

201 Willowbrook Boulevard  
P.O. Box 290  
Wayne, NJ 07470  
201 785-0700  
212 926-2878  
Telex 133-541

18 August 1984  
84C4048

Mr. James B. Marean  
New York State Electric and Gas Corp.  
87-89 Chenango Street  
Binghamton, New York 13902

Dear Mr. Marean:

This report presents the results of our additional investigation at the New York State Electric and Gas (NYSEG) Geneva Service Center. The work was performed on 6 June 1984 in accordance with our letter of proposal dated 4 June 1984. During the field investigation a WCC geologist observed, logged, measured organic vapor levels, and collected samples from 4 shallow auger borings. This investigation was initiated in order to determine if subsurface contamination was present at specific locations. Table I lists the reasons for choosing each location. Figure I shows the new boring locations (B-11 through B-14) in relation to the previous borings (B-1 through B-10). Results of the earlier investigation and background information can be found in the WCC letter report dated 18 May 1984.

TABLE I

<u>Boring Number</u>	<u>Consideration For Choosing Location</u>
B-11	Site of former sludge basin
B-12	Site of former pump station
B-13	Site of former clear water basin
B-14	Near proposed sanitary sewer excavation

RESULTS

The soil types encountered were similar to those found in the previous investigation. The typical soil consisted of a sandy gravel with some cobbles and trace silt. The cobbles were often fragments of bricks and other building



18 August 1984  
84C4048

Page 2

materials. Copies of the boring logs are contained in Appendix A. Soil samples were collected from borings B-11, B-12, and B-14 for laboratory analysis, as was a water sample from B-13. Appendix B contains the laboratory test results.

The laboratory data shows that significant amounts of compounds associated with coal tar were present in samples taken from all four borings. The total concentration of tested compounds ranged from approximately 10,000 ppm (1%) in soil sample B-14 to 7 ppm (0.0007%) in water sample B-13. These concentrations are not surprising because the boring locations were chosen based on the likelihood of encountering contaminants.

#### RECOMMENDATIONS

We (WCC) believe that construction of the new service garage would adversely affect future investigations or actions dealing with the coal tar compounds detected in this study. Three possible options would be to 1) cancel construction of the new service garage, 2) relocate the planned service garage, or 3) address the contaminated soil problem prior to construction. Options 2 and 3 would both require further work to define the extent of contamination. Comparison of the two rounds of Hnu surveys indicates that the problem is not confined solely to former structures which had contained coal tar. The option chosen will depend upon NYSEG priorities regarding the new service garage.

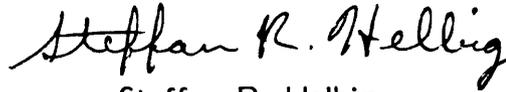
Our recommendations for construction of the new sanitary sewer are essentially unchanged from our original report dated 18 May 1984. The primary concerns are personnel exposure during construction and the potential for the backfilled trench to act as a pathway for contaminant migration.

18 August 1984  
84C4048

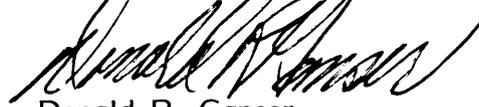
Page 3

If we can be of any further service or answer any questions please do not hesitate to call.

Very truly yours,



Steffan R. Helbig  
Assistant Project Geologist



Donald R. Ganser  
Associate

SRH/DRG:js

Encl.

D836/188



APPENDIX A

BORING LOGS

**WOODWARD-CLYDE CONSULTANTS**  
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING B-11

SHEET 1 OF 1

PROJECT AND LOCATION <b>NYSEG</b> 80'E, 10'N. of SW Corner <b>Geneva, N.Y.</b> of Parking Lot (Former Sludge Basin)		ELEVATION AND DATUM ~ 102.5 MSL		PROJECT NO. <b>84CA048</b>	
DRILLING AGENCY <b>NYSEG</b>		FOREMAN —		DATE STARTED <b>6 June 1981</b>	
DRILLING EQUIPMENT <b>Power Auger</b>		COMPLETION DEPTH <b>7.0 ft</b>		BORE DEPTH —	
SIZE AND TYPE OF BIT <b>1.5 ft. Dia. Auger</b>		SIZE AND TYPE SOLE BARREL <b>N/A</b>		NO. SAMPLES 1	
CASING <b>N/A</b>		CASING HAMMER WEIGHT —		DROPS —	
SAMPLER <b>N/A</b>		SAMPLER HAMMER WEIGHT —		DROPS —	
				BORE ANGLE AND DIRECTION <b>Vertical</b>	
				REPORTOR <b>S. Helbig</b>	

DESCRIPTION	DEPTH, FT	Organic Matter Analysis Readings	REMARKS
Blacktop			
Dark Brown Sandy GRAVEL Some Cobbles (Bricks), Occ. Steel Pipe Fragments. Sl. Moist. (Gw)	1	0.0	
	2		
	3		
	4		
	5		
Brown Sandy CLAY, Some Gravel, tr. silt, Moist. (CH)	6	0.2	Sample Taken @ ~6' (Soil)
	7	0.5	
	8		End of Boring 7.0'
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		

**WOODWARD-CLYDE CONSULTANTS**  
 CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING.....B-12.....

SHEET.....1.....OF.....1.....

PROJECT AND LOCATION <b>NYSEG Geneva, N.Y. 60' E. OF B-11</b>		ELEVATION AND DATUM <b>~103' MSL</b>		PROJECT NO. <b>84CA048</b>	
DRILLED AGENCY <b>NYSEG</b>		DATE STARTED <b>6 June 1984</b>		DATE FINISHED <b>6 June 1984</b>	
DRILLED EQUIPMENT <b>Power Auger</b>		COMPLETION DEPTH <b>8.0'</b>		RISK DEPTH <b>—</b>	
SIZE AND TYPE OF BIT <b>1.5 ft. Dia Auger</b>	SIZE AND TYPE CORE BARREL <b>N/A</b>	NO. SAMPLES <b>1</b>	SOFT <b>—</b>	HARD <b>—</b>	CORE <b>—</b>
CASING <b>N/A</b>	<b>N/A</b>	WATER LEVEL <b>5</b>	FEET <b>—</b>	DEPTH <b>—</b>	DI. IN. <b>—</b>
CASING HAMMER <b>—</b>	WEIGHT <b>—</b>	BORING ANGLE AND DIRECTION <b>Vertical</b>			
SAMPLER <b>N/A</b>	<b>—</b>	OPERATOR <b>S. Helbig</b>			
SAMPLER HAMMER <b>—</b>	WEIGHT <b>—</b>	DROP <b>—</b>			

DESCRIPTION	DEPTH, FT	Organic Analyses Readings	REMARKS
Blacktop	1		
Dark Brown Sandy GRAVEL Some Cabbles (Bricks) Sl. Moist (GW)	2	0.0	
	3		
	4	0.2	Caving to 4'
	5		▽
	6		
Dark Gray CLAY, Some Organics (Roots, stems) (CH) Moist.	7		Sample Taken From ~6'-8' (Soil)
	8		End Of Boring 8.0'
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		

PROJECT AND LOCATION <b>NYSEG</b> Geneva, N.Y. 52'E, 5'S OF B-12		ELEVATION AND DATUM ~103 MSL		PROJECT NO. <b>84CA048</b>	
DRILLING AGENCY <b>NYSEG</b>		FOREMAN -		DATE STARTED 6 June 1984	
DRILLING EQUIPMENT <b>Power Auger</b>		COMPLETION DEPTH 8.5'		ROCK DEPTH -	
SIZE AND TYPE OF BIT 1.5 ft. dia Auger		SIZE AND TYPE CORE BARREL N/A		NO. SAMPLES 1	
CASING N/A		CASING HAMMER - WEIGHT - DROP -		WATER LEVEL ~5'	
SAMPLER N/A		SAMPLER HAMMER - WEIGHT - DROP -		DIP -	
				DIP ANGLE AND DIRECTION Vertical	
				REPORTER S. Helbig	

DESCRIPTION	DEPTH, FT	Organic Matter Analysis Readings	REMARKS
Black top			
Brown Sandy COBBLES (Bricks) Some Gravel Dry (GW)	1		
	2	0.0	Caving To 2'
	3		
	4		
	5		∇
	6	0.6	Took Water Sample From Inside Auger.
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		

**WOODWARD-CLYDE CONSULTANTS**  
 CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING.....B-1A.....

SHEET 1 OF 1

PROJECT AND LOCATION <b>NYSEG S. N. of Manhole Geneva, N.Y. Cover Near Gas Meter Shop</b>		ELEVATION AND DATUM <b>- 102 MSL</b>	PROJECT NO. <b>84CA048</b>
DRILLING AGENCY <b>NYSEG</b>		DATE STARTED <b>6 June 1984</b>	DATE FINISHED <b>6 June 1984</b>
DRILLING EQUIPMENT <b>Power Auger</b>		COMPLETION DEPTH <b>7.0'</b>	BORE DEPTH <b>-</b>
SIZE AND TYPE OF BIT <b>N/A</b>	SIZE AND TYPE CORE BARREL <b>N/A</b>	NO. SAMPLES <b>1</b>	DEPTH <b>-</b>
CASING HAMMER <b>-</b>	WEIGHT <b>-</b>	DEPTH <b>1</b>	DEPTH <b>-</b>
BAMPLER <b>N/A</b>	WEIGHT <b>-</b>	DEPTH <b>~ 1'</b>	DEPTH <b>-</b>
BAMPLER HAMMER <b>-</b>	WEIGHT <b>-</b>	CORING ANGLE AND DIRECTION <b>Vertical</b>	
BAMPLER HAMMER <b>-</b>		REPORTER <b>S. Helbig</b>	

DESCRIPTION	DEPTH, FT	Organic Matter Analyses Readings	REMARKS
Brown Sandy GRAVEL (Fill)			
Dark Brown SAND, tr. Gravel, Silt, Sl. Moist (Cinders?) (SW)	1	0.0	
	2		
	3		Caving to 3'
	4	1.0	▽
Occ. Wood Fragments On Bit	5		Slight Odor (Creosote?) (Soil)
	6		
	7		End of Boring 7.0'
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	16		
	17		
	18		
	19		

APPENDIX B  
LABORATORY TEST RESULTS

# general testing corporation

water and wastewater testing specialists

710 Exchange Street  
Rochester, NY 14608  
(716) 454-3760

85 Trinity Place  
Hackensack, NJ 07601  
(201) 488-5242

## LABORATORY REPORT

Job No. 41756 Date 7/06/84

Client  
Mr. Steffan Helbig  
Woodward-Clyde Consultants  
201 Willowbrook Boulevard  
Wayne, NJ 07470

Sample(s) Reference  
Geneva Service Center  
N.Y.S. Electric & Gas

Date Samples (  ) received ( ) collected by General Testing 6/06/84

### ANALYTICAL RESULTS

(mg/l unless stated otherwise)

P.O. # \_\_\_\_\_

#### Sample Description

WOODWARD CLYDE - NYSEG

B-11

B-12

B-13

B-14

Date(s)

6/6/84

6/6/84

6/6/84

6/6/84

Time(s)

-

-

-

-

Aromatics (602 Series)

\*

\*

\*

\*

Phenolics (Total) (ug/g)

.205

37.5

.023

3.38

PNAH's (612 Series)

\*

\*

\*

\*

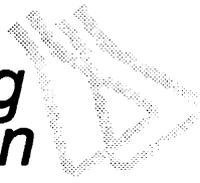
\* See attached sheets.

Analytical procedures in accordance with Standard Methods for the Examination of Water and Wastewater, 15th Edition and Methods for Chemical Analysis of Water and Wastes, EPA. (<) indicates lowest detectable concentration with procedure used. Data on quality control performed with above sample(s) is available upon request.

*Dr. Bemer*

Laboratory Director

# general testing corporation



water and wastewater testing specialists

710 Exchange Street  
Rochester, NY 14608  
(716) 454-3760

85 Trinity Place  
Hackensack, NJ 07601  
(201) 488-5242

## LABORATORY REPORT

Job No. 41756 Date 7/6/84

**Client**

Mr. Steffan Helbig  
Woodward-Clyde Consultants  
201 Willowbrook Boulevard  
Wayne, NJ 07470

**Sample(s) Reference**

**Priority Pollutant Data**  
**7 Purgeable Aromatics**  
Geneva Service Center

Date Samples (x) received ( ) collected by General Testing 6/6/84

### ANALYTICAL RESULTS, $\mu\text{g/l}$ (ppb)

P.O. # \_\_\_\_\_

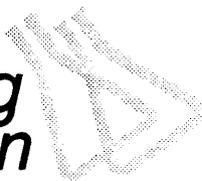
Sample Description	B-11	B-12	B-13	B-14
Analysis * by GC Method 602				
Date(s) Collected	6/6/84	6/6/84	6/6/84	6/6/84
Time(s) Collected	-	-	-	-
Date Analyzed	6/12/84	6/12/84	6/12/84	6/12/84
	( $\mu\text{g/kg}$ )	( $\mu\text{g/kg}$ )	( $\mu\text{g/l}$ )	( $\mu\text{g/kg}$ )
2-1 Benzene	10	180	5.4	7100
2-2 Toluene	4.8	55	1.9	11,900
2-3 Ethylbenzene	1.5	120	1.1	7000
2-4 Chlorobenzene	<10	<100	<10	<10,000
2-5 1,4-Dichlorobenzene	<10	<100	<10	<10,000
2-6 1,3-Dichlorobenzene	<10	<100	<10	<10,000
2-7 1,2-Dichlorobenzene	<10	<100	<10	<10,000
Additional Compounds eluting but not on 602 list				
2-8 p-Xylene *	5.2	170	2.8	13,100
2-9 m-Xylene *				
2-10 o-Xylene	1.6	110	1.6	7100
2-11 Styrene	1.9	36	<2	1700
2-12 n-Propylbenzene	<2	28	<2	400
* Elute together				

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\* EPA 40 CFR, Part 136, 12/79.

Laboratory Director

# general testing corporation



water and wastewater testing specialists

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Rochester, NY 14608  
(716) 454-3760

85 Trinity Place  
Hackensack, NJ 07601  
(201) 488-5242

## LABORATORY REPORT

Job No. 41756 Date 7/6/84

**Client**

Mr. Steffan Helbig  
Woodward-Clyde Consultants  
201 Willowbrook Boulevard  
Wayne, NJ 07470

**Sample(s) Reference**

**Priority Pollutant Data**  
Base/Neutral Compounds  
Polynuclear Aromatic Hydrocarbons  
Geneva Service Center

Date Samples (x) received ( ) collected by General Testing 6/6/84

### ANALYTICAL RESULTS, $\mu$ ug/l (ppb)

P.O. # \_\_\_\_\_

Sample Description	B-11	B-12	B-13	B-14
Analysis * by GC Method 610 (in order of elution)				
Date(s) Collected	6/6/84	6/6/84	6/6/84	6/6/84
Time(s) Collected	-	-	-	-
Date Extracted	6/25/84	6/25/84	6/25/84	6/25/84
Date Analyzed	6/30/84	6/30/84	6/30/84	6/30/84
0-1 Naphthalene	8200	20,000	300	1,250,000
10-2 Acenaphthylene	17,000	21,000	210	510,000
10-3 Acenaphthene	13,000	22,000	470	90,000
0-4 Fluorene	22,000	38,000	1300	1,300,000
0-5 Phenanthrene *				
10-6 Anthracene * >	18,000	280,000	750	2,790,000
0-7 Fluoranthene	21,000	420,000	740	1,110,000
0-8 Pyrene	17,000	370,000	600	2,260,000
10-9 Benzo (a) anthracene	16,000	140,000	510	320,000
10-10 Chrysene	14,000	130,000	440	240,000
0-11 Benzo (b) fluoranthene *				
10-12 Benzo (k) fluoranthene * >	18,000	34,000	760	260,000
10-13 Benzo (a) pyrene	11,000	30,000	380	170,000
0-14 Dibenzo (a,h) anthracene * >				
0-15 Indeno (1,2,3-cd) pyrene * >				
10-16 Benzo (g,h,i) perylene	<5000	12,000	140	78,000
* Elute together.				

Analytical procedures in accordance with Standard Methods for the Examination of Water and Wastewater, 15th Edition and Methods for Chemical Analysis of Water and Wastes, EPA. (<) indicates lowest detectable concentration with procedure used. Data on quality control performed with above sample(s) is available upon request.

\* EPA 40 CFR, Part 136, 12/79.

*DL Berner*  
Laboratory Director