original

Rowe Industries
Suffolk County, Long Island
Id. No. 152106

Remedial Investigation Report Project Review

June 22, 1990

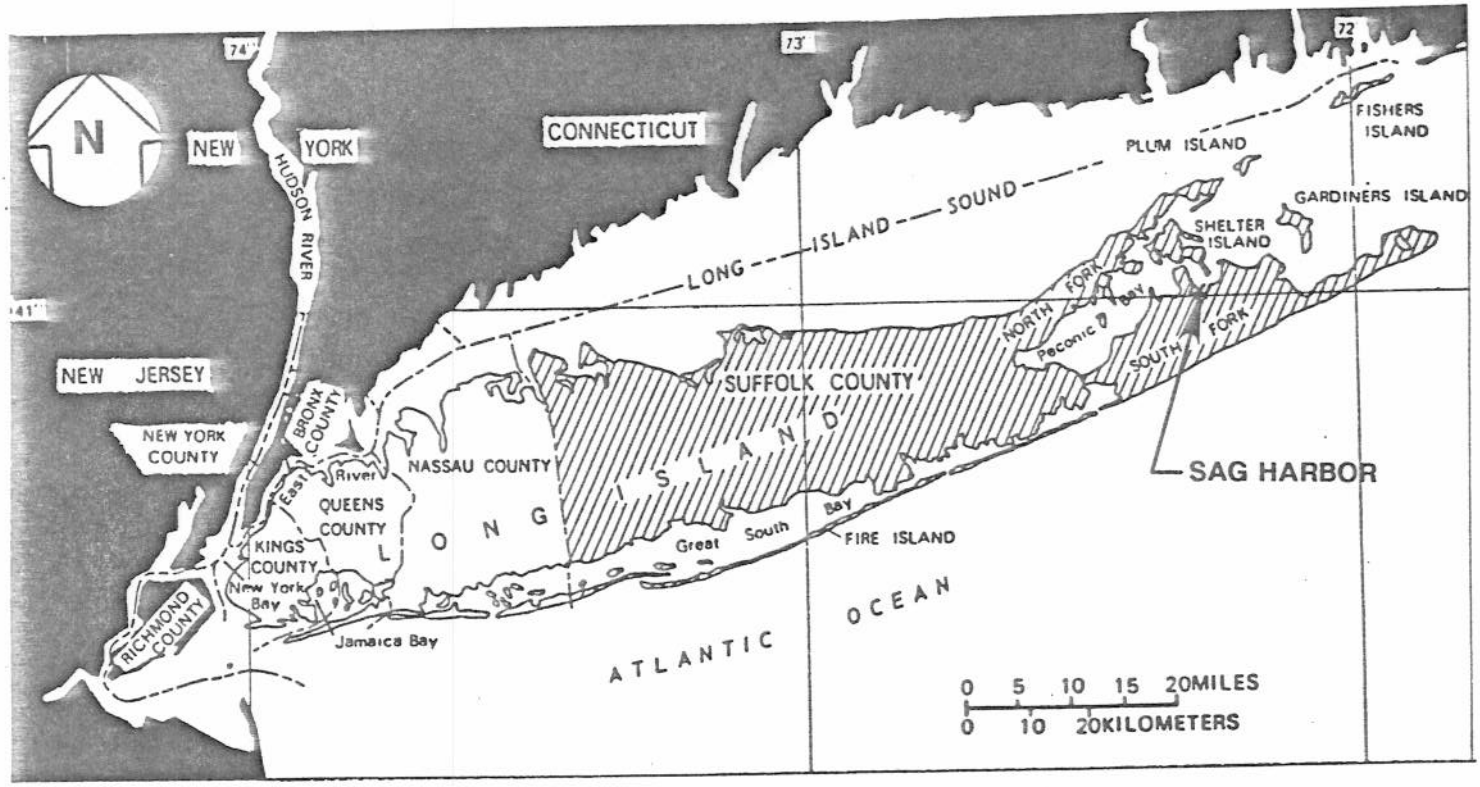
Site Location

The Rowe Industries site is located in the Town of Southampton, Suffolk County, on the South Fork of Long Island. The site is approximately 1,500 feet south of the Village of Sag Harbor boundary. (See Figure 1, Page 2).

Site Description

The property is about 8.5 acres in size. Approximately one acre is covered by a building and an additional one acre of the property is paved. (See Figure 8, Page 3).

The site vicinity is largely undeveloped to the east and west. There is a small industrial area to the southwest and residential/commercial areas to the northwest, north and south.



NOTE: MAP OF LONG ISLAND SHOWING LOCATION OF SUFFOLK COUNTY.
(MODIFIED FROM JENSEN AND SOREN, 1971, PAGE 3)

NABISCO BRANDS INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

SITE LOCATION MAP

DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
203-762-1207

DATE:

FIGURE 1

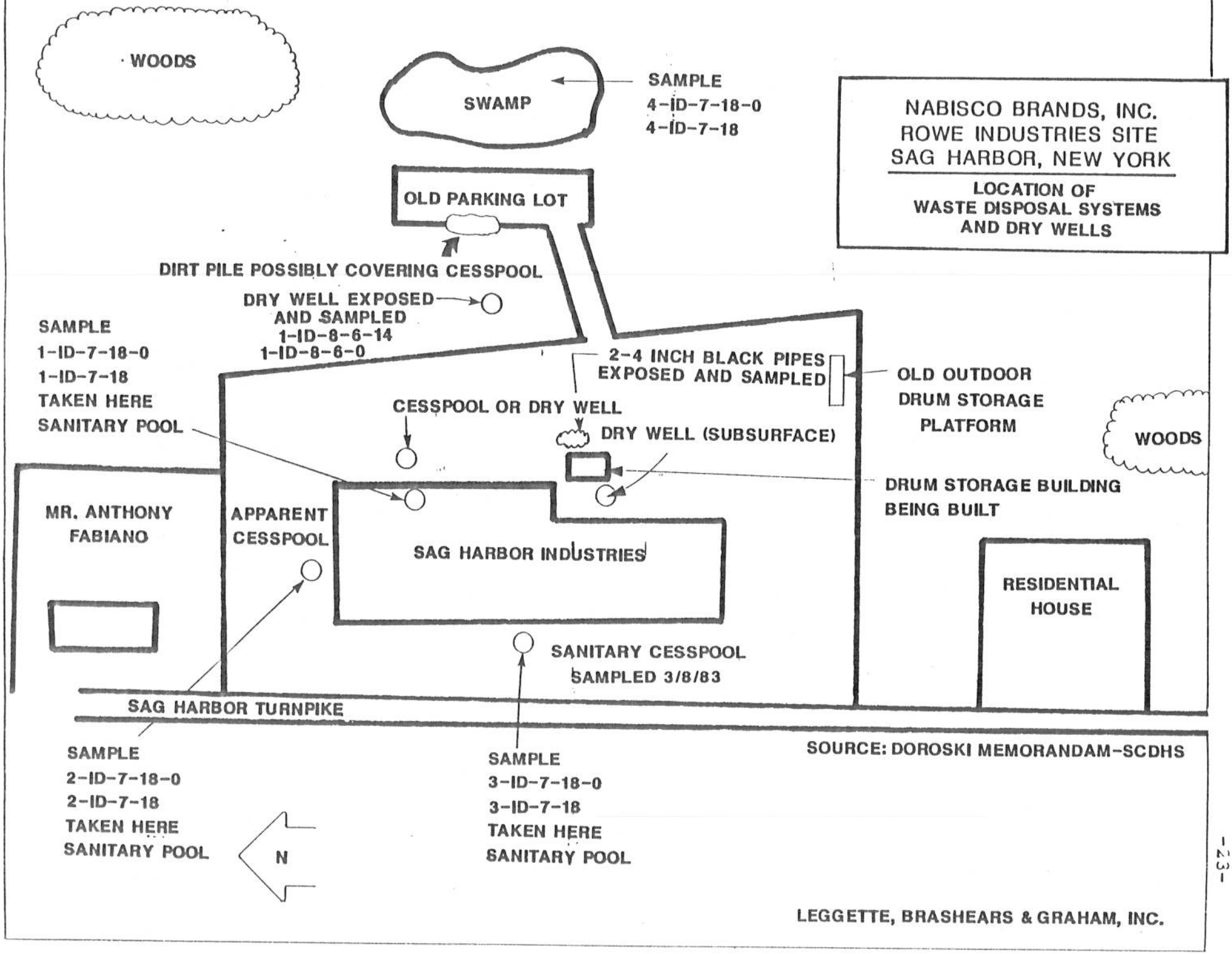

WOODS
SWAMP
SAMPLE
4-ID-7-18-0
4-ID-7-18
NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK
LOCATION OF
WASTE DISPOSAL SYSTEMS
AND DRY WELLS
OLD PARKING LOT
DIRT PILE POSSIBLY COVERING CESSPOOL
DRY WELL EXPOSED
AND SAMPLED
1-ID-8-6-14
1-ID-8-6-0
SAMPLE
1-ID-7-18-0
1-ID-7-18
TAKEN HERE
SANITARY POOL
2-4 INCH BLACK PIPES
EXPOSED AND SAMPLED
OLD OUTDOOR
DRUM STORAGE
PLATFORM
CESSPOOL OR DRY WELL
DRY WELL (SUBSURFACE)
WOODS
DRUM STORAGE BUILDING
BEING BUILT
MR. ANTHONY
FABIANO
APPARENT
CESSPOOL
SAG HARBOR INDUSTRIES
RESIDENTIAL
HOUSE
SANITARY CESSPOOL
SAMPLED 3/8/83
SAG HARBOR TURNPIKE
SAMPLE
2-ID-7-18-0
2-ID-7-18
TAKEN HERE
SANITARY POOL
N
SAMPLE
3-ID-7-18-0
3-ID-7-18
TAKEN HERE
SANITARY POOL
SOURCE: DOROSKI MEMORANDAM-SCDHS
LEGGETTE, BRASHEARS & GRAHAM, INC.

FIGURE 8

Site History

Rowe Industries, owned by Nabisco, was in use from 1971 to 1975. It was used for the manufacture of small motors used in appliances such as tools and hairdryers. Rowe also used the site to manufacture transformers used in Aurora's model race cars from 1966 to 1971. Chlorinated organic solvents were used in manufacturing to degrease oil-coated materials. The site was not in use from 1974 until it was sold in 1980.

Sag Harbor Industries purchased the land and building in 1980 and currently owns and occupies the site and conducts manufacturing operations. Part of the property is used for a graphic arts business and another part for an electronics laboratory.

An administrative order on consent was signed on September 30, 1988 between the U.S. Environmental Protection Agency and Nabisco, Inc. to investigate and remediate the site.

History of Preliminary Investigations and Remedial Actions

January 27, 1983 - Mr. Soffel's residence, house number 1 on Figure 10, Page 6, and located approximately 2,400 feet northwest of the site, was notified by the Suffolk County Department of Health Services (SCDHS) that a sample of his water revealed contamination. He replaced his 40-foot well with a 95-foot well and both wells were sampled on June 8, 1983. (See Table 1, Page 7).

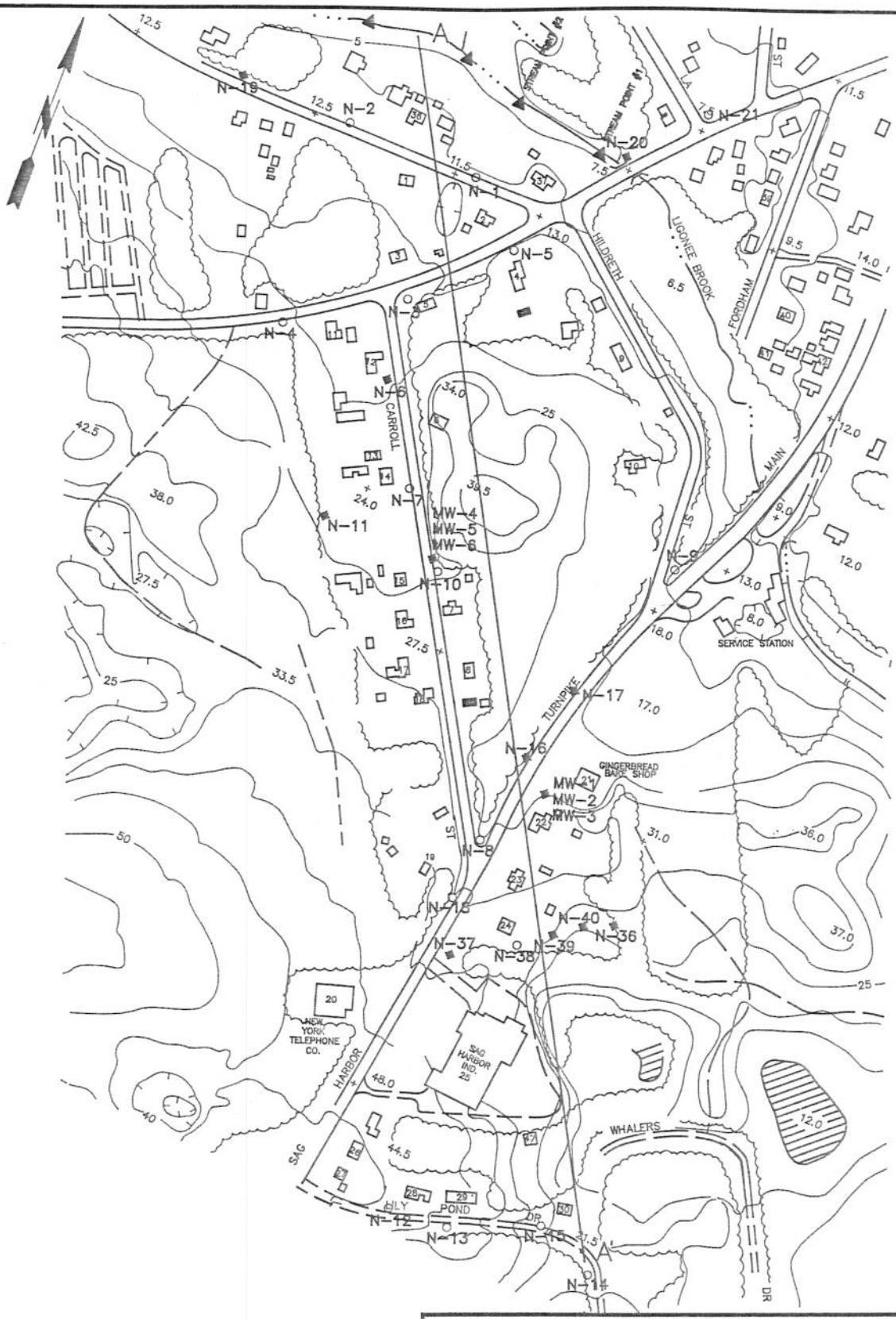
July 1983 - SCDHS undertook a survey to determine the source of contamination. SCDHS concluded that the Sag Harbor Industries (SHI) property could be the origin.

March-June 1984 - SCDHS installs 21 observation wells, N-1 through N-21, and samples 43 water supply wells. Figure 10, Page 6, shows the location of wells N-1 through N-21.

July-October 1984 - SCDHS installs an additional 18 observation wells, N-23 through N-41. See Figure 6, Page 8, for locations and water quality results. After this phase of the investigation, SCDHS concluded that SHI was the sole source of the solvents in the groundwater and characterized the groundwater plume as depicted on Figure 28, Page 43.

July-August 1984 - SCDHS samples sludge from 2 4-inch pipes leading from building to dry well in the woods east of the building (refer back to Figure 8, Page 3). Sludge contained those organic compounds found in the groundwater.

January 1985 - The USEPA contracts with the Suffolk County Water Authority to extend their public water supply mains into the affected area, and contracted with the Town of Southampton to install the individual hook-ups to the mains. This work was completed in March 1985.



LEGEND

- N-37 LOCATED SCDHS WELLS
- N-13 UNLOCATED SCDHS WELLS
- PROPERTY OWNERS' WELLS
- STREAM POINT SAMPLING LOCATION
- WATER TABLE CONTOUR ELEVATIONS IN FEET, MSL

0 200
SCALE IN FEET

CONTOUR INTERVAL = 5 FEET

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

STUDY AREA GEOLOGIC CROSS-SECTION LOCATION

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 10

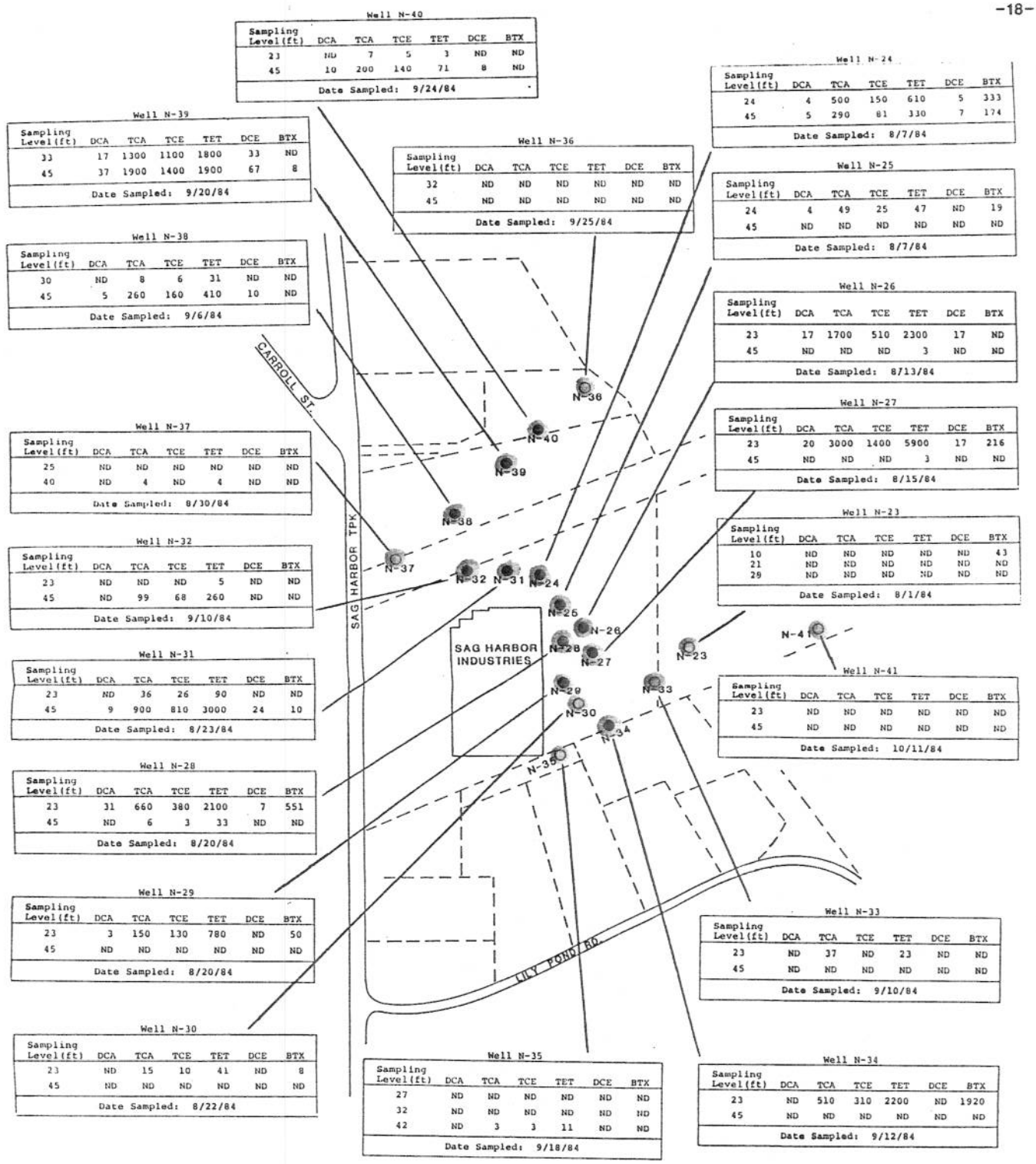
TABLE 1

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

Ground-Water Quality
for Soffell Residence
June 8, 1983

Parameter	House well (40 feet deep)	New well (95 feet deep)
Chloroform	<5	<5
1,1,1-trichloroethane	780	3
Carbon tetrachloride	<1	<1
1,1,2-trichloroethylene	470	6
Chlorodibromomethane	<2	<2
Bromoform	<5	<5
Tetrachloroethylene	20	<2
1,1,2-trichloroethane	<5	<5
Benzene	<3	<3
Toluene	<3	<3
Total xylenes	<3	<3
Ethylbenzene	<3	<3
Freon 113	<4	<4

All concentrations reported in ug/l (parts per billion).
< Denotes less than.



Well N-40

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	ND	7	5	3	ND	ND
45	10	200	140	71	8	ND

Date Sampled: 9/24/84

Well N-39

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
33	17	1300	1100	1800	33	ND
45	37	1900	1400	1900	67	8

Date Sampled: 9/20/84

Well N-38

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
30	ND	8	6	31	ND	ND
45	5	260	160	410	10	ND

Date Sampled: 9/6/84

Well N-37

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
25	ND	ND	ND	ND	ND	ND
40	ND	4	ND	4	ND	ND

Date Sampled: 8/30/84

Well N-32

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	ND	ND	ND	5	ND	ND
45	ND	99	68	260	ND	ND

Date Sampled: 9/10/84

Well N-31

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	ND	36	26	90	ND	ND
45	9	900	810	3000	24	10

Date Sampled: 8/23/84

Well N-28

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	31	660	380	2100	7	551
45	ND	6	3	33	ND	ND

Date Sampled: 8/20/84

Well N-29

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	3	150	130	780	ND	50
45	ND	ND	ND	ND	ND	ND

Date Sampled: 8/20/84

Well N-30

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	ND	15	10	41	ND	8
45	ND	ND	ND	ND	ND	ND

Date Sampled: 8/22/84

Well N-36

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
32	ND	ND	ND	ND	ND	ND
45	ND	ND	ND	ND	ND	ND

Date Sampled: 9/25/84

Well N-24

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
24	4	500	150	610	5	333
45	5	290	81	330	7	174

Date Sampled: 8/7/84

Well N-25

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
24	4	49	25	47	ND	19
45	ND	ND	ND	ND	ND	ND

Date Sampled: 8/7/84

Well N-26

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	17	1700	510	2300	17	ND
45	ND	ND	ND	3	ND	ND

Date Sampled: 8/13/84

Well N-27

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	20	3000	1400	5900	17	216
45	ND	ND	ND	3	ND	ND

Date Sampled: 8/15/84

Well N-23

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
10	ND	ND	ND	ND	ND	43
21	ND	ND	ND	ND	ND	ND
29	ND	ND	ND	ND	ND	ND

Date Sampled: 8/1/84

Well N-41

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	ND	ND	ND	ND	ND	ND
45	ND	ND	ND	ND	ND	ND

Date Sampled: 10/11/84

Well N-33

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	ND	37	ND	23	ND	ND
45	ND	ND	ND	ND	ND	ND

Date Sampled: 9/10/84

Well N-35

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
27	ND	ND	ND	ND	ND	ND
32	ND	ND	ND	ND	ND	ND
42	ND	3	3	11	ND	ND

Date Sampled: 9/18/84

Well N-34

Sampling Level(ft)	DCA	TCA	TCE	TET	DCE	BTX
23	ND	510	310	2200	ND	1920
45	ND	ND	ND	ND	ND	ND

Date Sampled: 9/12/84

● water quality exceeds drinking water guidelines at upper or lower level.

Wells that were located

Wells that are present but location undetermined

Wells that were pulled/paved over

NOYACK ON-SITE INVESTIGATION;
WELL LOCATIONS AND WATER QUALITY

KEY

Trace Organic Constituent	Abbreviation Used
1,1 dichloroethane	DCA
1,1,1 trichloroethane	TCA
1,1,2 trichloroethylene	TCE
tetrachloroethylene	TET
1,1 dichloroethylene	DCE
total xylenes 1,2,4 trimethyl benzene 1,3,5 trimethyl benzene benzene toluene	BTX

ND: none detected

All concentrations in ppb (parts per billion)

Summary of Remedial Investigation (field work conducted August 2 - April 5, 1989)

- Geophysical Survey - a survey was conducted in the eastern portion of the site to locate any possible buried drums. An EM-31 electromagnetic terrain conductivity meter was used. See Figure 2, Page 10, for the location of all stations.

- Disposal System Studies - six drywells are located on the SHI property. Currently, only three are actively used. Figure 18, Page 11, indicates the locations of all six dry wells.

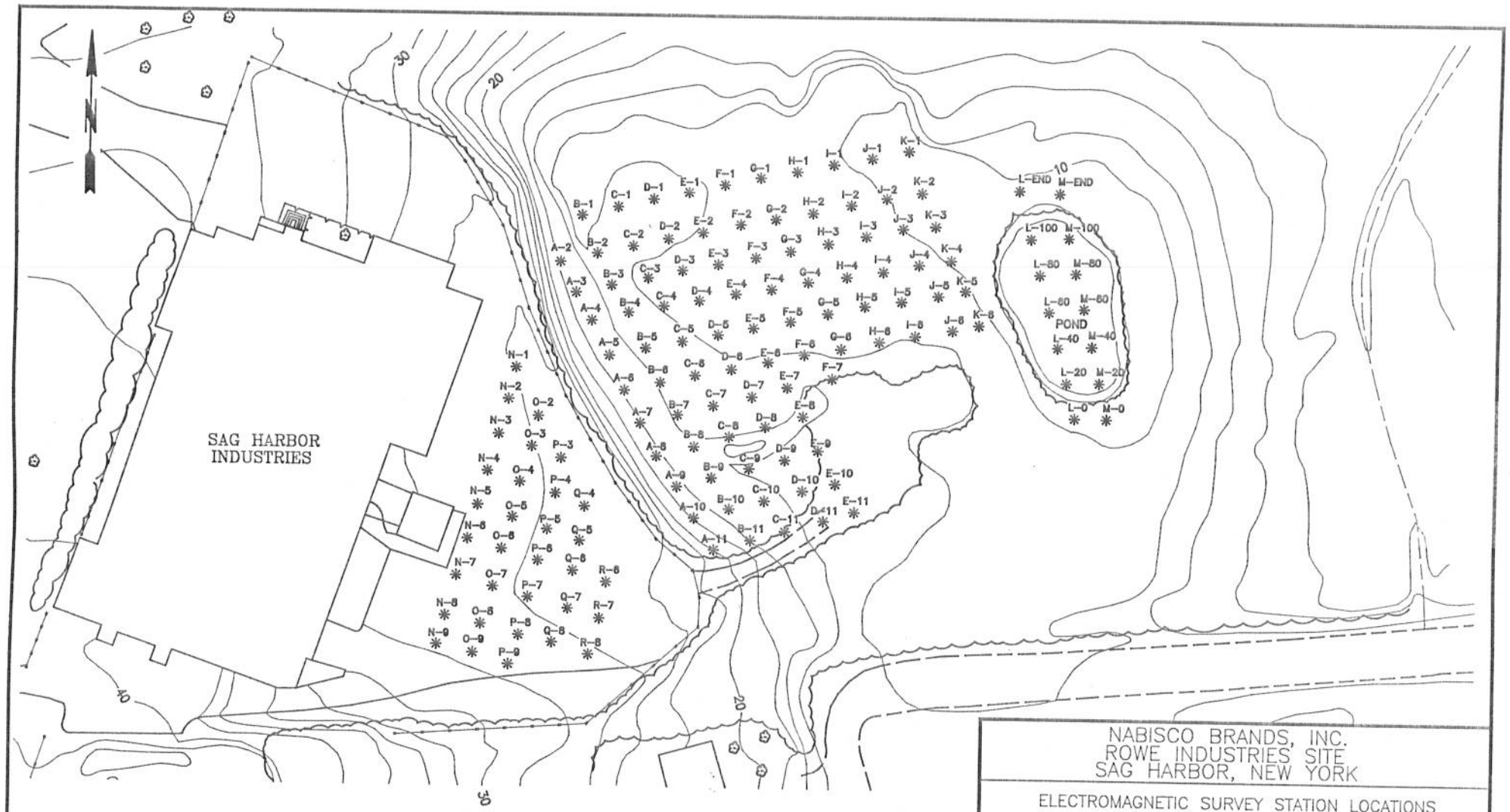
- Pond Sediment Sampling - sediment samples were obtained from three locations in the pond east of the building.

- Soil Vapor Survey - a soil vapor investigation was performed to identify any potential source areas and to determine the drilling locations for the on-site soil borings. Figure 3, Page 12, shows the soil vapor sampling locations.

- On-Site Soil Borings - eight soil borings, B-1 through B-8, were drilled on the SHI property. The locations are shown on Figure 4, Page 13.

- Surface Water and Sediment Sampling - five sets of surface water and sediment samples were obtained at low-tide along Ligonee Brook and Sag Harbor Cove. Water samples were collected directly above the sediment sample locations prior to collection of the sediment samples. The sampling locations are shown on Figure 5, Page 14.

- Groundwater Monitoring Well Installation - two off-site well clusters were installed, each cluster consisting of a shallow, intermediate and deep well. The locations are shown on Figure 10, Page 15.



LEGEND

C-1 ELECTROMAGNETIC SURVEY LOCATION

CONTOUR INTERVAL = 2 FEET

0 50

SCALE IN FEET

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

ELECTROMAGNETIC SURVEY STATION LOCATIONS

DATE	REVISED

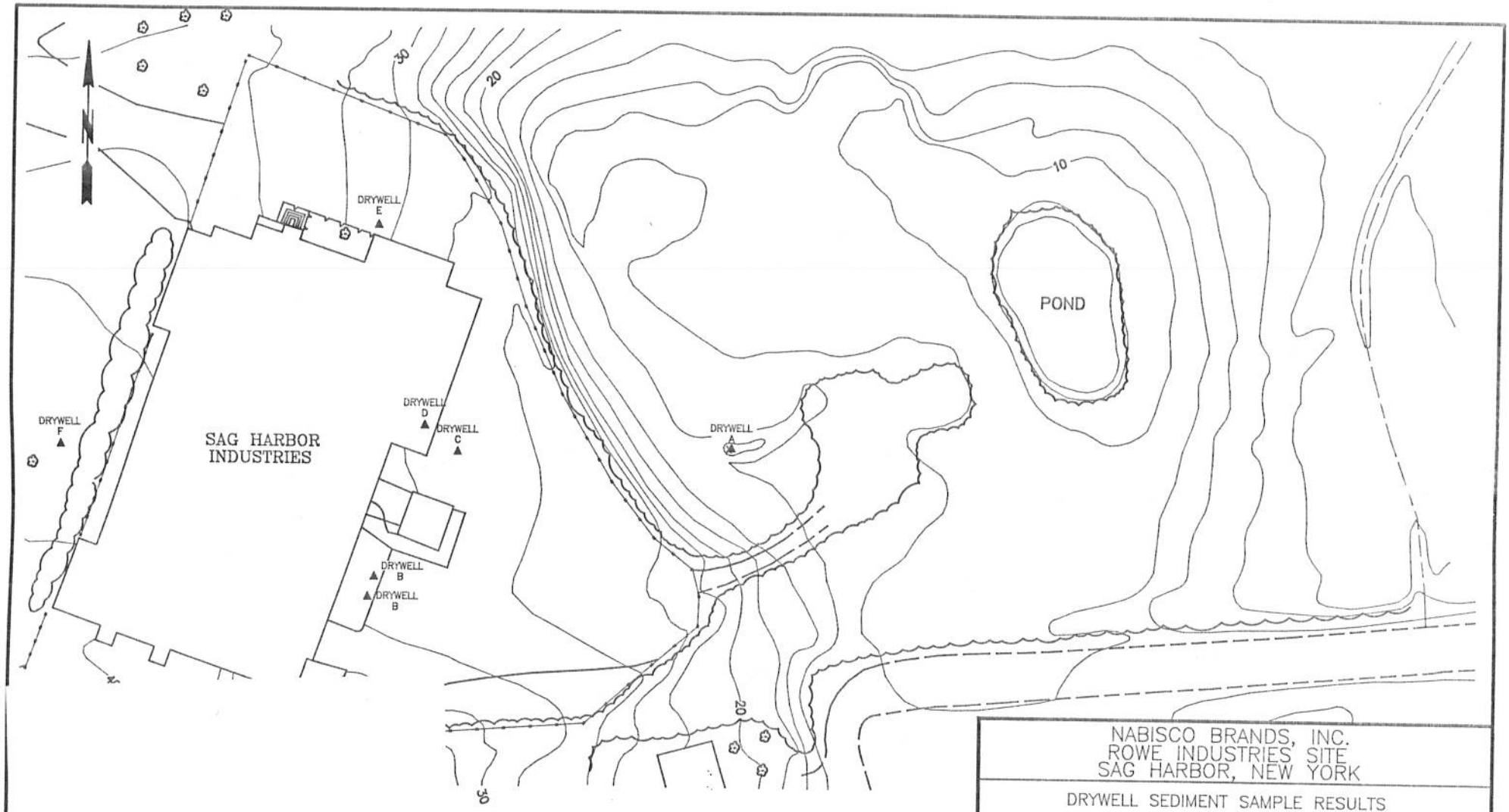
PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
203-762-1207

DATE:

FIGURE 2

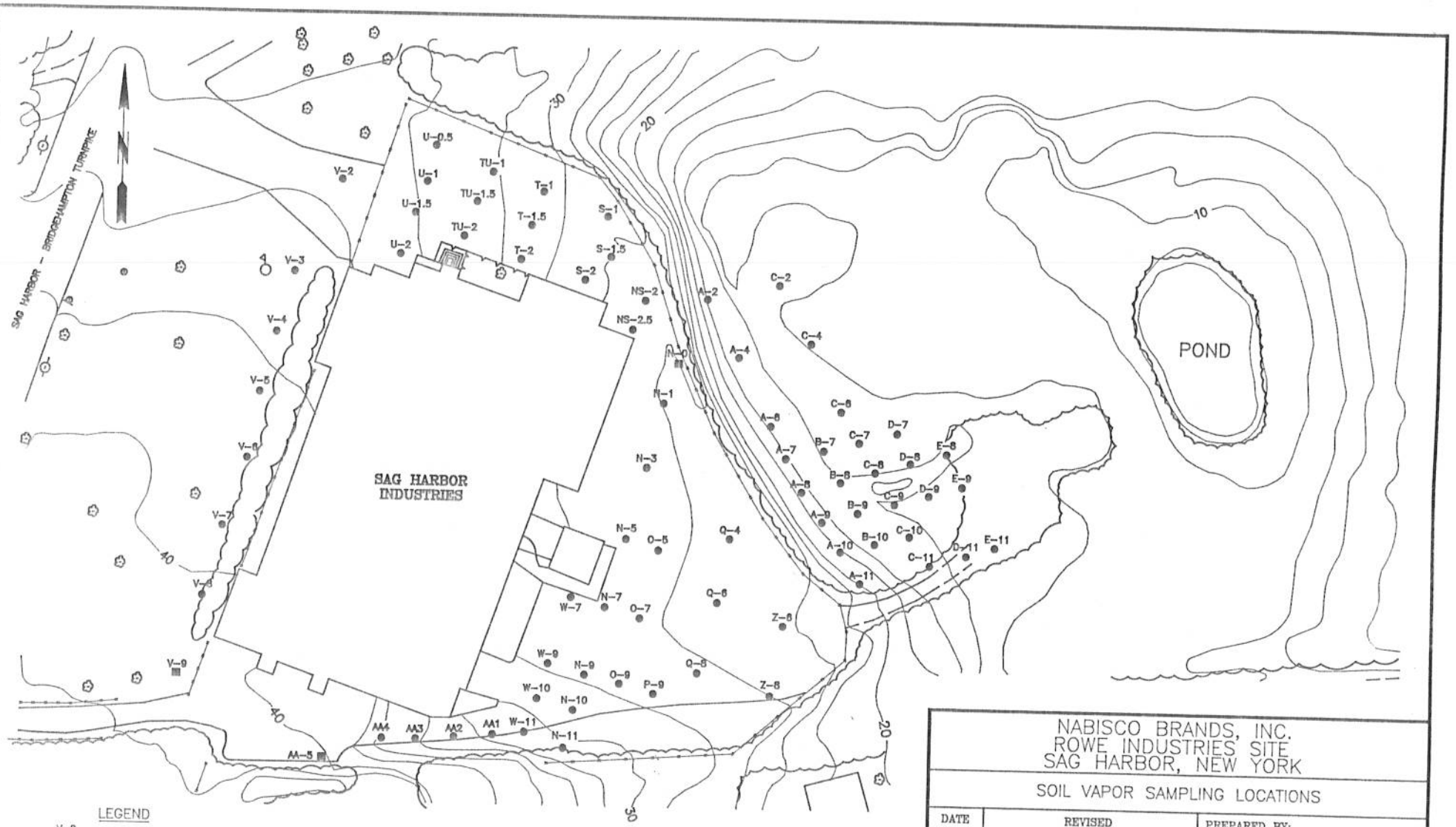
10



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

DRYWELL SEDIMENT SAMPLE RESULTS

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 18

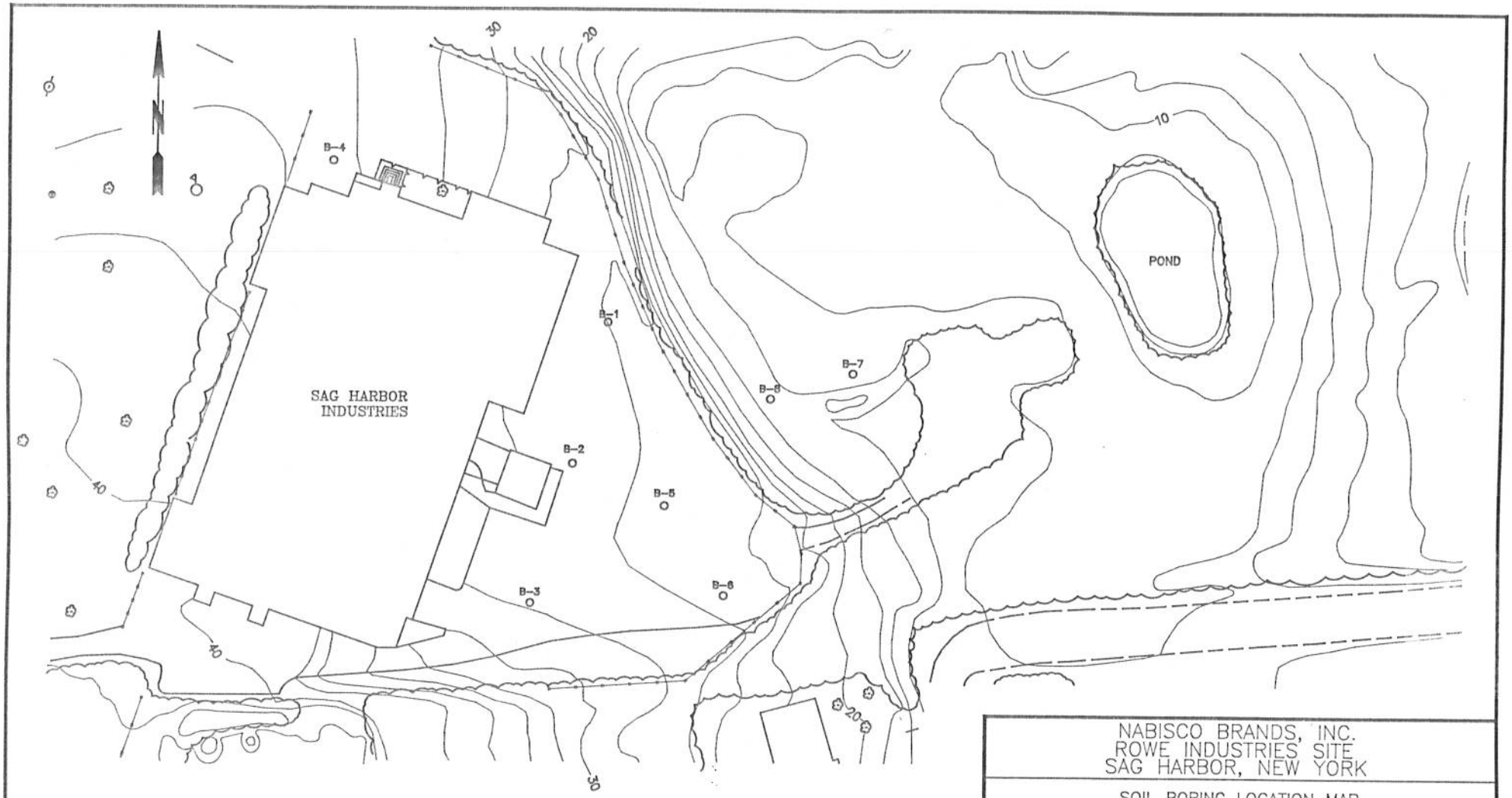


NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

SOIL VAPOR SAMPLING LOCATIONS

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 3

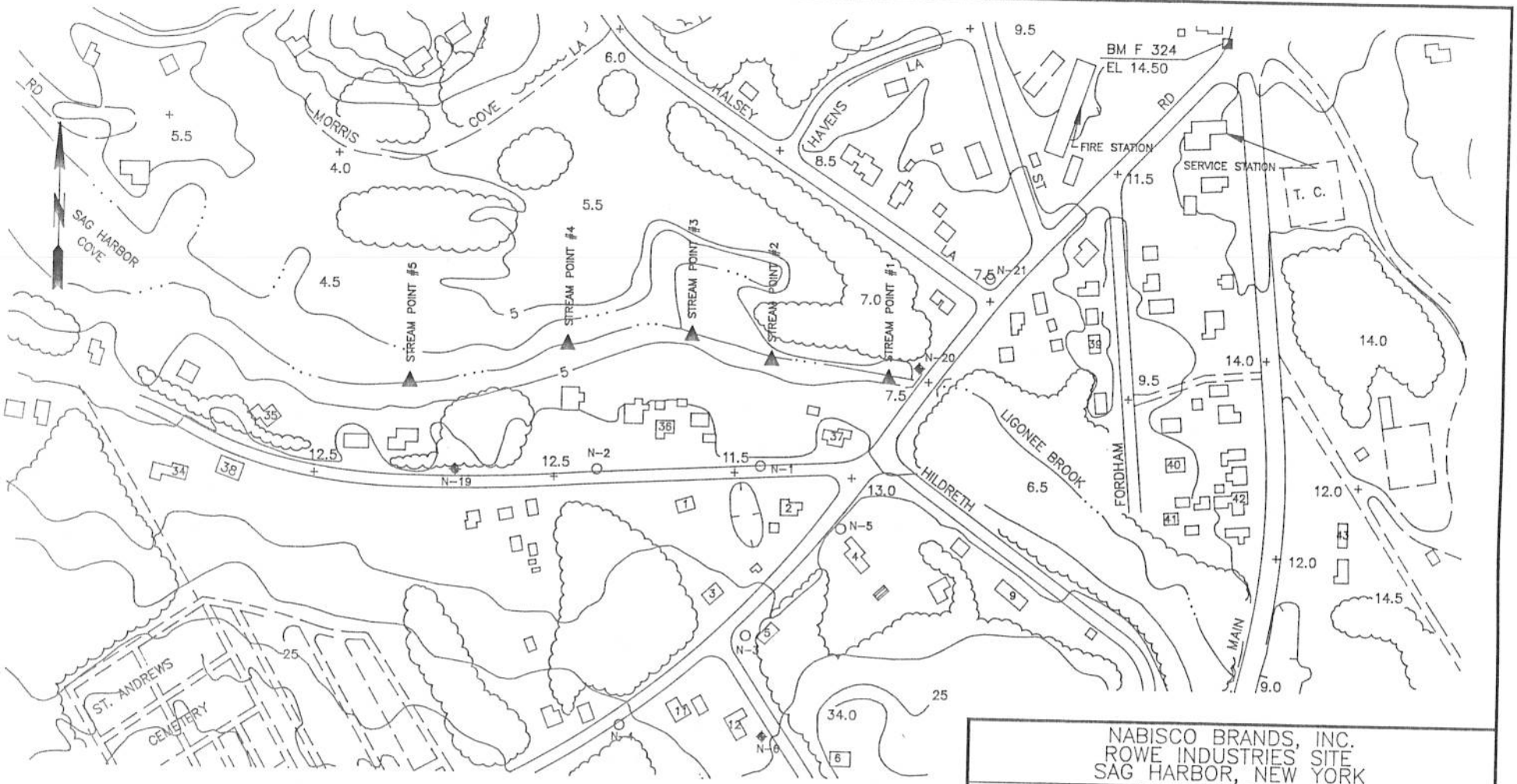
12



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

SOIL BORING LOCATION MAP

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 4



LEGEND

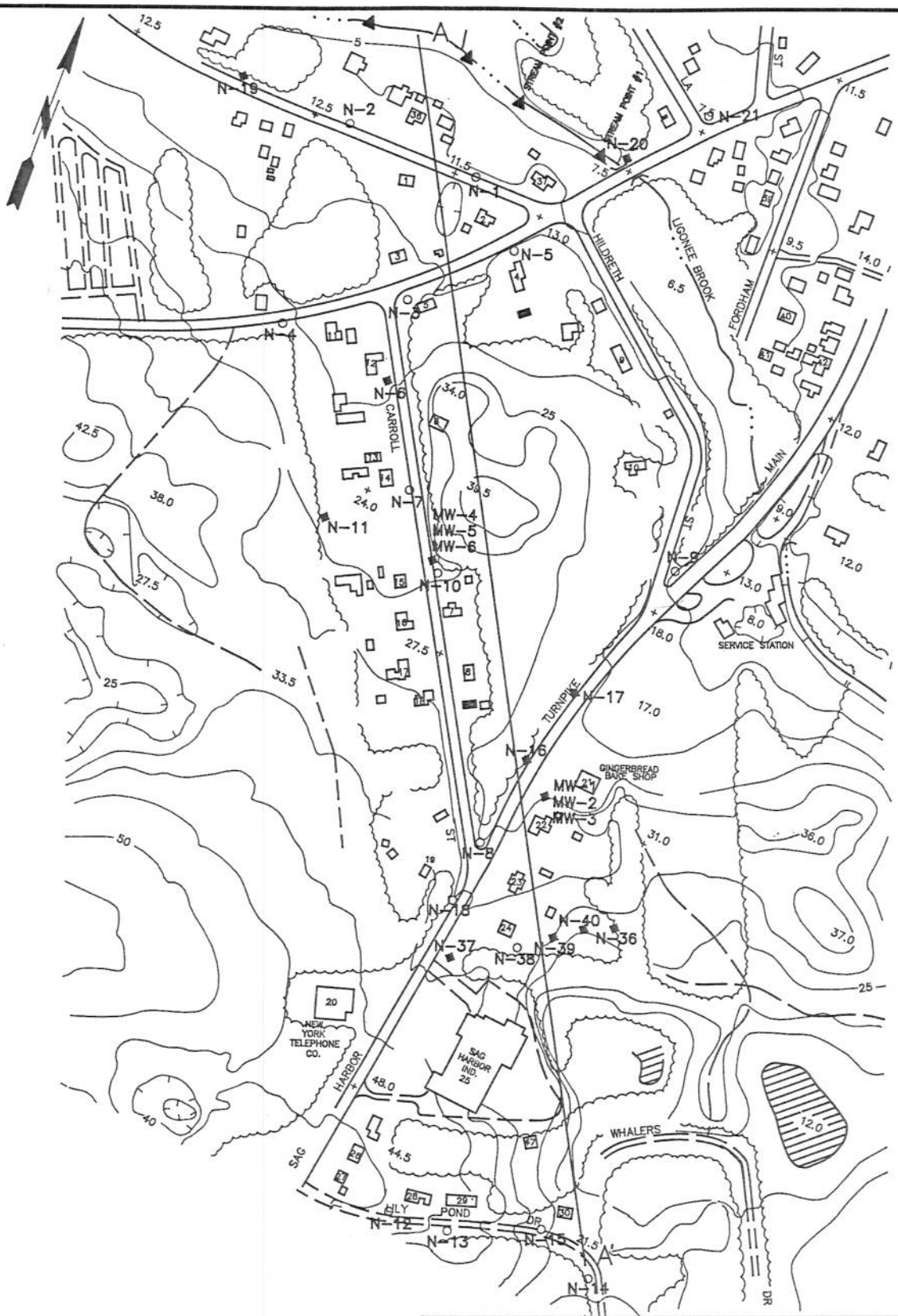
- N-37 ◆ LOCATED SCDHS WELLS
- N-13 ○ UNLOCATED SCDHS WELLS
- 27 PROPERTY OWNERS' WELLS
- ▲ STREAM POINT SAMPLING LOCATION
- CONTOUR INTERVAL = 5 FEET

0 200
SCALE IN FEET

NABISCO BRANDS, INC.
ROWE INDUSTRIES' SITE
SAG HARBOR, NEW YORK

STREAM AND BAY SAMPLING LOCATION MAP

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 5



LEGEND

- N-37 ◆ LOCATED SCDHS WELLS
- N-13 ○ UNLOCATED SCDHS WELLS
- 32 PROPERTY OWNERS' WELLS
- ▲ STREAM POINT SAMPLING LOCATION
- WATER TABLE CONTOUR
- ELEVATIONS IN FEET, MSL

0 200
SCALE IN FEET

CONTOUR INTERVAL = 5 FEET

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

STUDY AREA GEOLOGIC CROSS-SECTION LOCATION

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 10

Geology of the Study Area

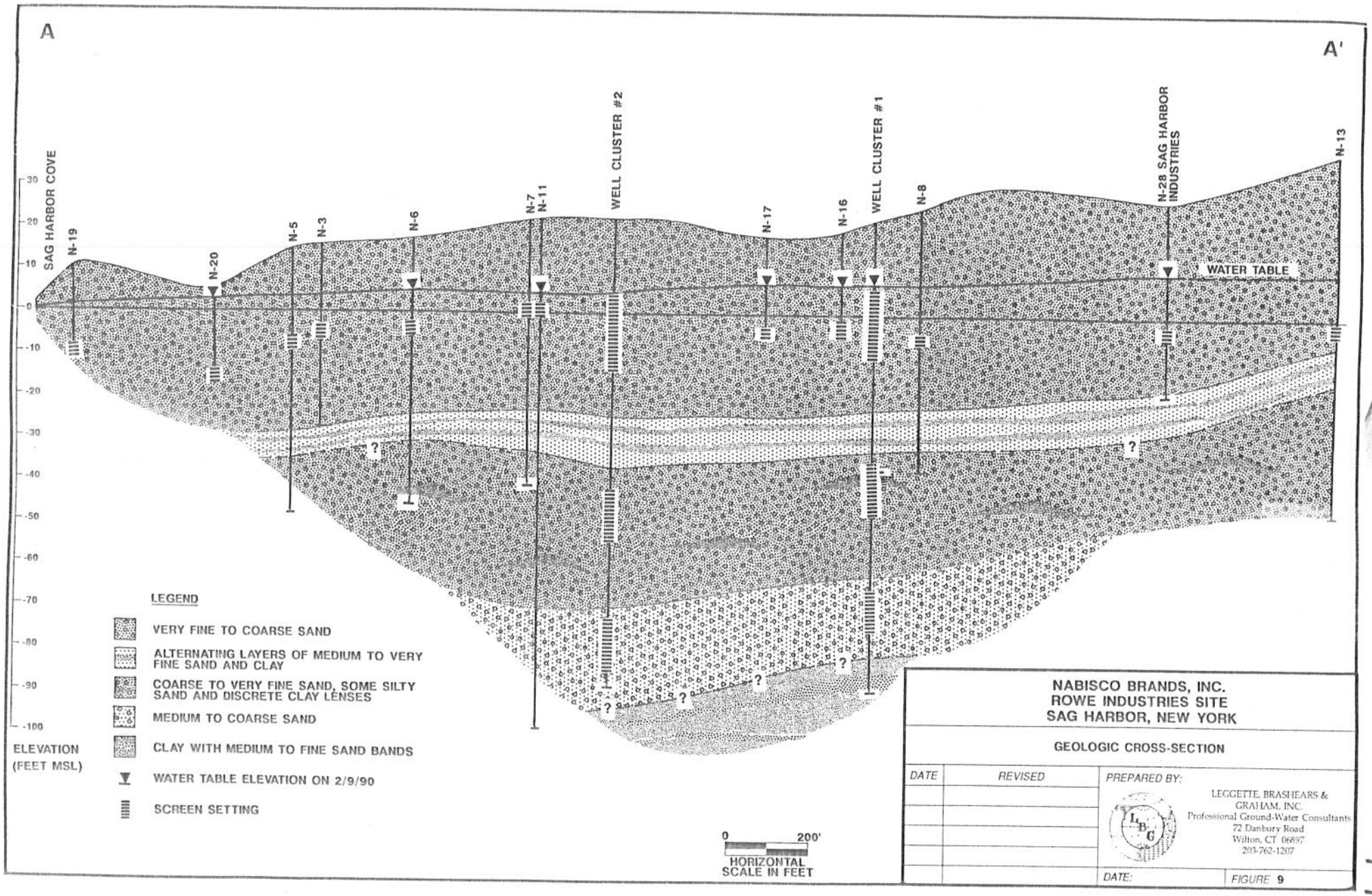
Figure 9, Page 17, shows a geologic cross section of the area (Figure 10, Page 15, shows the location of the cross section).

The study area is underlaid by the Upper Glacial Aquifer which consists of clayey sand, sand and gravel. A layer of alternating clay, silt and sand was encountered at approximately 45 feet below grade. This unit may represent the Gardiner's clay.

Hydrogeology

Based on water-level measurements (see Table 3, Page 18), the groundwater flows to the northwest toward the Ligonee Brook and Sag Harbor Cove, paralleling Carroll Street. A water table contour map for the study area is shown on Figure 15, Page 19.

The calculated average horizontal flow velocity is 2.1 ft./day (766 ft./year).



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

GEOLOGIC CROSS-SECTION

DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
203-762-1207

DATE:

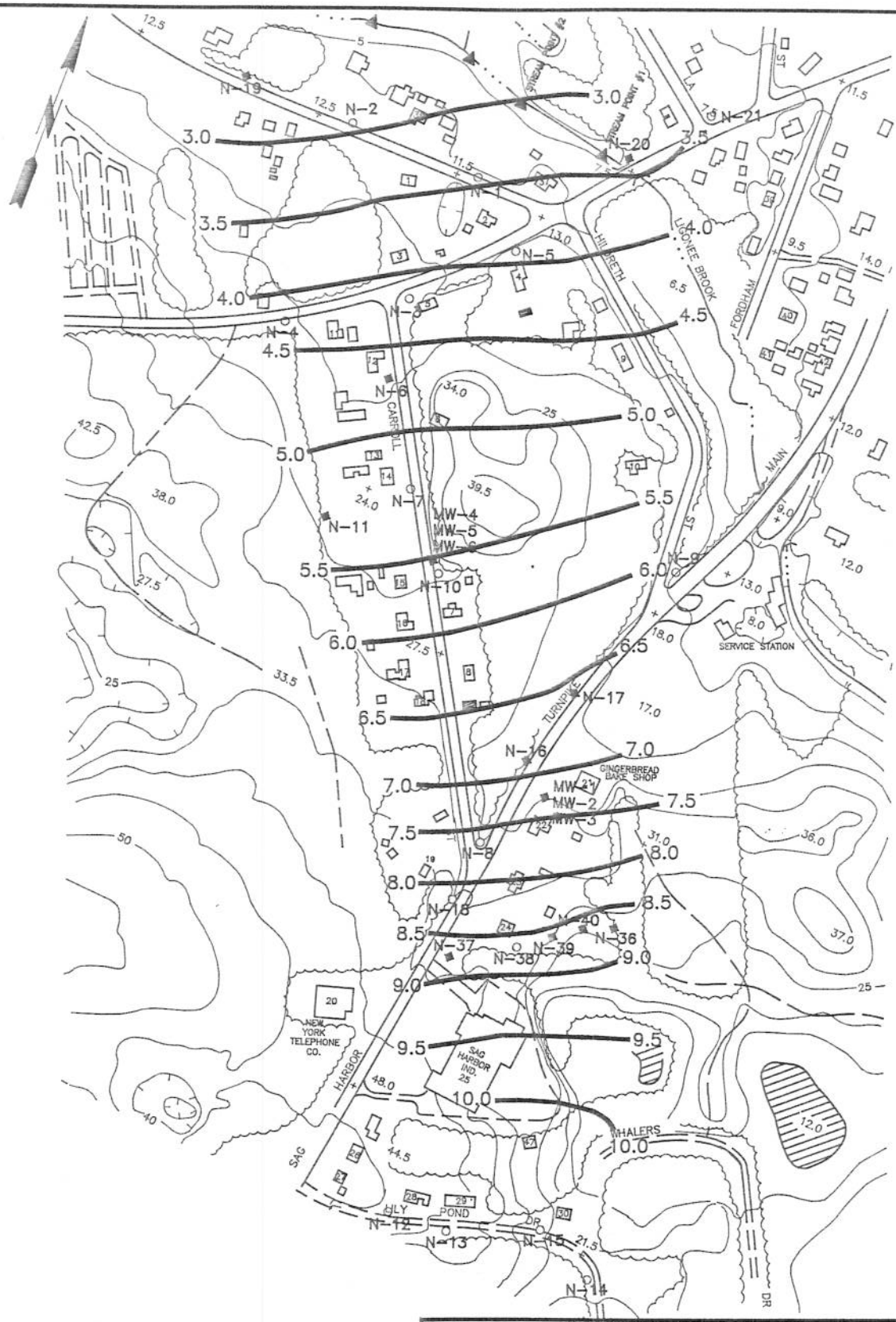
FIGURE 9

TABLE 3

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

Ground-Water Elevations

Well no.	Measuring point elevation	Water elevation (February 1, 1990)	Water elevation (February 9, 1990)	Water elevation (April 5, 1990)
Onsite:				
N-24	27.24	9.12	9.33	9.37
N-25	25.44	9.20	9.50	9.45
N-26	25.18	9.56	9.78	9.79
N-27	24.90	9.65	9.87	9.89
N-28	26.76	9.68	9.77	9.78
N-31	28.91	9.15	--	9.40
N-32	32.12	8.94	9.40	9.18
N-33	22.43	9.76	9.96	9.98
Offsite:				
MW-1	22.80	7.02	7.30	7.15
MW-2	23.06	7.18	7.42	7.33
MW-3	22.98	7.44	7.70	7.61
MW-4	22.81	5.33	5.61	5.53
MW-5	22.97	5.21	5.45	5.41
MW-6	23.06	5.17	5.40	5.38
N-06	17.36	4.58	4.76	4.80
N-11	23.10	4.98	5.22	5.19
N-16	19.92	6.78	7.03	6.90
N-17	17.57	6.48	7.66	6.59
N-19	10.65	1.91	1.47	2.53
N-20	5.00	3.04	3.10	3.39
N-36	26.27	8.59	8.81	8.77
N-37	31.47	8.62	8.85	8.79
N-39	27.19	8.52	8.80	8.71
N-40	25.11	8.51	8.72	8.71
Ligonee Brook at N-20	5.87	--	2.38	2.29



LEGEND

- LOCATED SCDHS WELLS
- UNLOCATED SCDHS WELLS
- PROPERTY OWNERS' WELLS
- STREAM POINT SAMPLING LOCATION
- 10.0 WATER TABLE CONTOUR ELEVATIONS IN FEET, MSL

0 200 SCALE IN FEET

CONTOUR INTERVAL = 5 FEET

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

WATER TABLE CONTOUR MAP OF STUDY AREA

DATE	REVISED	PREPARED BY:
		LECCETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 15

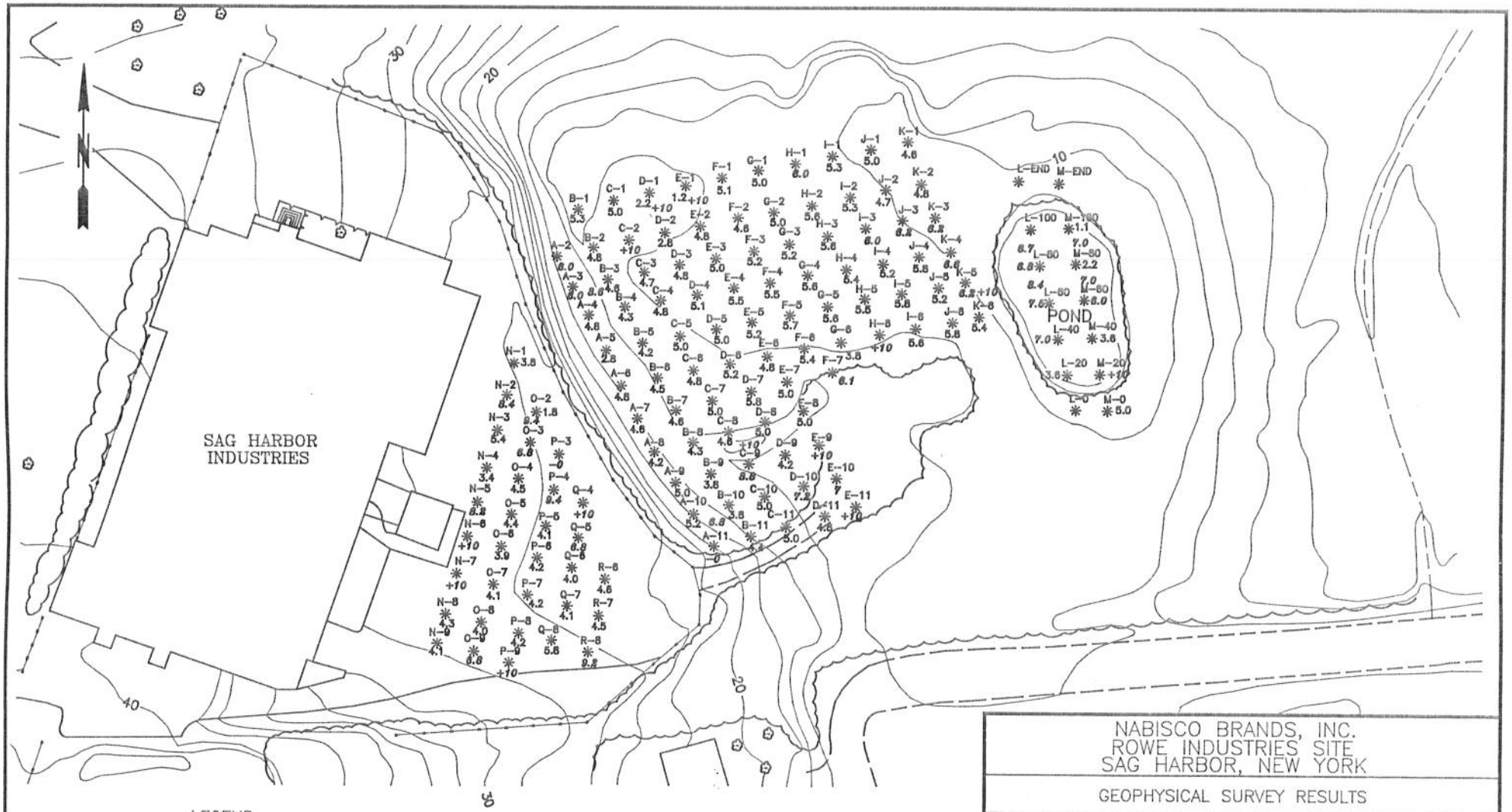
Nature and Extent of Contamination

1. Geophysical Survey Results - Figure 17, Page 21, is a map of the results of the electromagnetic survey. The anomalies detected on the SHI property were not large or continuous enough to indicate the detection of buried containers. In most cases, the anomalies were attributed to the nearby surface metal which was observed.

2. Disposal System Studies - the results from the sediment sampling are presented on Figure 18, Page 22. All of the samples were analyzed for TCL volatile organic compounds and Freon 113, except for Dry Well A which was sampled for the complete TCL and Freon 113.

3. Pond Sediment Sampling - Pond 1 sample was taken at location M-80 (see Figure 2, Page 10) and was analyzed for the full TCL and Freon 113. The Pond 2 sample was taken at location L-20 and Pond 3 sample was obtained at location L-100. These two samples were analyzed for TCL volatiles and Freon 113.

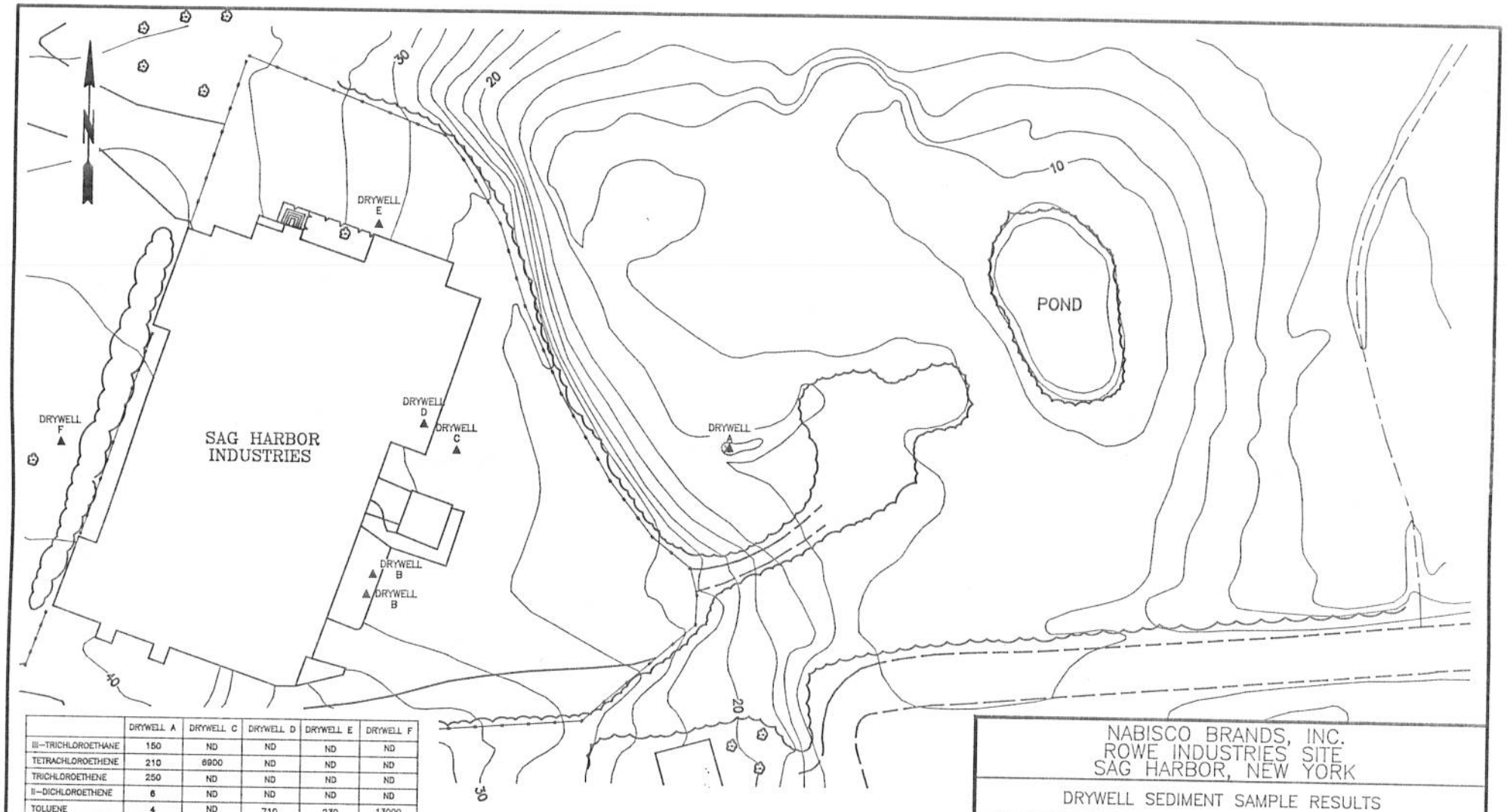
   Visually, the pond did not reveal any signs of vegetative or other biological stress. Results of the sediment analysis indicate that the pond is not a source of contamination.



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

GEOPHYSICAL SURVEY RESULTS

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 17



	DRYWELL A	DRYWELL C	DRYWELL D	DRYWELL E	DRYWELL F
III–TRICHLOROETHANE	150	ND	ND	ND	ND
TETRACHLOROETHENE	210	6900	ND	ND	ND
TRICHLOROETHENE	250	ND	ND	ND	ND
II–DICHLOROETHENE	6	ND	ND	ND	ND
TOLUENE	4	ND	710	230	13000
FREON 113	4	790	490	2	1600
XYLENE	ND	ND	3900	ND	ND
ETHYLBENZENE	ND	ND	310	ND	ND
METHYLENE CHLORIDE	8	ND	990	360	680
ACETONE	19	ND	ND	1400	6300
2 BUTANONE	ND	ND	ND	ND	520

ND=NON DETECTED
ALL CONCENTRATIONS IN ug/kg (MICROGRAMS PER KILOGRAM)

LEGEND

DRYWELL A — DRYWELL LOCATION

CONTOUR INTERVAL = 2 FEET

0 50
SCALE IN FEET

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

DRYWELL SEDIMENT SAMPLE RESULTS

DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
203-762-1207

DATE:

FIGURE 18

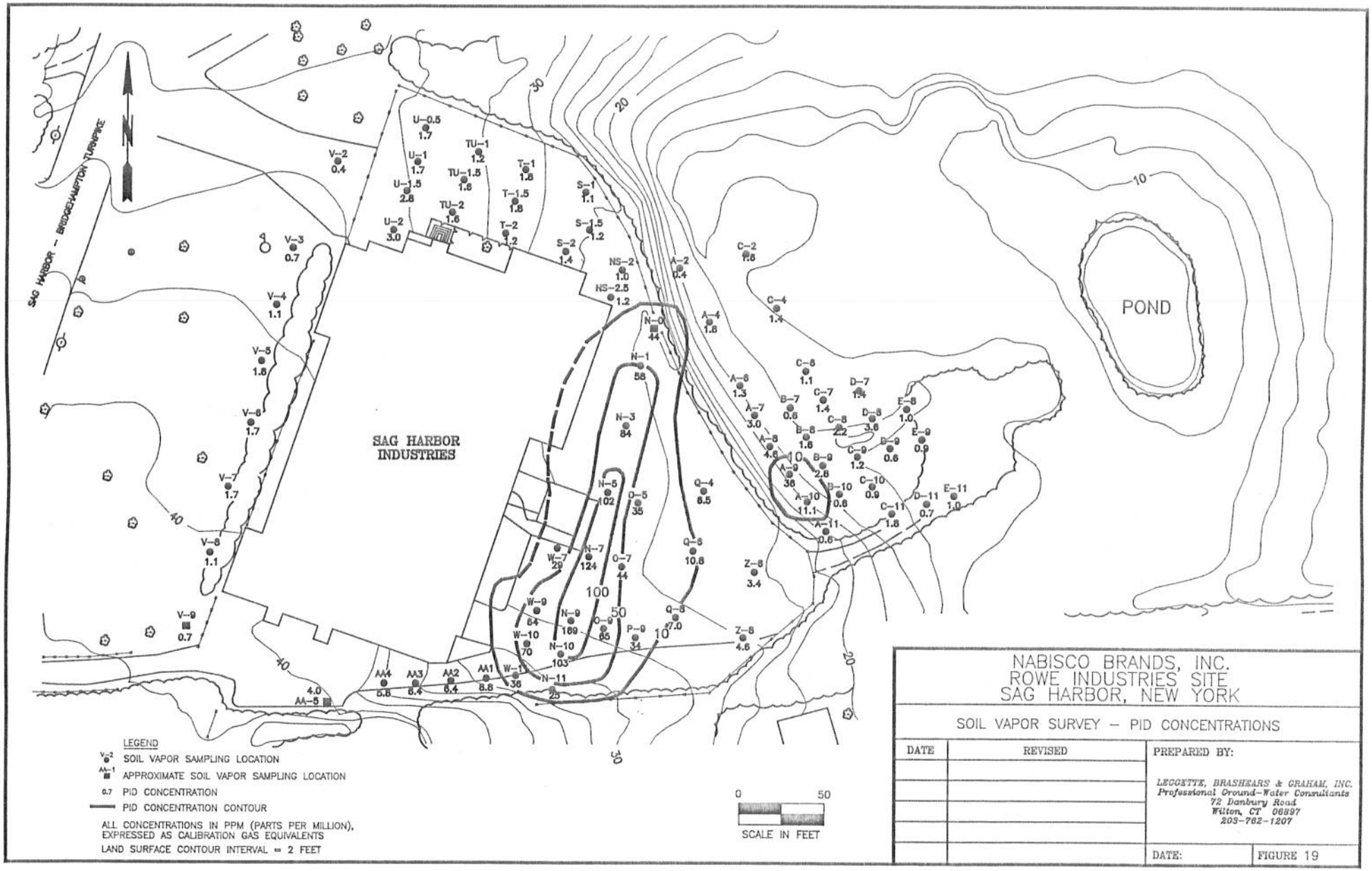
22

4. Soil-Vapor Survey - Figure 19, Page 24, shows the PID readings taken at each station. Figure 20, Page 25, is a map showing the PCE concentrations. Figure 21, Page 26, is a map of TCE and TCA concentrations at their respective locations.

5. Soil Boring Results - Table 9, Page 27, presents the characteristics of the on-site borings. Table 10, Pages 28 and 29, are the PID results of the screened samples from each boring. Table 11, Page 30, lists the parameters each sample was analyzed for. Figure 22, Page 31, illustrates the VOA laboratory results from the soil sampling.

6. Surface Water and Sediment Sampling - Figures 23 and 24, Pages 32 and 33, show the stream and bay surface water and sediment sampling locations and chemical concentrations that were detected.

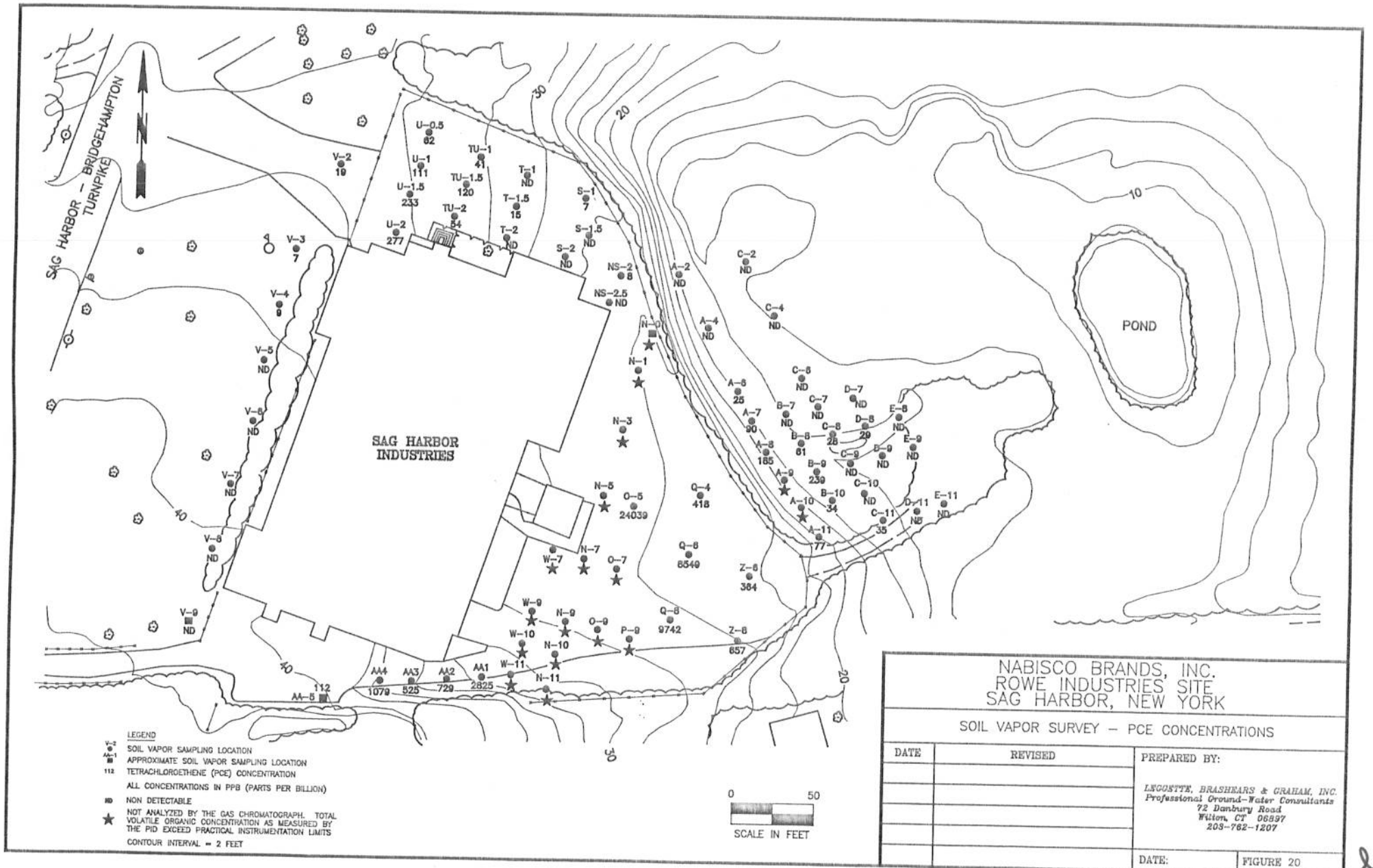
   Stream points 2 and 4 were sampled for the full TCL. All other locations were sampled for TCL volatiles and Freon 113.



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

SOIL VAPOR SURVEY – PID CONCENTRATIONS

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 19



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

SOIL VAPOR SURVEY – PCE CONCENTRATIONS

DATE	REVISED	PREPARED BY:
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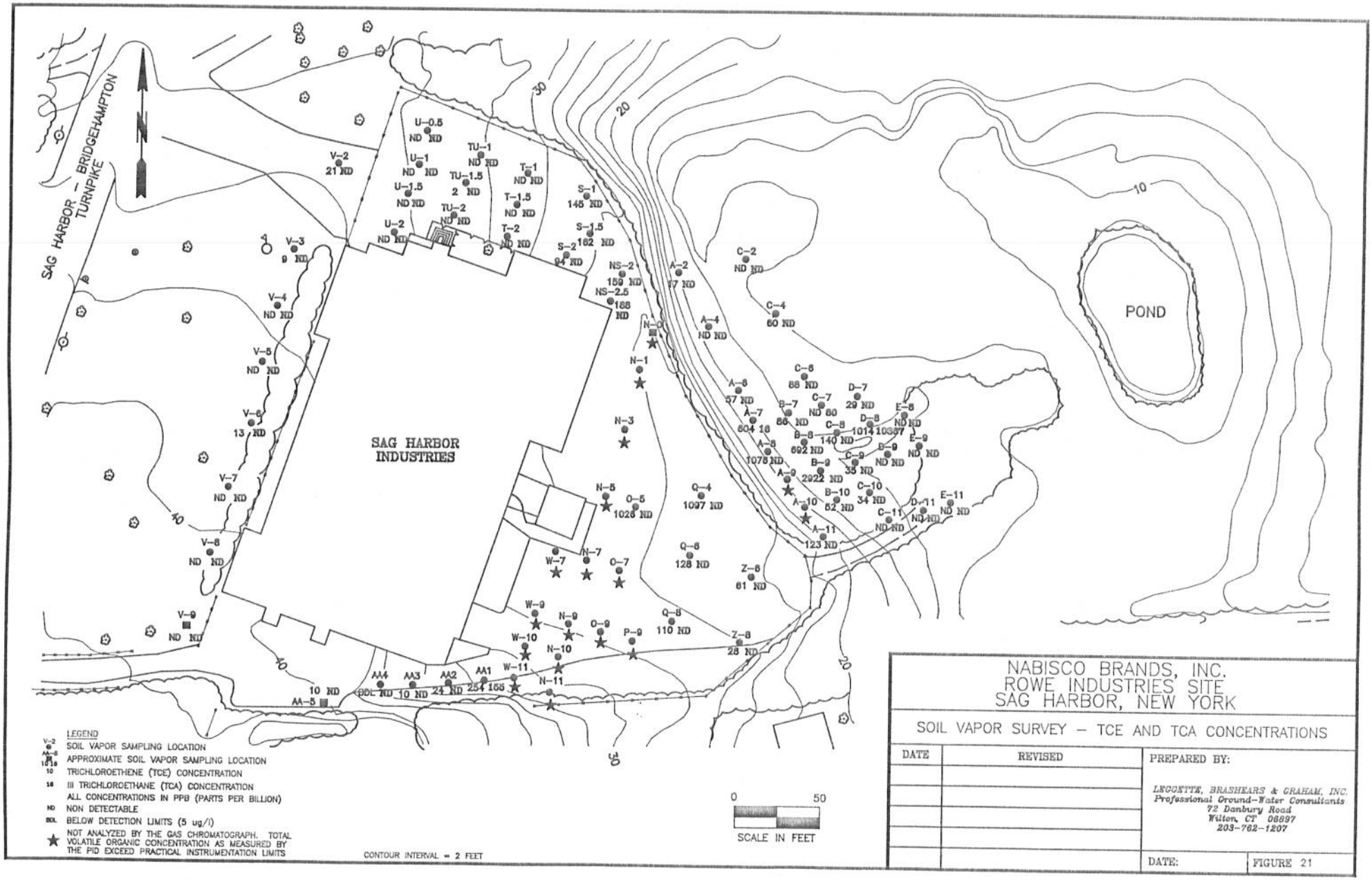
		DATE: FIGURE 20



LEGEND

- V–2 SOIL VAPOR SAMPLING LOCATION
- AA–5 APPROXIMATE SOIL VAPOR SAMPLING LOCATION
- 10 TRICHLOROETHENE (TCE) CONCENTRATION
- 18 III TRICHLOROETHANE (TCA) CONCENTRATION
- ALL CONCENTRATIONS IN PPB (PARTS PER BILLION)
- ND NON DETECTABLE
- BDL BELOW DETECTION LIMITS (5 ug/l)
- ★ NOT ANALYZED BY THE GAS CHROMATOGRAPH. TOTAL VOLATILE ORGANIC CONCENTRATION AS MEASURED BY THE PID EXCEED PRACTICAL INSTRUMENTATION LIMITS

NABISCO BRANDS, INC.
ROWE INDUSTRIES' SITE
SAG HARBOR, NEW YORK

SOIL VAPOR SURVEY – TCE AND TCA CONCENTRATIONS

DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
203-762-1207

DATE:

FIGURE 21

TABLE 9

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HABOR, NEW YORK

Characteristics of Onsite Borings

Boring no.	Date completed	Depth below grade (feet)	Depth to water (feet)	Geology
B-1	9/28/89	17.5	16.1	Coarse sand fining down boring; some cobbles; clay bands from 12 to 17 feet.
B-2	9/28/89	17	16.3	Medium to fine sand; some cobbles; clay from 12 to 17 feet.
B-3	9/28/89	18	16.9	Medium to fine sand and cobbles; clay bands from 13 to 18 feet.
B-4	9/29/89	26	25.2	Medium to coarse sand; some cobbles; clay from 11 to 14 feet.
B-5	9/29/89	16	14.5	Medium to fine sand; clay bands from 10 to 12 feet.
B-6	9/30/89	16	14.5	Medium to very fine sand; trace of pebbles; trace of clay from 11 to 16 feet.
B-7	9/30/89	4	3	Medium to fine sand; organic rich (top .5').
B-8	9/30/89	6	5	Medium to fine sand; organic rich top 5'.

TABLE 10

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

PID[1/] Readings for Onsite Borings

Boring no.	Depth interval (feet)	PID measurement (ppm)[2/]	Analysis performed
B-1	0 - 2.5	0.3	
	2.5 - 5.0	0.6	*
	5.0 - 7.5	0.4	
	7.5 - 10	0.2	
	10 - 12.5	0.4	
	12.5 - 15	0.1	*
	15 - 17.5	0.2	
B-2	.5 - 2.5	7.0	*
	3 - 5	4.5	
	5 - 7	0.4	
	7 - 9	0.1	
	11 - 13	3.2	
	13 - 15	6.5	**
	15 - 17	1.0	*
B-3	.5 - 2	3.0	
	2 - 4	2.0	
	4 - 6	+20.0	
	6 - 8	0.5	
	8 - 10	+20.0	
	10 - 12	1.0	
	12 - 14	30.0	***
	14 - 16	30.0	**
	14 - 16 (clay)	60.0	*
	16 - 18	7.0	*
B-4	.5 - 2	0.0	
	2 - 4	0.0	
	4 - 6	0.1	
	6 - 8	0.0	
	8 - 10	0.2	*
	10 - 12	0.0	
	12 - 14	1.0	
	14 - 16	1.0	
	16 - 18	1.0	
	18 - 20	1.0	
	20 - 22	0.0	
	22 - 24	0.0	*

TABLE 10
(continued)

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

PID[1/] Readings for Onsite Borings

Boring no.	Depth interval (feet)	PID measurement (ppm)[2/]	Analysis performed
B-5	.5 - 2	0.3	
	2 - 4	0.2	
	4 - 6	1.0	*
	6 - 8	0.0	
	8 - 10	1.0	
	10 - 12	0.0	
	10 - 12 (clay)	0.8	
	12 - 14	0.0	*
B-6	.5 - 2	0.0	
	2 - 4	0.0	
	4 - 6	0.4	*
	6 - 8	0.0	
	8 - 10	0.0	
	10 - 12	0.0	
	12 - 14	0.0	*
	14 - 16	0.1	
B-7	0 - 2	0.0	*
	2 - 4	0.0	*
B-8	0 - 2	0.0	*
	2 - 4	0.0	*

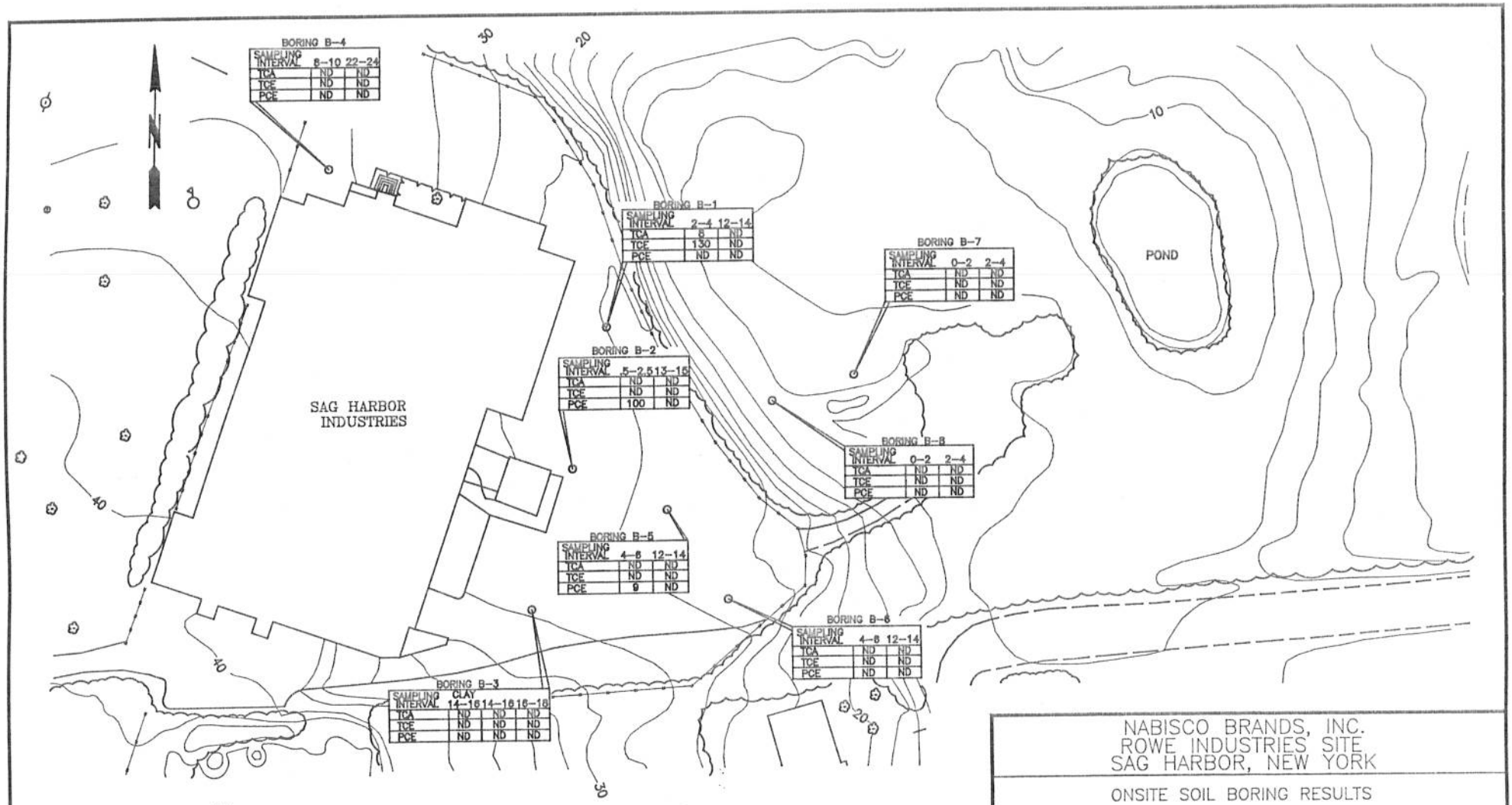
1/ Photoionization detector.
2/ Parts per million.
* Analyzed for TCL VOA and Freon 113.
** Analyzed for full TCL and Freon 113.
*** Split samples collected by Alliance Technologies.

TABLE 11

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

Laboratory Parameters for Onsite Soil Borings

Boring no.	Depth interval (feet)	Volatile organics	Semi-volatile organics	Pesticides	PCB's	Metals	Cyanide	Freon 113	Split samples taken by Allianc Techology
B-1	2-4	X						X	
B-1	12-14	X						X	
B-2	.5-2.5	X							
B-2	13-15	X	X	X	X	X	X	X	
B-2	15-17	X						X	
								X	
B-3	14-16 (clay)	X							
B-3	14-16	X	X	X	X	X	X	X	
B-3	16-18	X						X	* (12-14)
								X	
B-4	8-10	X							
B-4	22-24	X						X	
								X	
B-5	4-6	X							
B-5	12-14	X						X	
								X	
B-6	4-6	X							
B-6	12-14	X						X	
								X	*
B-7	0-2	X							
B-7	2-4	X						X	
								X	
B-8	0-2	X							
B-8	2-4	X						X	
								X	



KEY

ORGANIC CONSTITUENT	ABBREVIATION USED
III TRICHLOROETHANE	TCA
TRICHLOROETHENE	TCE
TETRACHLOROETHENE	PCE
ND=NON DETECTABLE ALL CONCENTRATIONS IN ug/kg (MICROGRAMS PER KILOGRAM)	

LEGEND

o SOIL BORING LOCATION

CONTOUR INTERVAL = 2 FEET

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

ONSITE SOIL BORING RESULTS

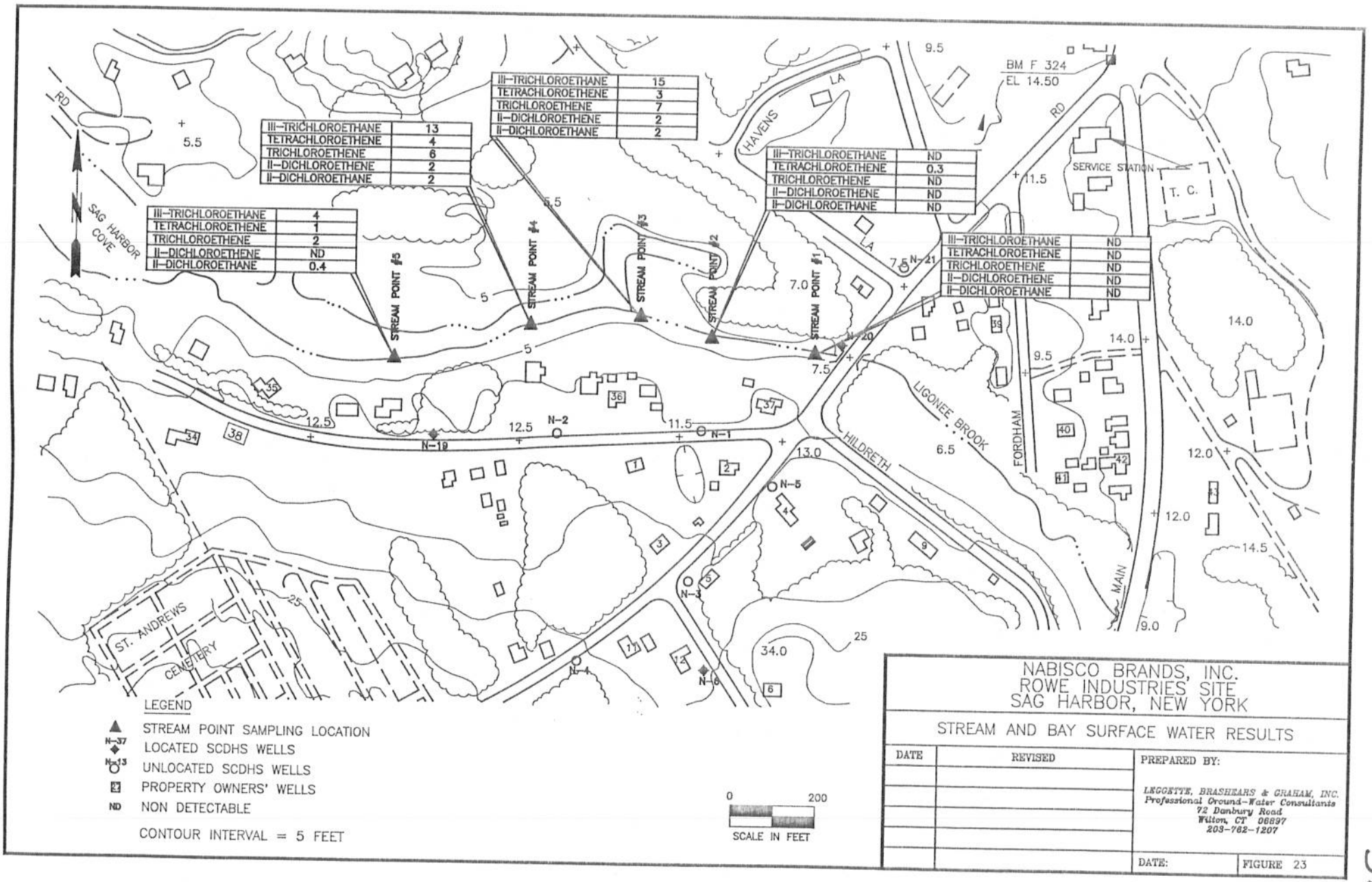
DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
203-762-1207

DATE:

FIGURE 22



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

STREAM AND BAY SURFACE WATER RESULTS

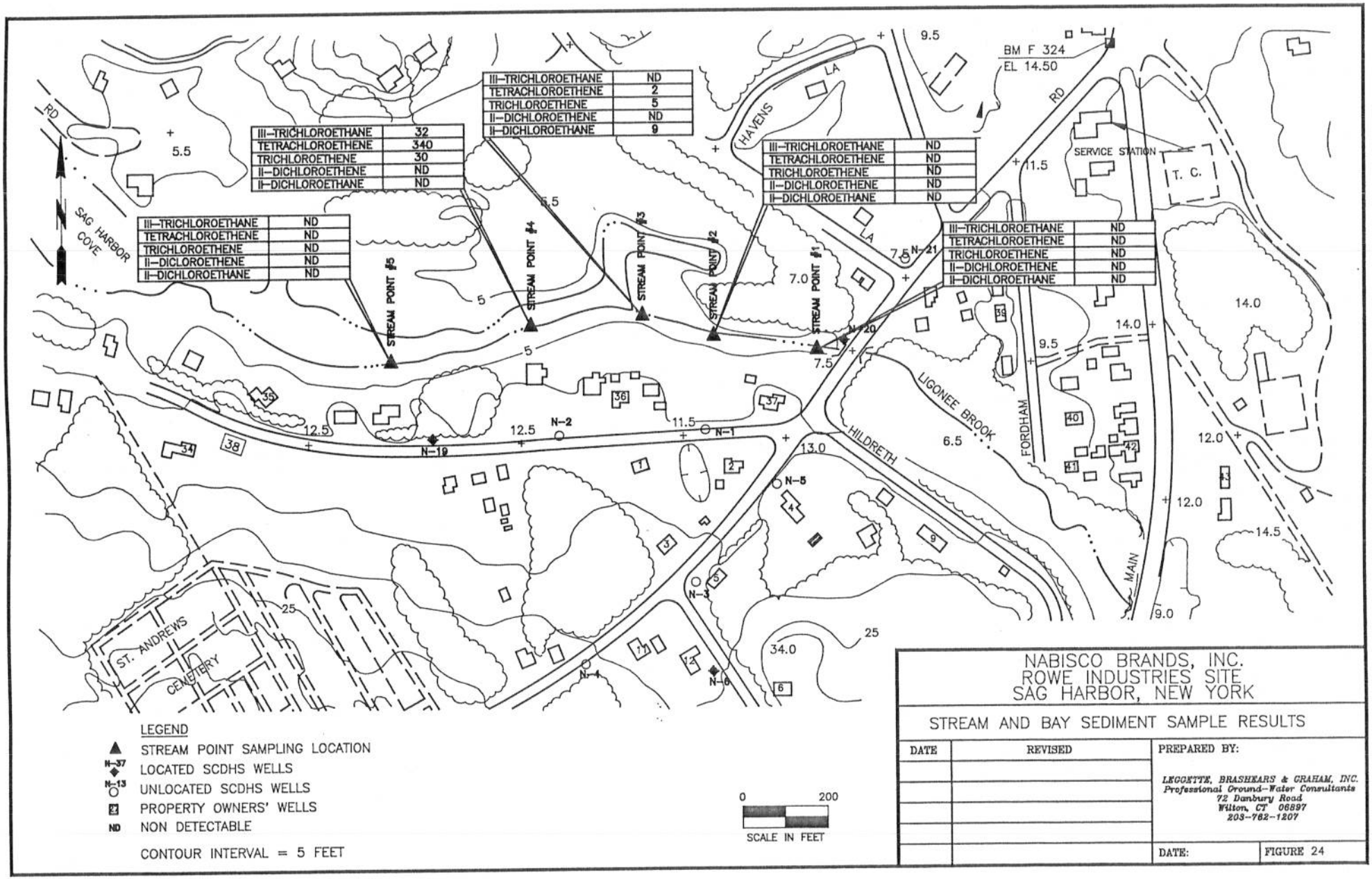
DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
203-762-1207

DATE:

FIGURE 23



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

STREAM AND BAY SEDIMENT SAMPLE RESULTS

DATE	REVISED	PREPARED BY:
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		DATE: FIGURE 24

7. Ground Water Quality - Table 15, Pages 35-38, lists the parameters each well was analyzed for during both rounds of sampling.

   Figures 25 and 26, Pages 39 and 40, show the results of both rounds of groundwater sampling both on and off the SHI property.

TABLE 15

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

Ground-Water Laboratory Parameters
for Two Rounds of Sampling

Well no.	Volatile organics	Semi-volatile organics	Pesticides	PCB's	Metals	Dissolved metals	Cyanide	Freon 113	Split samples taken by Alliance Technology
Onsite:									
Round 1									
N-24	X							X	
N-25	X							X	
N-26	X							X	*
N-27	X	X	X	X	X		X	X	*
N-28	X							X	*
N-32	X							X	
N-33	X							X	*
Round 2									
N-24	X							X	
N-25	X							X	
N-26	X							X	*
N-27	X				X	X		X	*
N-28	X							X	*
N-32	X							X	
N-33	X							X	

TABLE 15
(continued)

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

Ground-Water Laboratory Parameters
for Two Rounds of Sampling

Well no.	Volatile organics	Semi-volatile organics	Pesticides	PCB's	Metals	Dissolved metals	Cyanide	Freon 113	Split samples taken by Alliance Technology
Offsite:									
Round 1									
MW-1	X	X	X	X	X		X	X	
MW-2	X	X	X	X	X		X	X	
MW-3	X	X	X	X	X		X	X	
MW-4	X	X	X	X	X		X	X	
MW-5	X	X	X	X	X		X	X	*
MW-6	X	X	X	X	X		X	X	
N-06	X	X	X	X	X		X	X	
N-11	X							X	*
N-16	X							X	
N-17	X	X	X	X	X		X	X	*
N-19	X							X	
N-20	X							X	
N-36	X							X	
N-37	X							X	
N-39	X	X	X	X	X		X	X	
N-40	X							X	

TABLE 15
(continued)

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

Ground-Water Laboratory Parameters
for Two Rounds of Sampling

Well no.	Volatile organics	Semi-volatile organics	Pesticides	PCB's	Metals	Dissolved metals	Cyanide	Freon 113	Split samples taken by Alliance Technology
Round 2									
MW-1	X				X	X		X	*
MW-2	X				X	X		X	*
MW-3	X				X	X		X	
MW-4	X				X	X		X	
MW-5	X				X	X		X	*
MW-6	X				X	X		X	
N-06	NA	NA	NA	NA	NA	NA	NA	NA	
N-11					X	X			*
N-16	NA	NA	NA	NA	NA	NA	NA	NA	
N-17	NA	NA	NA	NA	NA	NA	NA	NA	
N-19					X	X			
N-20	NA	NA	NA	NA	NA	NA	NA	NA	
N-36	X							X	
N-37	X							X	
N-39	X				X	X		X	*
N-40	X							X	

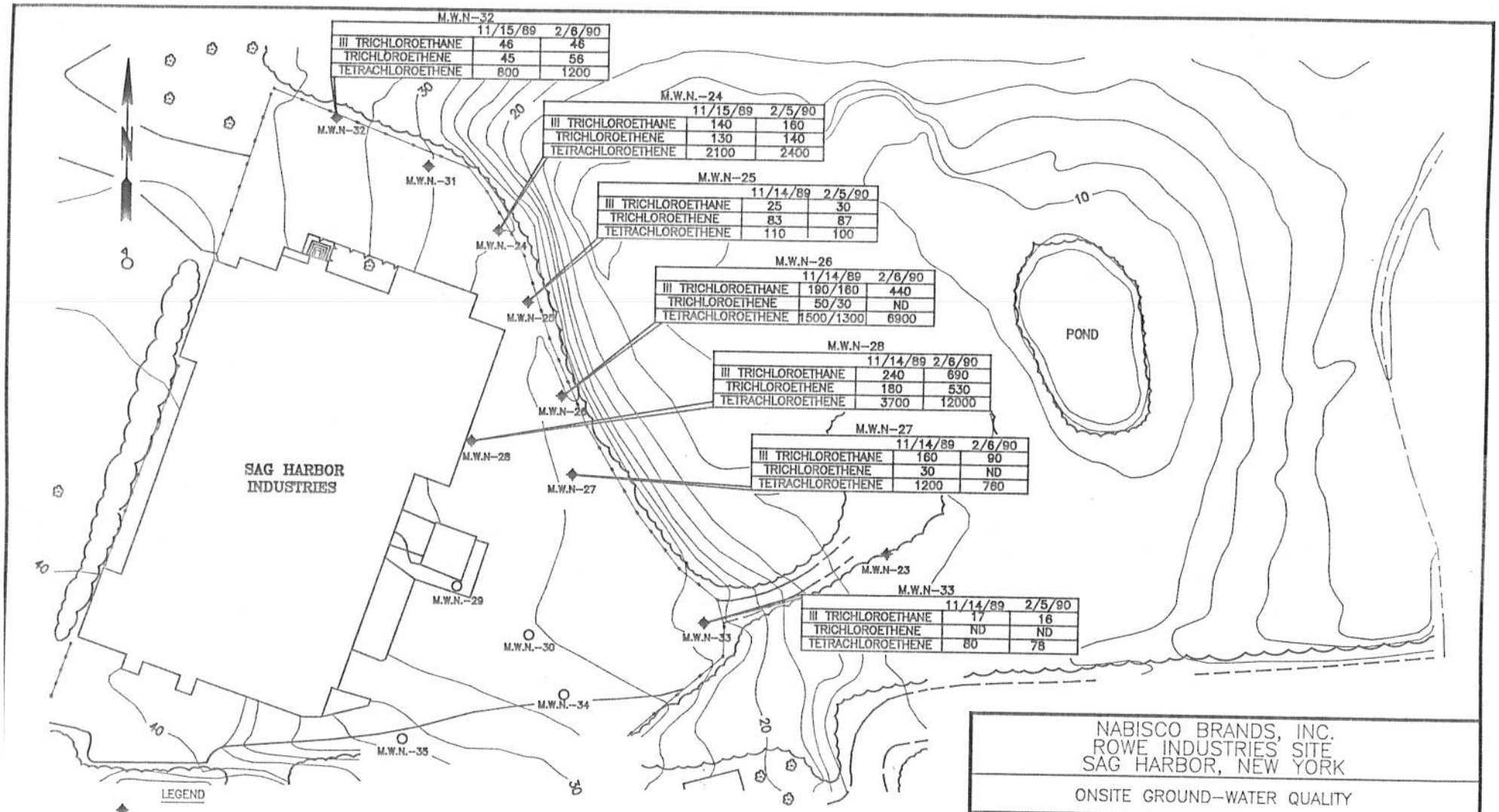
TABLE 15
(continued)

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

Ground-Water Laboratory Parameters
for Two Rounds of Sampling

Well no.	Volatile organics	Semi-volatile organics	Pesticides	PCB's	Metals	Dissolved metals	Cyanide	Freon 113	Split samples taken by Alliance Technology
Homeowners:									
Round 1									
Soffel	X	X	X	X	X		X	X	
Aldrich	X							X	
Willson	X	X	X	X	X		X	X	
Page	X							X	
Fabiano	X							X	
Shipkowski	X							X	
Mott	X							X	
Sag Harbor Ind.	X							X	
Round 2									
Christensen	X				X			X	*
Hagerman	X				X			X	

* Denotes location of split sample taken by Alliance Technologies.
NA Not analyzed.



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

ONSITE GROUND-WATER QUALITY

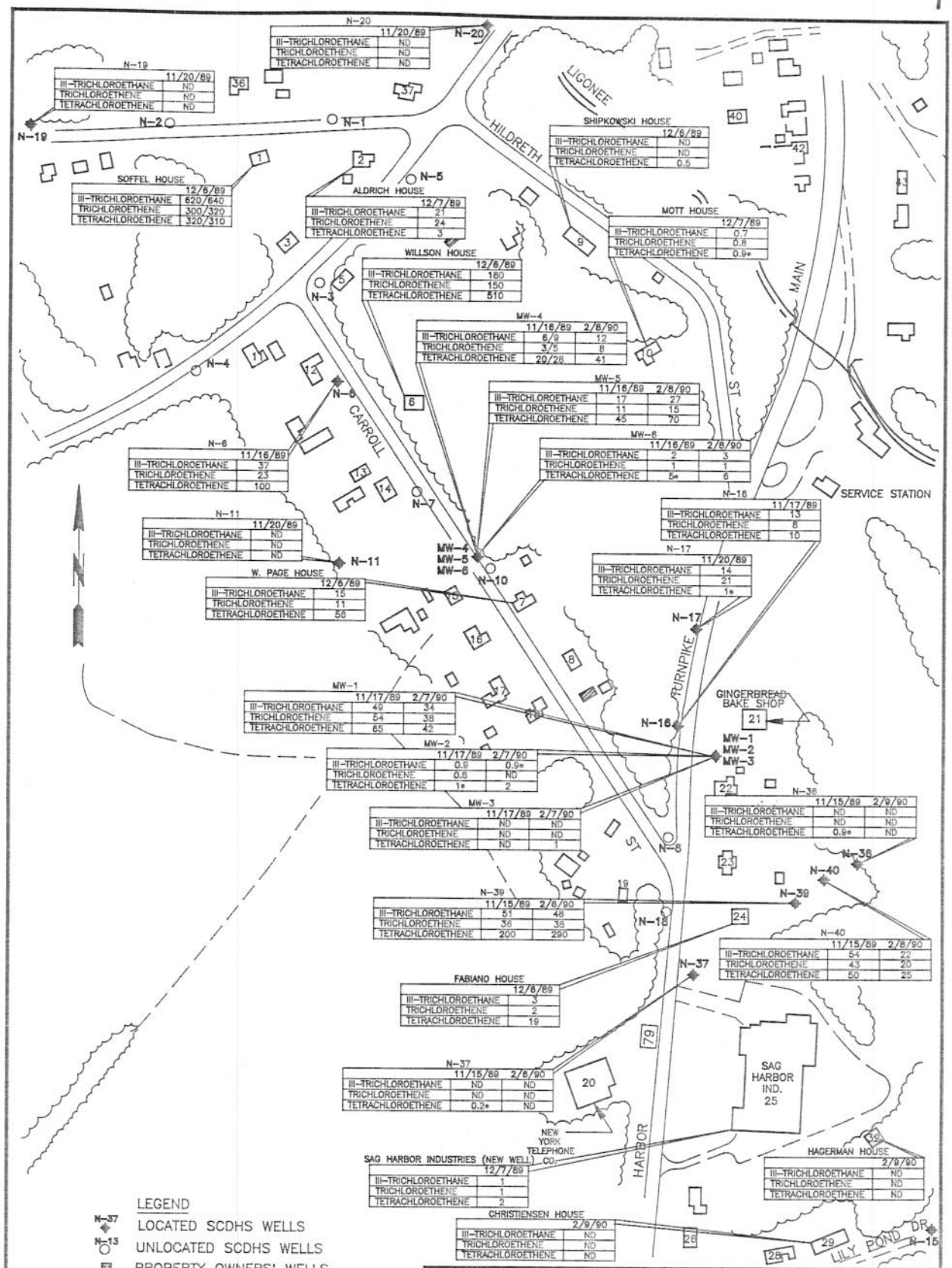
DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
203-762-1207

DATE:

FIGURE 25



NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

OFFSITE WATER QUALITY RESULTS

DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
203-762-1207

DATE:

FIGURE 26

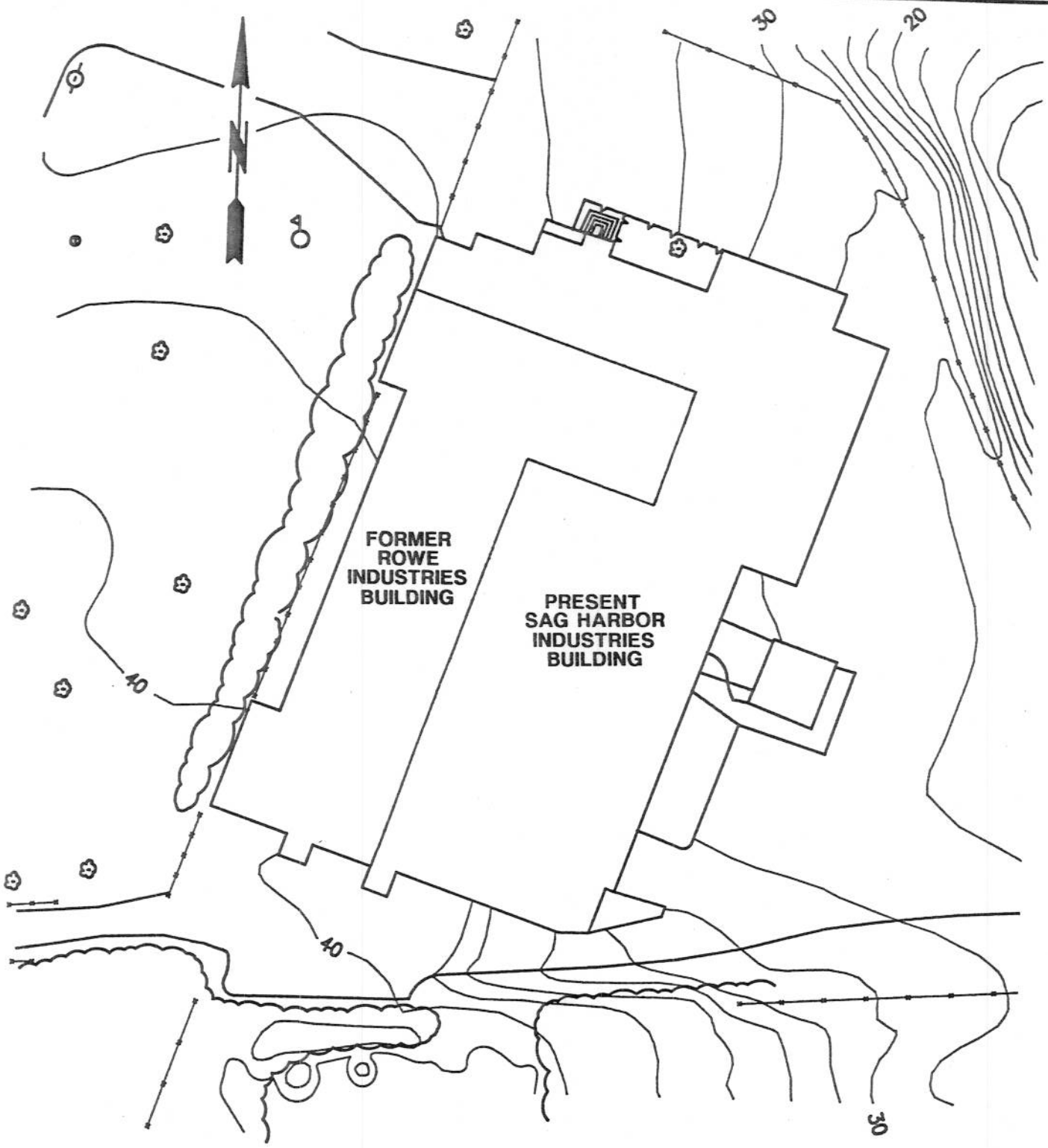
Summary of Results

Soil: The soil-vapor survey isolated three distinct areas of potential soil and/or groundwater contamination; the parking area immediately east of the building; the woods near the vicinity of Dry Well A; and the northwest side of the building next to the loading dock. The highest concentrations of TCE were observed near the pipes which lead to Dry Well A and in the area between the embankment and Dry Well A.

The soil boring program, however, did not provide evidence of soil contamination. The conclusion is made that the high soil gas readings were a result of groundwater vapors.

It is also proposed to investigate under the current building. (See Figure 27, Page 42).

Groundwater: If data from the SCDHS wells and the residential wells can be assumed accurate, the plume is well defined, with the exception of north of Ligonee Brook (See Figure 28, Page 43). However, given the fact that the construction methods and details of these wells are unknown, additional well installation may be necessary to define the groundwater plume and provide long-term monitoring points.



NABISCO BRANDS, INC.
SAG HARBOR, NEW YORK

PRESENT AND FORMER BUILDING LOCATIONS

DATE	REVISED

PREPARED BY:

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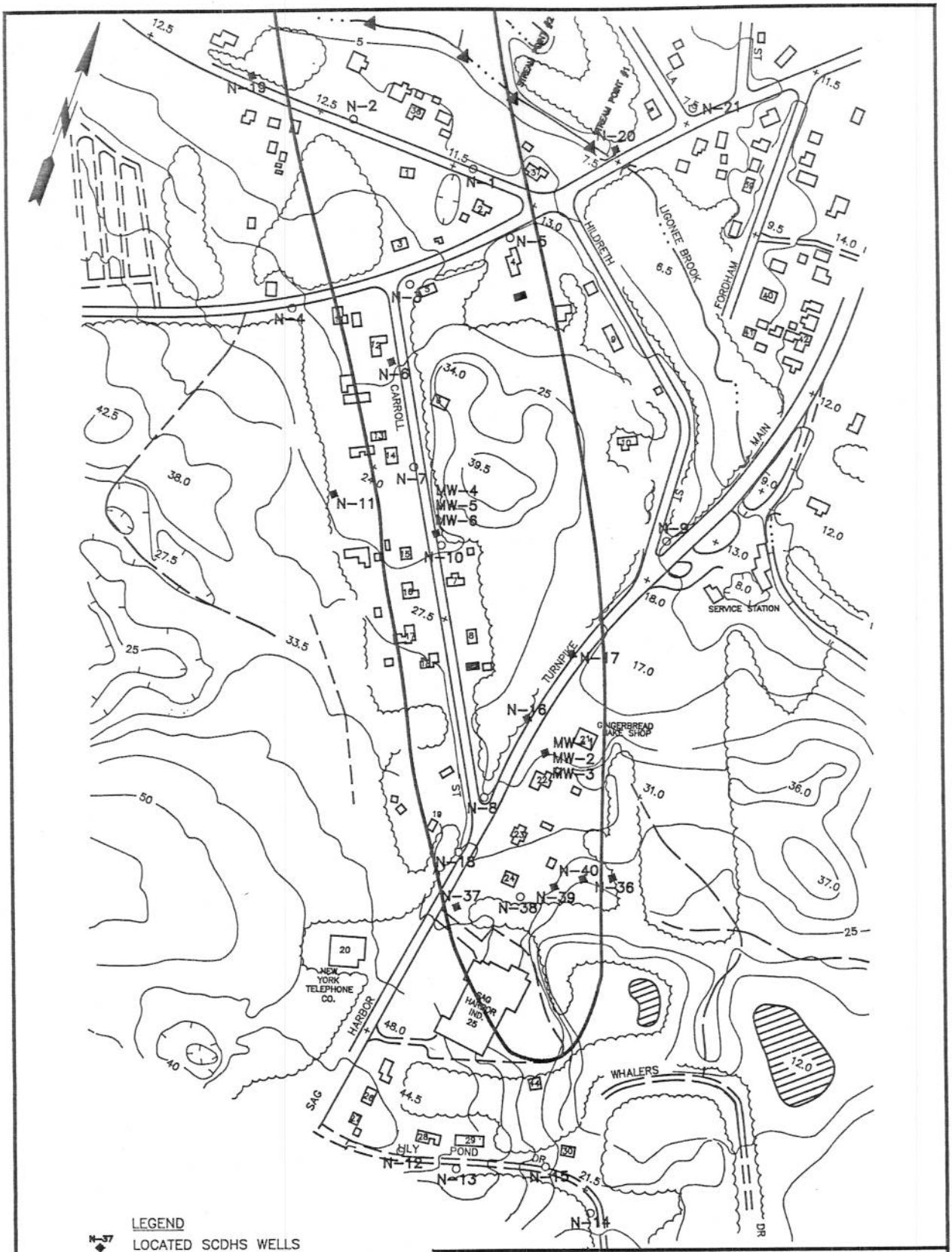
203-762-1207

DATE:

FIGURE 27



LEGEND

- LOCATED SCDHS WELLS
- UNLOCATED SCDHS WELLS
- PROPERTY OWNERS' WELLS
- STREAM POINT SAMPLING LOCATION
- PLUME BOUNDARY BASED ON 1 PPB OF ANY DETECTED PRIMARY PLUME CONSTITUENT

ELEVATIONS IN FEET, MSL

0 200
SCALE IN FEET

CONTOUR INTERVAL = 5 FEET

NABISCO BRANDS, INC.
ROWE INDUSTRIES SITE
SAG HARBOR, NEW YORK

CURRENT PLUME EXTENT OF STUDY AREA

DATE	REVISED	PREPARED BY:
		LECCHETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 28