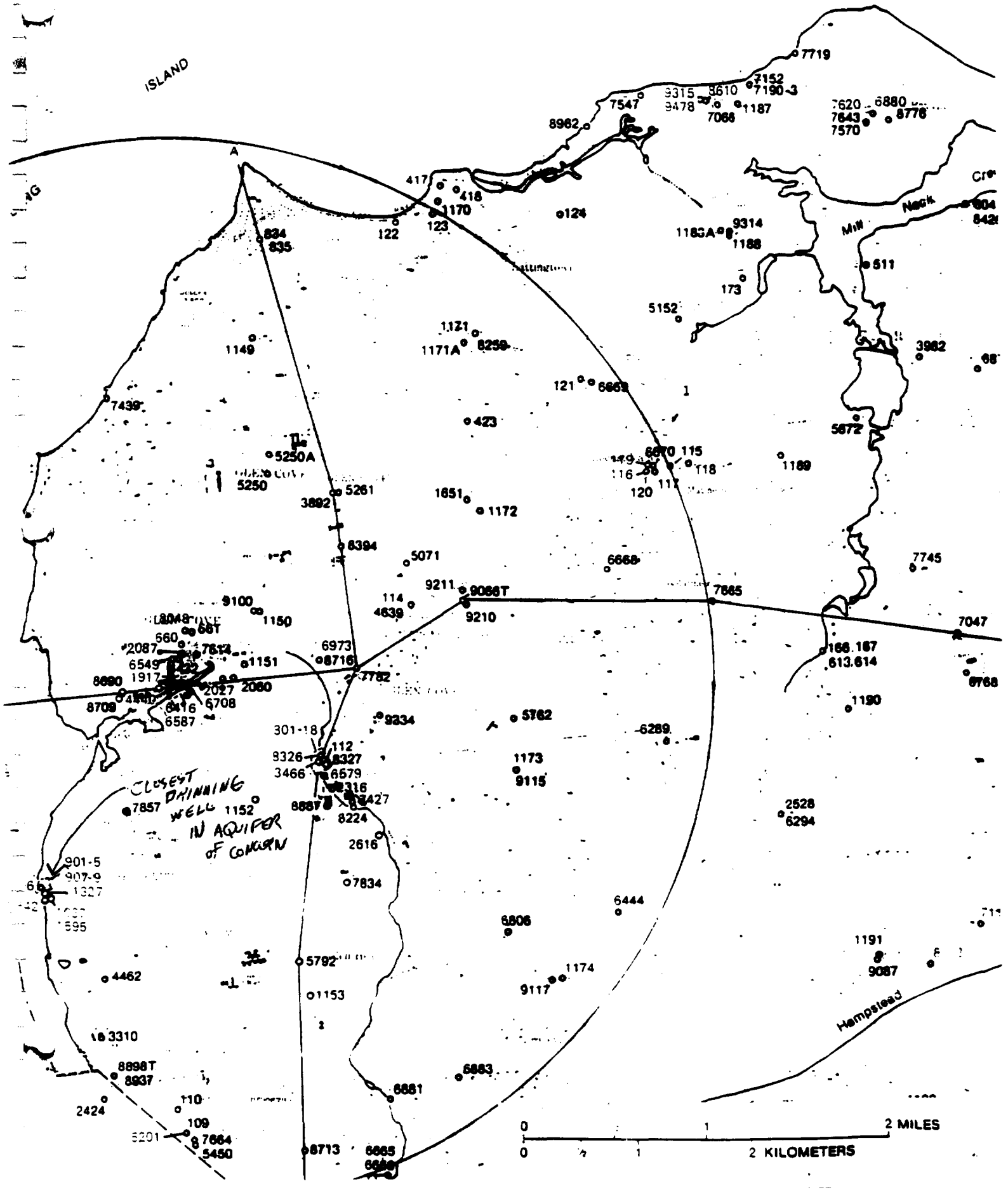
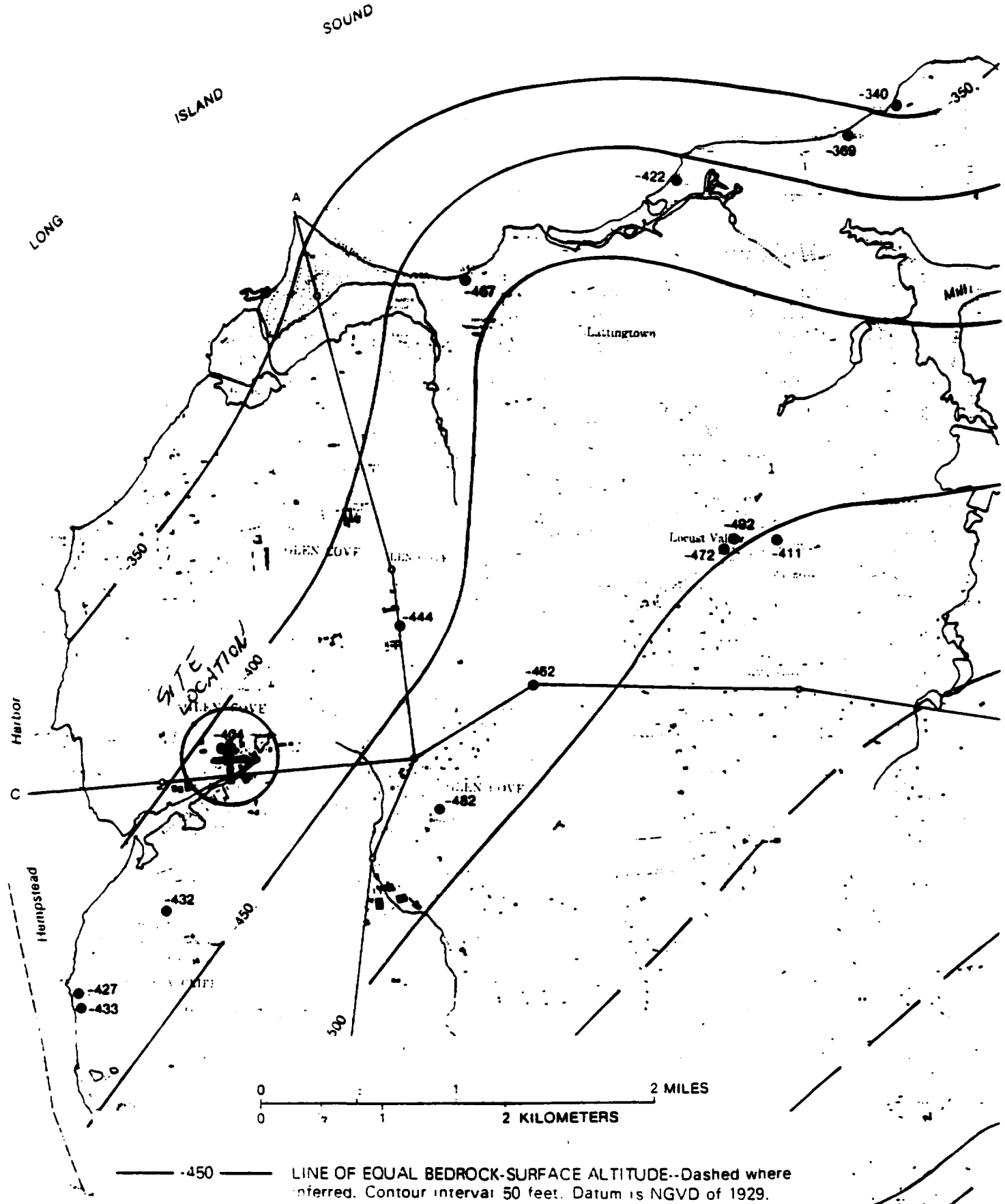
PLATE 1A. LOCATIONS OF

SELECTED WELLS AND TEST HOLES AND OF HYDROGEOLOGIC SECTIONS



# PLATE 2A. ALTITUDE AND CONFIGURATION OF BEDROCK SURFACE




-450 — LINE OF EQUAL BEDROCK-SURFACE ALTITUDE--Dashed where inferred. Contour interval 50 feet. Datum is NGVD of 1929.

-462 — WELL-DATA POINT--Number is aquifer-surface altitude, in feet below (-) NGVD of 1929.

A—o—A' — LINE OF HYDROGEOLOGIC SECTION--Open circle is control point. (Sections are shown on plate 1B).

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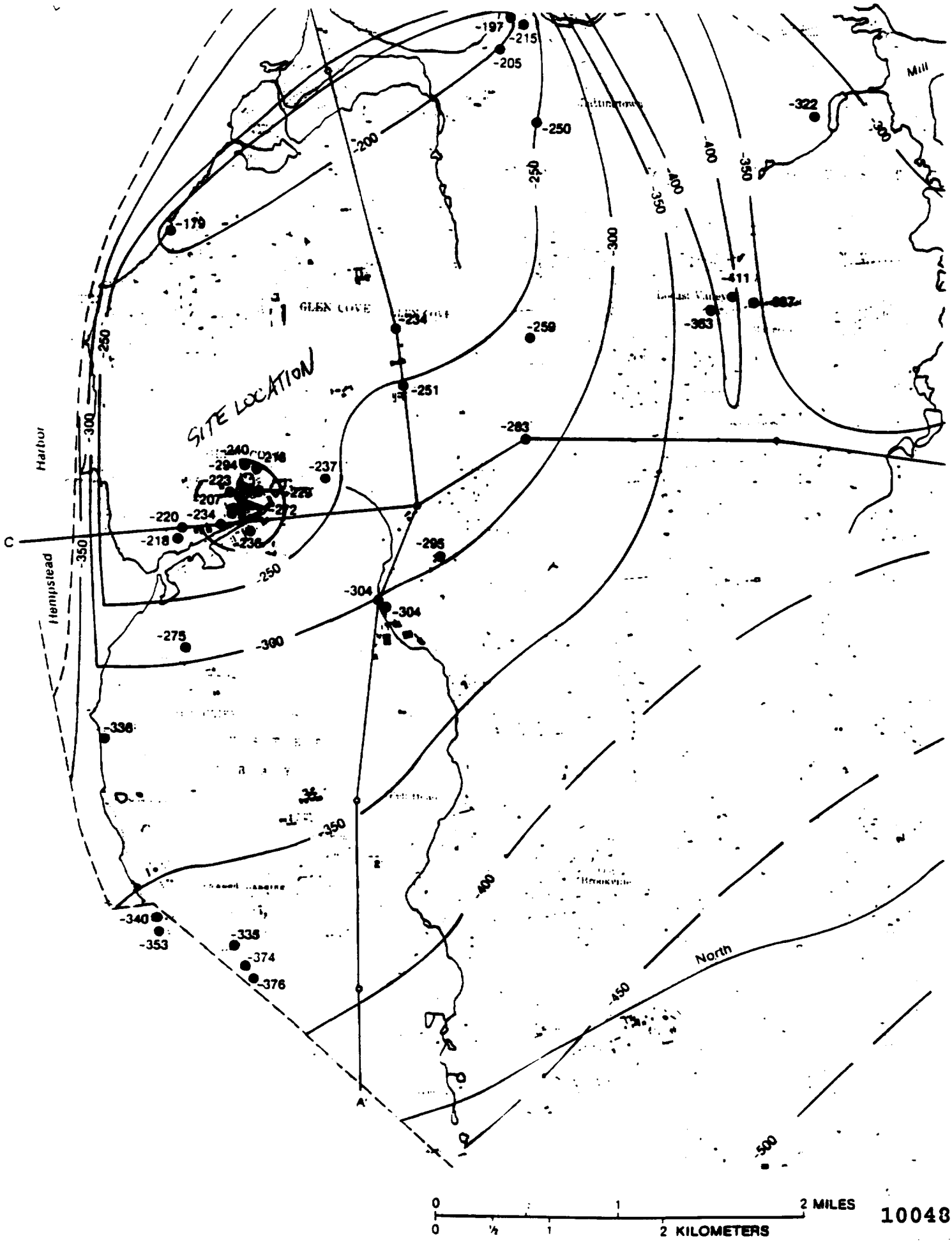
# PLATE 2B. ALTITUDE AND CONFIGURATION OF THE LLOYD AQUIFER



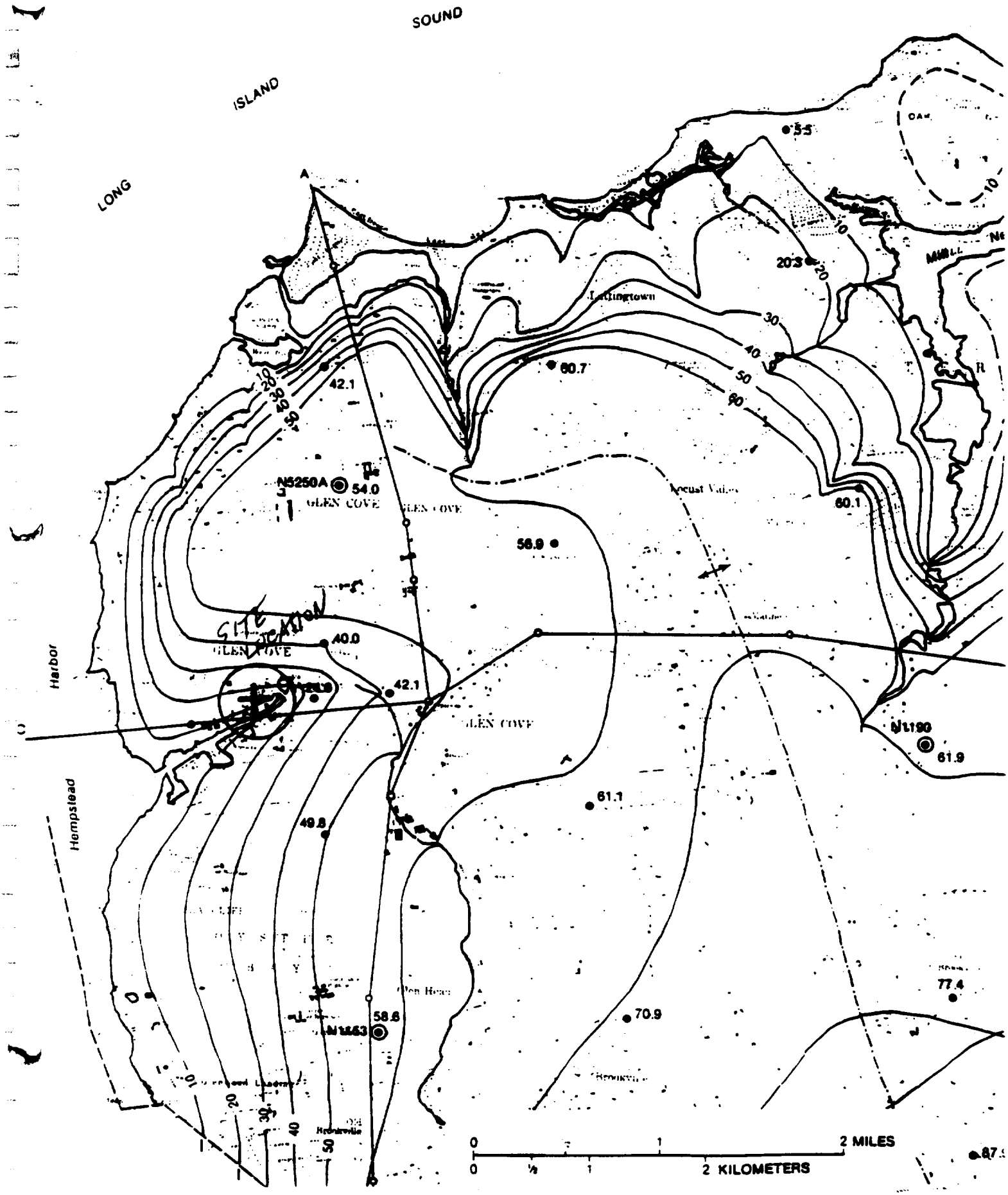

0 1 2 MILES

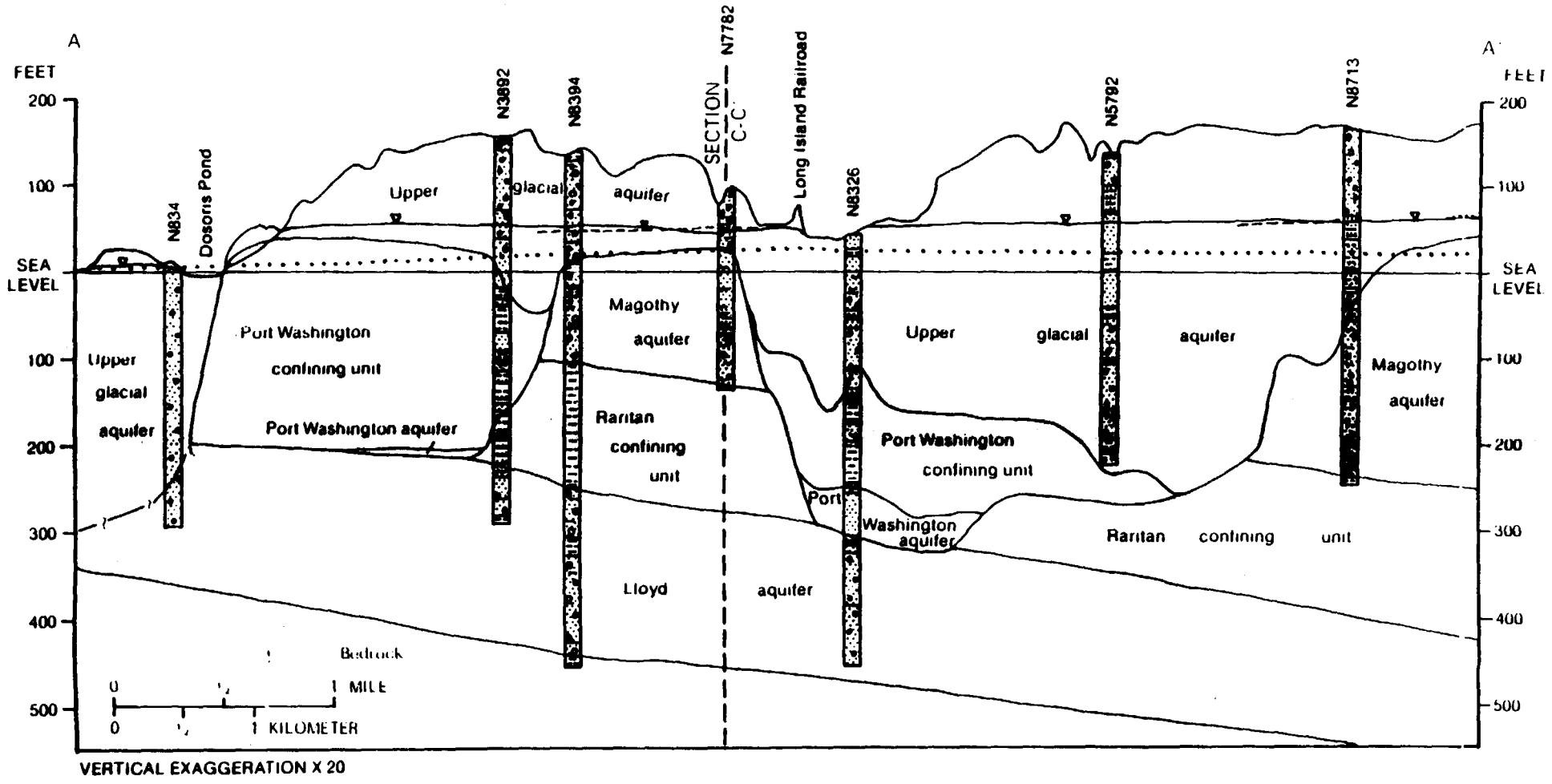
0 ½ 1 2 KILOMETERS

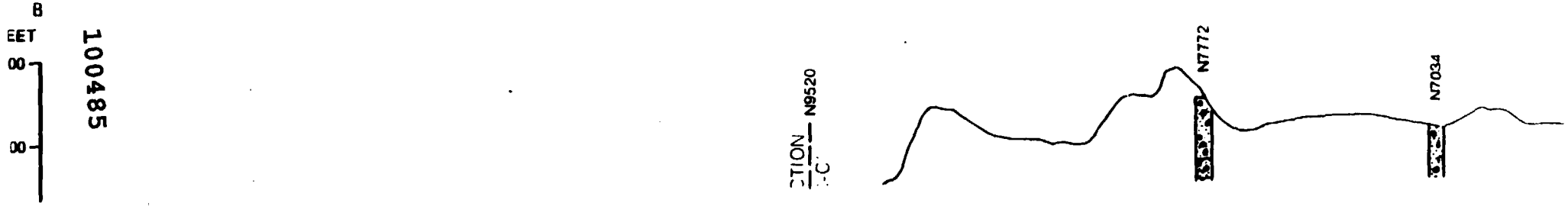
100483

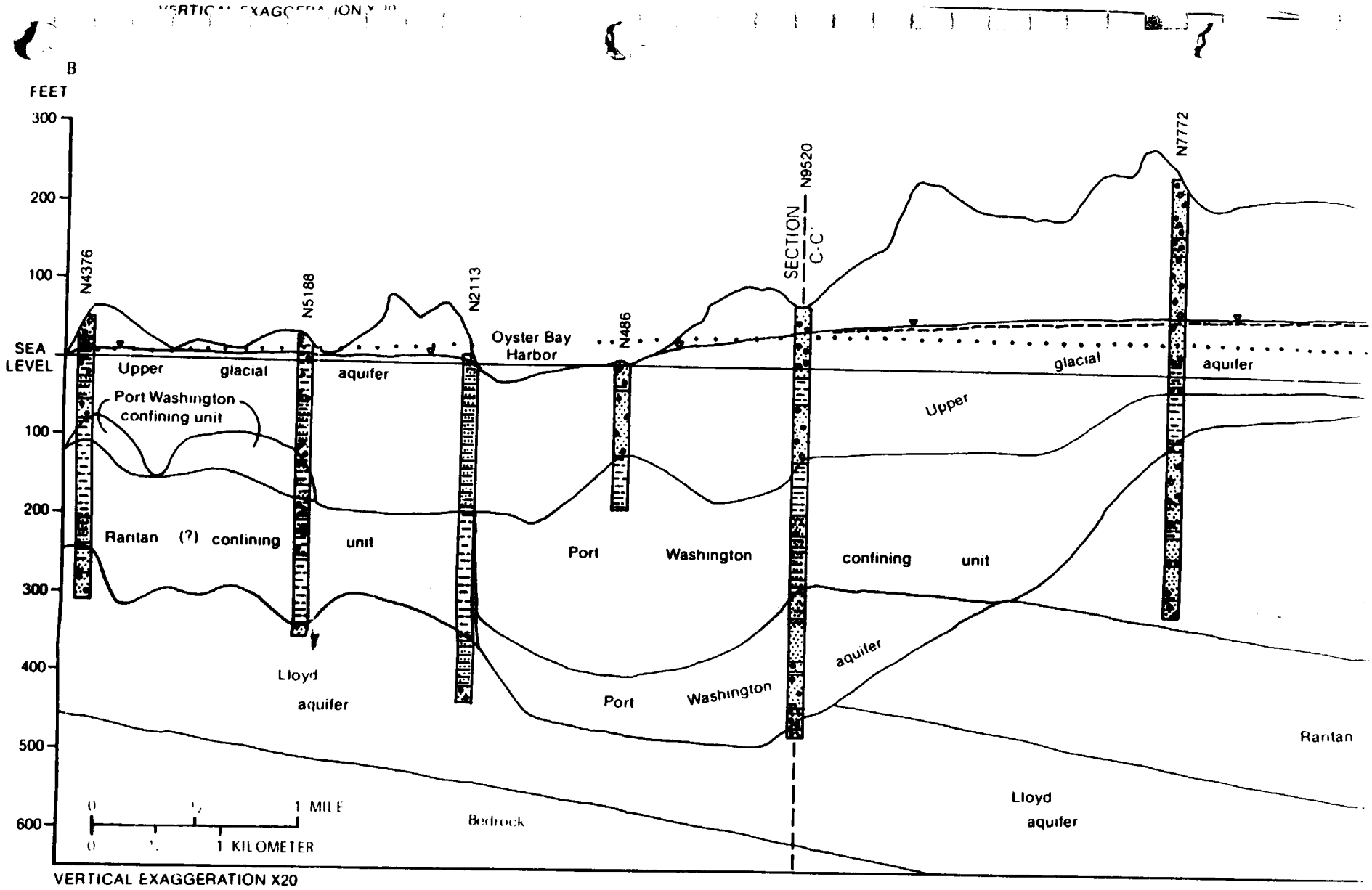
37'30" 35'

# PLATE 6A. WATER-TABLE CONFIGURATION IN 1980




A
A'
FEET
200
100
SEA LEVEL
100
200
300
400
500
N834
Dosoris Pond
N3892
N8394
SECTION C-C'
N7782
Long Island Railroad
N8326
N5792
N8713
Upper glacial aquifer
Port Washington confining unit
Port Washington aquifer
Upper glacial aquifer
Magothy aquifer
Raritan confining unit
Lloyd aquifer
Port Washington aquifer
Port Washington confining unit
Upper glacial aquifer
Raritan confining unit
Magothy aquifer
Bedrock
0 ½ 1 MILE
0 ½ 1 KILOMETER
VERTICAL EXAGGERATION X 20


B
EET
00
00
100485
N9520
N7772
N7034


B
FEET
300
200
100
SEA LEVEL
100
200
300
400
500
600
N4376
N5188
N2113
N486
SECTION C-C'
N9520
N7772
Oyster Bay Harbor
Upper glacial aquifer
Port Washington confining unit
Raritan (?) confining unit
Lloyd aquifer
Port Washington
Port Washington
Upper glacial aquifer
confining unit
aquifer
Raritan
Lloyd aquifer
Bedrock
0 ½ 1 MILE
0 ½ 1 KILOMETER
VERTICAL EXAGGERATION X20
C

100486

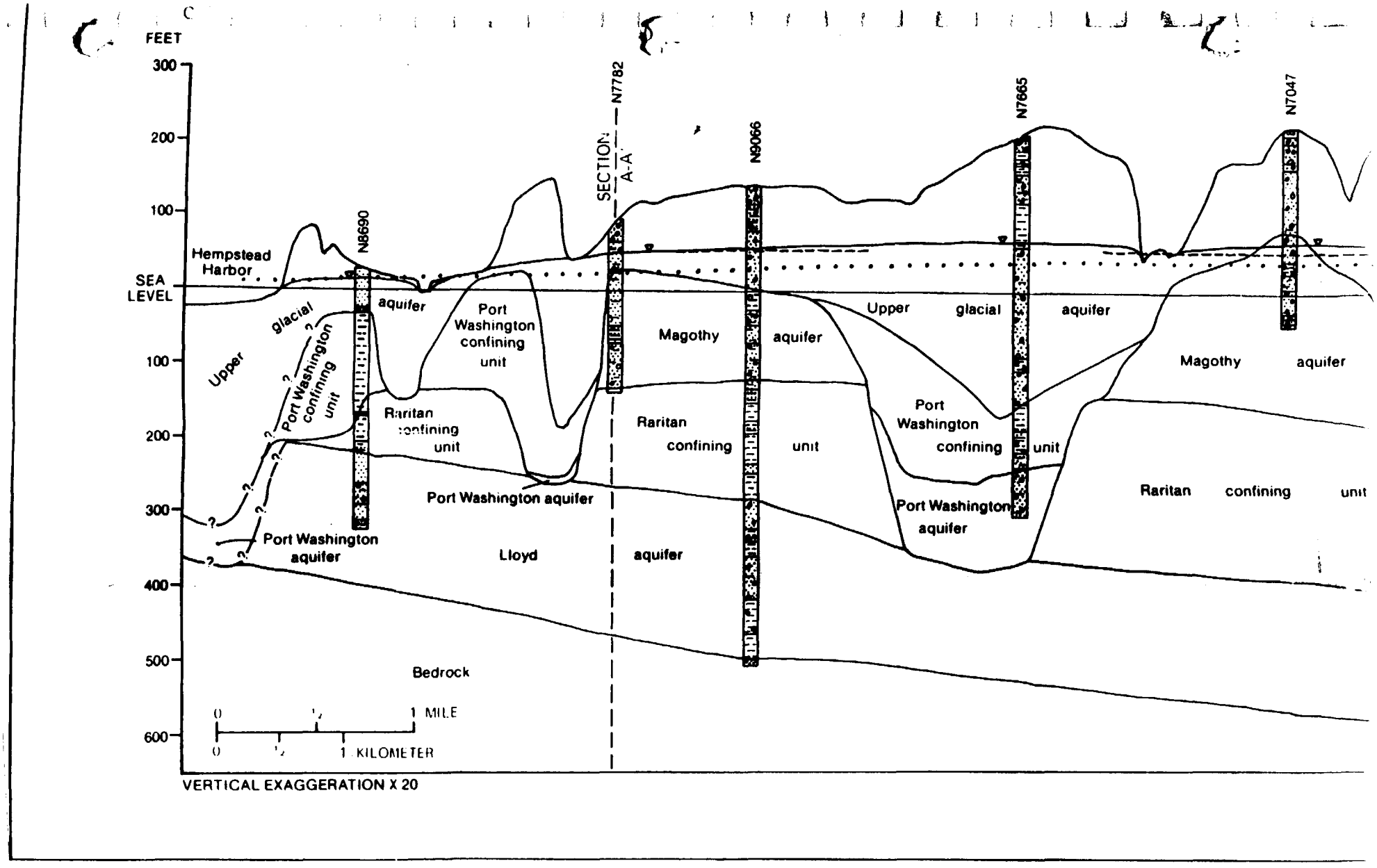



PLATE 1B. HYDROGEOLOGIC SECTIONS A-A

100487

**OF THE TOWN OF OYSTER BAY, NASSAU COUNTY, NEW YORK, IN 1980**