DRAFT FINAL

REMEDIAL INVESTIGATION

OF THE

GORICK C & D LANDFILL

KIRKWOOD (T), BROOME (C), NEW YORK

NYSDEC SITE NO. 7-04-019
WORK ASSIGNMENT NO. D002340-5

Prepared for:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road, Albany, New York

Thomas C. Jorling, Commissioner

DIVISION OF HAZARDOUS WASTE REMEDIATION

Michael J. O'Toole, Jr., P.E. - Director

URS Consultants, Inc.
282 Delaware Avenue
Buffalo, New York 14202

APPENDICES I-R

OCTOBER 1991

1258

APPENDICES

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rw/dm/jlk

35232.00

RI-TOC.APP

APPENDIX I

GEOTECHNICAL TESTING REPORT

APPENDIX I

GEOTECHNICAL TESTING REPORT

Geotechnical samples were collected from the split spoon samples of selected boreholes and from one test trench location. These were taken from various depths to characterize the different strata underlying the site.

Table 3-3 from the main body of the report (reproduced here) lists the stratum from which each sample was collected.

SUMMARY OF GRAIN SIZE ANALYSES

ID # & Depth	Total % Gravel (1)	Total % Sand	% Fines Silt	% Fines Clay	Total % Fines	USCS Class*	Material Description
MW-1S 36-38'	22.7	28.9	32.4	16.0	48.4	SC-SM	Silty sand, some gravel (till)
MW-1S 54-56'	33.9	38.2	17.0	10.9	27.9	SC	Gravelly sand, some silt (till)
MW-2S 6-8'	1.1	87.4	7.8	3.7	11.5	SW-SM	Sand
MW-3S 2-4'	0.0	5.0	71.9	23.1	95.0	CL	Clayey silt (flood plain deposit)
MW-4I 34-36'	51.8	38.0	6.9	3.3	10.2	GW-GM	Sand and Gravel
MW-5D 60-62'	45.3	31.9	20.2	2.6	22.8	GM	Sand and Gravel
MW-5D 68-70'	16.2	22.4	52.7	8.7	61.4	ML	Sandy silt, some gravel (till)
MW-6I 12-14'	53.8	37.8	6.5	1.9	8.4	GW-GM	Sand and Gravel
MW-6I 22-24'	0.0	89.1	7.4	3.5	10.9	SP-SM	Sand
MW-7S 18-20'	79.5	17.6	1.7	1.2	2.9	GP	Sand and Gravel
MW-7S 30-32'	48.9	35.9	11.6	3.6	15.2	GM	Sand and Gravel

SUMMARY OF GRAIN SIZE ANALYSES

ID # & Depth	Total % Gravel (1)	Total % Sand	% Fines Silt	% Fines Clay	Total % Fines	USCS Class*	Material Description
MW-8S 26-28'	59.5	32.8	5.4	2.3	7.7	GW-GM	Sand and Gravel
MW-10S 18-20'	26.6	60.8	9.4	3.2	12.6	SM	Sand
MW-10S 28-30'	16.5	32.0	41.6	9.9	51.5	ML	Sandy silt, some gravel (till)
MW-11 8-10'	45.2	23.6	24.8	6.4	31.2	GM	Sandy and silty gravel (till)
MW-12D 42-44'	20.3	38.0	29.4	12.3	41.7	SM	Silty sand, some gravel and clay (till)
MW-12D 45-46'	18.5	36.6	29.6	15.3	44.9	SM	Silty sand, some gravel and clay (till)
P-13 23-25'	3.8	27.8	55.9	12.5	68.4	ML	Silt, some sand, little clay, trace gravel (till)
Test Pit #2 28" Depth	8.7	16.4	48.8	26.1	74.9	ML	Silt, some clay and sand, trace gravel (till)

(1) Up to a maximum of 3".

* All non-plastic fines are assumed ML for classification purposes.

RI-TAB.3-3/35232A

EMPIRE
SOILS INVESTIGATIONS INC

GEOTECHNICAL TESTING REPORT

GORICK C & D LANDFILL RI/FS

KIRKWOOD, NEW YORK

For:

URS Consultants, inc.
Buffalo, New York

JOB NO. G008.006
JANUARY 1991

EMPIRE
SOILS INVESTIGATIONS INC.

January 23, 1991

Mr. James Lanzo, PE
URS Consultants, Inc.
570 Delaware Avenue
Buffalo, New York 14202-1207

Reference: Geotechnical Testing, Contaminated Soil Samples
Gorick C & D Landfill RI/FS
Kirkwood, New York

Dear Mr. Lanzo:

Transmitted herewith are two (2) copies of the Geotechnical Testing Reports for testing performed on contaminated soil samples from Gorick C & D Landfill site in Kirkwood, New York. The study was performed under the terms of our Subcontract Agreement dated August 31, 1990.

A total of fifteen (15) jar samples were tested for grain size distribution (ASTM Designation D 422) water content (ASTM Designation D 2216) and Atterberg Limits (ASTM Designation D 4318).

Atterberg Limits test could be completed only on Lab No. 599.001, 599.002, and 599.004 (URS-1, 36'-38'; URS-1, 54'-56'; and URS-3, 2'-4'). Due to scarcity of -#40 sieve fraction the liquid limit test on Lab No. 599.002 had to be performed as a one-point test in accordance with Method D of ASTM D4318. The remainder of the samples classified as non-plastic; either the material slipped in the liquid limit cup, or the material could not be rolled into a string 3mm thick before crumbling as required for the plastic limit determination.

Individual test reports for grain size distribution, with the water content determination noted under Remarks, are presented in Appendix A. The results of the Atterberg Limits test are contained in Appendix B.

Should you have any questions, or in case we may be of further service, do not hesitate to contact the undersigned.

Respectfully submitted,

EMPIRE SOILS INVESTIGATIONS, INC.

Jorgen F. Christiansen

Jorgen F. Christiansen, P.E.
Director, Geotechnical Testing

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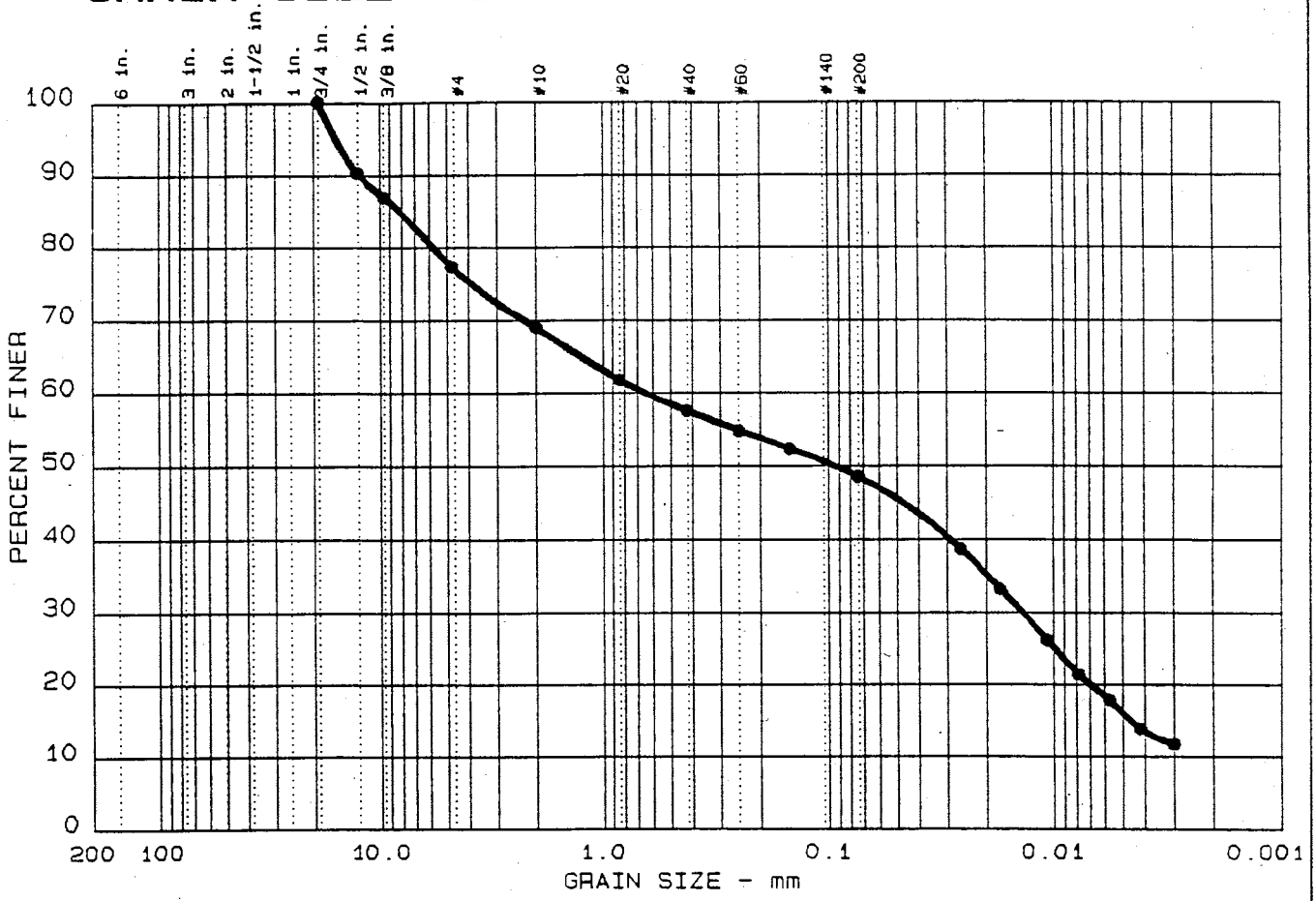
APPENDIX A

GRAIN SIZE DISTRIBUTION

WATER CONTENT

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	22.7	28.9	32.4	16.0

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	24.7	6.4	8.13	0.65	0.09	0.014	0.0046			

MATERIAL DESCRIPTION	USCS	AASHTO
● TAN SILT, Some Sand & Gravel, little clay	SC-SM	

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N. Y.
● Location: URS - 1 / S-19 / 36'-38'

Date: JANUARY 2, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Remarks:

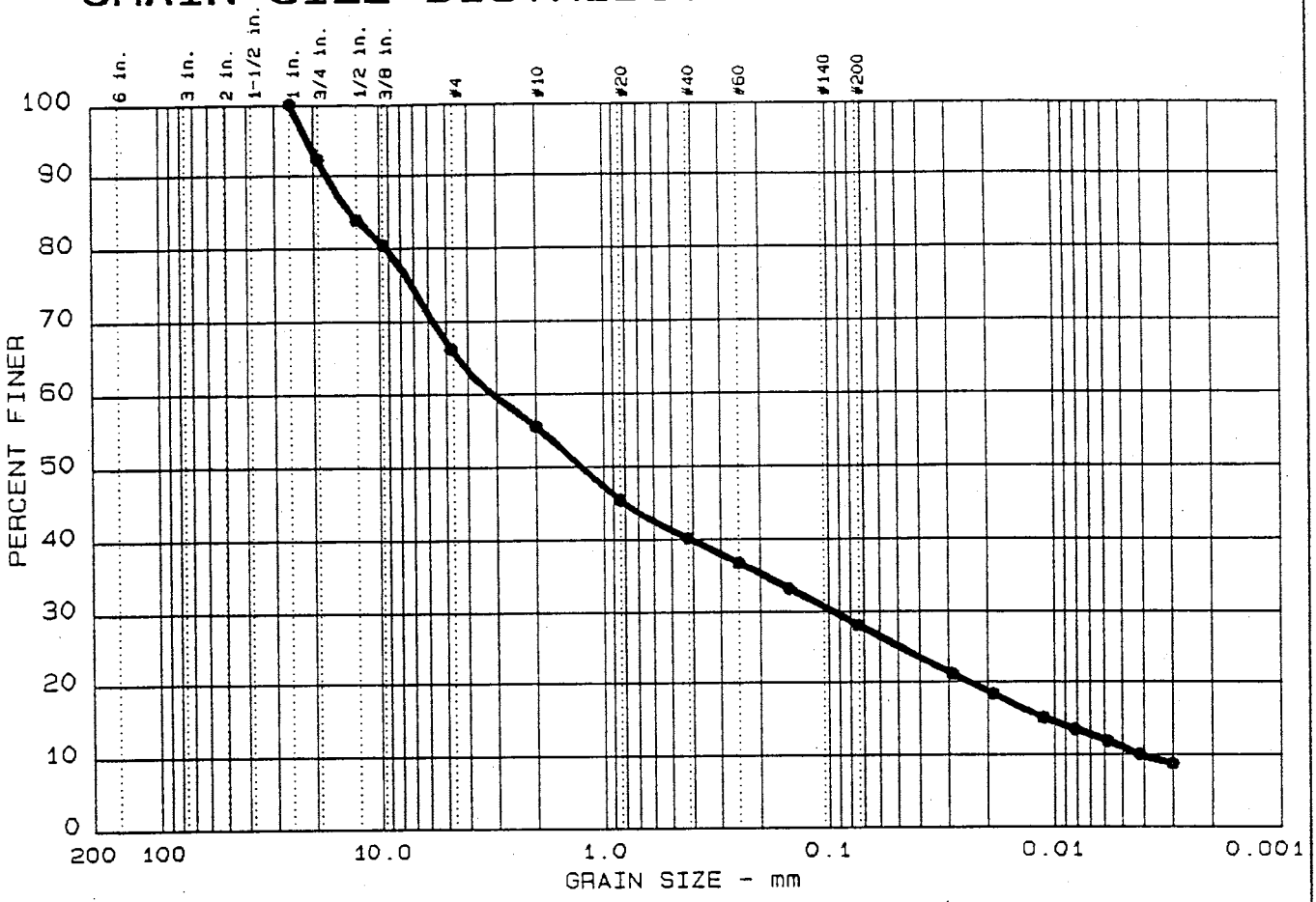
CLIENT: URS

WATER CONTENT: 10.3%

LAB NO. 599.001

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	33.9	38.2	17.0	10.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	24.4	7.5	13.65	3.09	1.26	0.098	0.0111	0.0042	0.74	741.3

MATERIAL DESCRIPTION	USCS	AASHTO
● TAN SAND, Some Gravel, little silt & clay	SC	

Project No.: G008.006
Project: GORRICK C&D LANDFILL, KIRKWOOD, N.Y.
● Location: URS-1 / S-28 / 54'- 56'

Date: JANUARY 2, 1991

Remarks:
CLIENT: URS
WATER CONTENT: 9.3%

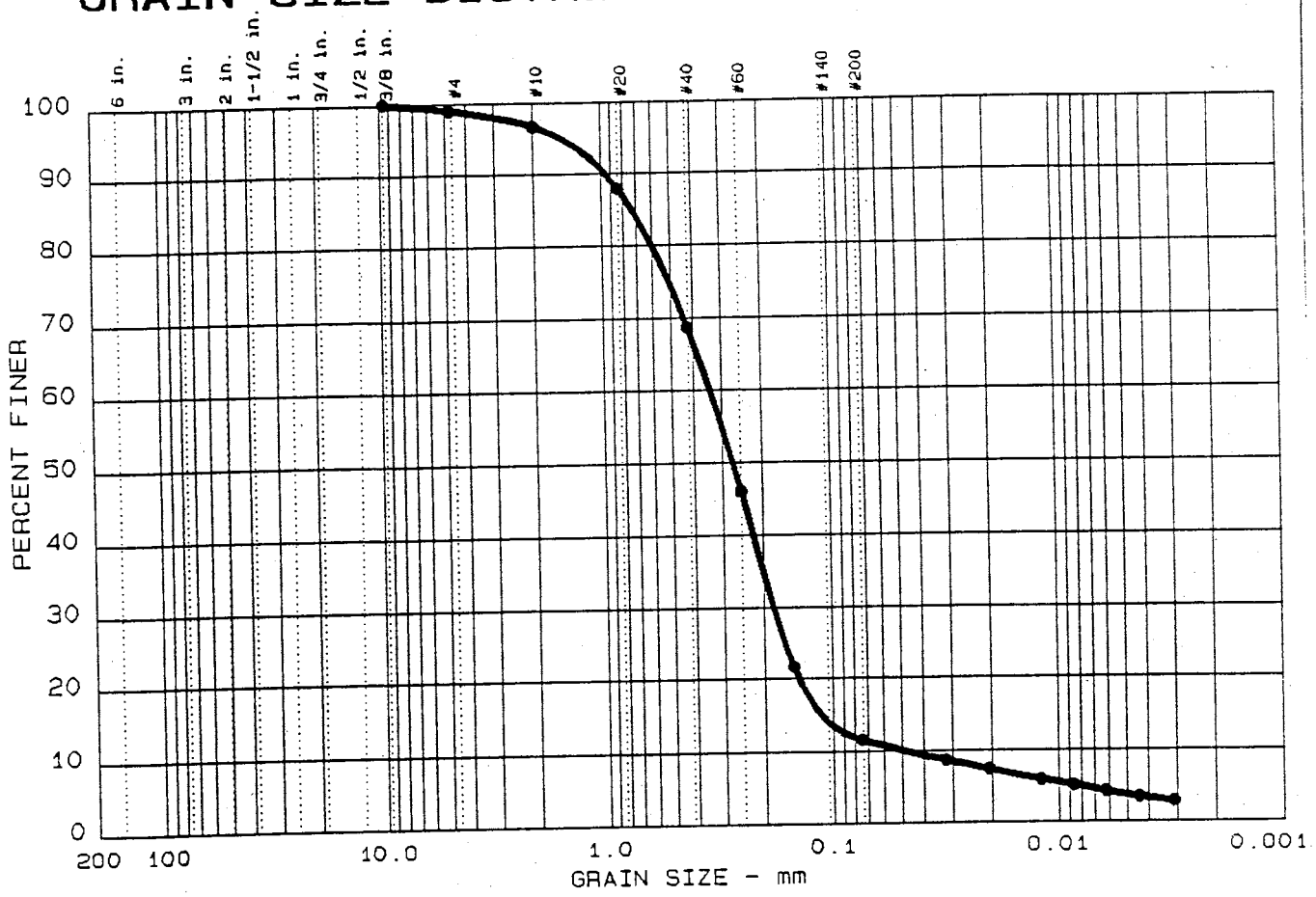
LAB NO. 599.002

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	3	0.0	1.1	87.4	7.8	3.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.72	0.34	0.27	0.182	0.1125	0.0491	2.00	6.9

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN SAND, trace silt & clay & gravel		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y.
● Location: URS-2 / S-4 / 6'- 8'

Date: JANUARY 2, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

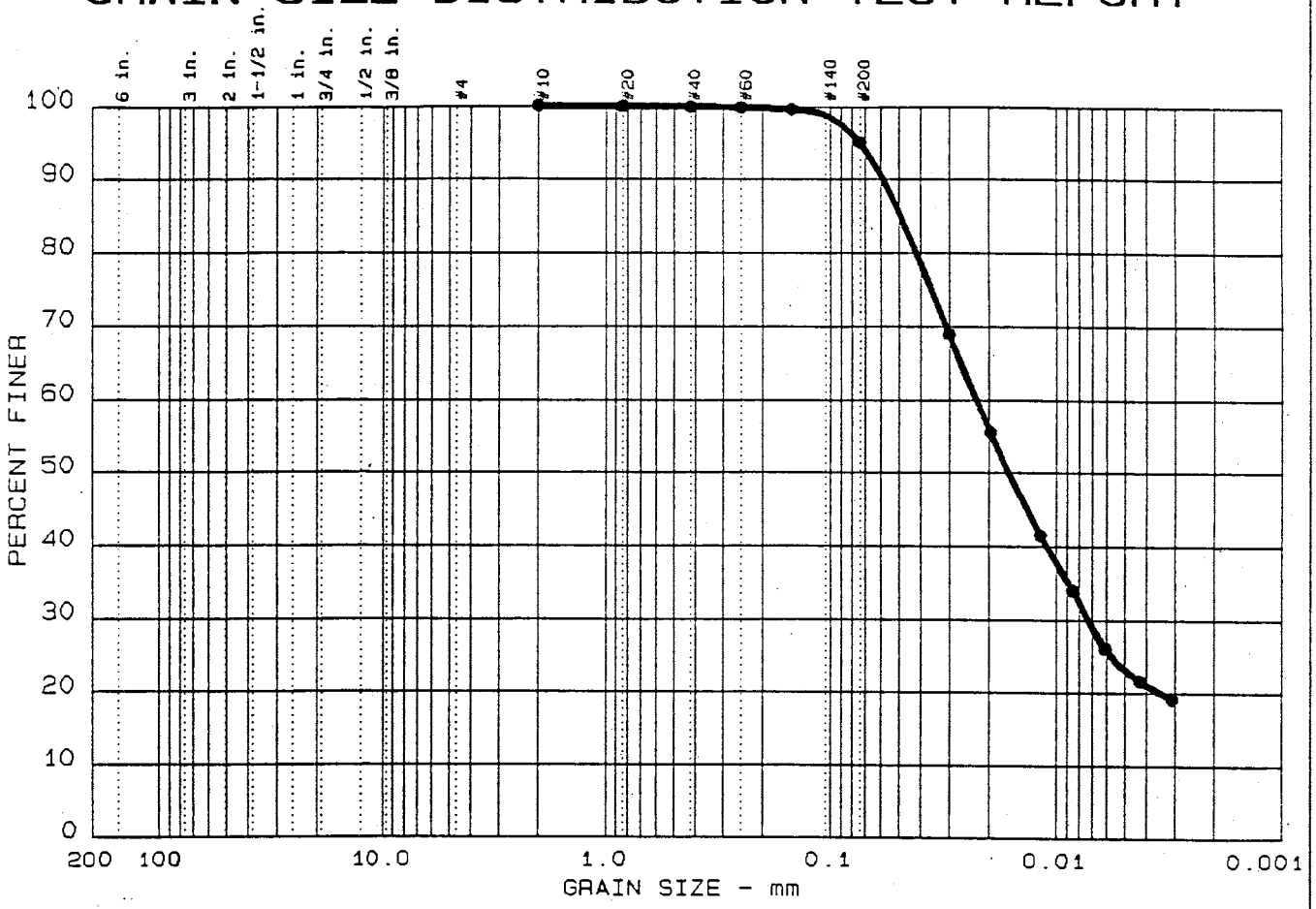
EMPIRE SOILS INVESTIGATIONS, INC

Remarks:
CLIENT: URS
WATER CONTENT: 22.2%

LAB NO. 599.003

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.0	5.0	71.9	23.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	32.7	9.5			0.02	0.007				

MATERIAL DESCRIPTION	USCS	AASHTO
● LT. BROWN SILT, Some Clay, trace sand	CL	

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y.
◆ Location: URS - 3 / S-2 / 2'-4'

Date: JANUARY 2, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Remarks:

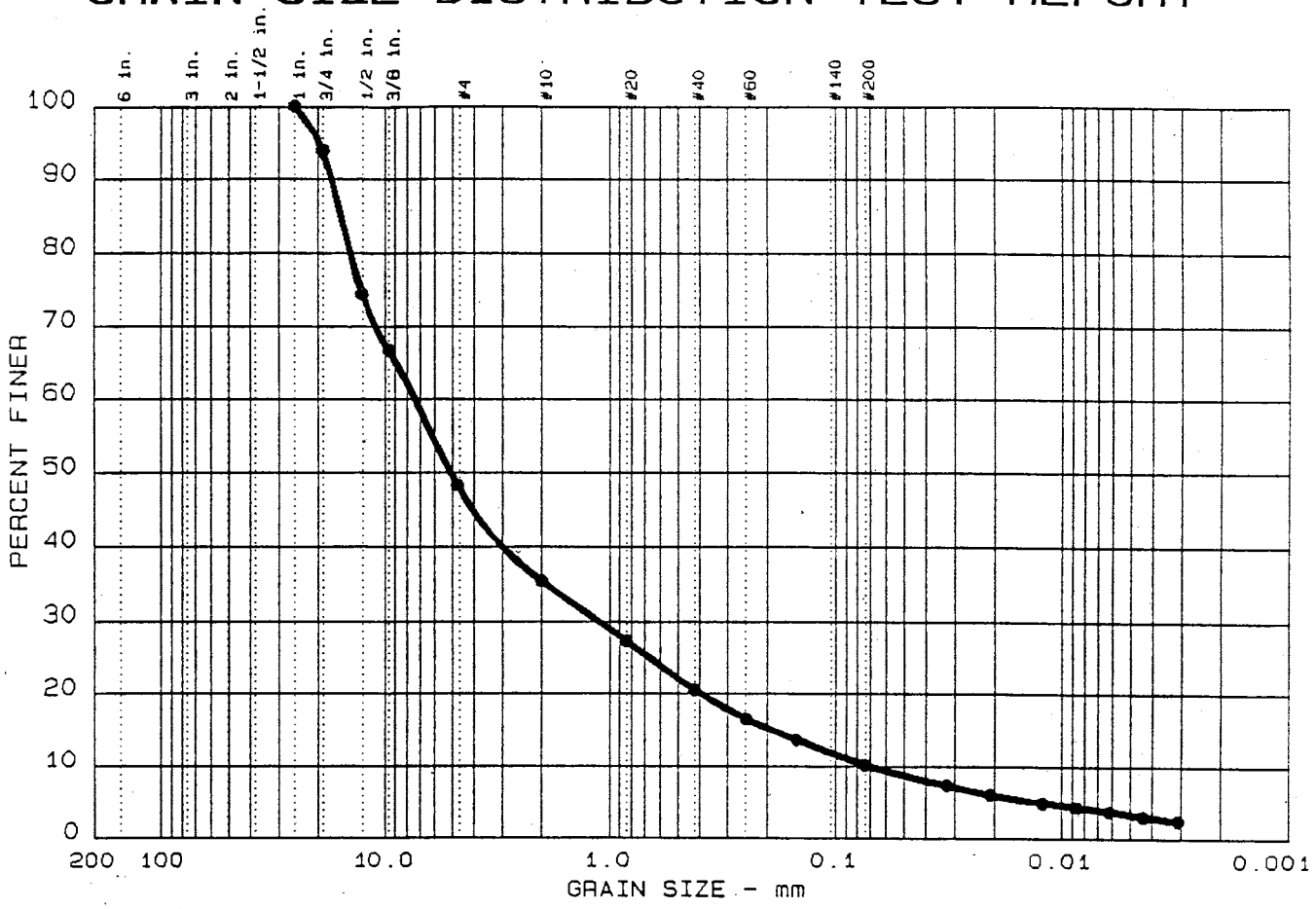
CLIENT: URS

WATER CONTENT: 24.2%

LAB NO. 599.004

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	51.8	38.0	6.9	3.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	15.76	7.36	5.09	1.114	0.1914	0.0711	2.37	103.5

MATERIAL DESCRIPTION	USCS	AASHTO
● LT. BROWN GRAVEL, Some Sand, trace silt & clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y.
● Location: URS - 4 / S-18 / 34'-36'

Date: JANUARY 2, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Remarks:

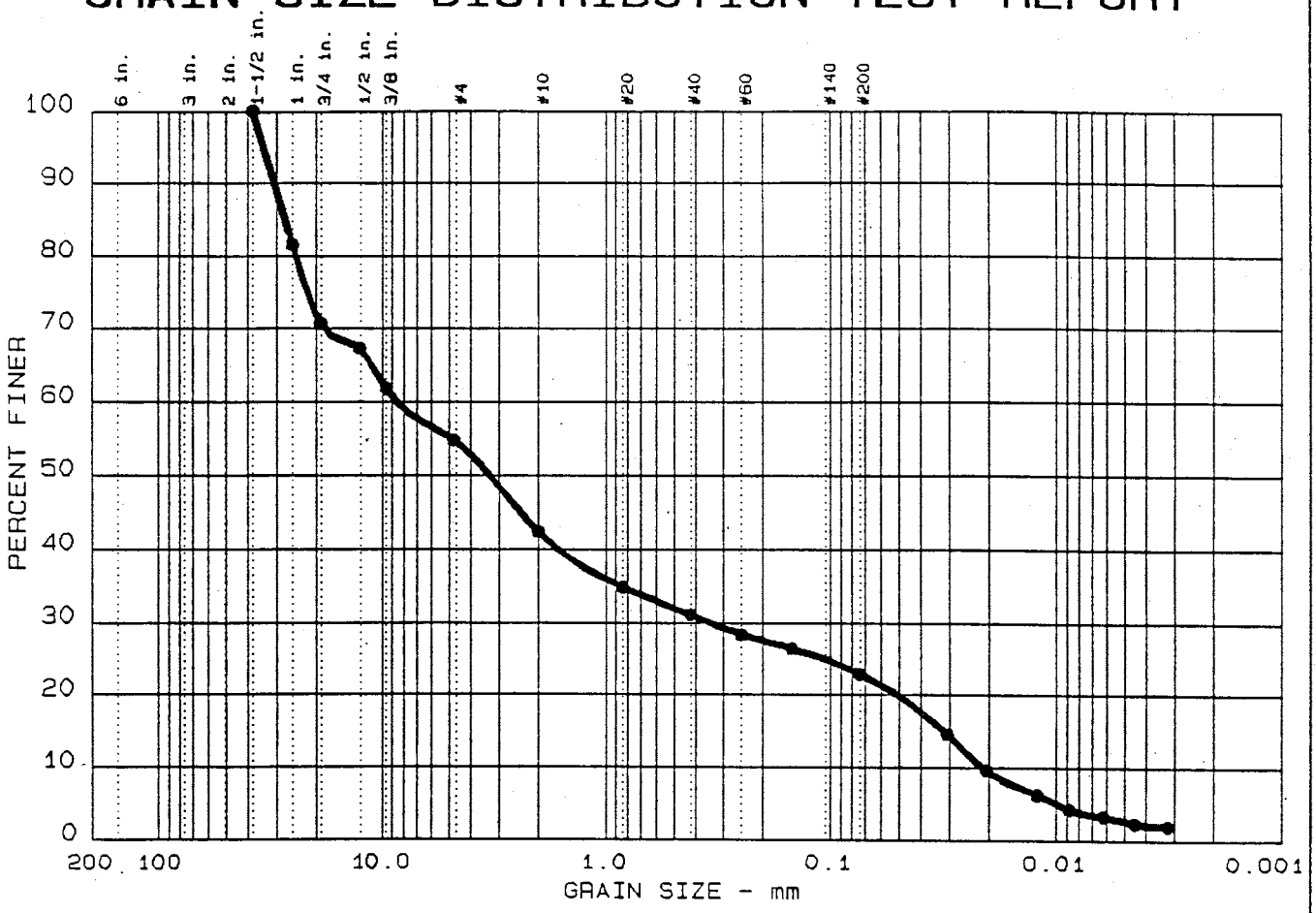
CLIENT: URS

WATER CONTENT: 10.9%

LAB NO. 599.005

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	6	0.0	45.3	31.9	20.2	2.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	27.38	8.56	3.29	0.349	0.0318	0.0213	0.67	402.7

MATERIAL DESCRIPTION	USCS	AASHTO
● TAN GRAVEL, Some Sand, little silt, trace clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N. Y.
● Location: URS - 5 / S-30 / 60'-62'

Date: JANUARY 2, 1991

Remarks:
CLIENT: URS
WATER CONTENT: 8.4%

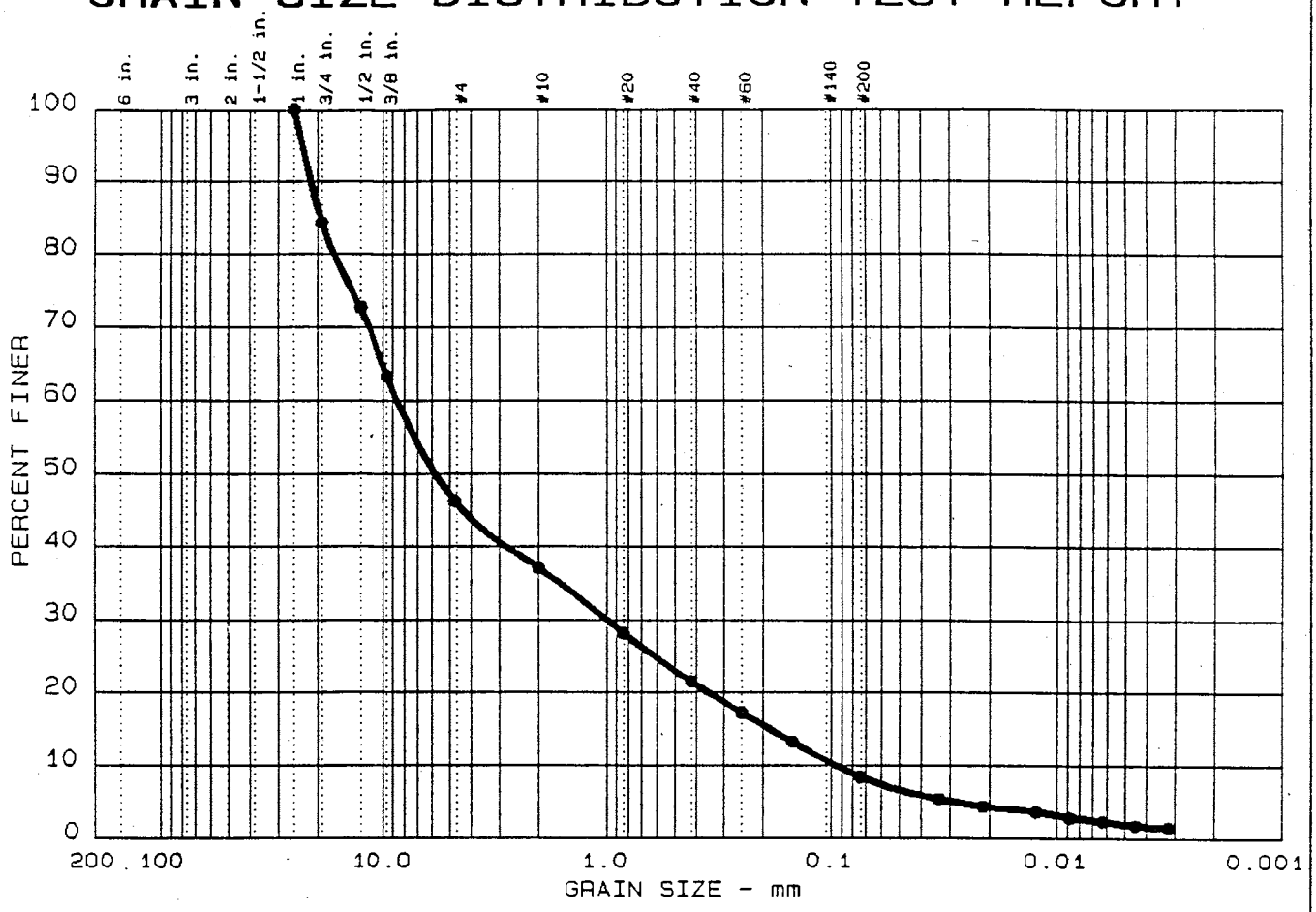
LAB NO. 599.006

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	8	0.0	53.8	37.8	6.5	1.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	19.28	8.59	5.81	0.998	0.1879	0.0964	1.20	89.1

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN GRAVEL AND SAND, trace silt & clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y.
● Location: URS - 6 / S-7 / 12'- 14'

Date: JANUARY 2, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Remarks:

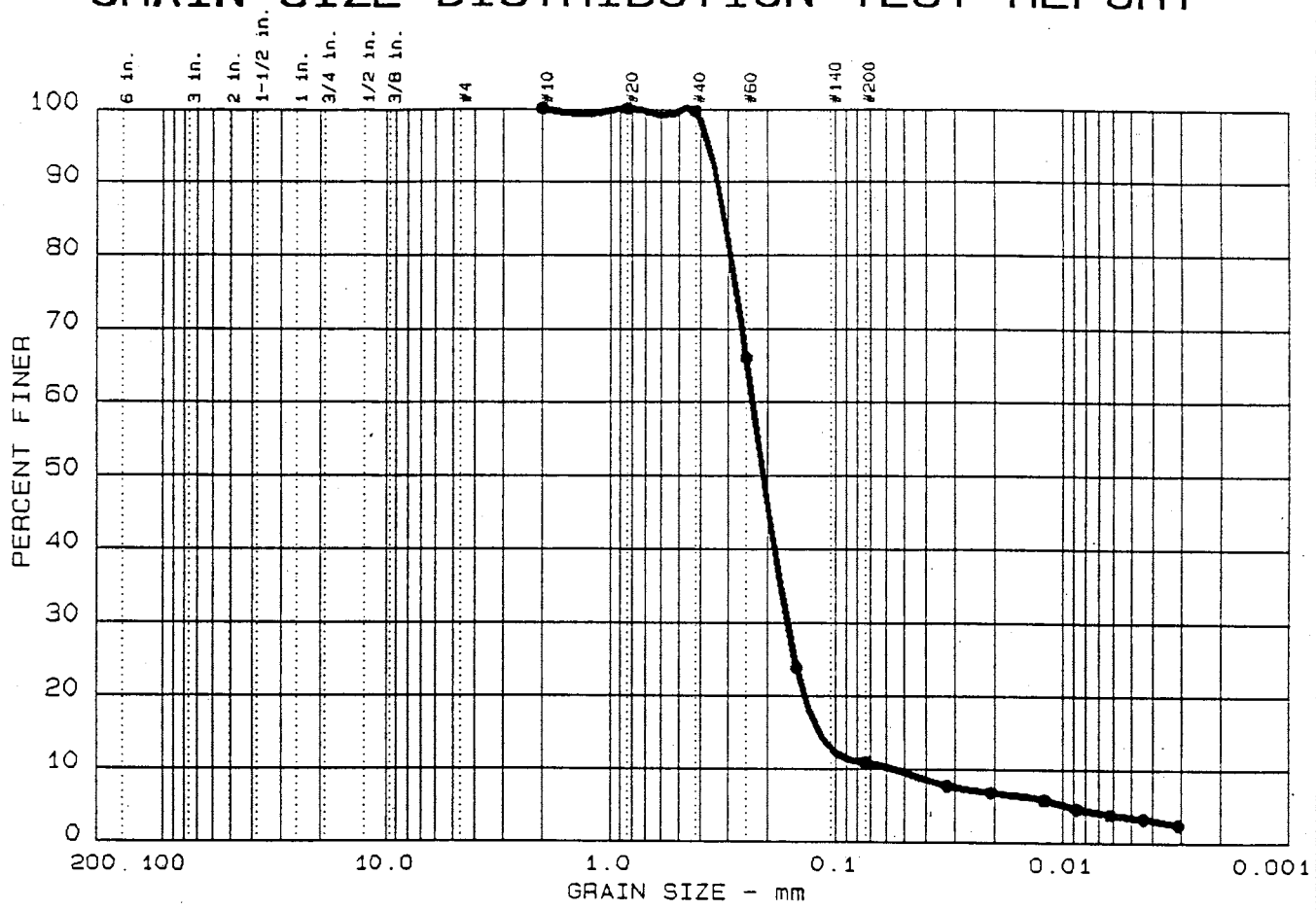
CLIENT: URS

WATER CONTENT: 15.0%

LAB NO. 599.008

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	9	0.0	0.0	89.1	7.4	3.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.31	0.23	0.21	0.164	0.1186	0.0561	2.06	4.2

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN SAND, trace silt & clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y.
● Location: URS-6 / S-12 / 22'- 24'

Date: JANUARY 2, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Remarks:

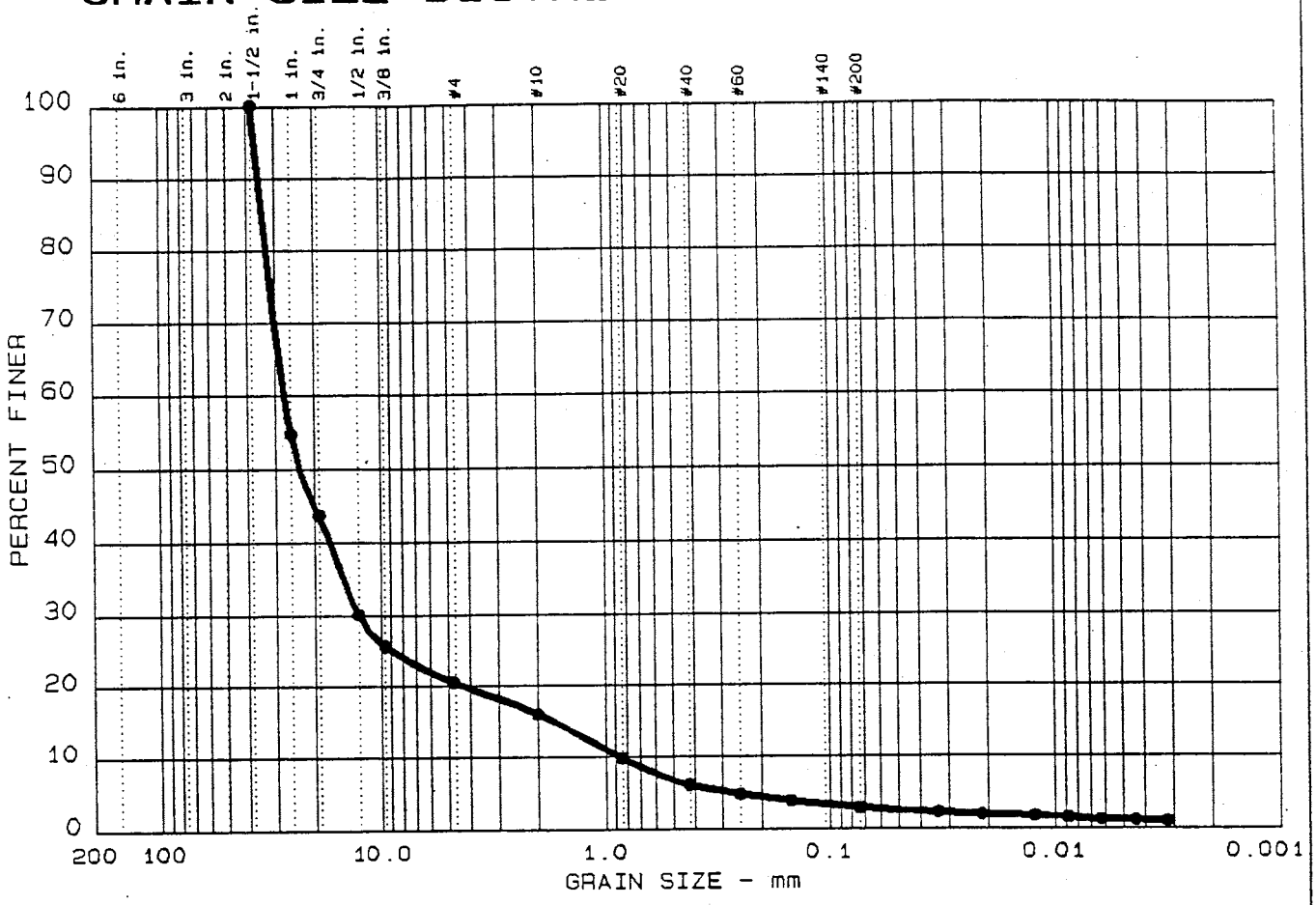
CLIENT: URS

WATER CONTENT: 25.4%

LAB NO. 599.009

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	79.5	17.6	1.7	1.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	34.00	27.20	23.28	12.647	1.7258	0.8650	6.80	31.4

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN GRAVEL, Little Sand, trace silt & clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y.
● Location: URS-7 / S-10 / 18'- 20'

Date: JANUARY 2, 1991

Remarks:
CLIENT: URS
WATER CONTENT: 9.4%

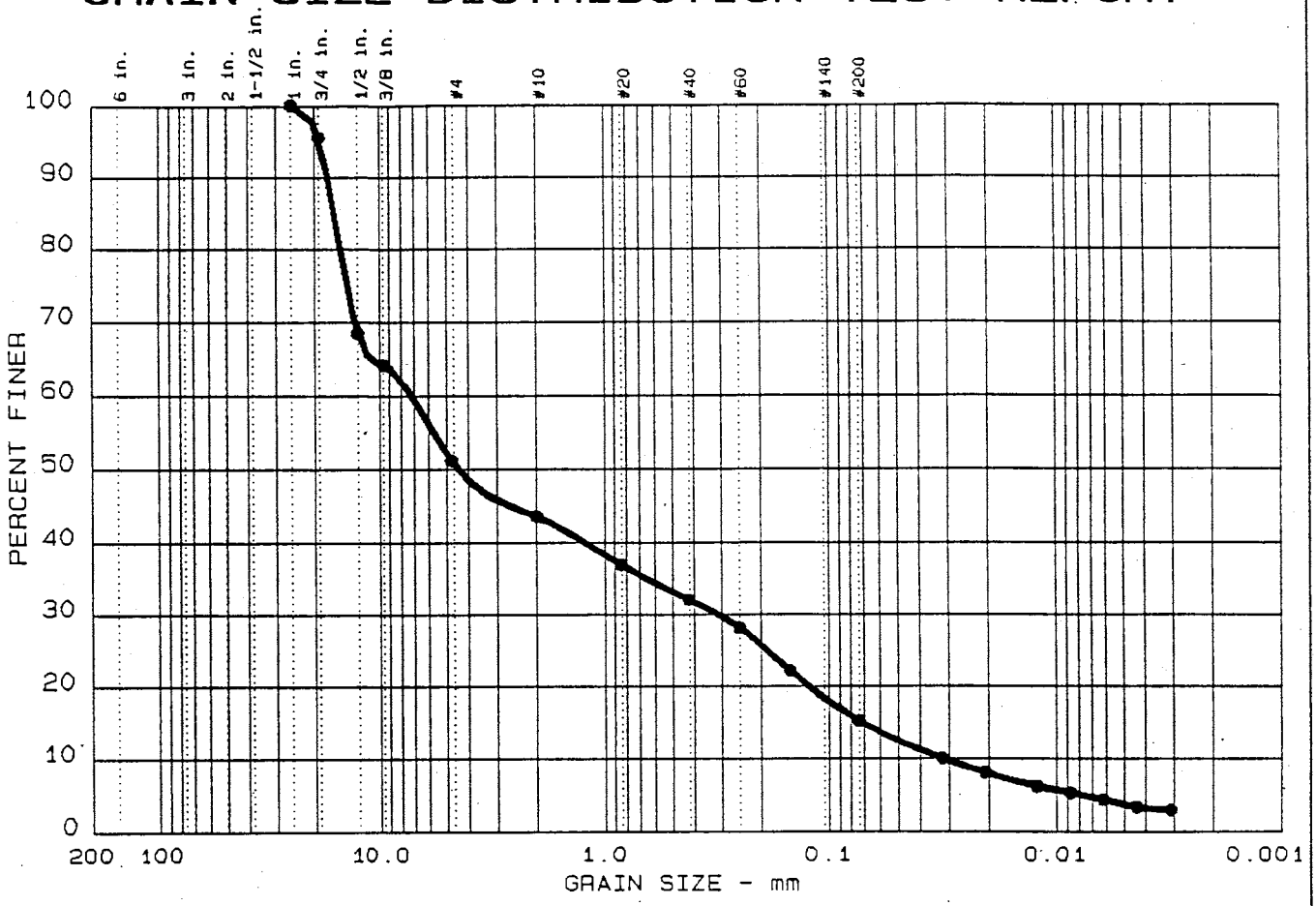
LAB NO. 599.010

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	48.9	35.9	11.6	3.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	16.18	7.14	4.46	0.316	0.0723	0.0319	0.44	223.9

MATERIAL DESCRIPTION	USCS	AASHTO
● GREY GRAVEL & SAND, Little Silt, trace clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y.
● Location: URS-7 / S-16 / 30'- 32'

Date: JANUARY 2, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

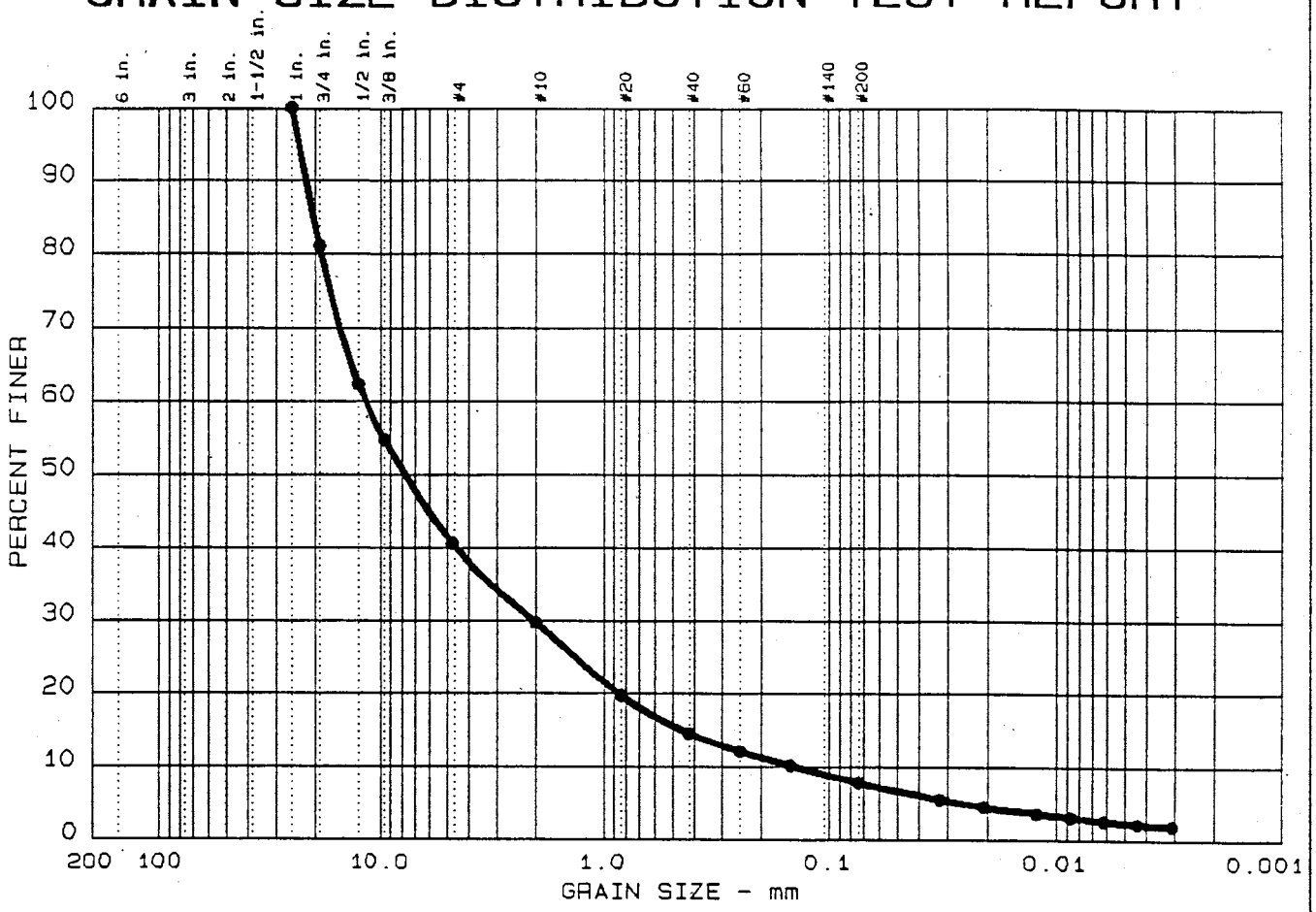
EMPIRE SOILS INVESTIGATIONS, INC

Remarks:
CLIENT: URS
WATER CONTENT: 10.9%

LAB NO. 599.011

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	12	0.0	59.5	32.8	5.4	2.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	20.30	11.79	7.70	2.049	0.4587	0.1434	2.48	82.2

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN GRAVEL, Some Sand, trace silt & clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y.
● Location: URS-8 / S-14 / 26'- 28'

Date: JANUARY 2, 1991

Remarks:
CLIENT: URS
WATER CONTENT: 10.5%

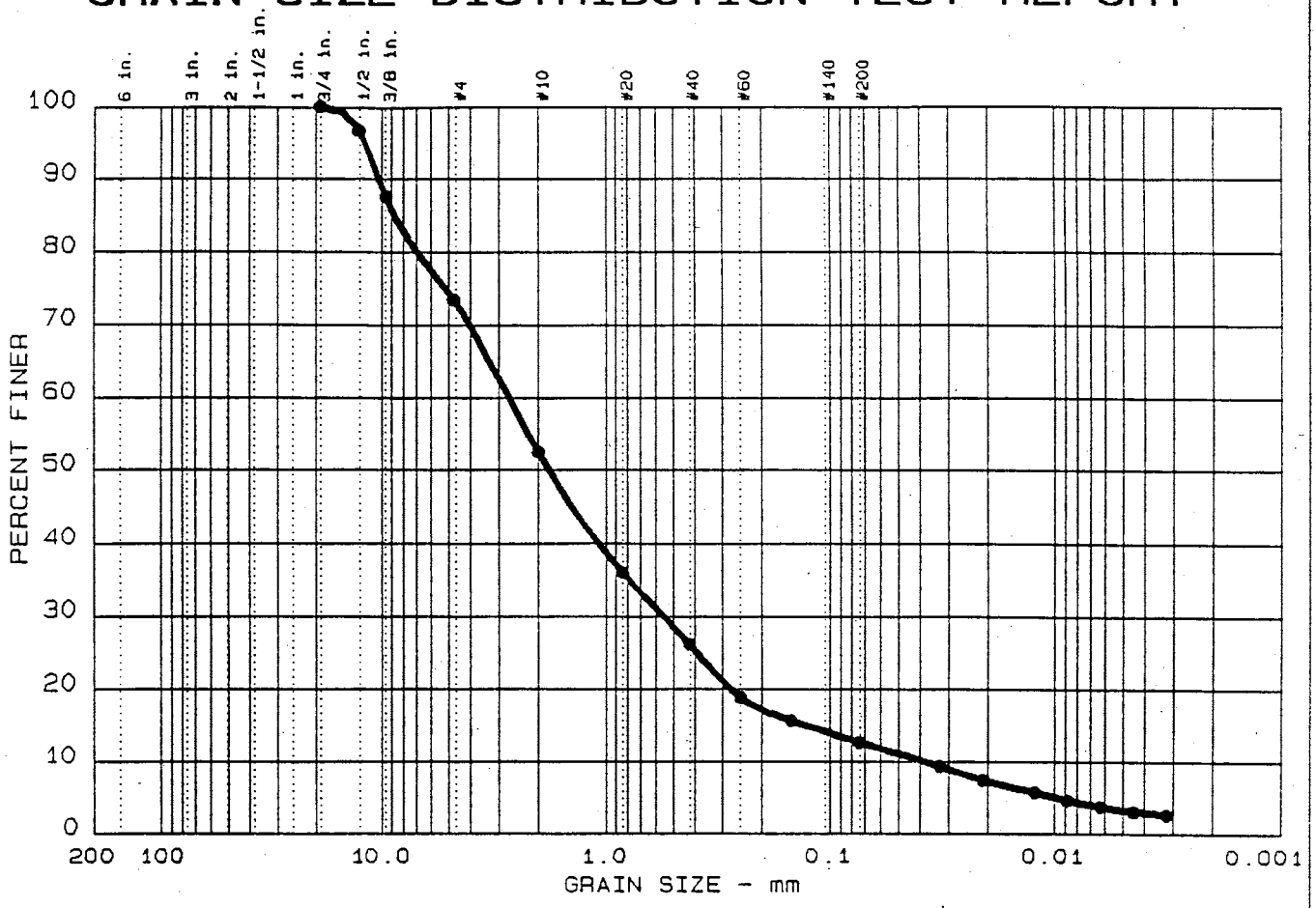
LAB NO. 599.012

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	13	0.0	26.6	60.8	9.4	3.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	8.69	2.70	1.81	0.551	0.1263	0.0369	3.05	73.4

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN SAND, Some Gravel, trace silt & clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y
● Location: URS-10 / S-10 / 18'- 20'

Date: JANUARY 2, 1991

Remarks:
CLIENT: URS
WATER CONTENT: 10.4%

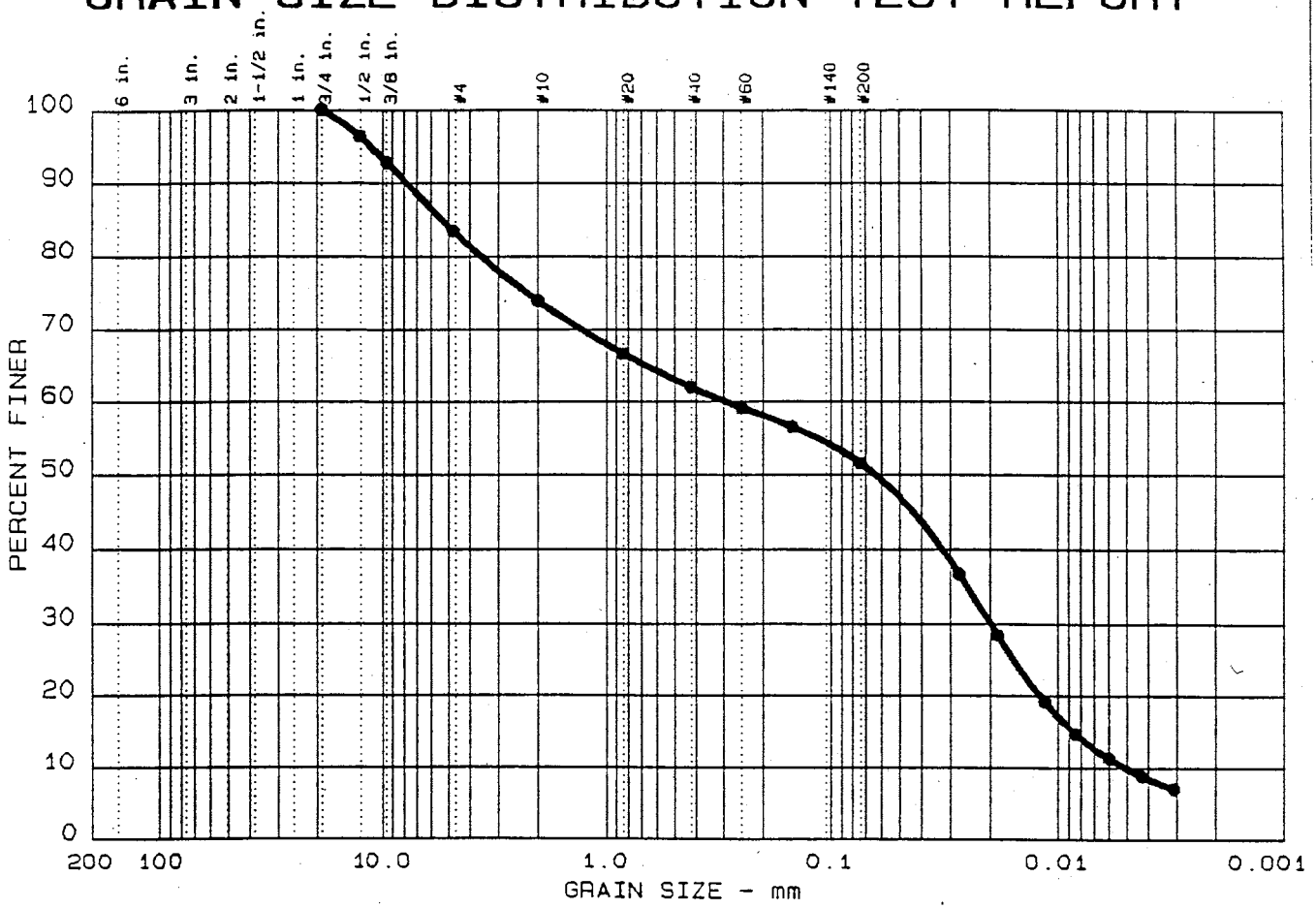
LAB NO. 599.013

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	14	0.0	16.5	32.0	41.6	9.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	5.31	0.30	0.06	0.020	0.0085	0.0051	0.27	58.2

	MATERIAL DESCRIPTION	USCS	AASHTO
●	TAN SILT, Some Sand, little gravel, trace clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y
● Location: URS-10 / S-15 / 28'- 30'

Date: JANUARY 2, 1991

Remarks:
CLIENT: URS
WATER CONTENT: 13.3%

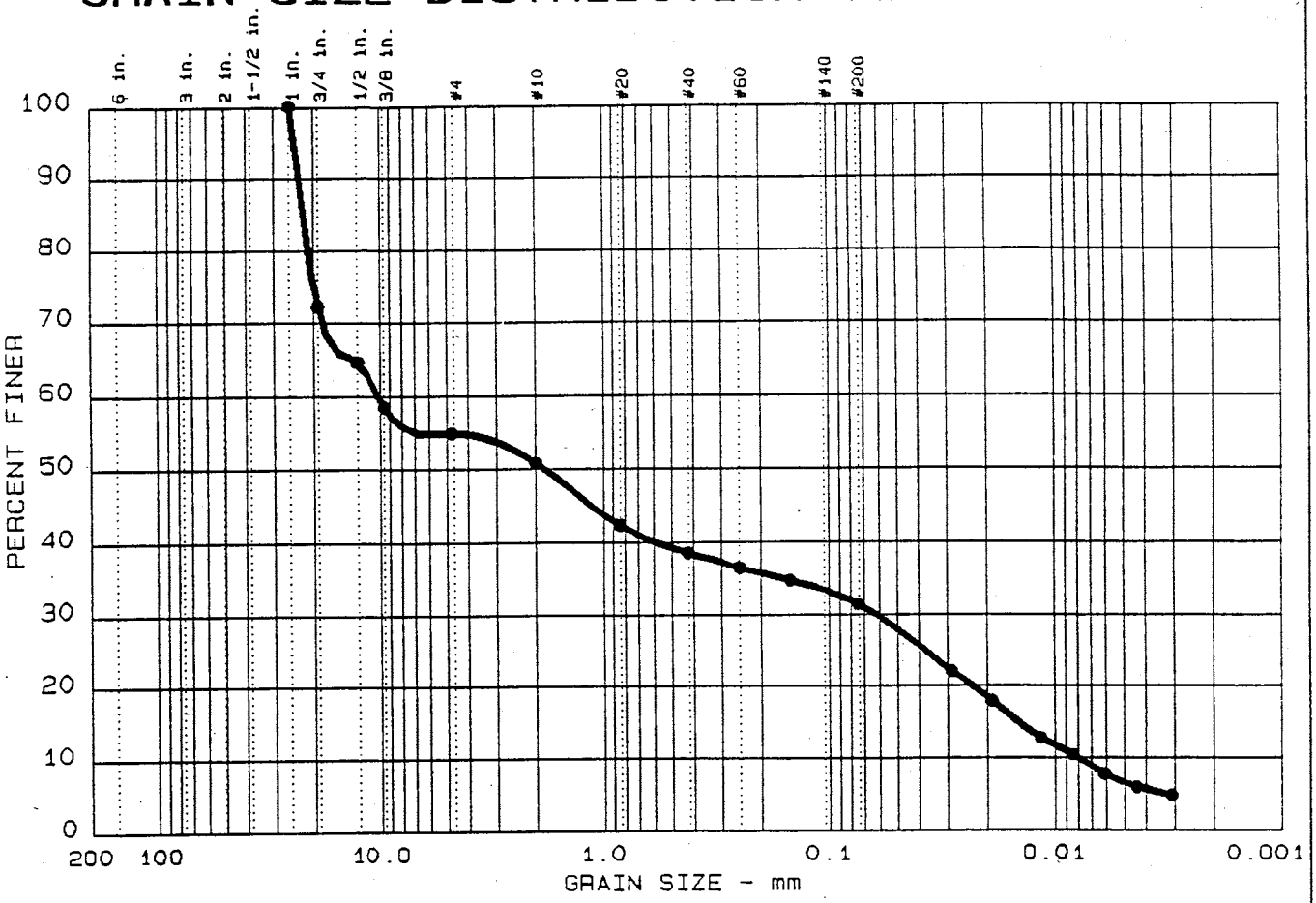
LAB NO. 599.014

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	15	0.0	45.2	23.6	24.8	6.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	22.18	10.14	1.85	0.063	0.0145	0.0080	0.05	1273.5

MATERIAL DESCRIPTION	USCS	AASHTO
● TAN GRAVEL, Some Silt & Sand, trace clay		

Project No.: G008.006
Project: GORICK C&D LANDFILL , KIRKWOOD, N.Y.
● Location: URS-11 / S-5 / 8'- 10'

Date: JANUARY 2, 1991

Remarks:
CLIENT: URS
WATER CONTENT: 8.0%

LAB NO. 599.015

GRAIN SIZE DISTRIBUTION TEST REPORT

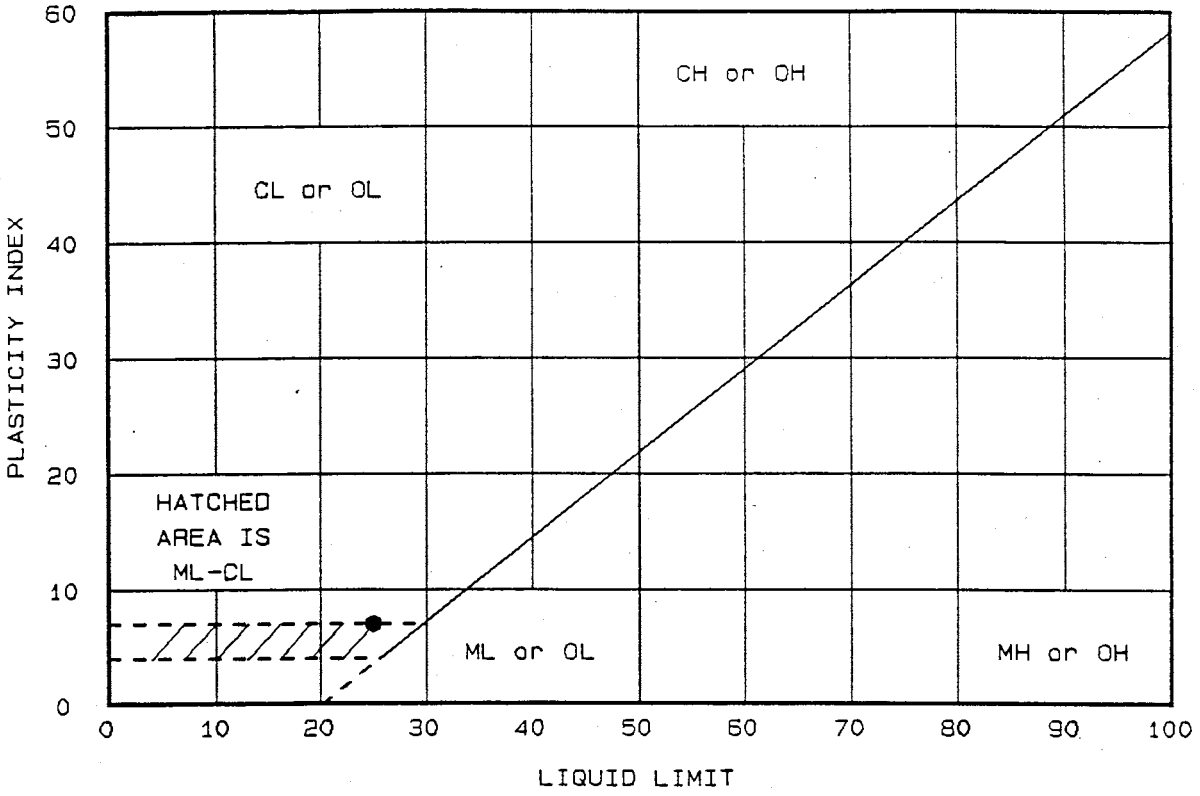
EMPIRE SOILS INVESTIGATIONS, INC

Figure No. 1

APPENDIX B

ATTERBERG LIMITS

LIQUID AND PLASTIC LIMITS TEST REPORT



Location + Description	LL	PL	PI	-200	ASTM D 2487-85
● URS-1 / S-19 / 36'- 38'	25	18	7	48.43	SC-SM, Silty, clayey sand with gravel

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N. Y.

Date: JAN. 3, 1991

Remarks:

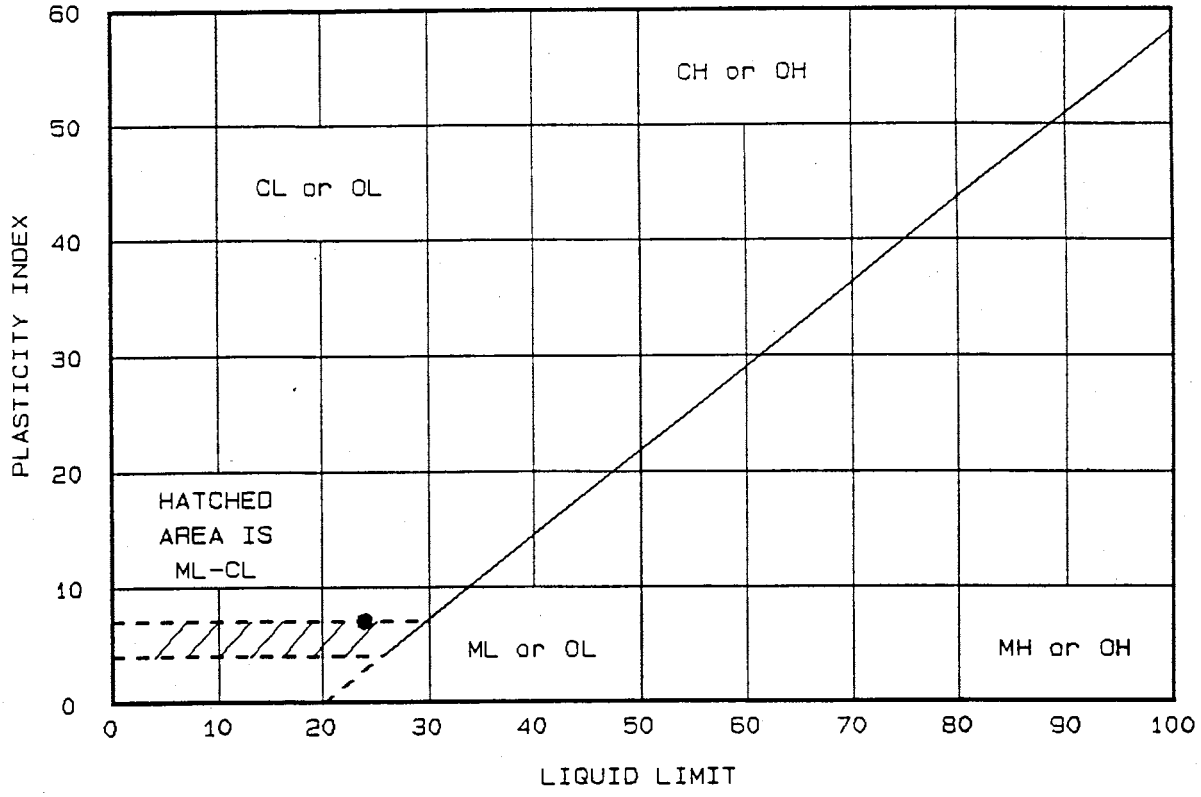
LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

LAB NO. 599.001

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



	Location + Description	LL	PL	PI	-200	ASTM D 2487-85
●	URS-1 / S-28 / 54'- 56'	24	17	7	27.96	SC, Clayey sand with gravel

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N.Y.

Date: JAN. 3, 1991

Remarks:

ASTM D 4318
Method D Used

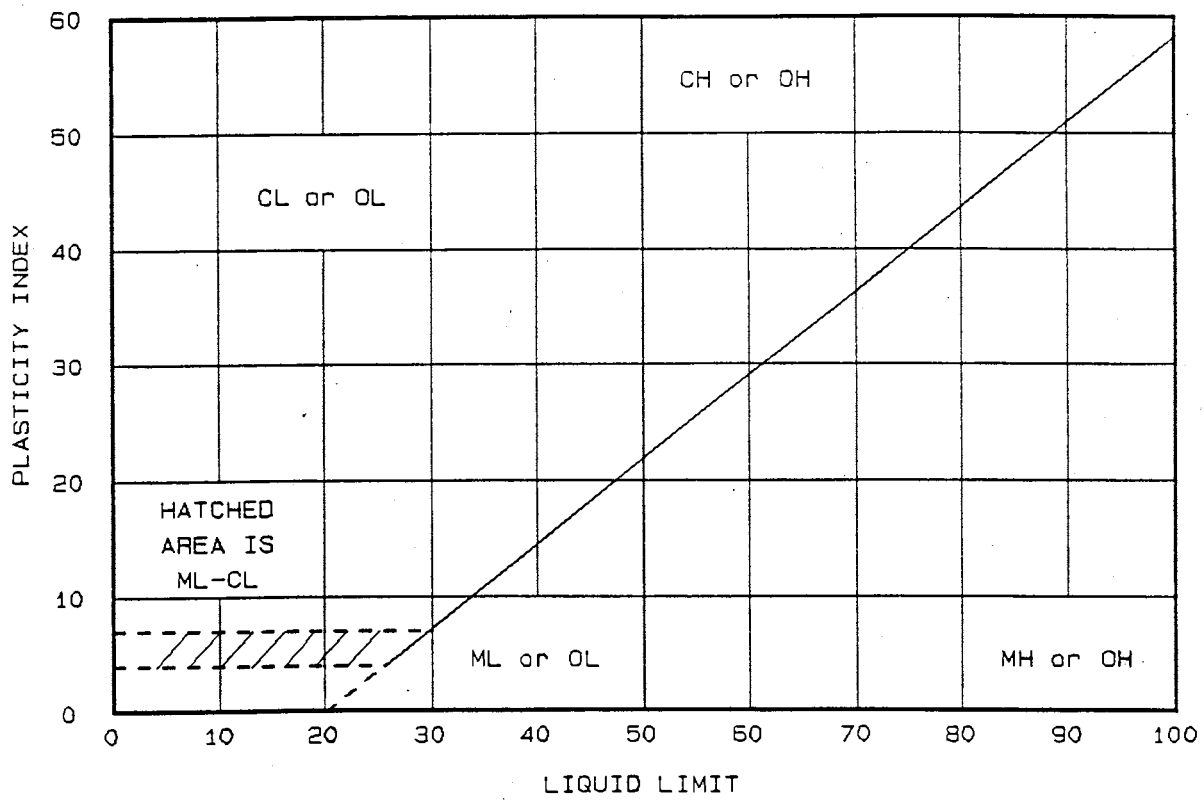
LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

LAB NO. 599.002

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



	Location + Description	LL	PL	PI	-200	ASTM D 2487-85
●	URS-2 / S-4 / 6'- 8'			None		

NV - Non-Viscous NP - Non-Plastic

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N. Y.

Date: JAN. 3, 1991

Remarks:
SIEVED ON #40 SIEVE
SAMPLE FOUND TO BE
NON-PLASTIC

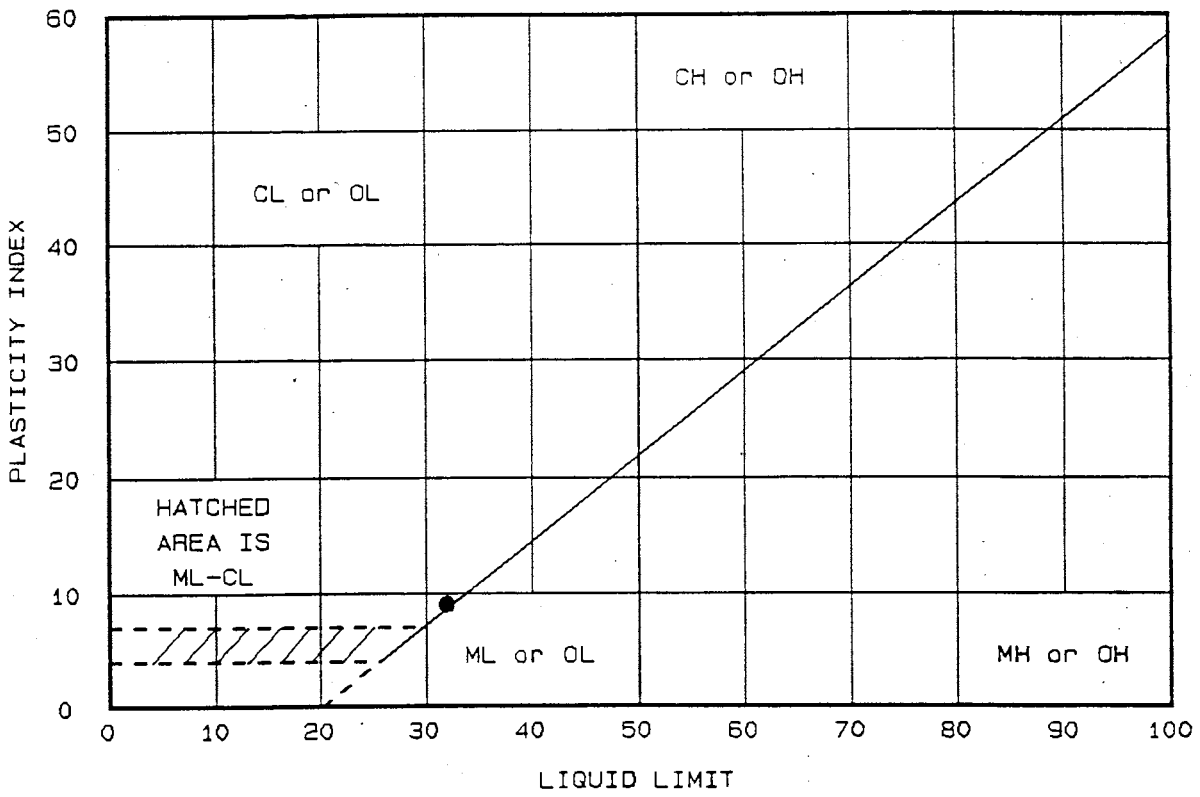
LAB NO. 599.003

LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



	Location + Description	LL	PL	PI	-200	ASTM D 2487-85
●	URS-3 / S-2 / 2'- 4'	32	23	9	94.97	ML, Silt

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N.Y.

Date: JAN. 3, 1991

Remarks:

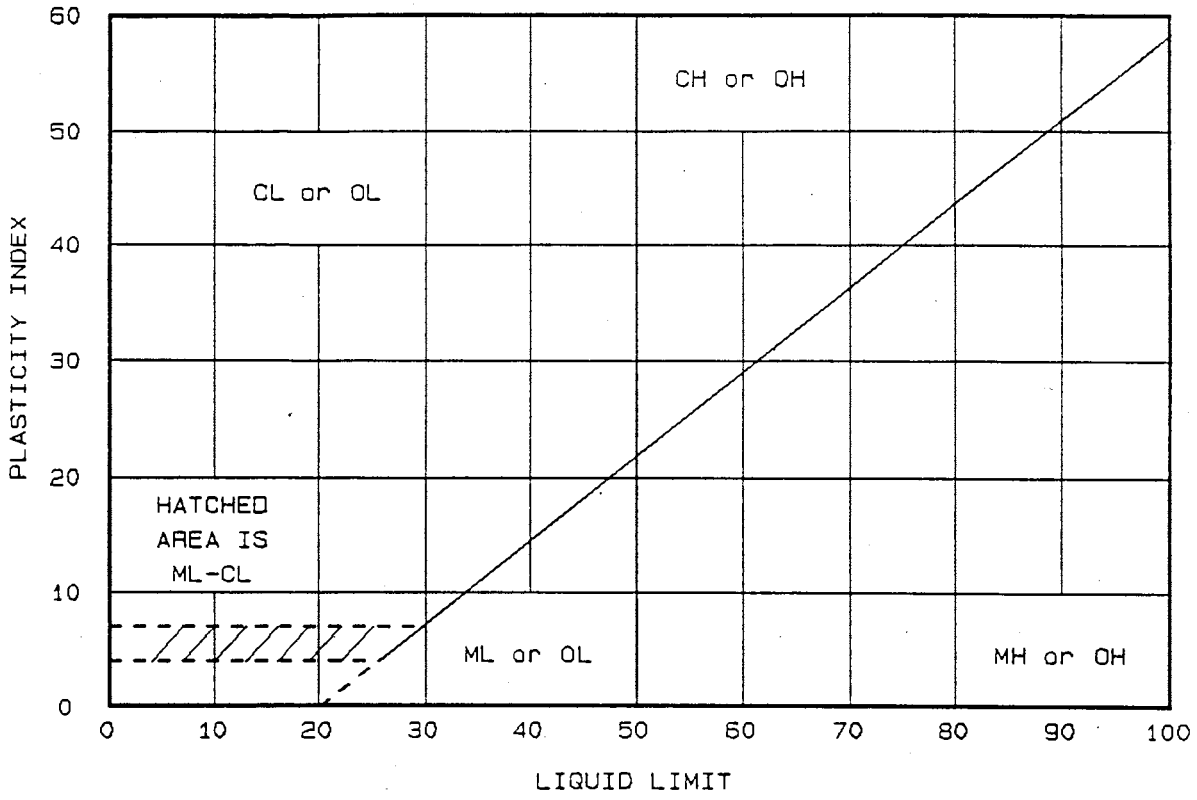
LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

LAB NO. 599.004

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



	Location + Description	LL	PL	PI	-200	ASTM D 2487-85
●	URS-4 / S-18 / 34'- 36'			None		

NV - Non-Viscous NP - Non-Plastic

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N.Y

Date: JAN. 3, 1991

Remarks:
SIEVED ON #40 SIEVE
SAMPLE FOUND TO BE
NON-PLASTIC

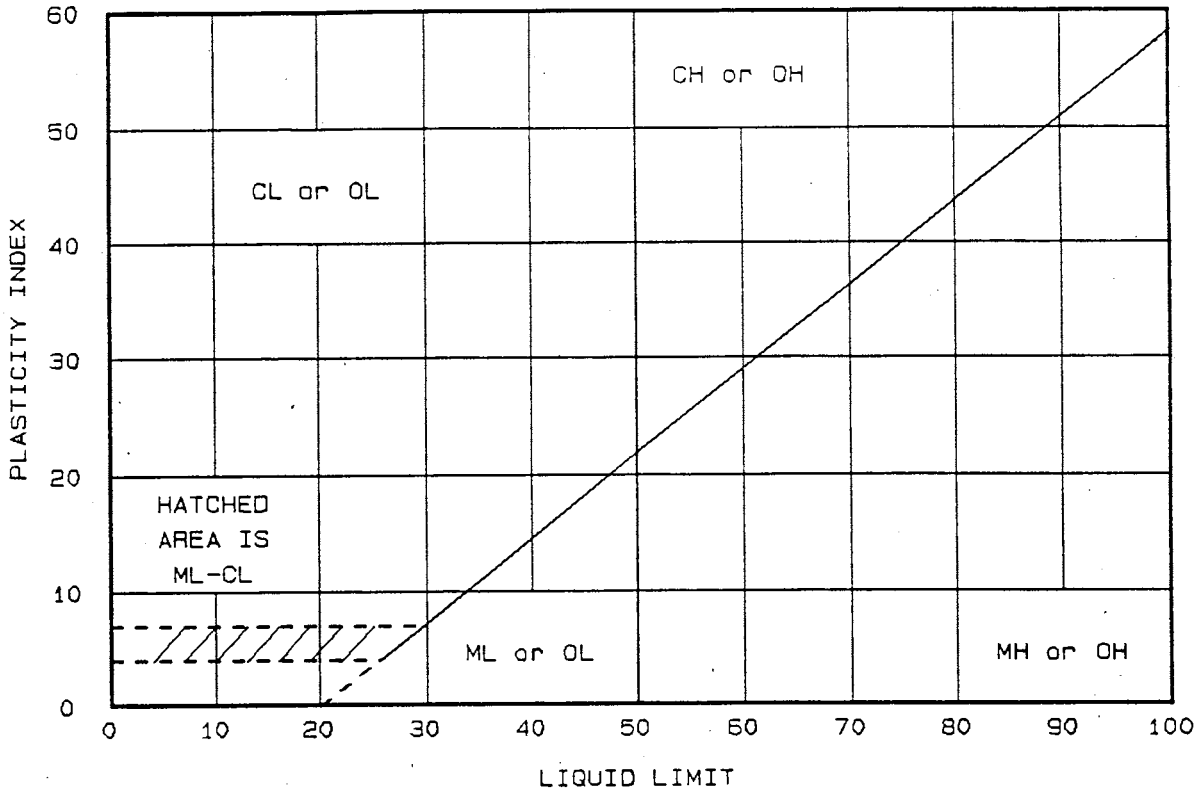
LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

LAB NO. 599.005

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



	Location + Description	LL	PL	PI	-200	ASTM D 2487-85
●	URS-5 / S-30 / 60'- 62'			None		

NV - Non-Viscous NP - Non-Plastic

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N.Y

Date: JAN. 3, 1991

Remarks:
SIEVED ON #40 SIEVE
SAMPLE FOUND TO BE
NON-PLASTIC

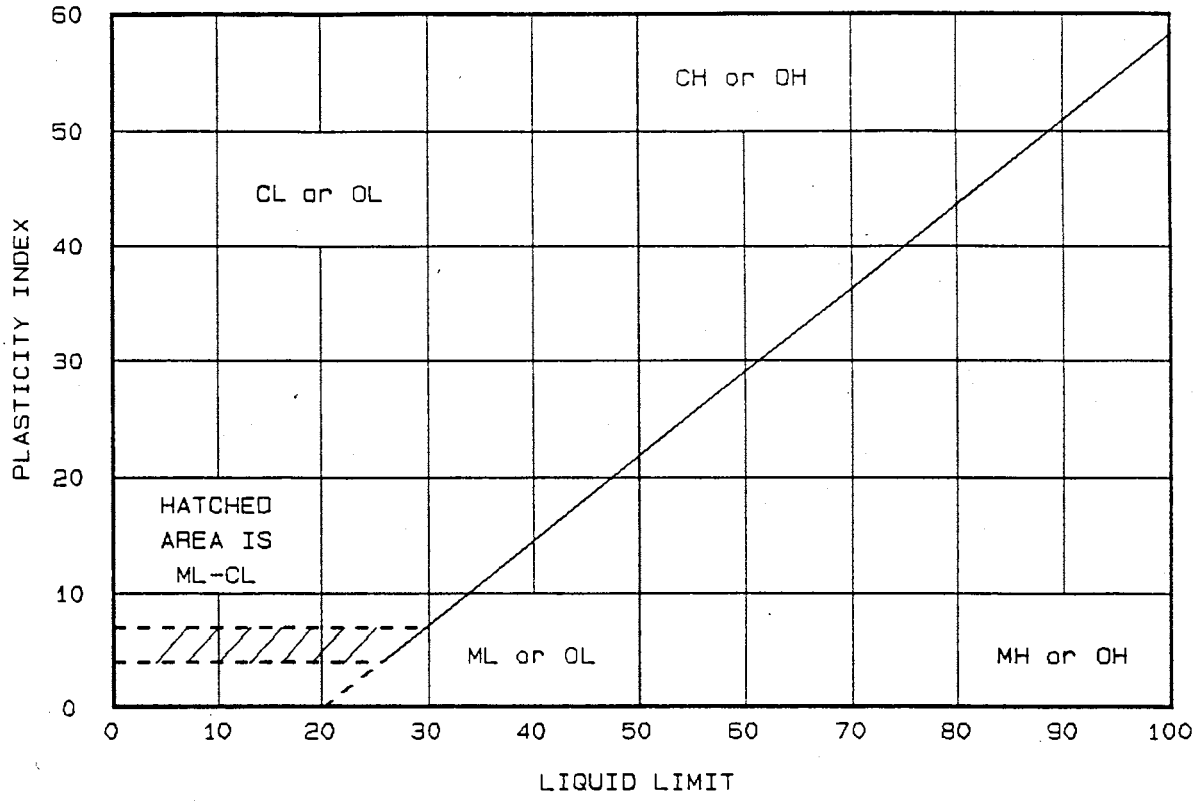
LAB NO. 599.006

LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



Location + Description	LL	PL	PI	-200	ASTM D 2487-85
● URS-5 / S-34 / 68'- 70'			None		

NV - Non-Viscous NP - Non-Plastic

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N. Y.

Date: JAN. 3, 1991

Remarks:
SIEVED ON #40 SIEVE
SAMPLE FOUND TO BE
NON-PLASTIC

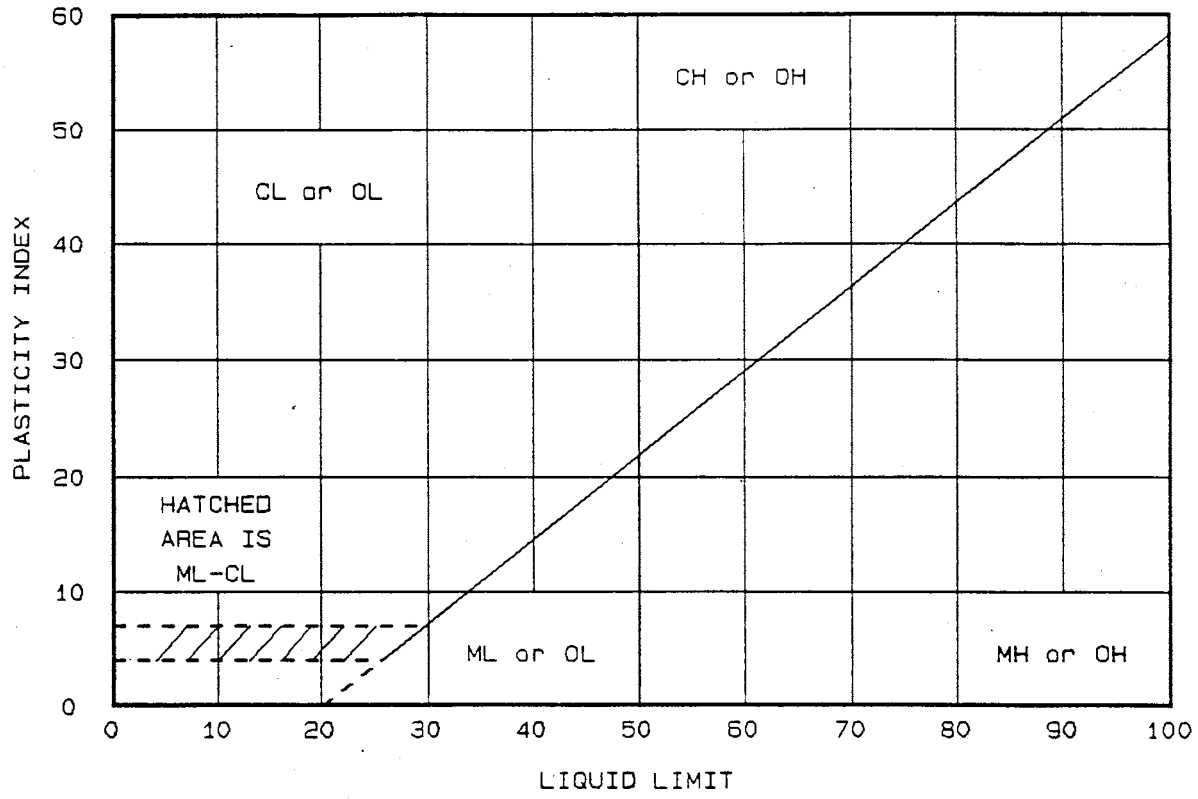
LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

LAB NO. 599.007

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



	Location + Description	LL	PL	PI	-200	ASTM D 2487-85
●	URS-6 / S-12 / 22'- 24'			None		

NV - Non-Viscous NP - Non-Plastic

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N. Y.

Date: JAN. 3, 1991

Remarks:
SIEVED ON #40 SIEVE
SAMPLE FOUND TO BE
NON-PLASTIC

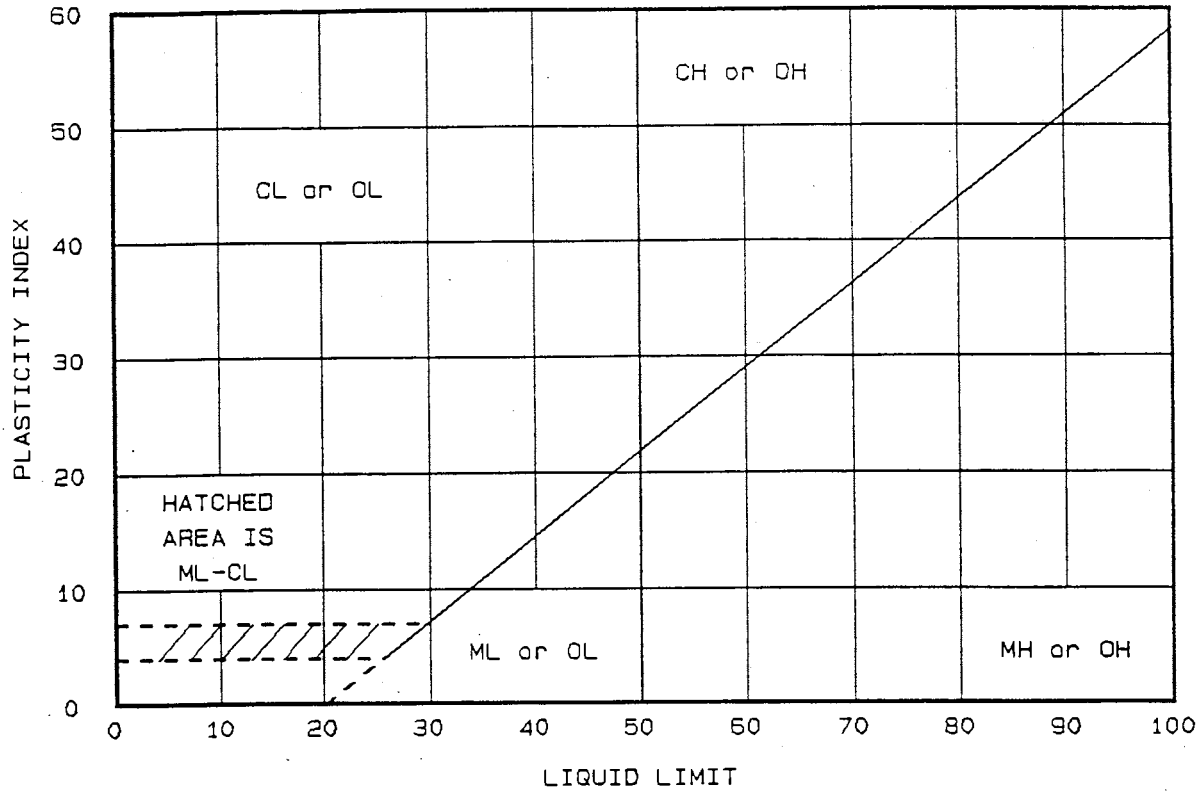
LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

LAB NO. 599.009

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



Location + Description	LL	PL	PI	-200	ASTM D 2487-85
● URS-7 / S-16 / 30'- 32'			None		

NV - Non-Viscous NP - Non-Plastic

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N.Y.

Date: JAN. 3, 1991

Remarks:
SIEVED ON #40 SIEVE
SAMPLE FOUND TO BE
NON-PLASTIC

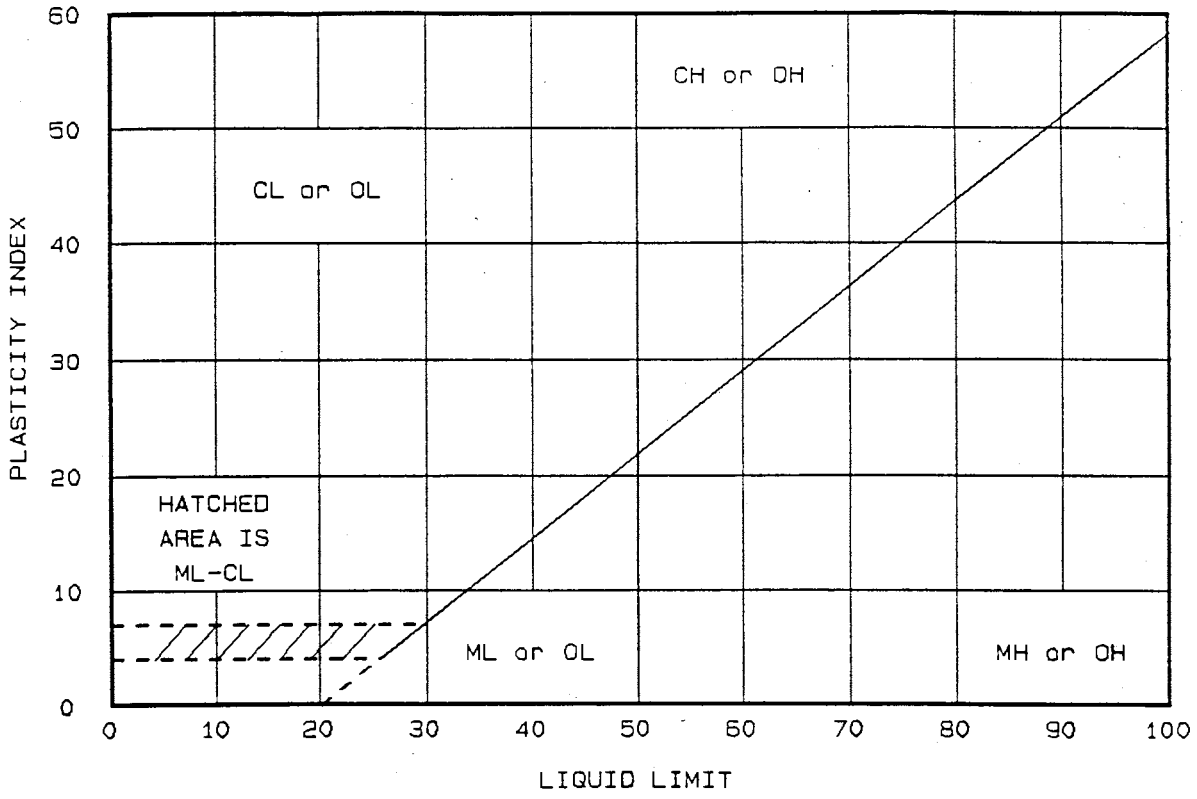
LAB NO. 599.011

LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



	Location + Description	LL	PL	PI	-200	ASTM D 2487-85
●	URS-10 / S-10 / 18'- 20'			None		

NV - Non-Viscous NP - Non-Plastic

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N.Y.

Date: JAN. 3, 1991

Remarks:
SIEVED ON #40 SIEVE
SAMPLE FOUND TO BE
NON-PLASTIC

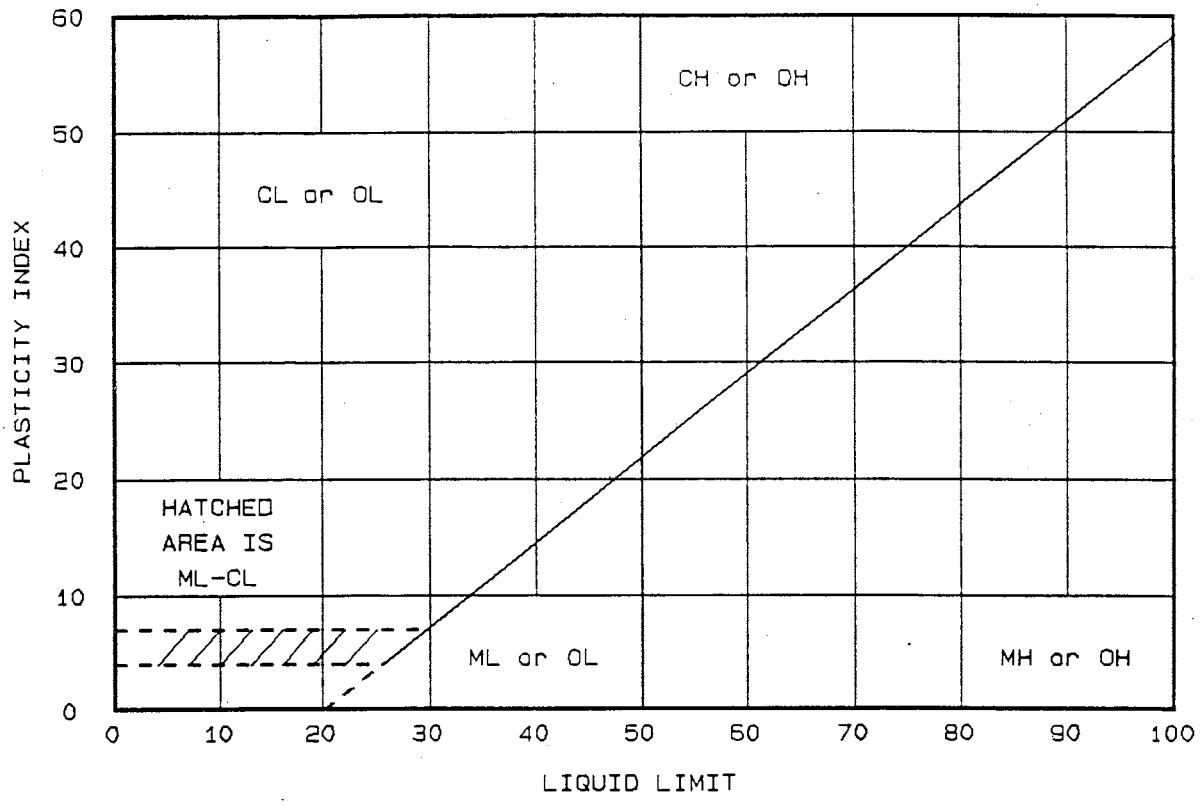
LAB NO. 599.013

LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Fig. No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



	Location + Description	LL	PL	PI	-200	ASTM D 2487-85
●	URS-11 / S-5 / 8'- 10'			None		

NV - Non-Viscous NP - Non-Plastic

Project No.: G008.006
Project: GORICK C&D LANDFILL

Client: URS
Location: KIRKWOOD, N.Y.

Date: JAN. 3, 1991

Remarks:
SIEVED ON #40 SIEVE
SAMPLE FOUND TO BE
NON-PLASTIC

LAB NO. 599.015

LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Fig. No. 1

EMPIRE
SOILS INVESTIGATIONS INC.

GEOTECHNICAL TESTING REPORT

GORICK C & D LANDFILL RI/FS

KIRKWOOD, NEW YORK

For:

URS Consultants, Inc.
Buffalo, New York

JOB NO. G008.006
July, 1991

EMPIRE
SOILS INVESTIGATIONS INC.

July 25, 1991

Mr. James Lanzo, PE
URS Consultants, Inc.
282 Delaware Avenue
Buffalo, New York 14202-1805

Reference: Geotechnical Testing
Gorick C & D Landfill, RI/FS, Phase II
Kirkwood, New York

Dear Mr. Lanzo:

Transmitted herewith are two (2) copies of the Geotechnical Testing Reports for testing performed on soil samples from Gorick C & D Landfill site in Kirkwood, New York. The study was performed under the terms of our Subcontract Agreement dated August 31, 1990.

A total of four (4) soil samples were received at our laboratory in Middleport, New York on July 9, 1991 and catalogued with Lab Nos. 827.001 throught 827.004, inclusive. Of the samples submitted only Lab No. 827.004 was potentially contaminated.

In accordance with the instructions on the chain-of-custody documents grain size distribution test was performed in accordance with ASTM Designation D 422 on all four samples. Atterberg Limits Test (ASTM D4318) was requested on Lab No. 827.003 (Test Pit #2, 28"), however, the fraction passing the 40 mesh sieve could not be rolled into a string 3 mm thick before crumbling as required of the plastic limit determination, and therefore classifies as being non-plastic.

We succeeded in trimming a relatively undisturbed specimen from the 2.5 inch diameter split spoon sample identified as Lab No. 827.004 (P-13, 23.0'-25.0') and then completed a flexible wall permeability test in accord with US Army Corps of Engineers EM 1110-2-1906, Appendix VII (7).

CORPORATE OFFICES
140 TELEGRAPH ROAD, P.O. BOX 297, MIDDLEPORT, NEW YORK 14105 716-735-3502 TELEFAX 716-735-9027

EMPIRE
SOILS INVESTIGATIONS INC.

Individual test reports for grain size distribution and Atterberg Limits tests are presented in Appendix A. The results of the flexible wall permeability test is contained in Appendix B.

Should you have any questions, or in case we may be of further service, do not hesitate to contact the undersigned at 716-735-3400.

Respectfully submitted,

EMPIRE SOILS INVESTIGATIONS, INC.

Jorgen F. Christiansen

Jorgen F. Christiansen, P.E.
Director, Geotechnical Testing

JFC/lkn

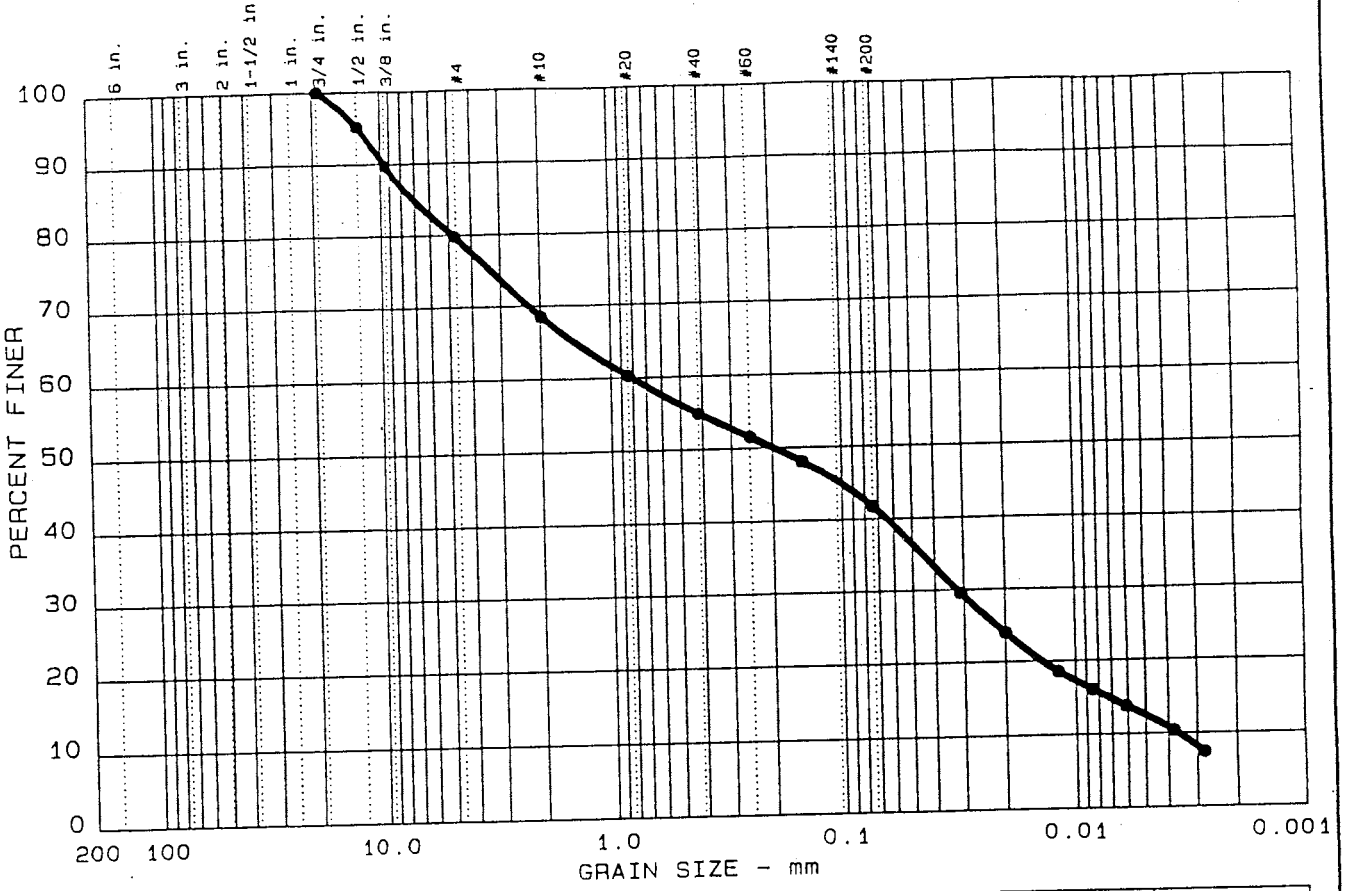
Enclosures

APPENDIX A

GRAIN SIZE DISTRIBUTION

ATTERBERG LIMITS

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	20.3	38.0	29.4	12.3

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			7.08	0.81	0.20	0.032	0.0073	0.0036	0.35	223.9

MATERIAL DESCRIPTION	USCS	AASHTO
● TAN SAND, Some Silt & gravel, little clay		

Project No.: G008.006
Project: GORICK LANDFILL
● Location: 12D / 42-44'

Date: JULY 23, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

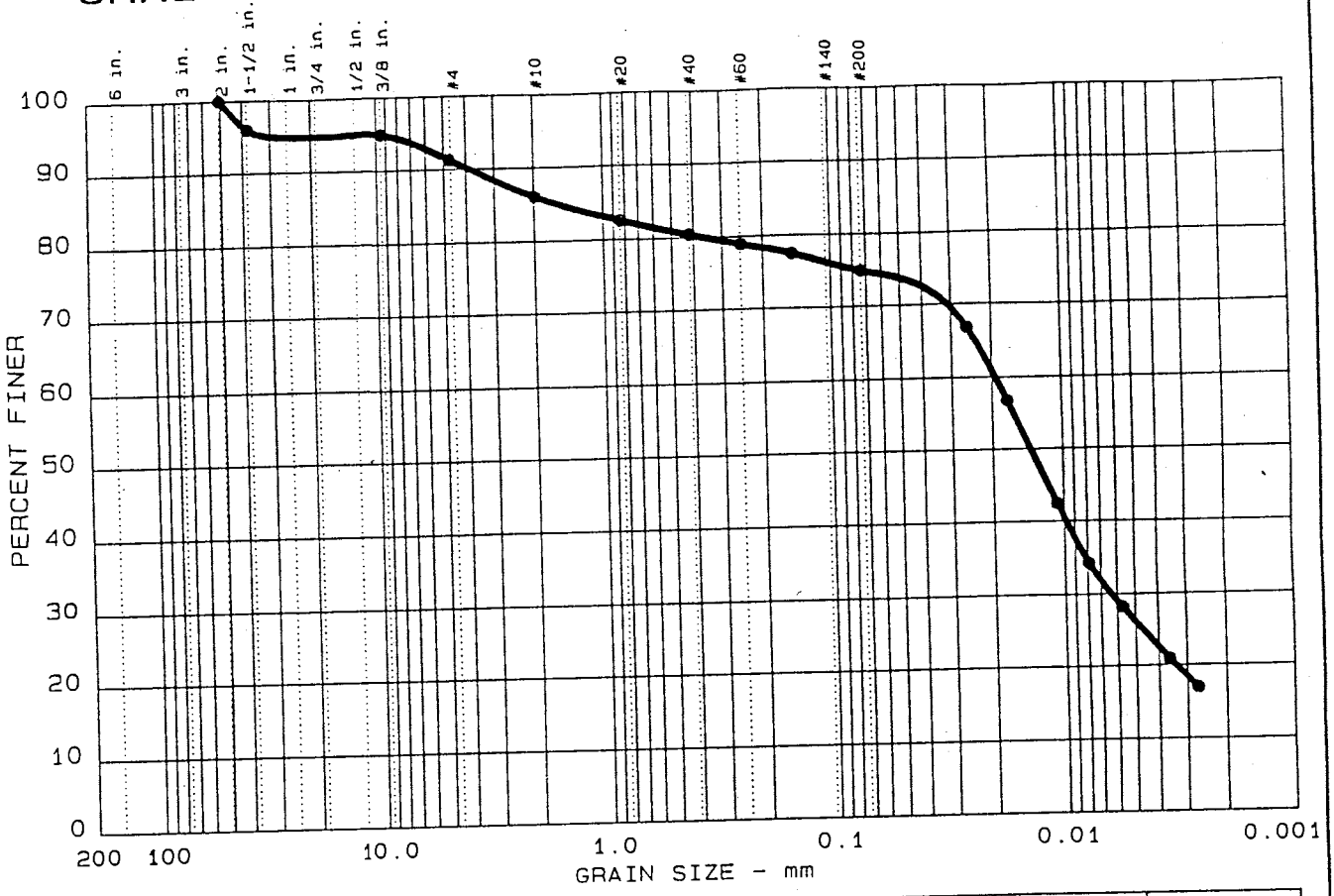
EMPIRE SOILS INVESTIGATIONS, INC

Remarks:
CLIENT: URS
URS PROJECT# 35232

LAB NO. 827.001

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	3	0.0	8.7	16.4	48.8	26.1

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	1.58		0.01	0.006				

MATERIAL DESCRIPTION	USCS	AASHTO
● TAN SILT, Some Clay, little sand, trace gravel		

Project No.: G008.006
Project: GORICK LANDFILL
● Location: TEST PIT #2 / 28"

Date: JULY 23, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Remarks:

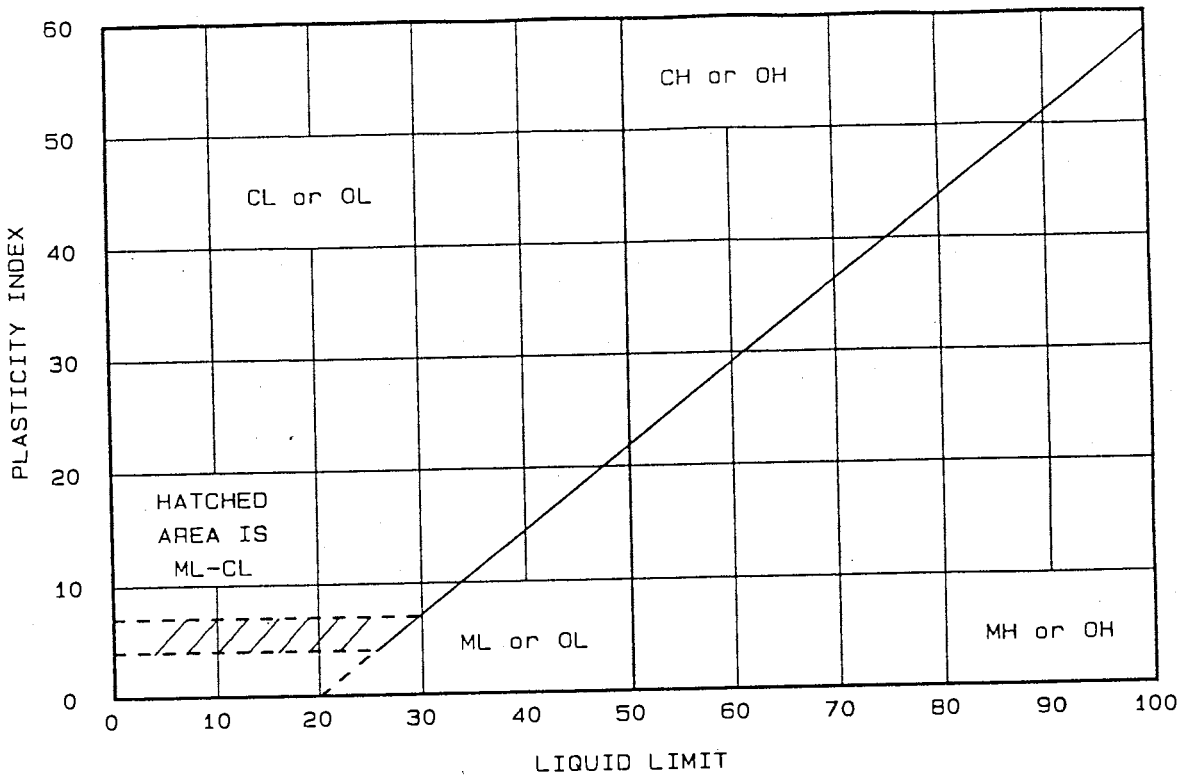
CLIENT: URS

URS PROJECT# 35232

LAB NO. 827.003

Figure No. 1

LIQUID AND PLASTIC LIMITS TEST REPORT



Location + Description	LL	PL	PI	-200	ASTM D 2487-85
● TEST PIT #2 / 28			None		

NV - Non-Viscous NP - Non-Plastic

Project No.: G008.006
Project: GORICK LANDFILL

Client: URS
Location: KIRKWOOD, NEW YORK

Date: JULY 23, 1991

Remarks:
MAT'L SIEVED ON #40
SCREEN; UNABLE TO ROLL-
NON-PLASTIC

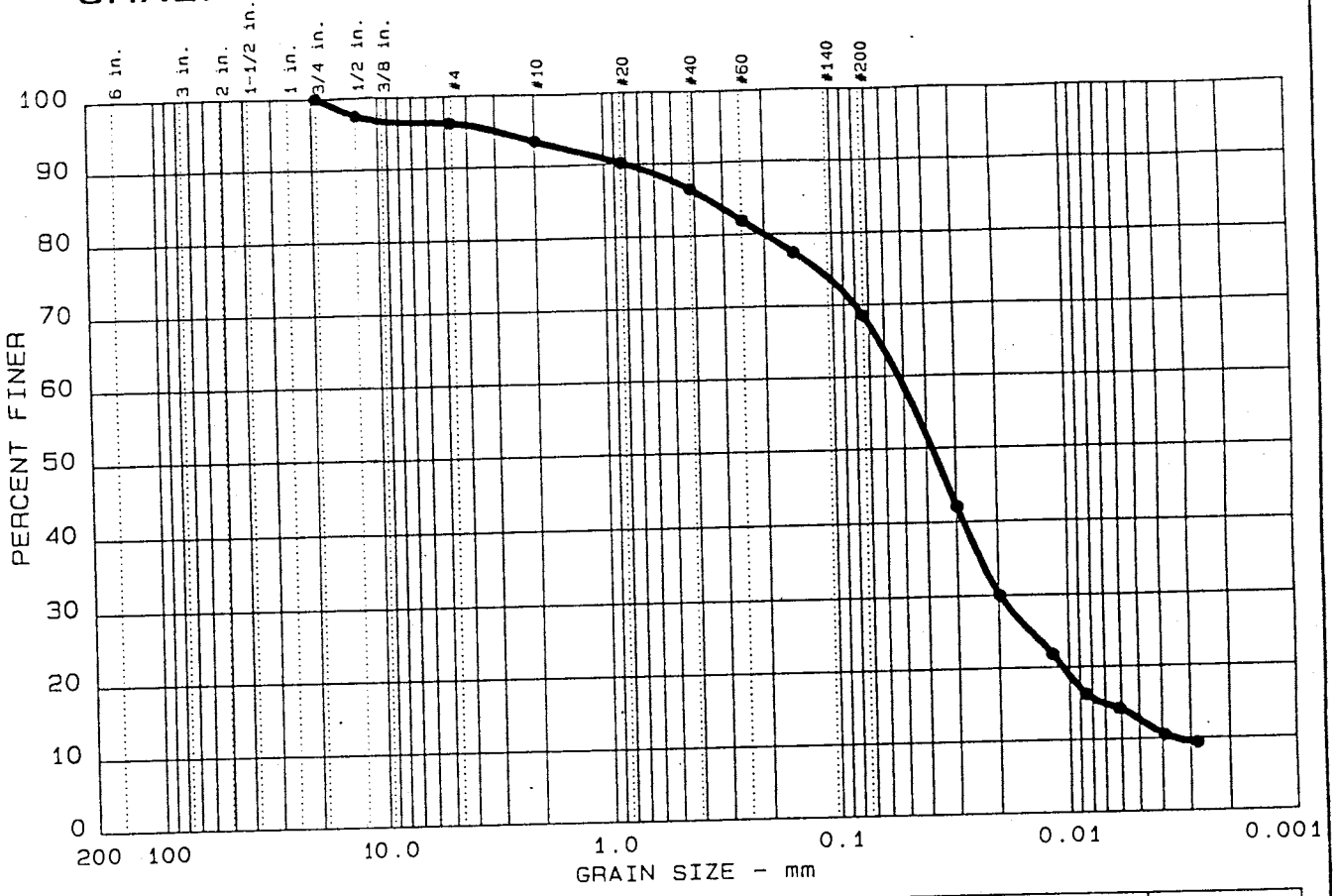
LAB NO. 827.003

LIQUID AND PLASTIC LIMITS TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Fig. No. 1

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	3.8	27.8	55.9	12.5

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.35		0.04	0.020	0.0074	0.0035	2.14	15.1

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN SILT, Some Sand, little clay, trace gravel		

Project No.: G008.006
Project: GORICK LANDFILL
● Location: P-13 / 23-25'

Date: JULY 23, 1991

GRAIN SIZE DISTRIBUTION TEST REPORT

EMPIRE SOILS INVESTIGATIONS, INC

Remarks:

CLIENT: URS

URS PROJECT# 35232

LAB NO. 827.004

Figure No. 1

APPENDIX B

PERMEABILITY

827004

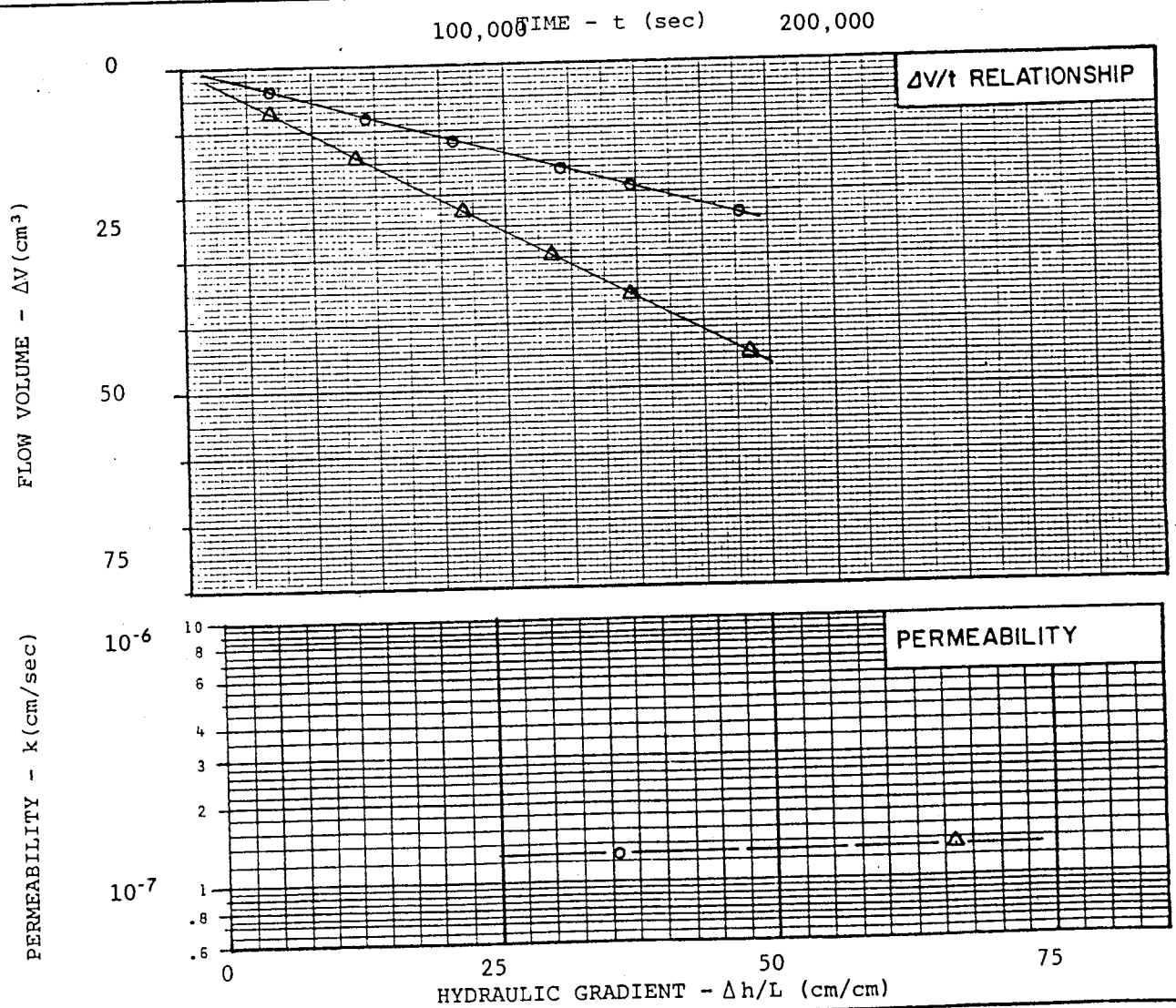
TEST DATA:

Specimen Height (cm):	10.68	
Specimen Diameter (cm):	6.28	
Dry Unit Weight (pcf):	125.5	
Moisture Content Before Test (%):	13.5	
Moisture Content After Test (%):	13.2	
Cell Confining Pressure (psi):	95.0	
Test Pressure (psi):	85.1	90.0
Back Pressure (psi):	80.0	80.2
Differential Head (psi):	5.1	9.8
Flow Rate ($\Delta V/t$) (cm^3/sec)	O 1.37×10^{-4}	Δ 2.58×10^{-4}
Permeability (cm/sec):	O 1.24×10^{-7}	Δ 1.26×10^{-7}

SAMPLE DATA:

Sample Identification: Lab No. 827.004
Boring P-13 (23.0'-25.0')
Visual Description: Olive silt, some sand, little gravel & clay
Remarks: 2.5" Diam. Split spoon sample

Maximum Dry Density (ASTM D ____) (pcf): ____
Optimum Moisture Content (%): ____
Percent Compaction: ____
Permeameter Type: Flexible Wall



EMPIRE SOILS INVESTIGATIONS INC

PERMEABILITY TEST REPORT

Gorick C & D Landfill
Kirkwood, New York

DR BY: JFC	CK'D. JFC	DATE: July, 1991	PROJ.NO. G008.006

APPENDIX J

ENVIRONMENTAL SAMPLE DESCRIPTIONS

GORICK LANDFILL RI/FS ENVIRONMENTAL SAMPLE DESCRIPTIONS (PHASE I & PHASE 2)

Sample ID	Sample Type	Description	Date Sampled	Grid Location	Reason for Location
SPS-1	Surface Soil	Dry brown silt and sand (2-10")	9-26-90	N-762,171 E-706,618	Background Sample
SPS-2	Surface Soil	Dry light brown silt, some sand (2-8")	9-26-90	N-762,300 E-706,129	Health Risk Assessment Data. Entrance to landfill.
SPS-3	Surface Soil	Dark brown silt, some sand, trace clay. Slight organic odor. Elevated PID readings (2-10").	9-26-90	N-761,916 E-705,857	Soil gas survey point #92, middle of landfill.
SPS-4	Surface Soil	Dry light brown silty sand (2-10")	9-28-90	N-761,726 E-706,354	Soil gas survey point #11, east side of landfill.
SPS-5	Surface Soil	Dry brown silt and sand (2-10")	9-28-90	N-762,221 E-705,748	Soil gas survey point #86, north side of landfill.
SPS-6	Surface Soil	Densely packed sandy soil. (2-6") Large rocks at 6".	6-28-91	N-762,253 E-705,887	Near SPS-5 to give further characterization of soil in that area (location moved as per DEC and DOH)
SPS-7	Surface Soil	Dry sandy soil with small to medium river rocks. (2-9") Dark sandy loam topsoil. (9-10")	6-28-91	N-762,254 E-705,780	Near SPS-5 to give further characterization of soil in that area (location moved as per DEC and DOH)
SPS-8 (MS/MSD)	Surface Soil	Dry sandy soil with landfill debris mixed in. (2-10")	6-28-91	N-762,163 E-705,734	Near SPS-5 to give further characterization of soil in that area (location moved as per DEC and DOH).
MW-SB-1S (8-10')	Subsurface Soil	Mottled grey/brown gravelly silt, some sand, dense, trace clay.	9-24-90	N-762,200 E-706,575	Unsaturated soil above perched water at MW-1S.

GORICK LANDFILL RI/FS ENVIRONMENTAL SAMPLE DESCRIPTIONS (PHASE I & PHASE 2) (Continued)

Sample ID	Sample Type	Description	Date Sampled	Grid Location	Reason for Location
SW-8	Surface Water	Turbid-slightly turbid water.	12-3-90	N-761,151 E-705,163	Susquehanna River sample, upstream of the drainage swale confluence.
SW-8	Surface Water	Clear-slightly turbid.	6-28-91	45' west of: N-761,098 E-705,087	Resample in approximately same area as above.
SW-9	Surface Water	Turbid-slightly turbid water.	12-3-90	N-761,801 E-705,287	Susquehanna River sample, downstream of the drainage swale confluence, opposite MW-5.
SW-10	Surface Water	Turbid-slightly water.	12-4-90	N-761,350 E-706,469	Drainage swale, upstream of confluence with water treatment plant drainage swale.
SW-11	Surface Water	Clear-slightly turbid.	6-28-91	62' west of: N-762,099 E-705,359	Downstream of landfill, to determine if contaminants are reaching the river.
SW-12	Surface Water	Clear-slightly turbid.	6-28-91	115' west of: N-762,193 E-705,381	Center of river, downstream of landfill, to determine if contaminants are reaching the river.
SS-1	Stream Sediment	Light to dark brown silt, some sand and gravel.	12-4-90	N-761,680 E-706,949	Taken in conjunction with SW-1.
SS-4	Stream Sediment	Dark brown, organic rich, fine grained sand and silt, sheen on sediments.	12-4-90	N-761,183 E-706,119	Taken in conjunction with SW-4.

GORICK LANDFILL RI/FS ENVIRONMENTAL SAMPLE DESCRIPTIONS (PHASE I & PHASE 2) (Continued)

Sample ID	Sample Type	Description	Date Sampled	Grid Location	Reason for Location
MW-1S	Groundwater	Clear	6-28-91	N-762,200 E-706,575	Resample.
MW-2S	Groundwater	Clear	12-5-90	N-761,492 E-706,571	Shallow water table well. Monitors background conditions near PVC factory.
MW-2S	Groundwater	Turbid	6-27-91	N-761,492 E-706,571	Resample.
MW-3S	Groundwater	Clear	12-5-90	N-761,145 E-705,634	Shallow water table well. Monitorings downgradient of fill to SW.
MW-3S	Groundwater	Turbid	6-26-91	N-761,145 E-705,634	Resample.
MW-4S	Groundwater	Clear to turbid	12-4-90	N-761,442 E-705,459	Shallow water table well. Monitors downgradient between landfill and town production well #3.
MW-4S (MS/MSD)	Groundwater	Turbid-brown	6-27-91	N-761,442 E-705,459	Resample.
MW-4I	Groundwater	Clear to turbid. Slight sulfur odor.	12-4-90	N-761,450 E-705,460	Intermediate water table well. Monitors some area as MW-4S, but deeper beneath water table.
MW-4I	Groundwater	Clear	6-27-91	N-761,450 E-705,460	Resample.

GORICK LANDFILL RI/FS ENVIRONMENTAL SAMPLE DESCRIPTIONS (PHASE I & PHASE 2) (Continued)

Sample ID	Sample Type	Description	Date Sampled	Grid Location	Reason for Location
MW-5S	Groundwater	Clear	12-6-90	N-761,766 E-705,467	Shallow water table well. Monitors downgradient of landfill and soil gas point #79 and upgradient of river.
MW-5S	Groundwater	Turbid-orangish brown.	6-27-91	N-761,766 E-705,467	Resample.
MW-5I	Groundwater	Clear	12-6-90	N-761,763 E-705,472	Intermediate water table well. Monitors same as MW-5S, but deeper beneath water table.
MW-5I	Groundwater	Clear	6-27-91	N-761,763 E-705,472	Resample.
MW-5D	Groundwater	Clear	12-6-90	N-761,772 E-705,463	Deep water table well. Monitors base of aquifer at same location as MW-5S and MW-5I.
MW-5D	Groundwater	Slightly turbid	6-27-91	N-761,772 E-705,463	Resample.
MW-6S	Groundwater	Turbid to slightly turbid.	12-7-90	N-762,111 E-705,446	Shallow water table well. Monitors downgradient of landfill and upgradient of river.
MW-6S	Groundwater	Turbid - orangish brown.	6-27-91	N-762,111 E-705,446	Resample.

GORICK LANDFILL RI/FS ENVIRONMENTAL SAMPLE DESCRIPTIONS (PHASE I & PHASE 2) (Continued)

Sample ID	Sample Type	Description	Date Sampled	Grid Location	Reason for Location
MW-6I	Groundwater	Turbid to slightly turbid. Slight sulfur odor.	12-7-90	N-762,118 E-705,446	Intermediate water table well. Monitors same area as MW-6S, but deeper beneath water table.
MW-6I (MS/MSD)	Groundwater	Clear	6-27-91	N-762,118 E-705,446	Resample.
MW-6D	Groundwater	Clear	6-27-91	N-762,124 E-705,443	Monitor for deep migration of contaminants to north and west of site.
MW-7S	Groundwater	Clear	12-6-90	N-762,265 E-705,809	Shallow water table well, monitors fill unit. Downgradient of soil gas point #86 and near north edge of landfill.
MW-7S	Groundwater	Clear-slight odor	6-26-91	N-762,265 E-705,809	Resample.
MW-8S (MS/MSD)	Groundwater	Clear	12-6-90	N-761,900 E-705,863	Shallow water table well, monitors fill unit. Location of soil gas point #92.
MW-8S	Groundwater	Very turbid	6-28-91	N-761,900 E-705,863	Resample.
MW-9S	Groundwater	Clear	12-6-90	N-761,667 E-705,660	Shallow water table well, monitors fill unit, between wells USGS-12 and well pair 35-36.
MW-9S	Groundwater	Slightly turbid	6-28-91	N-761,667 E-705,660	Resample.

GORICK LANDFILL RI/FS ENVIRONMENTAL SAMPLE DESCRIPTIONS (PHASE I & PHASE 2) (Continued)

Sample ID	Sample Type	Description	Date Sampled	Grid Location	Reason for Location
MW-14D	Groundwater	Clear	6-28-91	N-762,303 E-704,949	Same as MW-14I, but for the deep aquifer zone.
MW-31	Groundwater	Clear	12-5-90	N-761,363 E-705,314	Existing deep water table well. Adjacent to town production wells.
MW-31	Groundwater	Slightly turbid	6-26-91	N-761,363 E-705,314	Resample of above.
MW-32	Groundwater	Clear, slight sulfur odor.	12-5-90	N-761,426 E-705,301	Existing deep water table well. Adjacent to town production wells.
MW-32	Groundwater	Slightly turbid	6-26-91	N-761,426 E-705,301	Resample of above.
MW-33	Groundwater	Clear to slightly turbid	12-5-90	N-761,446 E-705,244	Existing deep water table well. Adjacent to town production wells.
MW-33	Groundwater	Very clear	6-26-91	N-761,446 E-705,244	Resample of above.
MW-34	Groundwater	Clear	12-5-90	N-761,299 E-705,297	Existing deep water table well. Adjacent to town production wells.
MW-34	Groundwater	Slightly turbid	6-26-91	N-761,299 E-705,297	Resample of above.
MW-35	Groundwater	Clear, trace iron	12-5-90	N-761,526 E-705,436	Existing shallow water table well.
MW-35	Groundwater	Slightly turbid, orangish-brown	6-27-91	N-761,526 E-705,436	Resample of above.

GORICK LANDFILL RI/FS ENVIRONMENTAL SAMPLE DESCRIPTIONS (PHASE I & PHASE 2) (Continued)

Sample ID	Sample Type	Description	Date Sampled	Grid Location	Reason for Location
MW-36	Groundwater	Clear	12-5-90	N-761,523 E-705,436	Existing deep water table well. Nested with MW-35.
MW-36	Groundwater	Turbid - orangish in color.	6-27-91	N-761,523 E-705,436	Resample of above.
GL-PW-1	Groundwater	Clear	12-7-90	See Figure 2-1	"Raw" water from Town Production Well #3.
GL-PW-1A	Groundwater	Clear	6-27-91	See Figure 2-1	Resample of above.

APPENDIX K

SELECTED BORING LOGS FROM PREVIOUS INVESTIGATIONS

APPENDIX K

SELECTED BORING LOGS/CONSTRUCTION DIAGRAMS FROM PREVIOUS INVESTIGATIONS

Information obtained by URS pertaining to selected existing wells on the Gorick landfill is included in this appendix. Each log or diagram is numbered with the well ID number ascribed to that well by URS during RI activities.

First Investigation

This report was prepared by Vernon O. Shumaker, Town Engineer, as part of the first investigation of the Gorick site as a potable water source. These wells no longer exist.

Wells VO1 through VO5:

Reproduced here is the 1982 report, including well construction logs and a location diagram, of the study of the Vyredox treatment process, proposed to remove metals from the groundwater in the Town of Kirkwood well field. Wells VO1 through VO5 were installed in Dec. 1981 as part of this demonstration. Well VO2 appears to have been destroyed during the construction of the Town wells. The remaining wells were utilized for water level readings during RI activities.

USGS Wells GS1 through GS16A&B:

Logs of wells presented here were installed in 1984 for the USGS groundwater modeling study. Wells GS10, 11A&B, 12, 13, and 16A&B are listed as being on the Gorick property; GS11A&B and 16A&B have been formally sealed by the USGS. GS12 is inaccessible. GS7 and 15A&B are located near the landfill, and were utilized along with the remaining onsite wells for water level measurements during RI activities.

Well #20:

This well was installed by Layne/Hydrogroup and Lake Engineering in 1987. Its purpose is unknown. This well was utilized for water level measurements during RI activities.

Town Wells 1, 2 and 3:

Diagrams of Town Production Wells #1, 2, and 3 are from various sources. Only the stratigraphy of the diagrams of Wells #1 and 2 appears to be actual - the construction diagrams are called "proposed".

Wells #31 through 37:

Boring logs and construction diagrams of wells installed by Layne/Hydrogroup and Lake Engineering in 1988 are shown. Also attached is a rough site sketch showing the locations of the wells as they are numbered on their logs and diagrams. Added to this sketch are the numbers ascribed to the wells by URS (based on conflicting reports at the time - these logs were not obtained until the RI had started) for the purposes of the Remedial Investigation. Wells #31 through 36 were sampled for the presence of contaminants, and all the wells were used for water level measurements, during RI field activities.

Wells RT7-3 through RT7-5

Boring logs of wells installed by Pratt and Wolff in 1986 are given. The wells were installed for the Town of Conklin as part of a study to determine a location for a replacement well for an existing town production well. Boring logs for RT7-1 and RT7-2 could not be obtained. These wells were used for water level measurements during the second phase of the RI field investigation. Included with the boring logs is a rough sketch that accompanied the logs. Added to the sketch are well designations created by URS.

Engr. Report for Improvement of Fairlawn Water District No.

SITE 2 - GORICK PROPERTY

The Gorick Property site is located within the flood plain of the Susquehanna River southwest of the community of Five Mile Point as shown on the Location Map, Sheet 5. Maximum flood elevation in this locality is estimated at elevation 853 ± for an intermediate regional flood as defined by the United States Corps of Engineers.

The topography of this site and the location of the test wells drilled at this site are shown on Sheet 12.

Four test holes were drilled at this site with the following results:

Exploratory Test Well #1 (#2-1):

This well was carried to a depth of 52 feet. Rock was encountered at this point. A thin lense of water sand-gravel was encountered at 10 feet. Nothing further was encountered indicating no potential as a water source at this location. See Test Boring Logs, Appendix Sheets A-2 and A-3.

Exploratory Test Well #2 (#2-2):

Test Well #2 was drilled to a depth of 67 feet. A water bearing aquifer was encountered between 50 and 65 feet. See Test Boring Logs, Appendix Sheets A-4 and A-5, for details. Appendix Sheet A-28, Figure I, is a mechanical analysis indicating aquifer grain size characteristics. Static water level at time of drilling was 7.46 feet below the ground surface.

A 10 foot section of Temporary Well Screen was installed and a Well Capacity Test conducted. The aquifer yielded water, but the specific capacity was not sufficient to deem this location suitable for a permanent well. See Pumping Log Data, Appendix Sheet A-18, for details.

The well was converted to a 2-inch Observation Well such that future readings of ground water levels could be made. See Appendix Sheet A-29, Figure II, for details.

Exploratory Test Well #3 (#2-3):

This test well was drilled to a depth of 71 feet. It is approximately 147 feet from the Susquehanna River. Aquifer thickness was 29 feet. See Test Boring Logs, Appendix Sheets A-6 and A-7, for details. Static water level at time of drilling and testing was 11.29 feet below the surface. See Appendix Sheet A-30, Figure III, for mechanical analysis indicating aquifer grain size characteristics.

A temporary well screen 10 feet in length was installed and an 8-hour well capacity test run. The aquifer yielded water favorably. See Pumping Log Data, Appendix Sheets A-19 and A-20 and Chemical-Bacteriological Analysis, Appendix Sheet A-26, for details.

The test well was converted to a 2-inch Observation Well such that future readings of ground water levels can be made. See Appendix Sheet A-28, Figure I, for details.

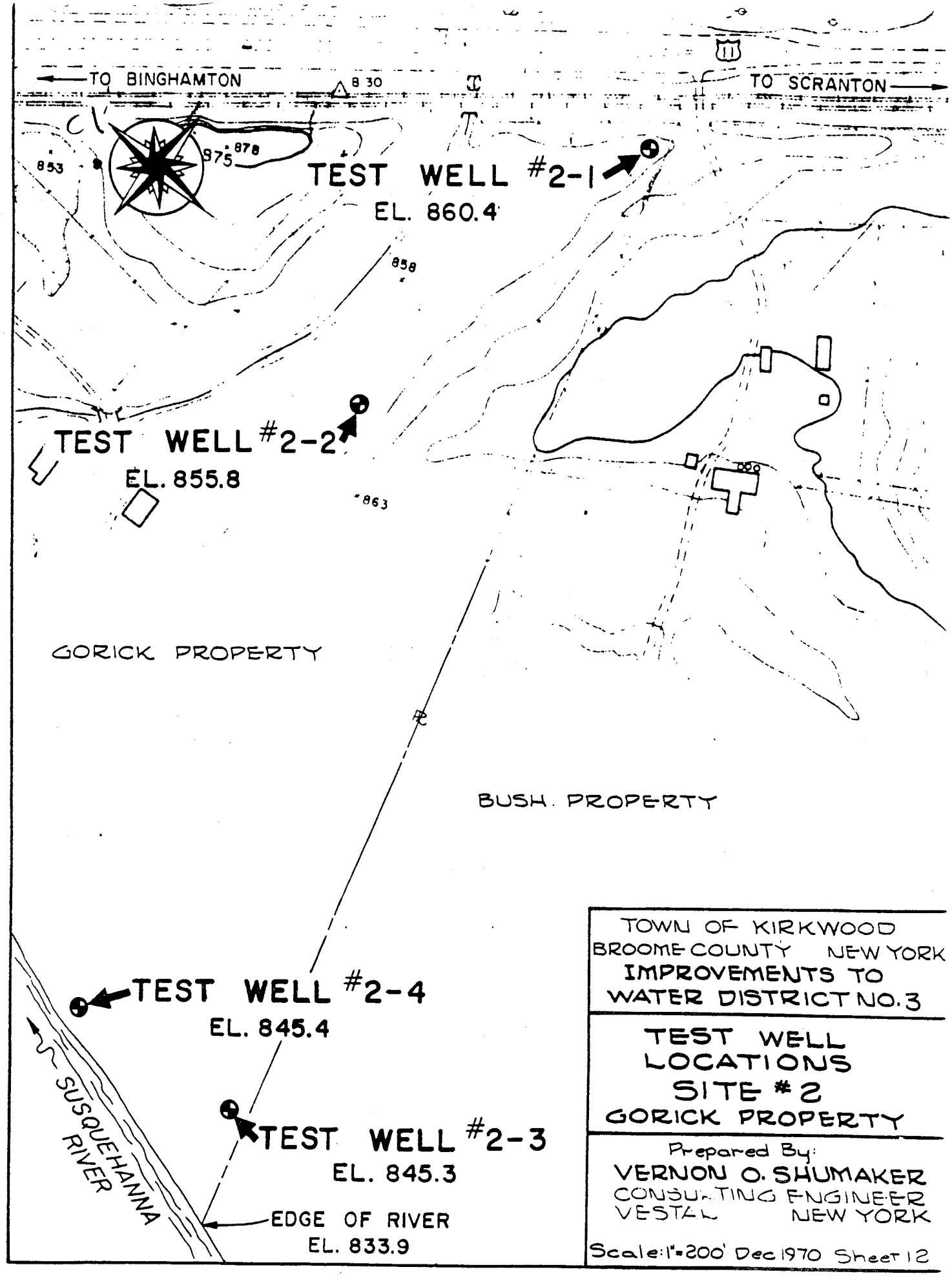
Exploratory Test Well #6 (#2-4):

This test well is approximately 48 feet from the Susquehanna River and about 308 feet west of Well #3.

The test well was drilled to a depth of 66 feet. The water bearing aquifer thickness was 50 feet. Static water level at time of drilling and test pumping was 10.65 feet below the surface. See Appendix Sheet A-31, Figure IV, for mechanical analysis indicating aquifer grain size characteristics.

A temporary well screen 10 feet in length was installed and a 24-hour well capacity test conducted. The aquifer yielded water very favorably, considerably superior to Test Well #3. See Pumping Log Data, Appendix Sheets A-21 thru A-24, for details.

The test well was converted to a 2-inch Observation Well such that future readings of ground water levels can be made. See Appendix Sheet A-28, Figure I, for details.



TOWN OF KIRKWOOD
BROOME COUNTY NEW YORK
IMPROVEMENTS TO
WATER DISTRICT NO. 3

TEST WELL LOCATIONS SITE #2 GORICK PROPERTY

Prepared By:
VERNON O. SHUMAKER
CONSULTING ENGINEER
VESTAL NEW YORK

Scale: 1"=200' Dec 1970 Sheet 12

Industrial and Municipal Well Water Works

GROUND WATER SURVEYS

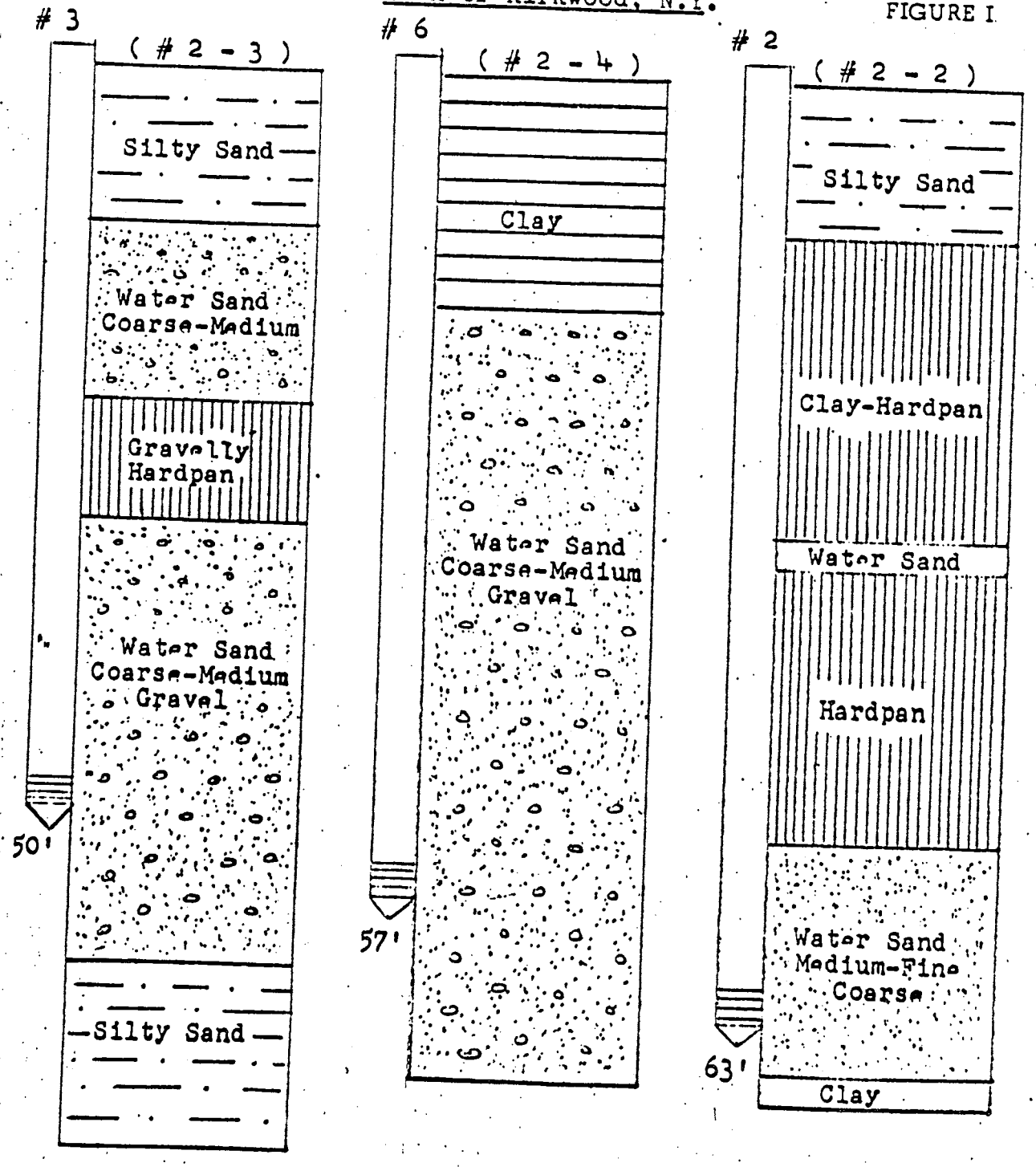
GEOLOGICAL • GEOPHYSICAL • HYDROLOGICAL

...and Plant
...BALLTOWN RD.
...518 - DI 6-2029

Address all mail to STEWART BROS. Inc., SCHENECTADY, N.Y. 12301
POST OFFICE BOX 976

2-inch Observation Wells
Town of Kirkwood, N.Y.

FIGURE I



SUBSURFACE INFORMATION
TEST BORING LOG

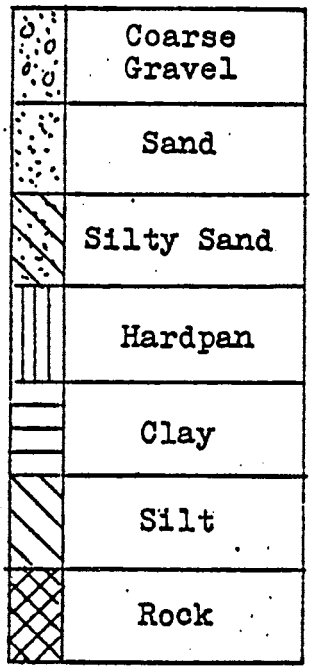
PROJECT NAME Town of Kirkwood

HOLE NO. 1 - 9
DATE Dec. 1970

CASING O. D. ____ I. D. ____	WEIGHT OF HAMMER ____	HAMMER FALL
SAMPLER O. D. ____ I. D. ____	INSIDE LGTH SAMPLER ____	CASING ____ SAMPLER ____

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	CROSS SECTION	MOISTURE	COLOR	FIELD IDENTIFICATION OF SOIL & REMARKS
0										
10										
20										
30										
40										
50										

Cross Section:



Moisture:

M.....Moist
W.....Wet

STEWART BROS., INC.
Schenectady, N. Y.

SUBSURFACE INFORMATION
TEST BORING LOG

GP-2

HOLE NO. 6 (# 2 - 4)
DATE 11-12-70

PROJECT NAME Town of Kirkwood

CASING O. D. ____ I. D. ____ SAMPLER O. D. ____ I. D. ____	WEIGHT OF HAMMER ____ INSIDE LGTH SAMPLER ____	HAMMER FALL CASING ____ SAMPLER ____

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER (0/6 6/12 12/18 18/24)	CROSS SECTION	MOISTURE	COLOR	FIELD IDENTIFICATION OF SOIL & REMARKS
0							Sample taken at 5' 0' to 5' top soil, clay
					M		Sample taken at 10' 5' to 10' Clay
10							Sample taken at 15' 10' to 15' Clay
							Sample taken at 20' 15' to 20' Silty sand and gravel with water
20					W		Sample taken at 25' 20' to 25' Dirty sand and gravel water
							Sample taken at 30' 25' to 30' Medium to fine sand, water
30							Sample taken at 35' 30' to 35' Sand, some gravel, water
					W		Sample taken at 40' 35' to 40' Water sand
40							Sample taken at 45' 40' to 45' water sand
							Sample taken at 50' 45' to 50' water sand
50							

STEWART BROS., INC.
Schenectady, N. Y.

SUBSURFACE INFORMATION
TEST BORING LOG

PROJECT NAME Town of Kirkwood

HOLE NO. 6 (# 2 - 4)
DATE 11-13-70

CASING O. D. ____ I. D. ____
SAMPLER O. D. ____ I. D. ____

WEIGHT OF HAMMER ____
INSIDE LGTH SAMPLER ____

HAMMER FALL
CASING ____ SAMPLER ____

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER 0/6 6/12 12/18 18/24	CROSS SECTION	MOISTURE	COLOR	FIELD IDENTIFICATION OF SOIL & REMARKS
0					W		Sample taken at 55' 50' to 55' Water sand Sample taken at 60' 55' to 60' Water sand Sample taken at 65' 60' to 65' Water sand Sample taken at 66' Dirty sand, water shut off.
10							
20							
30							
40							
50							

(2)

GROUNDWATER ASSOCIATES

HYDROGEOLOGICAL INVESTIGATION • VYREDOX® PROCESS

WESTERVILLE, OHIO

REPORT IV
ON
VYREDOX PILOT STUDIES
IRONWOOD, NEW YORK WELL #2

APRIL 1987

standards of 0.30 mg/l and 0.05 mg/l respectively.

Evaluation of initial water quality data in five observation wells revealed that water from the southern portion of the well field had the highest concentrations of iron and manganese.

The pilot study was successful. Four full cycles of injection and pumping out were performed. In each cycle iron was reduced below the standard of 0.3 mg/l. In successive cycles, this reduction was maintained for longer durations which was measured by comparing the volume of water pumped to the volume of water injected. In the fourth cycle, 3,600,000 gallons of water with an iron concentration of less than 0.3 mg/l were produced by injecting 589,000 gallons of aerated water.

Manganese removals were not complete because we were unable to treat the desired aquifer area due to limited available injection water and interference from Well #1. With each cycle, removal improved. At the beginning of cycle four, 75% of the manganese was removed and at the end of the cycle, 58% was removed. Previous experience has taught us that using a larger treatment radius and allowing time for run-in will bring manganese below the limit of 0.05 mg/l.

There are 70 Vyredox plants worldwide. The average volumetric efficiency is 8.9:1. Well #2 responded somewhat better than average after four cycles; therefore, we estimate that after the normal run-in period of ten to fifteen cycles, the system will produce about ten gallons of water with acceptable iron and manganese concentrations for each gallon injected.

We sampled the observation wells for contaminants. The town is evaluating the data and plans to continue monitoring at the site. We recommend that every possible effort be made to protect the quality of the wells from contamination by neighbors.

Based on our pilot data, we believe a Vyredox plant at this site will solve the iron and manganese problem at capital and operating costs less than those of the existing pressure filtration plant. Because the iron and manganese will not reach the well screen, the plugging that occurred at Well #2 should not occur at the proposed Well #3.

TABLE 1 - PRE-VYREDOX WATER QUALITY DATA

WELL	Fe	Mn	pH	DATE
GP-1	.22	.37	6.2	6/77
GP-1	.03	.08	6.2	1/82
GP-2	.78	.89	5.9	6/77
GP-2	3.5	1.3	5.9	1/82
VO-1	.03	.09	6.4	1/82
VO-2	.01	.06	6.4	1/82
VO-3	.80	1.08	4.2	1/82
VO-4	.50	1.10	6.0	1/82
VO-5	.60	3.40	5.8	1/82

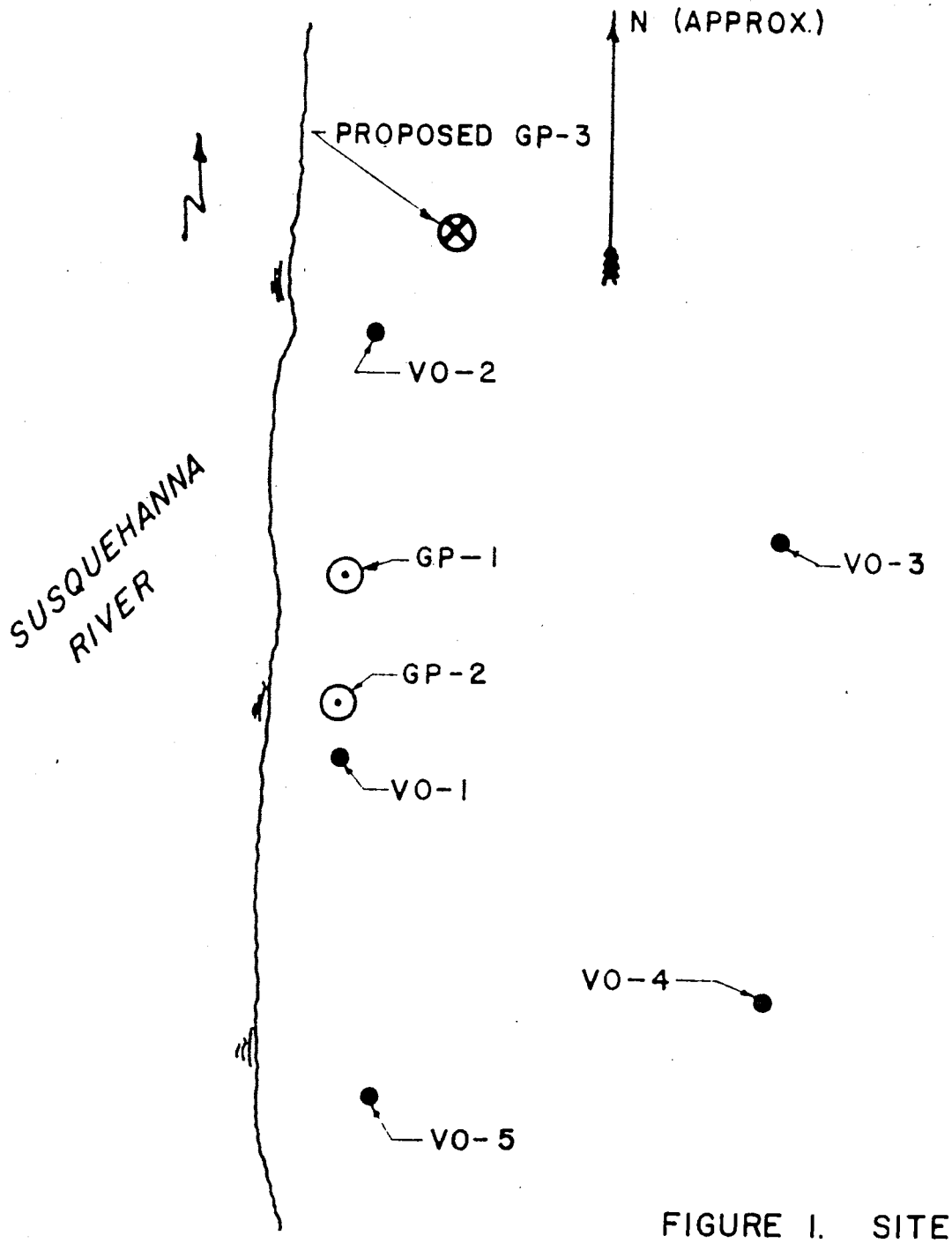


FIGURE 1. SITE PLAN

SCALE: 1" = 100'

TABLE 2 - OBSERVATION WELL #1 QUALITY LOG

DEPTH	TOTAL IRON	DISSOLVED IRON	MANGANESE	DISSOLVED OXYGEN	Ph	Eh
25	.03	0	.06	.75	5.83	404
30	.02	0	.08	.45	5.85	400
35	.05	0	.05	.45	6.2	397
40	.05	0	.05	2.0	6.17	391
45	.01	0	.15	2.35	6.20	372
50	.05	.04	.20	2.40	6.20	370
55	.19	.15	.28	.90	6.20	351
60	.04	0	.09	.20	6.02	322
65	.02	0	.05	.10	6.02	50
70	.23	0	.05	0	6.10	80
75	.02	0	.03	0	6.01	110
80	.08	0	.05	.45	6.08	128

URS # 8 V01

TEST WELL RECORD

Layne NEW YORK CO., INC.

DATE 12/7/81 TEST WELL NO. 1

FOR Kirkwood, N.Y.

LOCATION

PROPERTY OWNER

SKETCH OF LOCATION GIVE APPROXIMATE DISTANCES

N

LOG OF WELL

GROUND SURFACE	0'
Fill	16'
Fine Med. Brown Sand & Silt Dark Brown	21'
Clay Brown Fine Silty Sand Light Brown	58'
Fine Med. Sand & Silt Reddish Brown	79'
Silty Sand Reddish Brown	
BOTTOM OF TEST HOLE	88'

TOTAL WELL DEPTH 88'

OBS. WELL: NO. DISTANCE DEPTH

NO. DISTANCE DEPTH

WELL SCREEN: TYPE LENGTH OPENING

PUMPING DATA (MEASURED FROM TOP OF PIPE) ELEVATION:

TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL	TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL

REMARKS

P.V.C. 30 Slot 50'

P.V.C. Riser 32.50

P.V.C. Plug (1)

10' of 2 1/2" Pipe for protection

STATIC LEVEL ORIFICE AIR LINE LENGTH

QUALITY: PH HARD. IRON MANGANESE

ODOR TASTE LAB. SAMPLE

PIPE LEFT: IN WELL FT., IN OBS. WELL FT.

SCREEN LEFT: IN WELL FT., IN OBS. WELL FT.

PIPE: TO BE LEFT TO BE PULLED LATER

NOTE (1) SHOW SCREEN SETTING ON SKETCH.
(2) TAKE ALL MEASUREMENTS FROM GROUND LEVEL.

URS # V01

TEST WELL RECORD

Layne NEW YORK CO., INC.

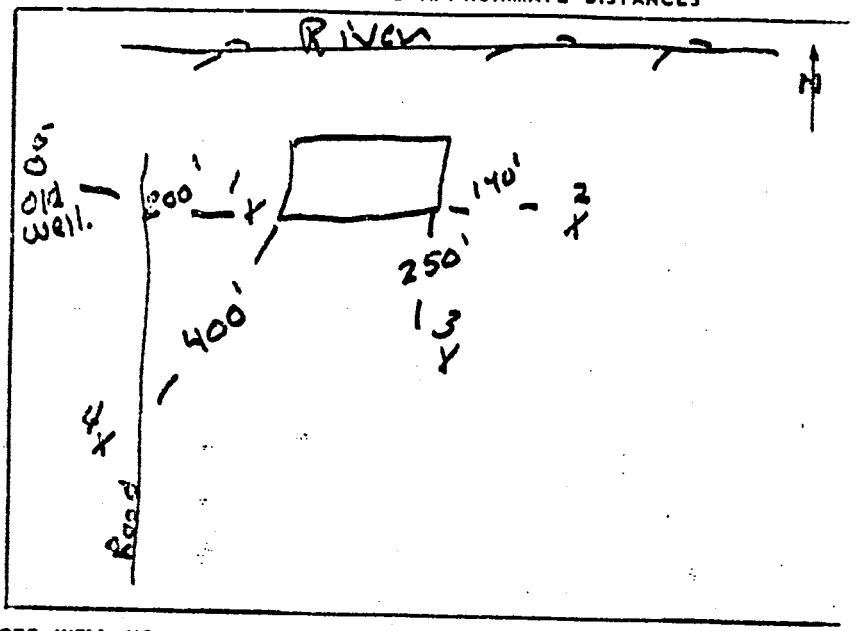
DATE 12-7-81 TEST WELL NO. 1

FOR Kirkwood N.Y.

LOCATION

PROPERTY OWNER

SKETCH OF LOCATION GIVE APPROXIMATE DISTANCES



LOG OF WELL

GROUND SURFACE 0'		
Fill	16'	
Fine med. brown Sand + Silt	21'	
Dark Brown		
Clay Brown Fine Silty Sand	58'	TOTAL WELL DEPTH 88'
Light Brown		
Fine med. Sand + Silt	79'	
Reddish brown		
Silty Sand Reddish brown.		
BOTTOM OF TEST HOLE	88'	

OBS. WELL: NO. DISTANCE DEPTH

NO. DISTANCE DEPTH

WELL SCREEN: TYPE LENGTH OPENING

PUMPING DATA (MEASURED FROM TOP OF PIPE) ELEVATION:

TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL	TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL

STATIC LEVEL ORIFICE AIR LINE LENGTH

QUALITY: PH HARD. IRON MANGANESE

ODOR TASTE LAB. SAMPLE

PIPE LEFT: IN WELL FT., IN OBS. WELL FT.

SCREEN LEFT: IN WELL FT., IN OBS. WELL FT.

PIPE: TO BE LEFT TO BE PULLED LATER

REMARKS

P.V.C. 30 SLOT 50'

P.V.C. Riser 32.50

P.V.C. plug. (1)

10' of 2½" pipe for protection.

NOTE (1) SHOW SCREEN SETTING ON SKETCH.
(2) TAKE ALL MEASUREMENTS FROM GROUND LEVEL.

R. Persali

FOR LAYNE - NEW YORK CO., INC.

Well no longer exists

TEST WELL RECORD

LAYNE NEW YORK CO., INC.

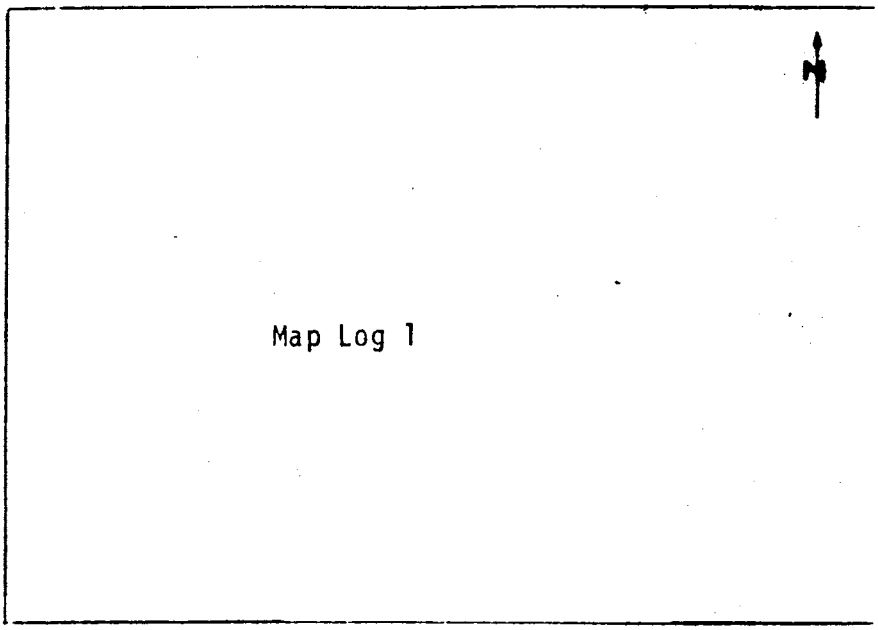
DATE 12/10/81 TEST WELL NO. 2

FOR Kirkwood, N.Y.

LOCATION

PROPERTY OWNER

SKETCH OF LOCATION GIVE APPROXIMATE DISTANCES



OBS. WELL: NO. DISTANCE DEPTH

NO. DISTANCE DEPTH

WELL SCREEN: TYPE LENGTH OPENING

PUMPING DATA (MEASURED FROM TOP OF PIPE) ELEVATION:

TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL	TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL

STATIC LEVEL ORIFICE AIR LINE LENGTH

QUALITY: PH HARD. IRON MANGANESE

ODOR TASTE LAB. SAMPLE

PIPE LEFT: IN WELL FT., IN OBS. WELL FT.

SCREEN LEFT: IN WELL FT., IN OBS. WELL FT.

PIPE: TO BE LEFT TO BE PULLED LATER

LOG OF WELL

GROUND SURFACE 0'

Peat	7'
Fine Brown Sand Light Brown	20'
Fine, Med Sand & Gravel with Clay Dark Brown	45'
Fine Sand Light Brown	61'
Fine Med Sand & Gravel	
BOTTOM OF TEST HOLE	68'

TOTAL WELL DEPTH 68'

REMARKS

P.V.C. 30 Slot 50'

P.V.C. Riser 18.70

P.V.C. Plug (1)

10' of 2 1/2" pipe for protection

NOTE (1) SHOW SCREEN SETTING ON SKETCH.
(2) TAKE ALL MEASUREMENTS FROM GROUND LEVEL.

FOR LAYNE - NEW YORK CO., INC.

URS # V03

TEST WELL RECORD

LAYNE NEW YORK CO., INC.

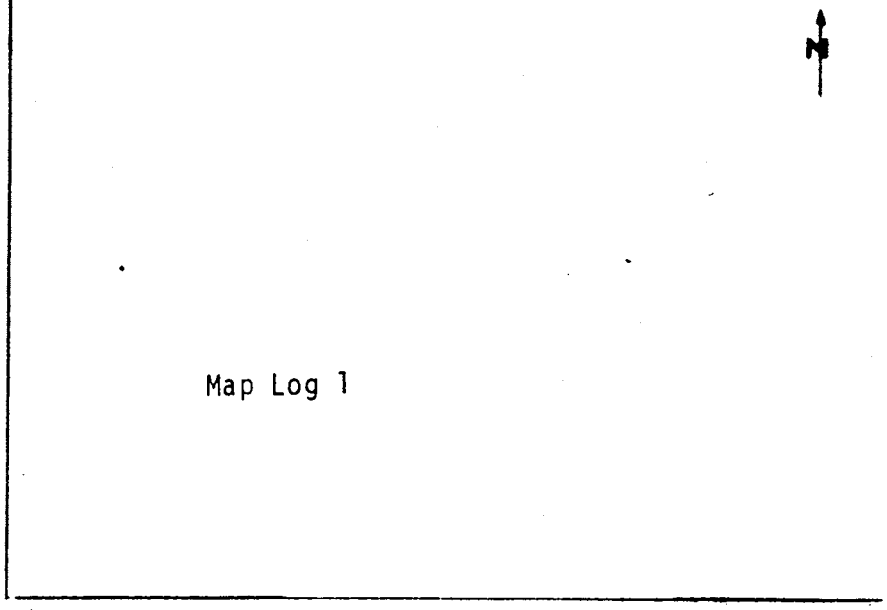
DATE 12/12/81 TEST WELL NO. 3

FOR Kirkwood, N.Y.

LOCATION

PROPERTY OWNER

SKETCH OF LOCATION GIVE APPROXIMATE DISTANCES



OBS. WELL: NO. DISTANCE DEPTH

NO. DISTANCE DEPTH

WELL SCREEN: TYPE LENGTH OPENING

PUMPING DATA (MEASURED FROM TOP OF PIPE) ELEVATION:

TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL	TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL

STATIC LEVEL ORIFICE AIR LINE LENGTH

QUALITY: PH HARD. IRON MANGANESE

ODOR TASTE LAB. SAMPLE

PIPE LEFT: IN WELL FT., IN OBS. WELL FT.

SCREEN LEFT: IN WELL FT., IN OBS. WELL FT.

PIPE: TO BE LEFT TO BE PULLED LATER

LOG OF WELL

GROUND SURFACE 0'

Peat 9'

Fine Sand Gray 20'

Fine Med Sand & Gravel with Gray Clay
Dark Brown 51'

F, M, Sand & Gravel
Trace of Clay
Dark Brown

BOTTOM OF TEST HOLE 66'

TOTAL WELL DEPTH 66'

REMARKS

P.V.C. Slot 30 50'

P.V.C. Riser 10'

P.V.C. Plug (1)

10' of 2 1/2" pipe for protection

NOTE (1) SHOW SCREEN SETTING ON SKETCH.
(2) TAKE ALL MEASUREMENTS FROM GROUND LEVEL.

FOR LAYNE - NEW YORK CO., INC.

URS# V04

TEST WELL RECORD

Layne NEW YORK CO., INC.

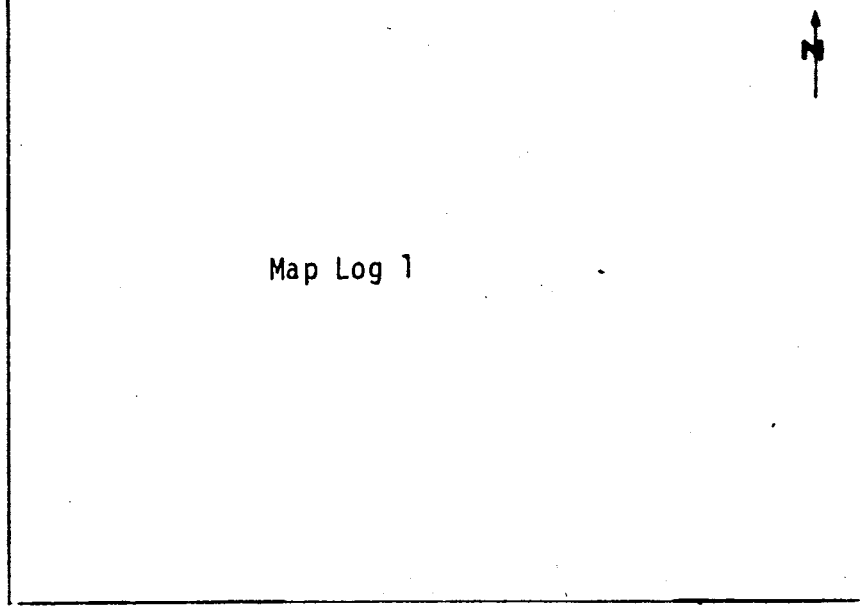
DATE 12/16/81 TEST WELL NO. 4

FOR Kirkwood, N.Y.

LOCATION

PROPERTY OWNER

SKETCH OF LOCATION GIVE APPROXIMATE DISTANCES



LOG OF WELL

GROUND SURFACE 0'

Fine Sand & Clay
Gray
20'

Fine Med Sand & Gravel Trace of Clay
47' Dark Brown
47'

TOTAL WELL DEPTH
66'

Fine Sand & Silt
Gray
BOTTOM OF TEST HOLE 66'

OBS. WELL: NO. DISTANCE DEPTH

NO. DISTANCE DEPTH

WELL SCREEN: TYPE LENGTH OPENING

PUMPING DATA (MEASURED FROM TOP OF PIPE) ELEVATION:

TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL	TIME	GPM	PUMP. WELL	OBS. WELL	OBS WEL

REMARKS

P.V.C. Slot 30 50'

P.V.C. Riser 19'

P.V.C. Plug (1)

10' of 2 1/2" Pipe for protection

STATIC LEVEL ORIFICE AIR LINE LENGTH

QUALITY: PH HARD. IRON MANGANESE

ODOR TASTE LAB. SAMPLE

PIPE LEFT: IN WELL FT., IN OBS. WELL FT.

SCREEN LEFT: IN WELL FT., IN OBS. WELL FT.

PIPE: TO BE LEFT TO BE PULLED LATER

NOTE (1) SHOW SCREEN SETTING ON SKETCH.
(2) TAKE ALL MEASUREMENTS FROM GROUND LEVEL.

FOR LAYNE - NEW YORK CO., INC.

TEST WELL RECORD

URS #V05

Layne NEW YORK CO., INC.

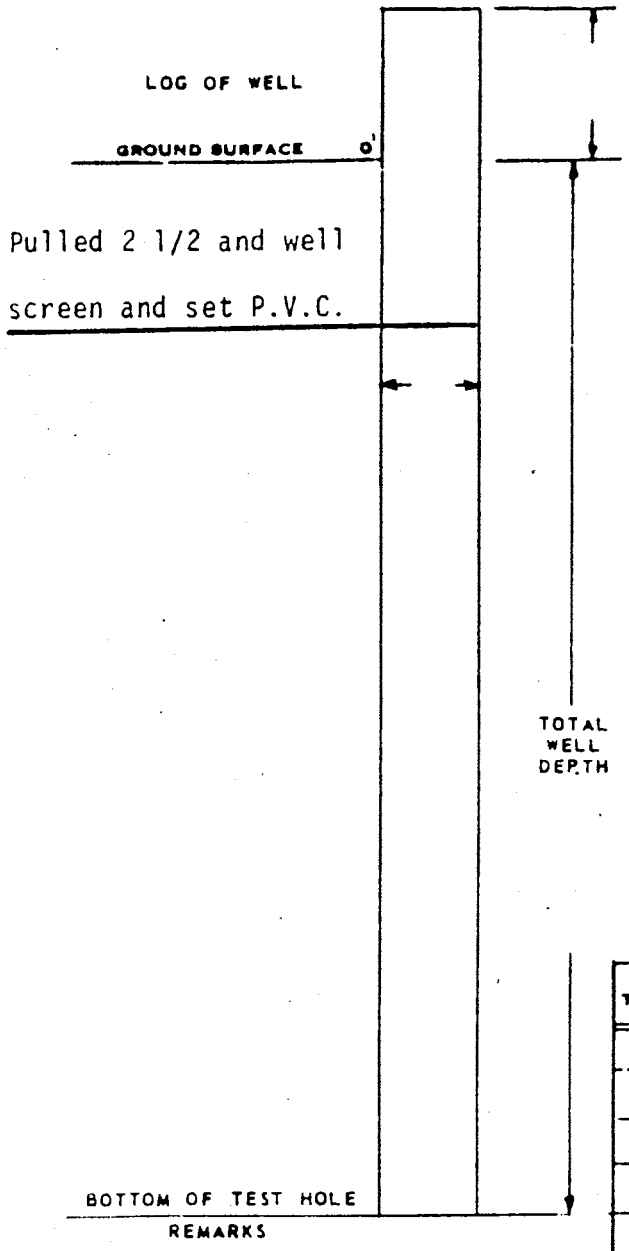
DATE 12/17/81 TEST WELL NO. 5

FOR Kirkwood, N.Y.

LOCATION Old 2 1/2 Well

PROPERTY OWNER

SKETCH OF LOCATION GIVE APPROXIMATE DISTANCES



REMARKS

P.V.C. Slot 30 40'

P.V.C. Riser 10'

P.V.C. Plug (1)

OBS. WELL: NO. DISTANCE DEPTH

NO. DISTANCE DEPTH

WELL SCREEN: TYPE LENGTH OPENING

PUMPING DATA (MEASURED FROM TOP OF PIPE) ELEVATION:

TIME	GPM	PUMP. WELL	OBS. WELL	OBS. WELL	TIME	GPM	PUMP. WELL	OBS. WELL	OBS WEL

STATIC LEVEL ORIFICE AIR LINE LENGTH

QUALITY: PH HARD. IRON MANGANESE

ODOR TASTE LAB. SAMPLE

PIPE LEFT: IN WELL FT., IN OBS. WELL FT.

SCREEN LEFT: IN WELL FT., IN OBS. WELL FT.

PIPE: TO BE LEFT TO BE PULLED LATER

NOTE (1) SHOW SCREEN SETTING ON SKETCH.
(2) TAKE ALL MEASUREMENTS FROM GROUND LEVEL.

FOR LAYNE - NEW YORK CO., INC.

Well Destroyed

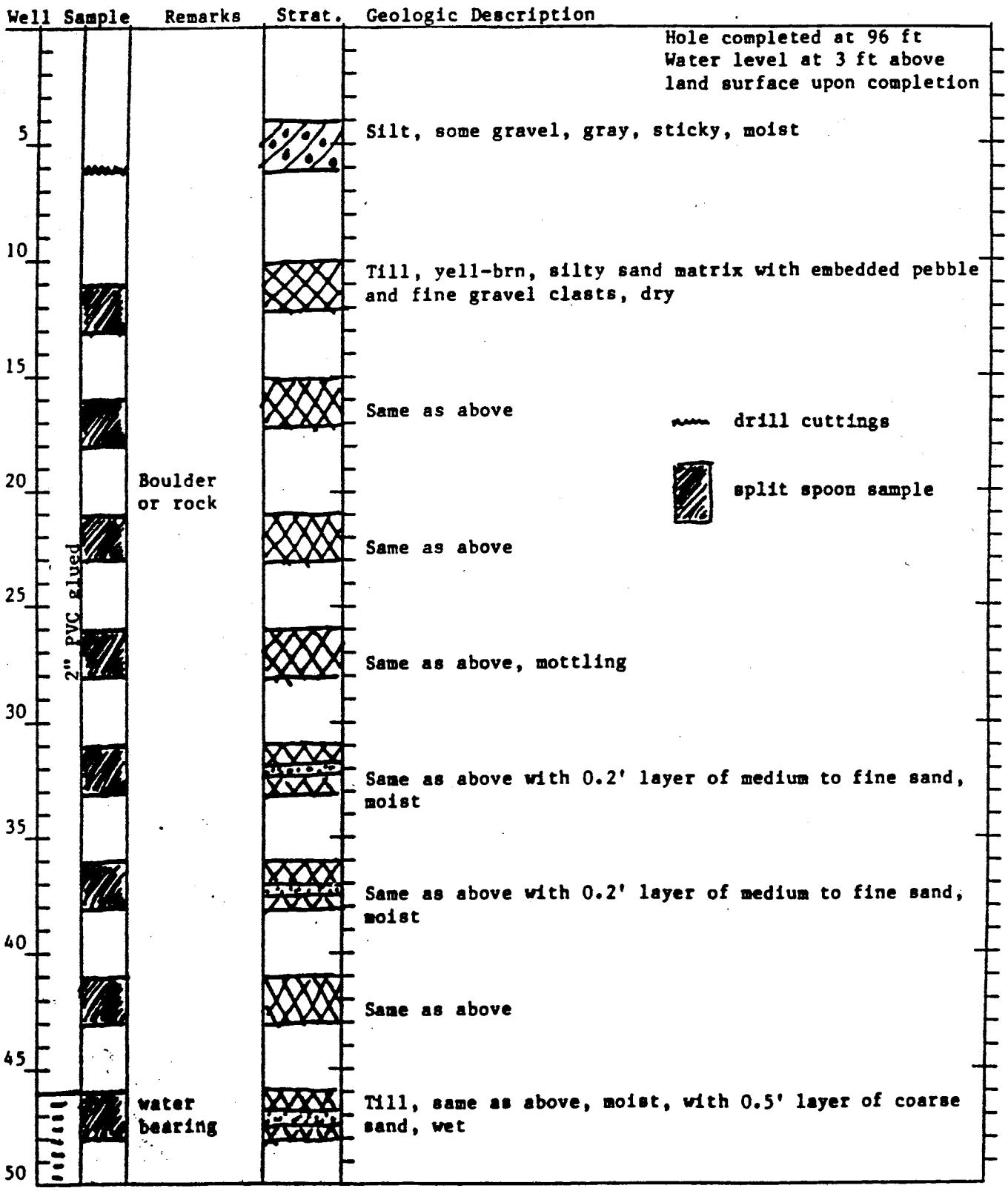
Site: USGS-1

Date Oct. 19, 1983

Location: Town of Kirkwood property

Land surface elevation 847

Measuring point 852.45



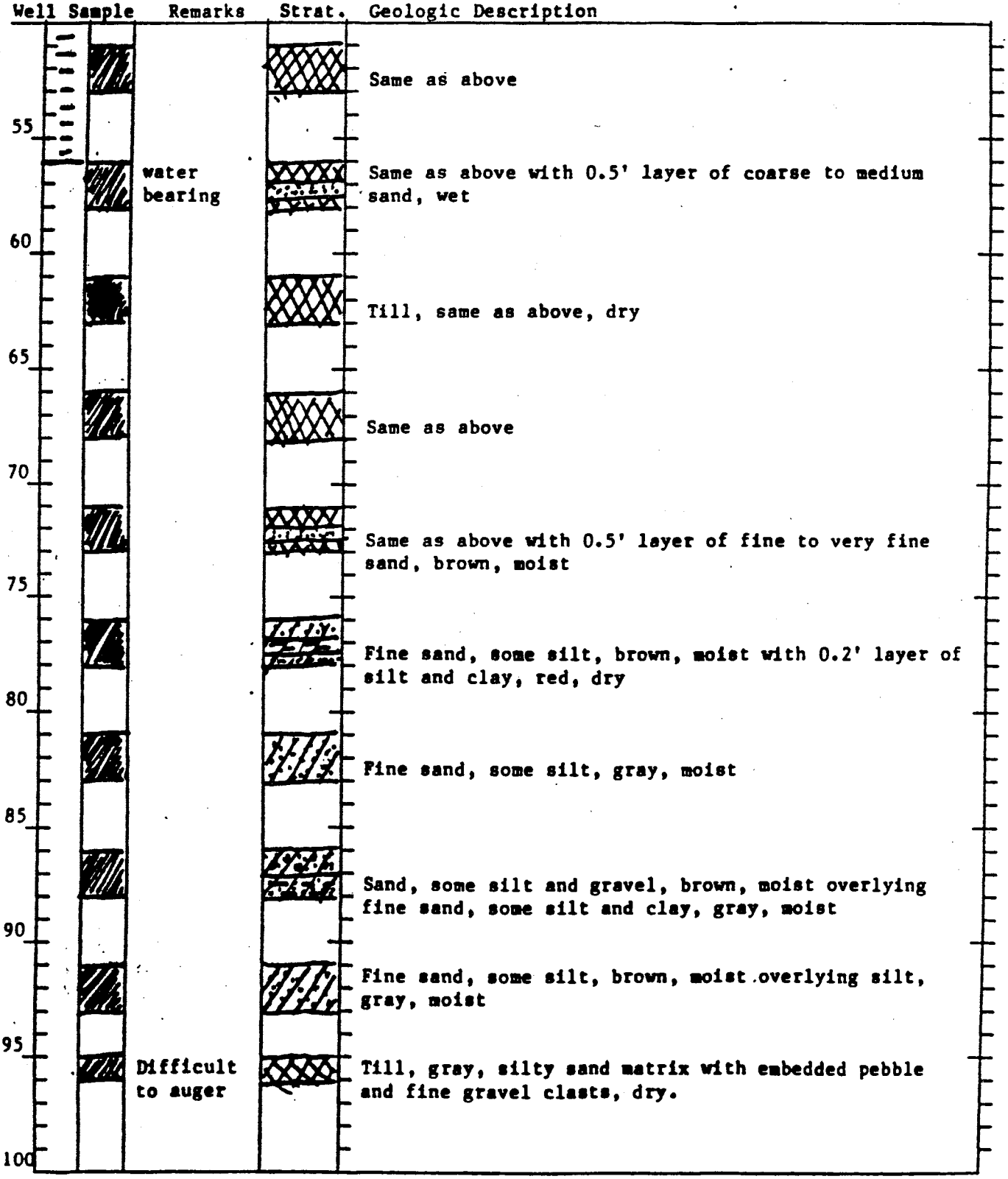
Site: USGS-1

Date Oct. 19, 1983

Location: Town of Kirkwood property

Land surface elevation 847

Measuring point 852.45



Well Destroyed

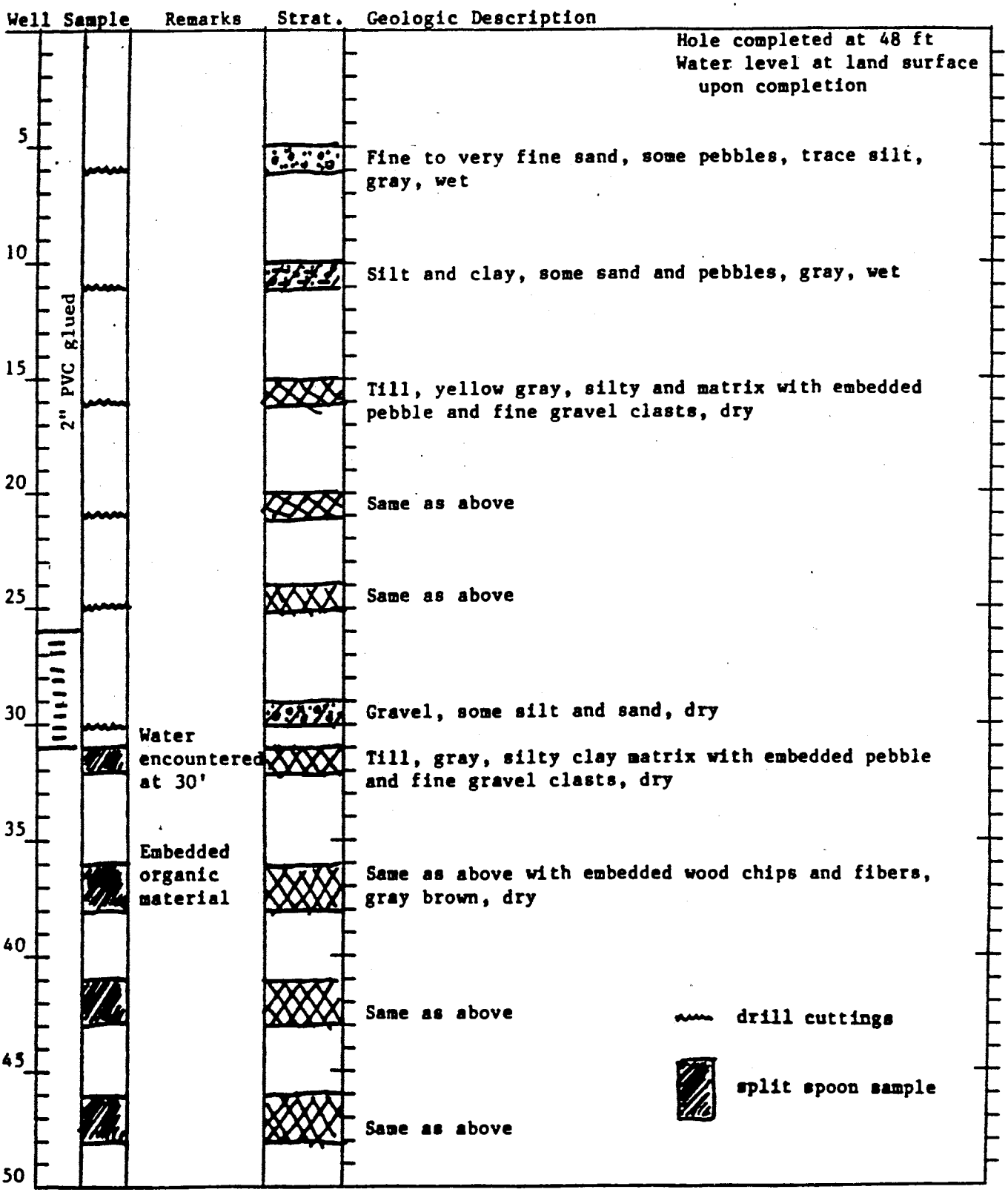
Site: USGS-2

Date Oct. 20, 1983

Location: Town of Kirkwood property

Land surface elevation 842

Measuring point 844.27



Sheet # 1 of 1

Well Destroyed

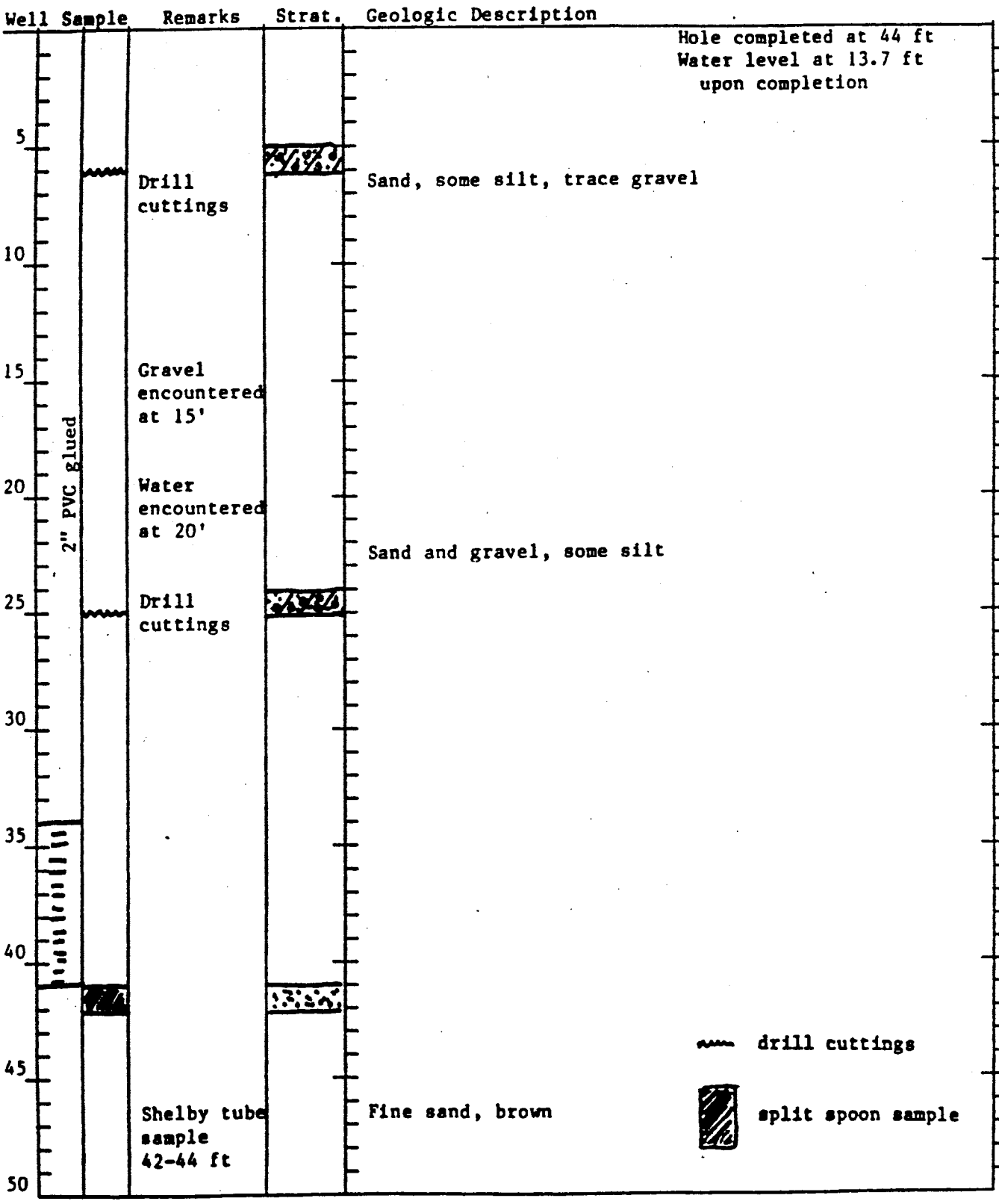
Site: USGS-4

Date Oct. 21, 1983

Location: A. J. Cerassaro property, Kirkwood

Land surface elevation 844

Measuring point 848.12



Sheet # 1 of 1

Well Destroyed

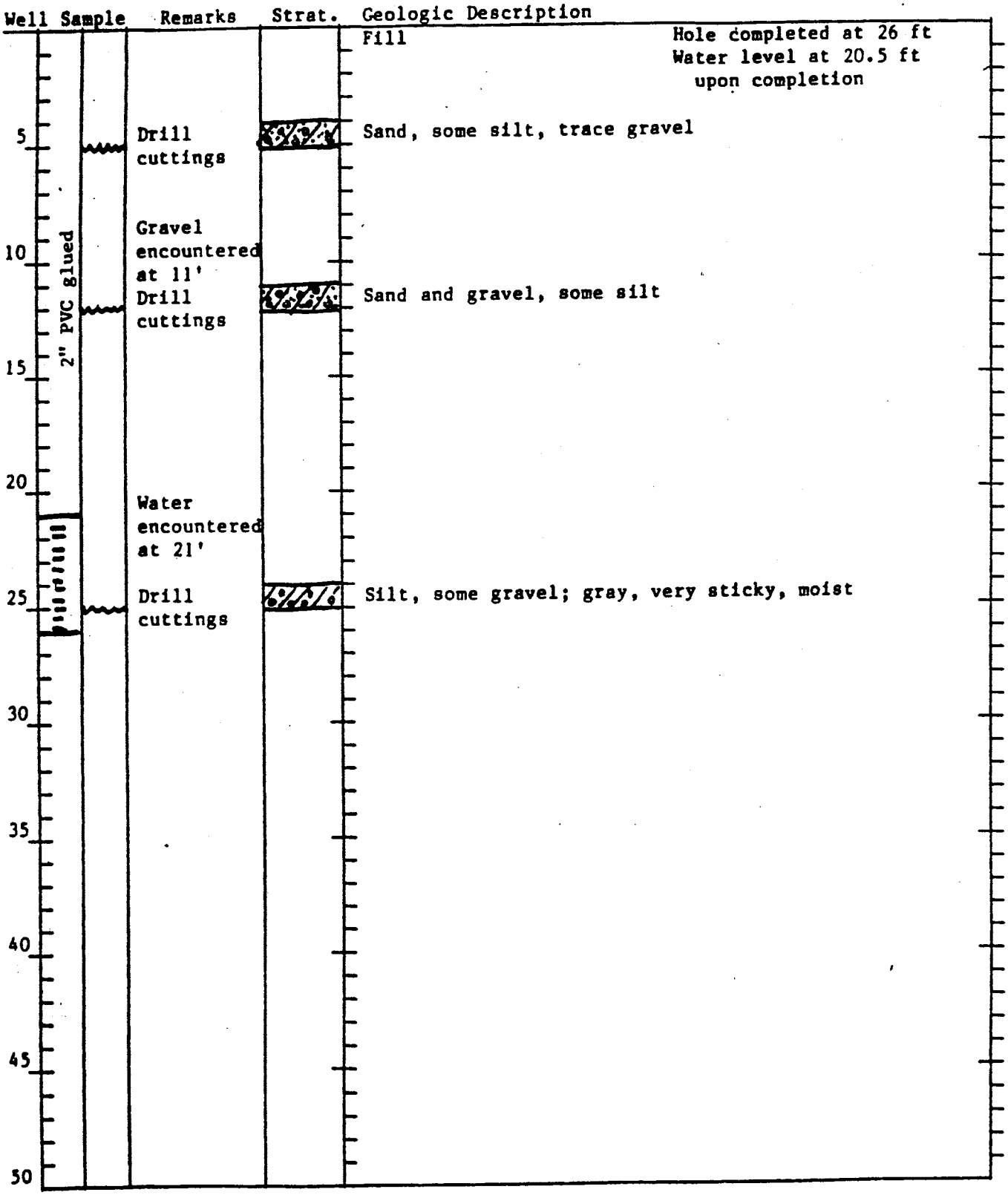
Site: USGS-6

Date Oct. 21, 1983

Location: A. J. Cerasaro property, Kirkwood

Land surface elevation 851

Measuring point 853.12



Sheet # 1 of 1

VRS # GS7

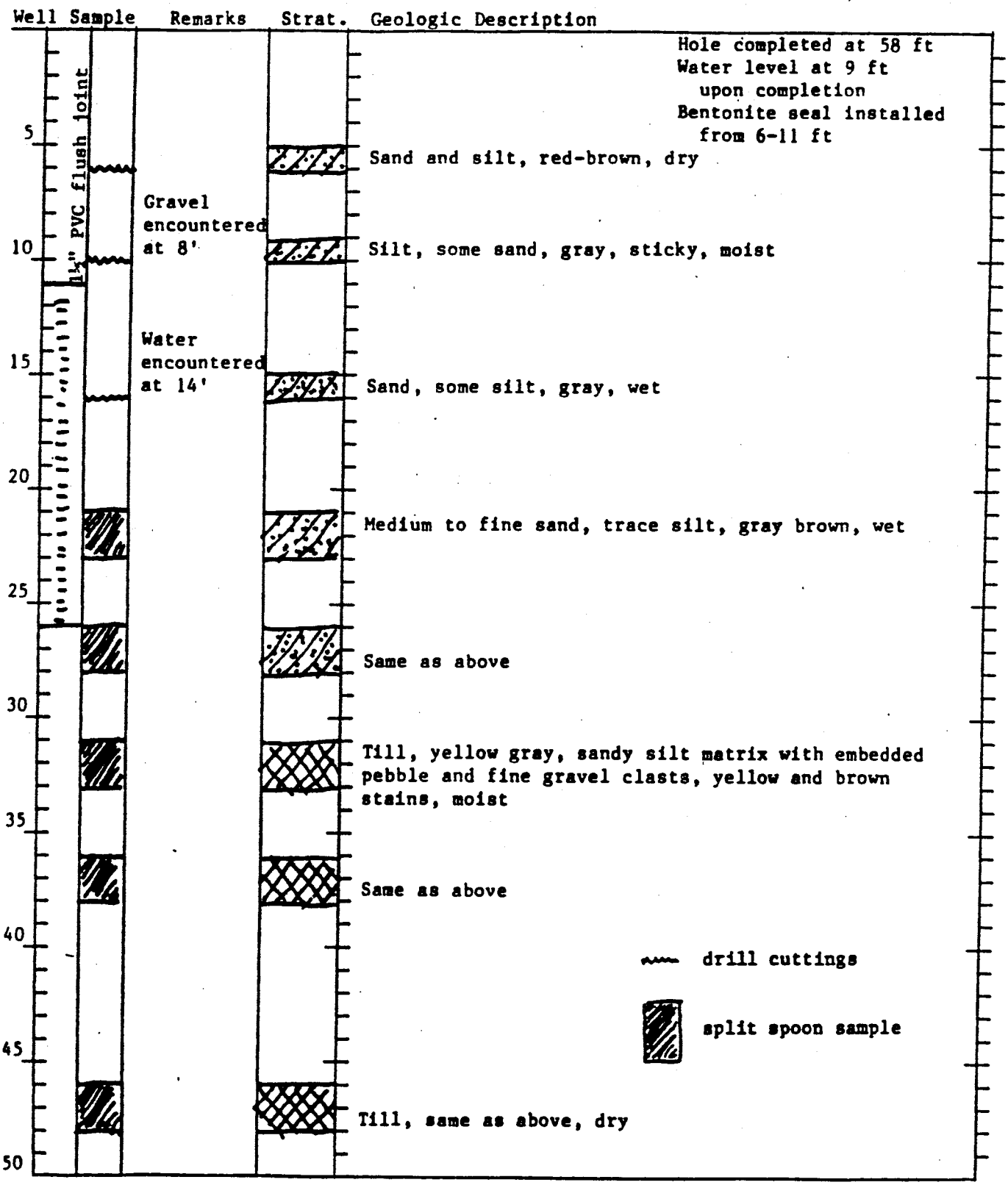
Site: USGS-7

Date Oct. 24, 1983

Location: Town of Kirkwood Property

Land surface elevation 839

Measuring point 841.96



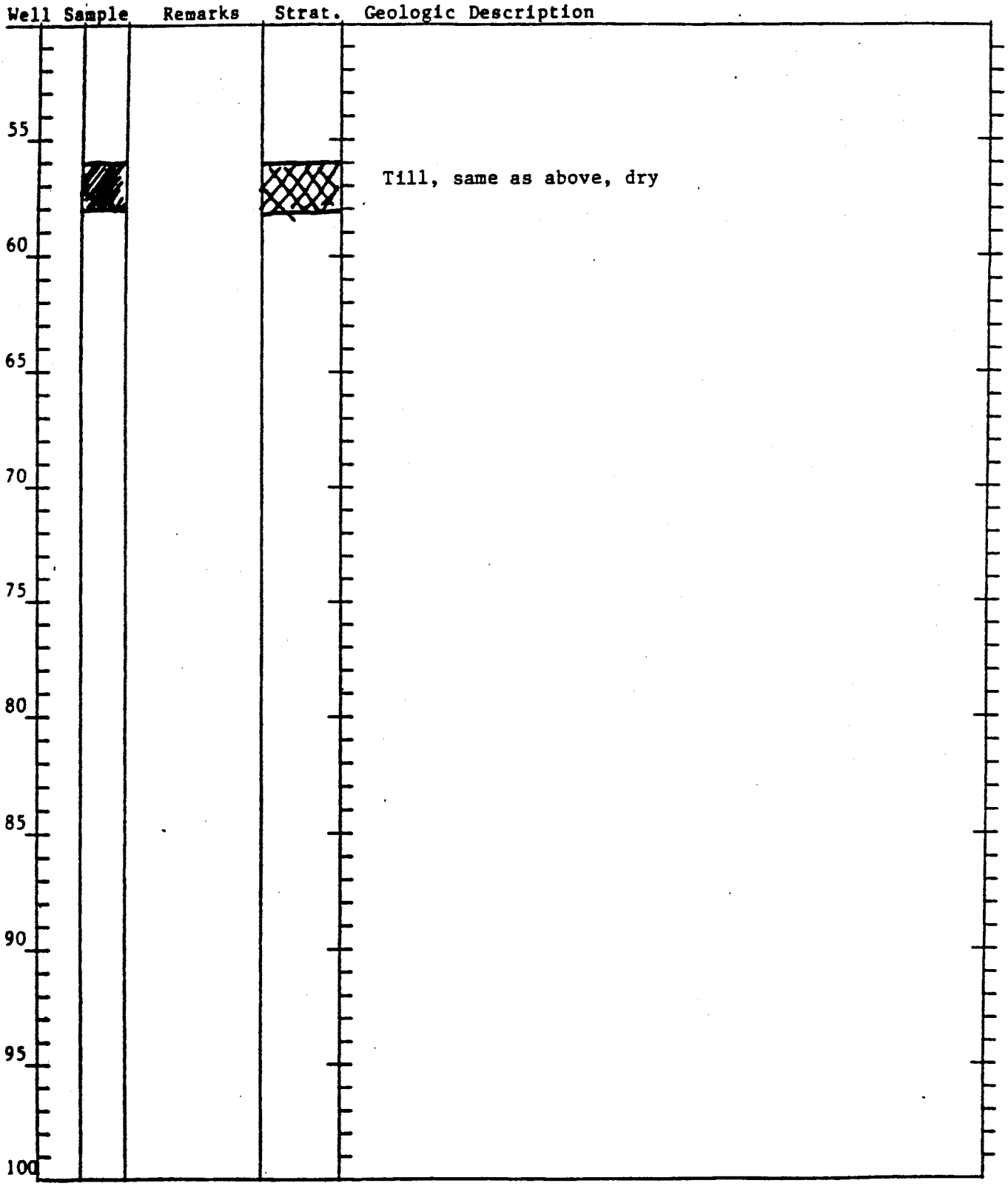
Site: USGS-7

Date Oct. 24, 1983

Location: Town of Kirkwood Property

Land surface elevation 839

Measuring point 841.96



Well Destroyed

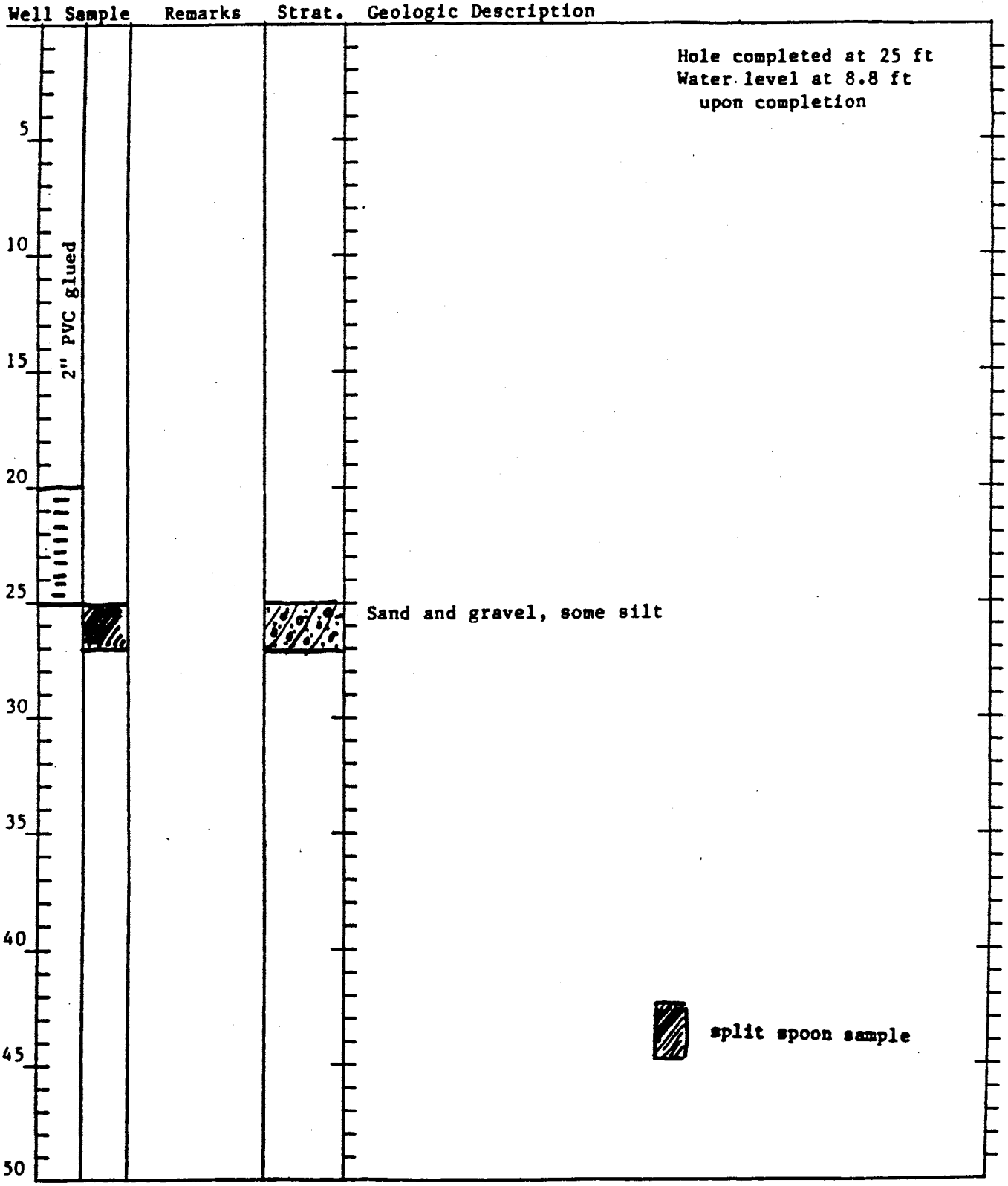
Site: USGS-8A

Date Jan. 18, 1984

Location: Town of Kirkwood property

Land surface elevation 842

Measuring point 842.70



Sheet # 1 of 1

Well Destroyed

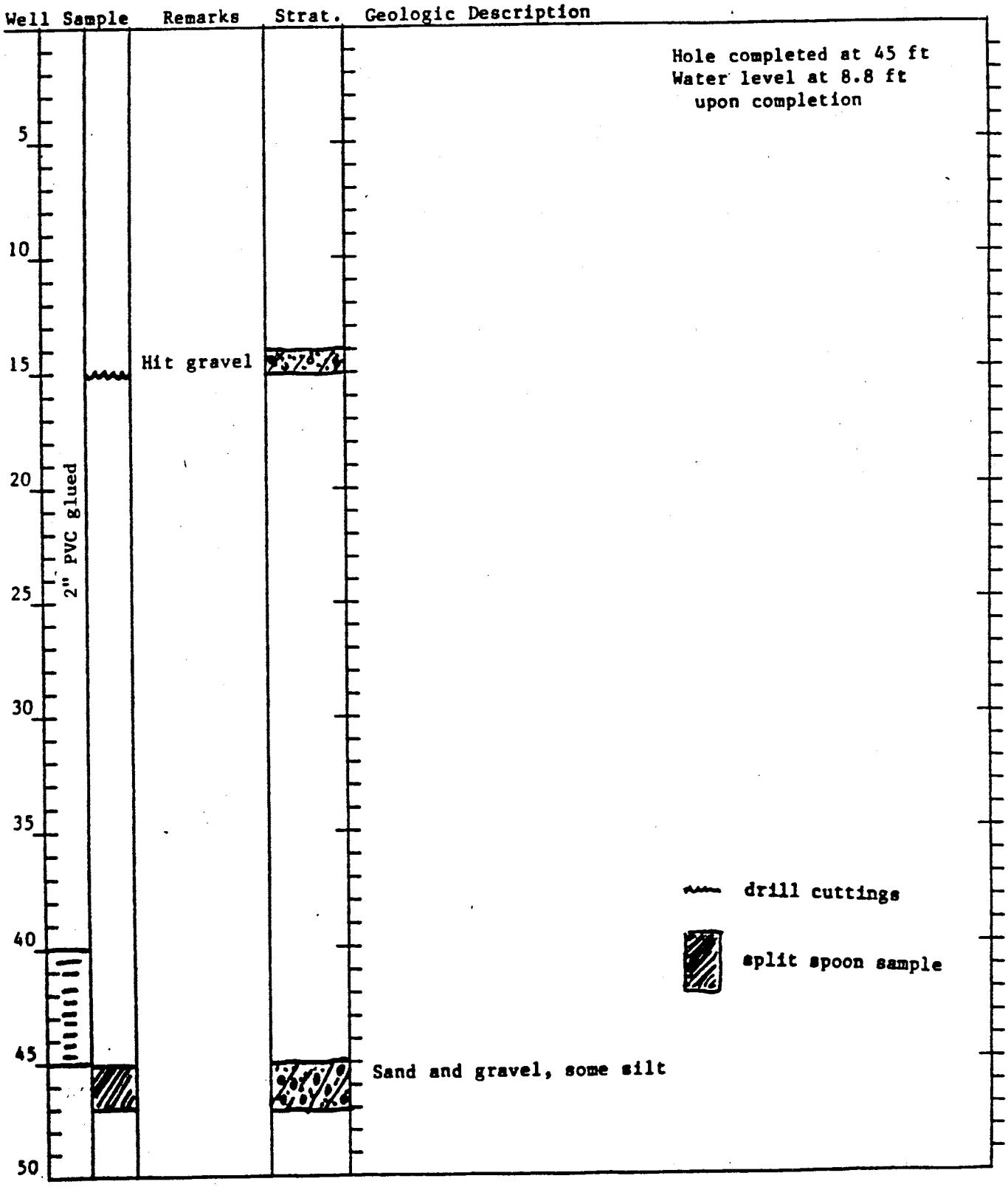
Site: USGS-8B

Location: Town of Kirkwood property

Date Jan. 17, 1984

Land surface elevation 842

Measuring point 842.70



Sheet # 1 of 1

Well Destroyed

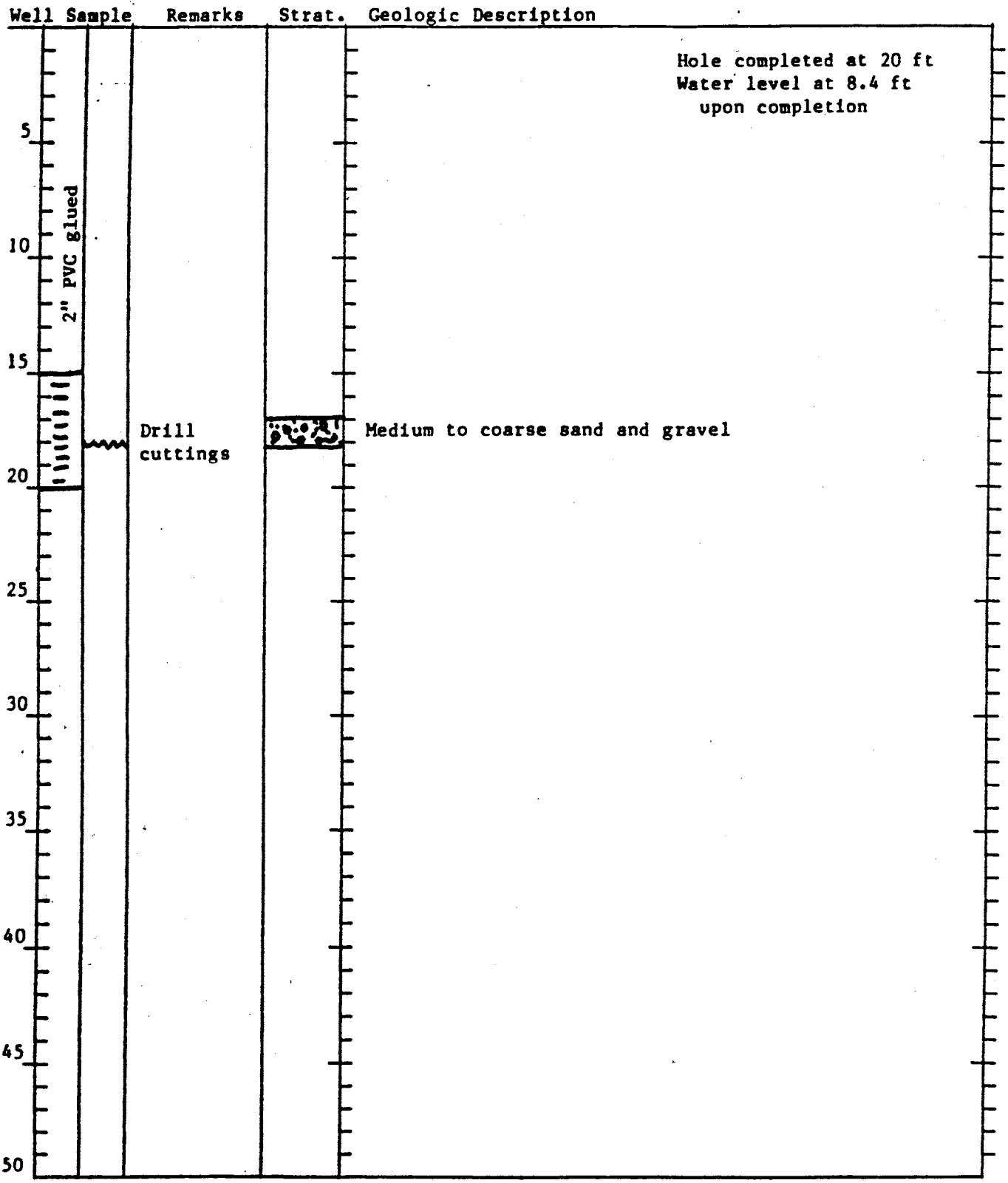
Site: USGS-9A

Date Aug. 6, 1984

Location: Town of Conklin near Susquehanna River

Land surface elevation 837

Measuring point 839.34



Sheet # 1 of 1

Well Destroyed

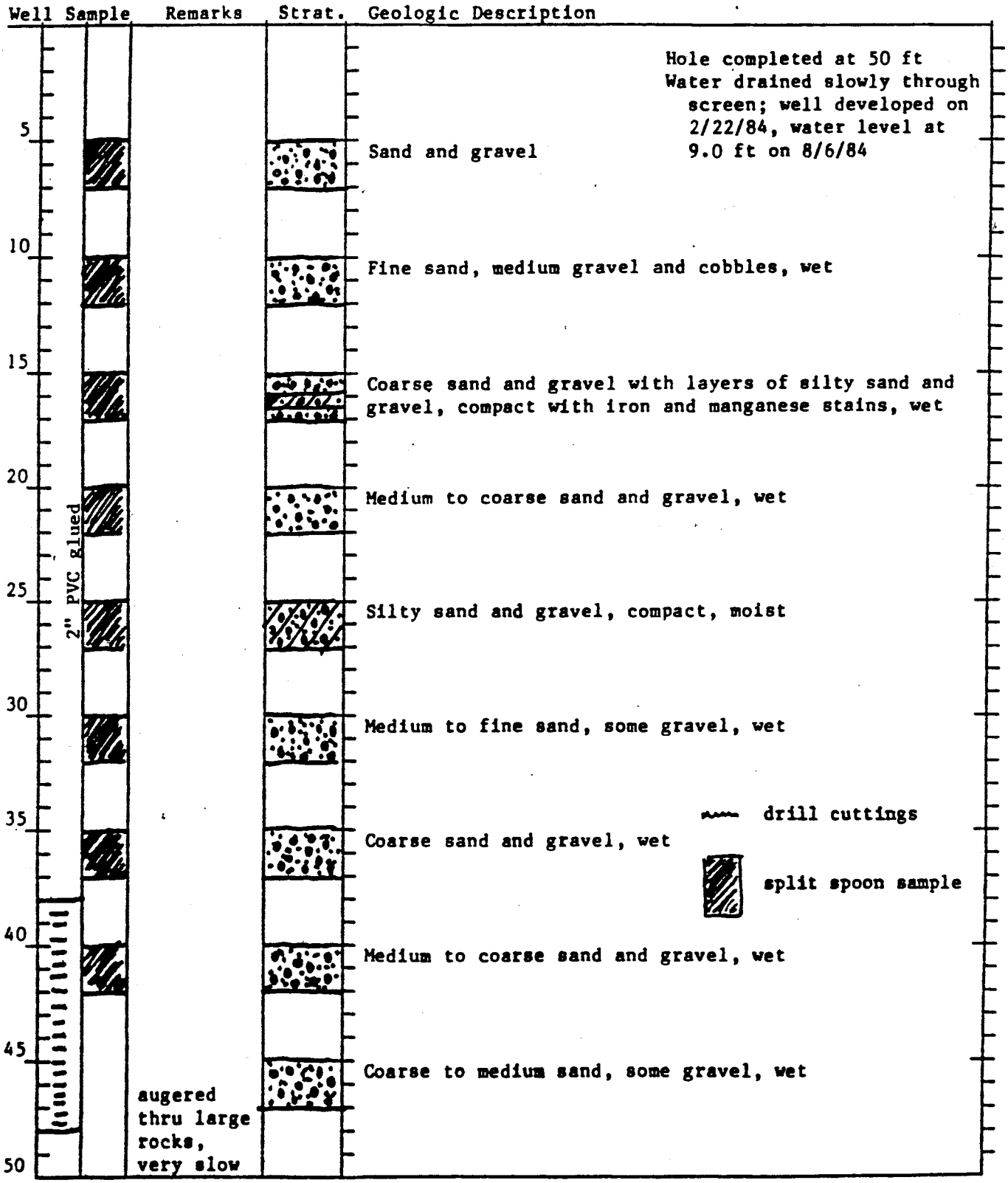
Site: USGS-9B

Date Jan. 19, 1984

Location: Town of Conklin near Susquehanna River

Land surface elevation 837

Measuring point 839.92



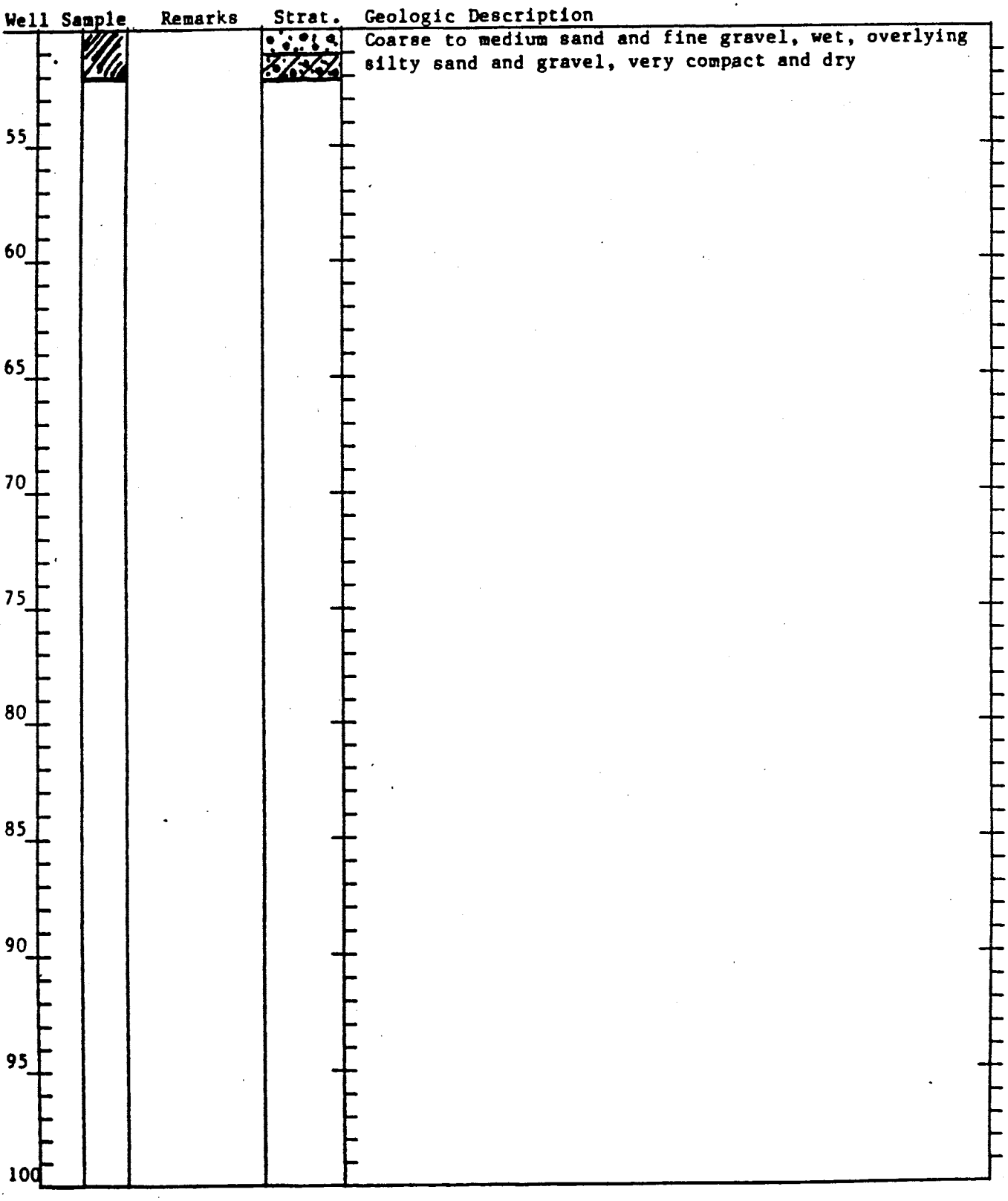
Site: USGS-9B

Date Jan. 19, 1984

Location: Town of Conklin near Susquehanna River

Land surface elevation 837

Measuring point 839.92



URS # G-S10

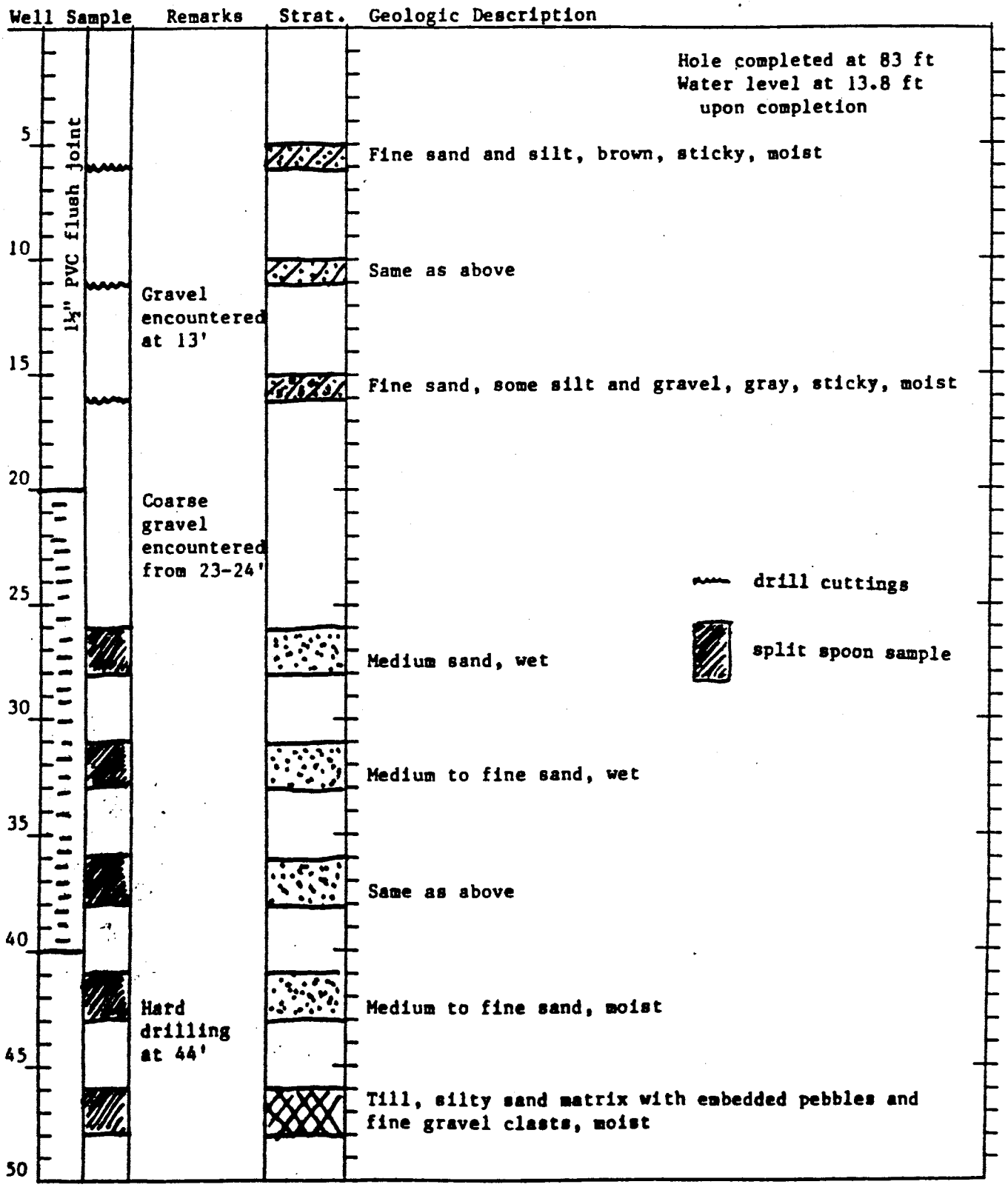
Site: USGS-10

Date July 31, 1984

Location: Gorick property, Kirkwood

Land surface elevation 848

Measuring point 845.71



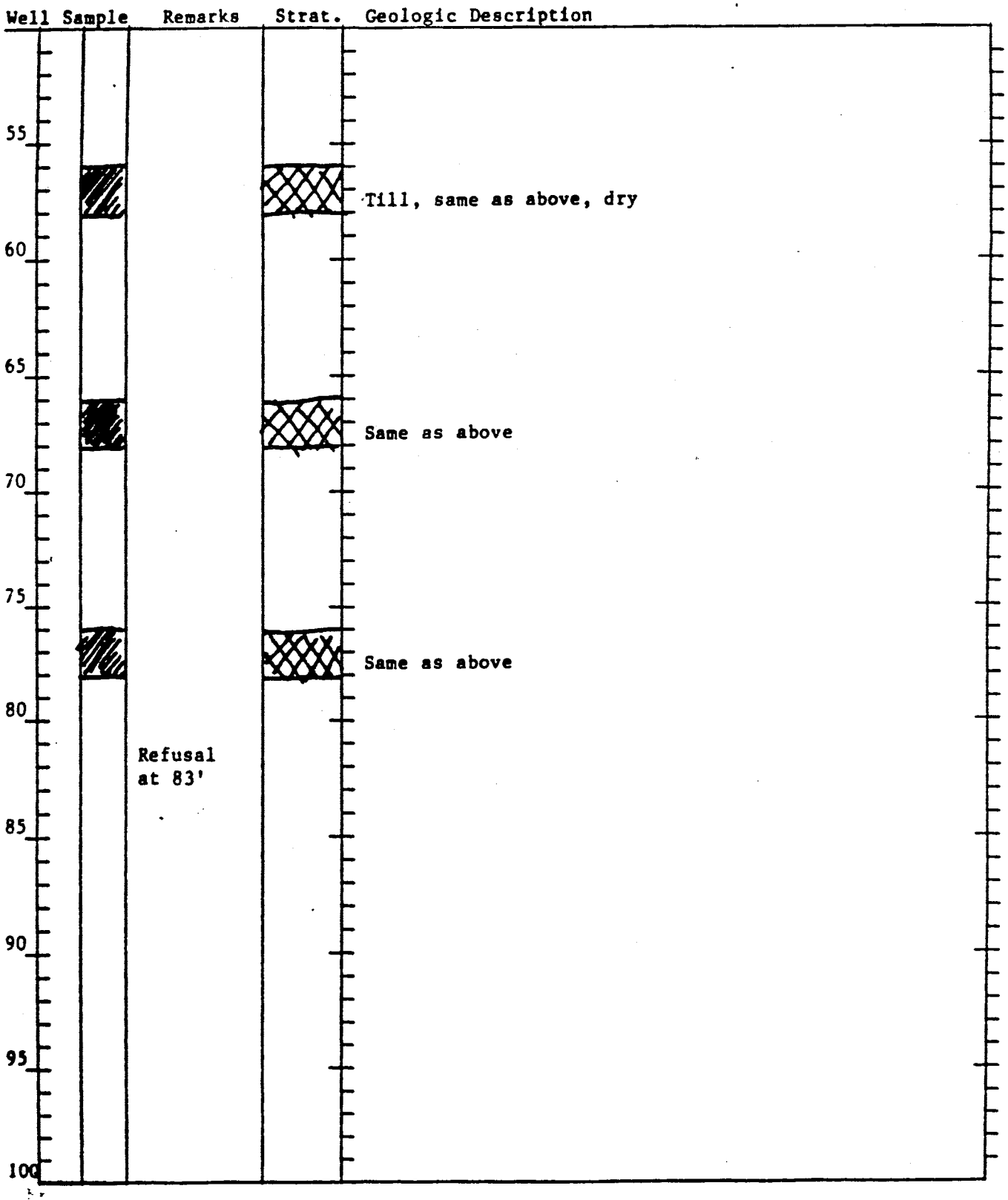
Site: USGS-10

Date July 31, 1984

Location: Gorick property, Kirkwood

Land surface elevation 848

Measuring point 845.71



Well Destroyed

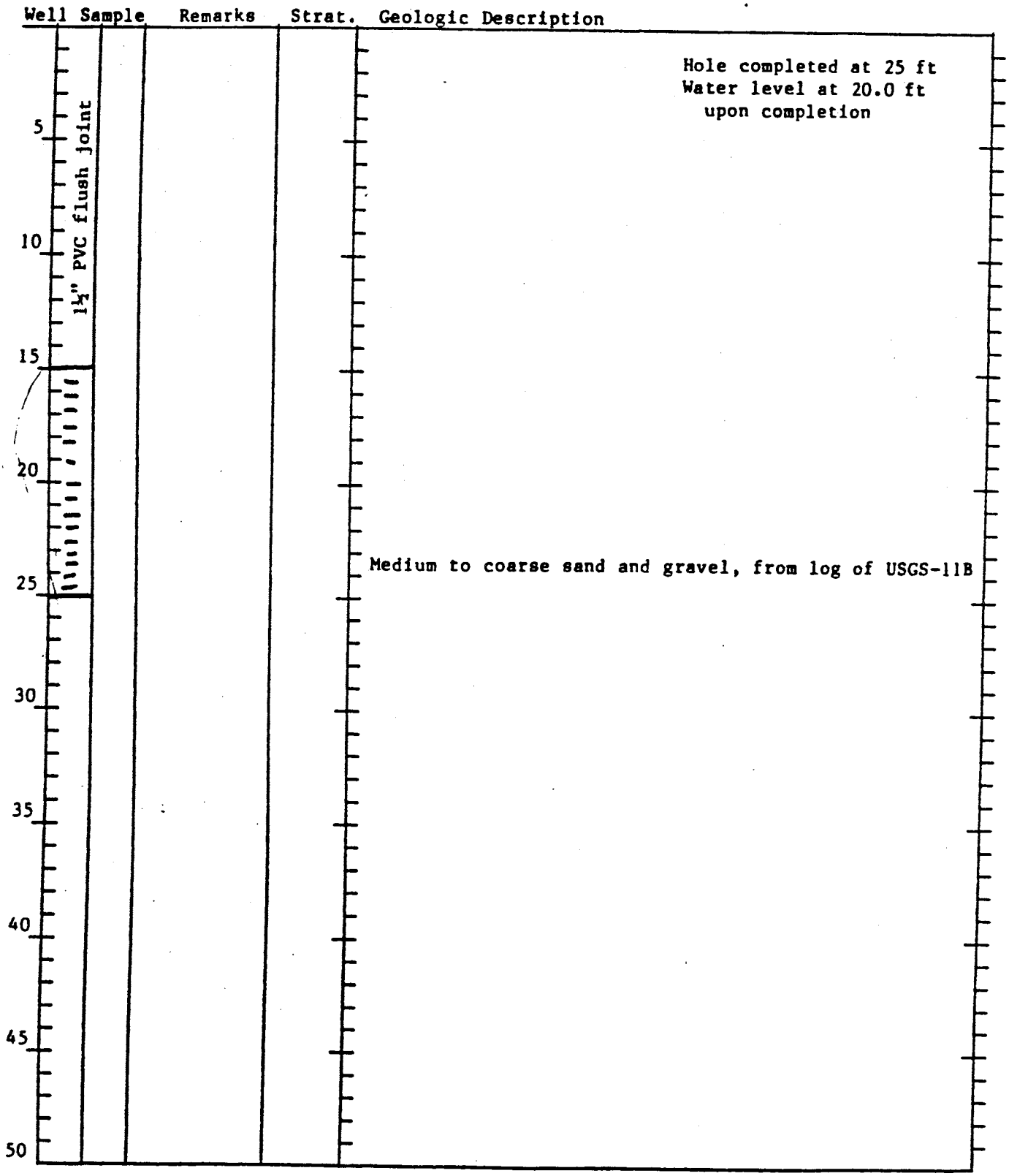
Site: USGS-11A

Date Aug. 2, 1984

Location: Gorick property, Kirkwood

Land surface elevation 850

Measuring point 852.36



Sheet # 1 of 1

Well Destroyed

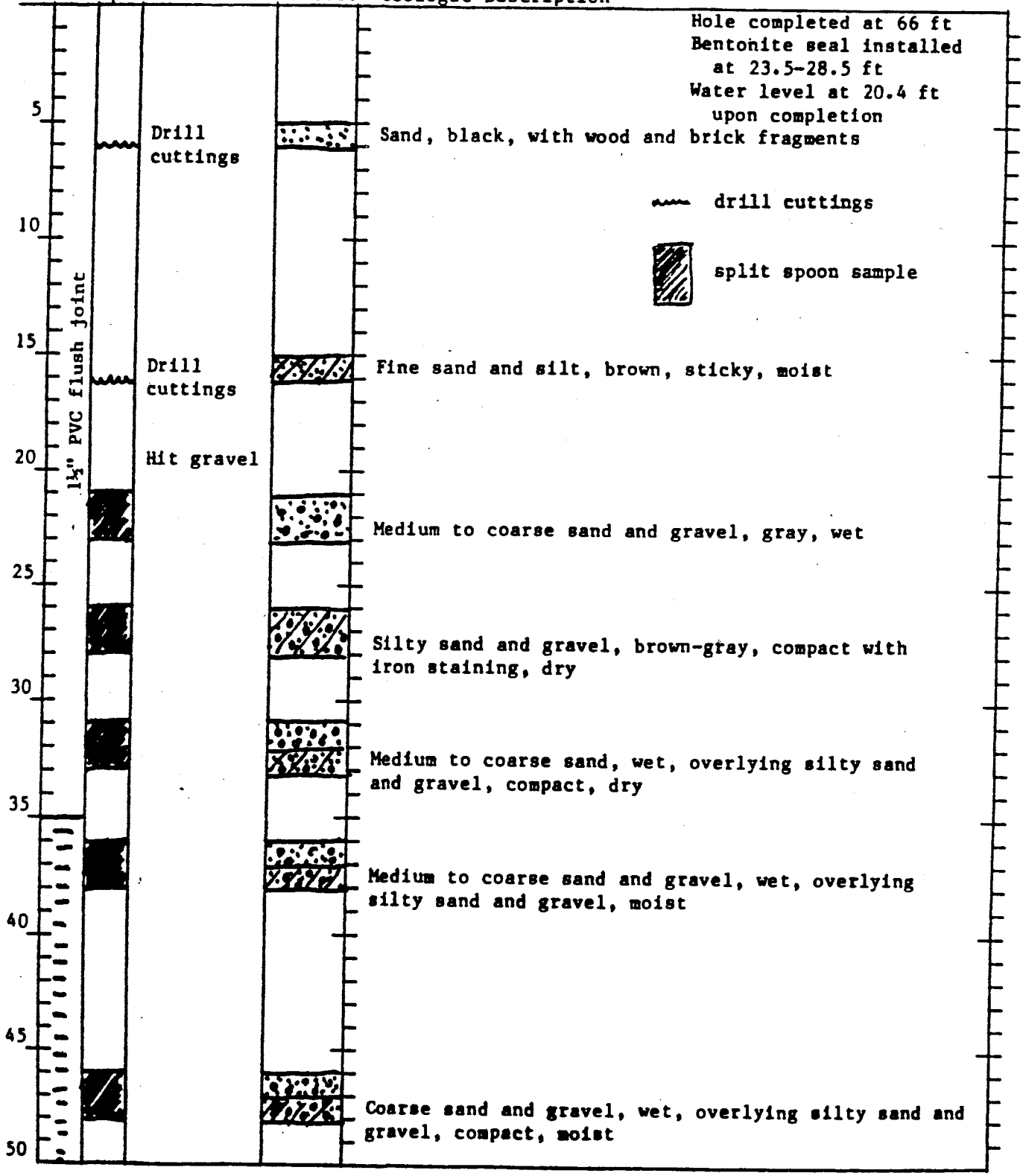
Site: USGS-11B

Date Aug. 1, 1984

Location: Gorick property, Kirkwood

Land surface elevation 850

Measuring point 852.10



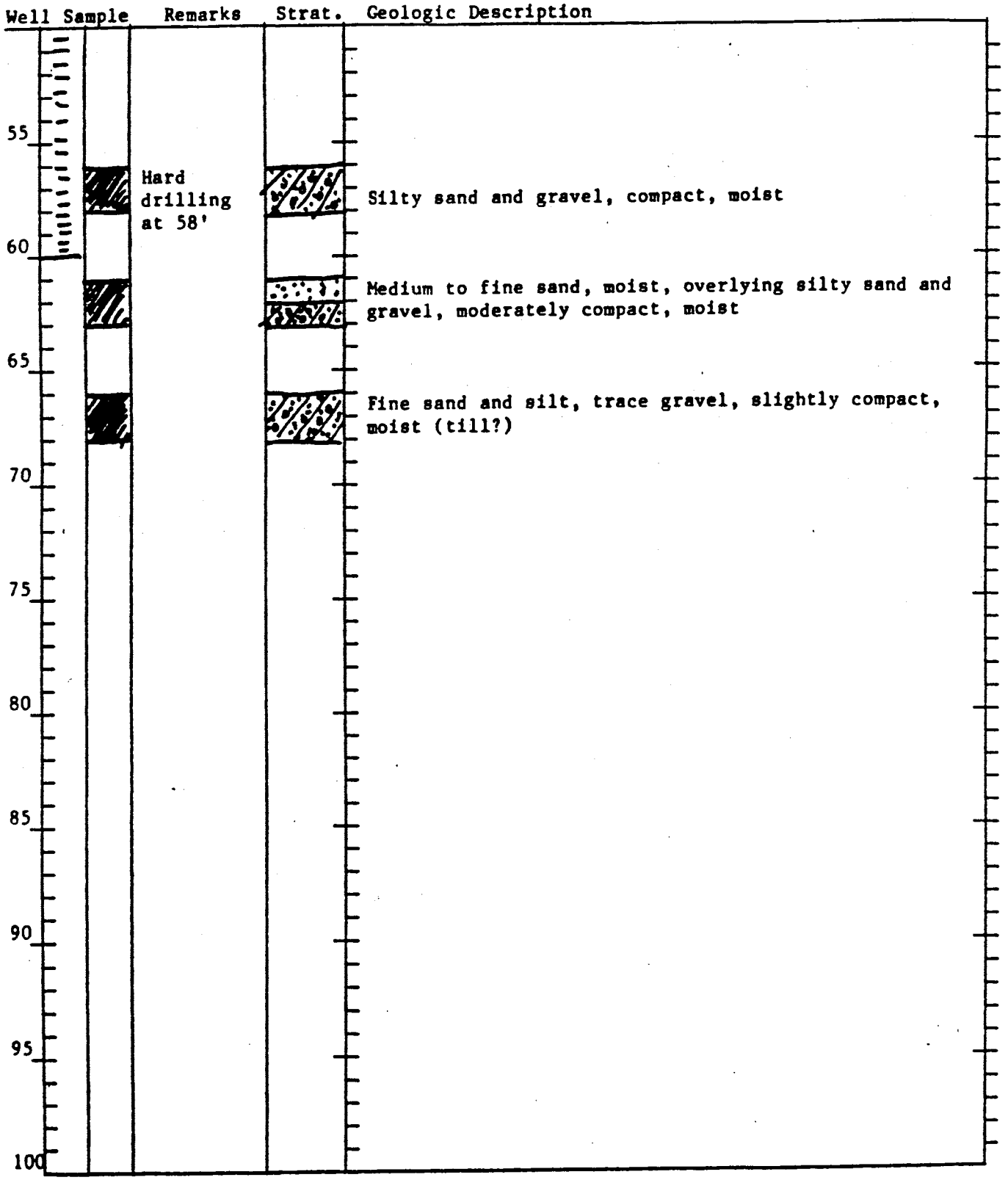
Site: USGS-11B

Location: Gorick property, Kirkwood

Date Aug. 1, 1984

Land surface elevation 850

Measuring point 852.10



URS # G-S12
(well inaccessible)

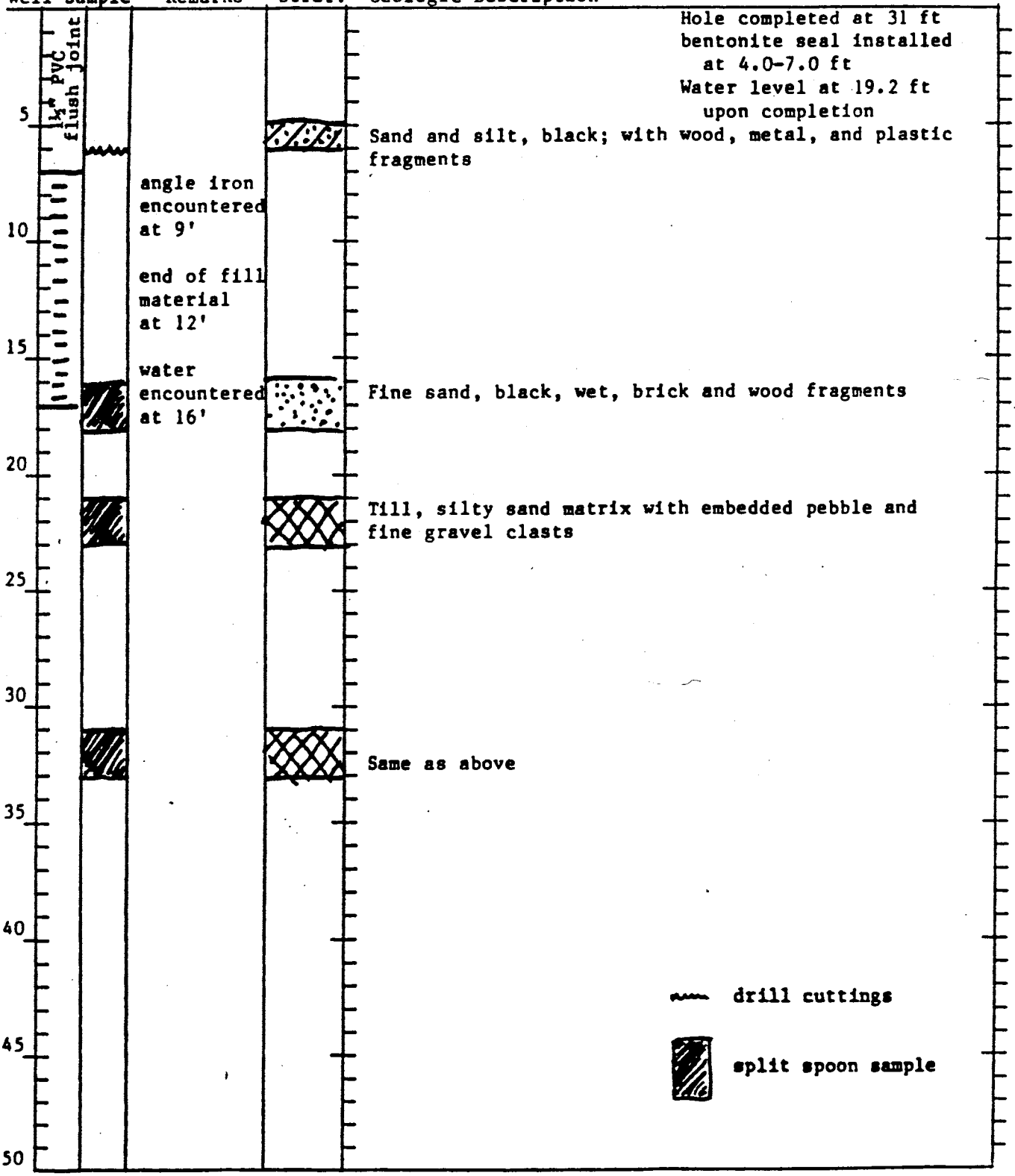
Site: USGS-12

Date Aug. 1, 1984

Location: Gorick property, Kirkwood

Land surface elevation 849

Measuring point 851.15



Sheet # 1 of 1

URS # G-513

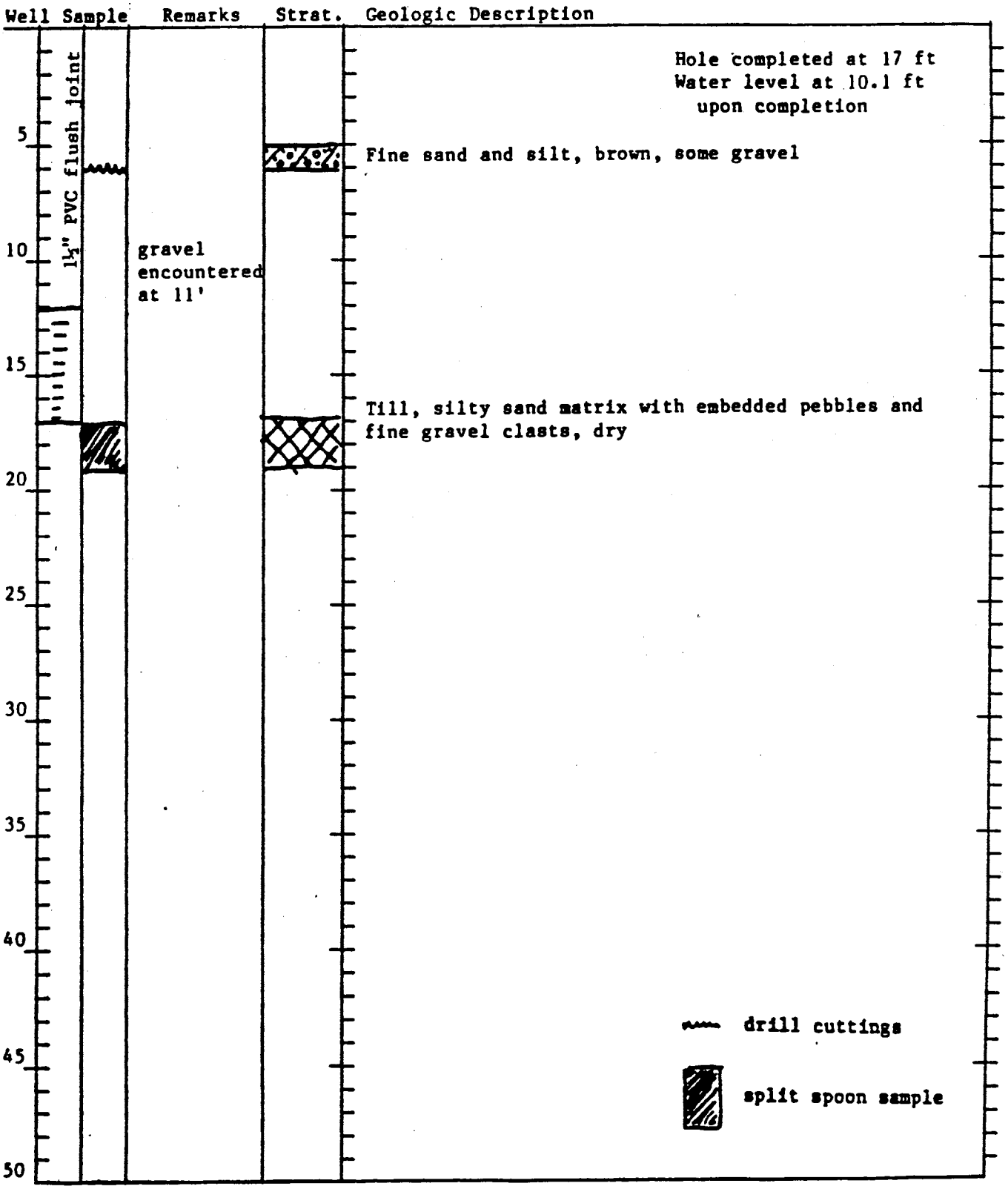
Site: USGS-13

Date Aug. 1, 1984

Location: Gorick property, Kirkwood

Land surface elevation 858

Measuring point 861.33



Sheet # 1 of 1

Well Destroyed

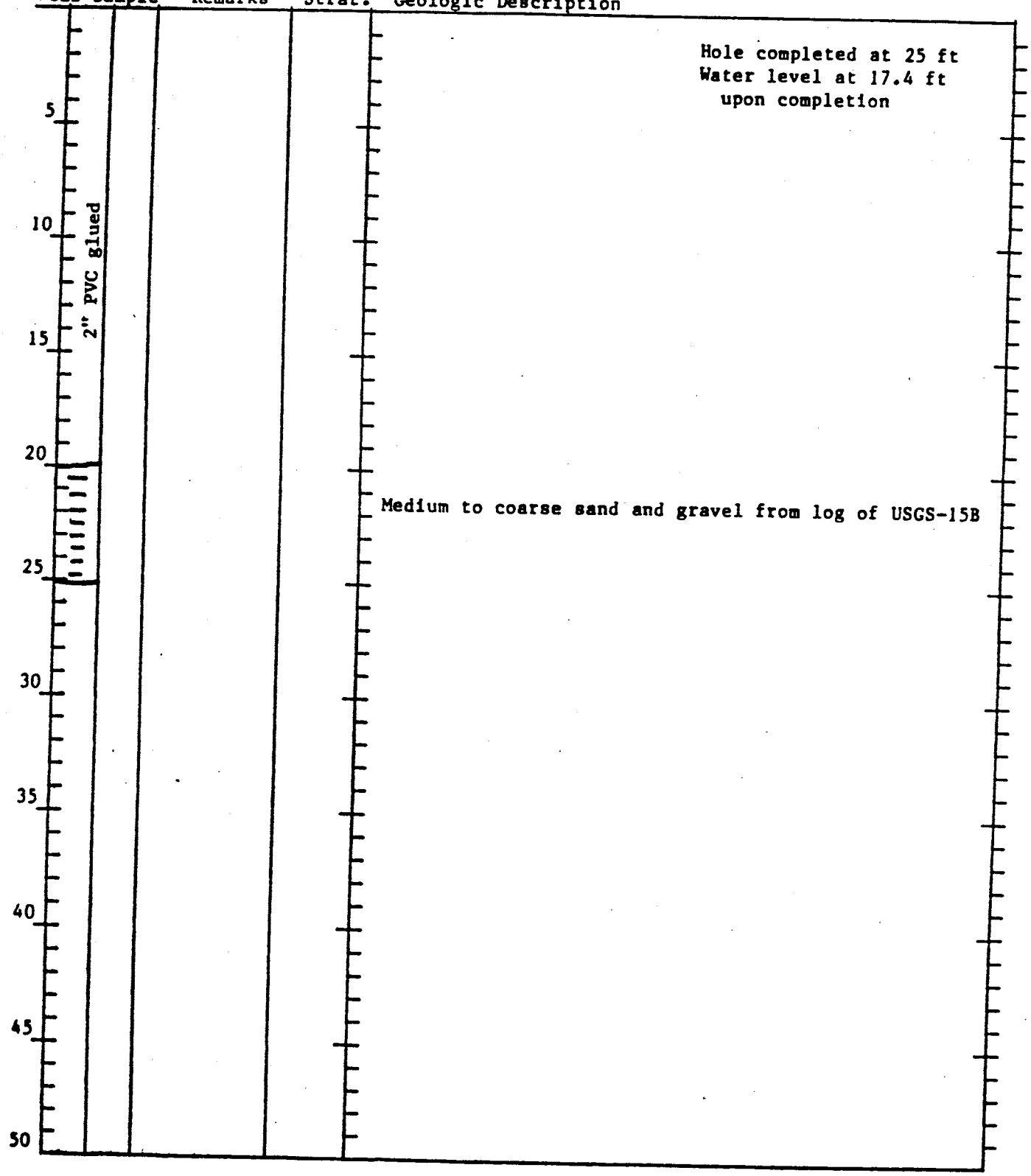
Site: USGS-14A

Location: C. Jones property, Conklin

Date Aug. 6, 1984

Land surface elevation '847

Measuring point 848.61



Sheet # 1 of 1

Well Destroyed

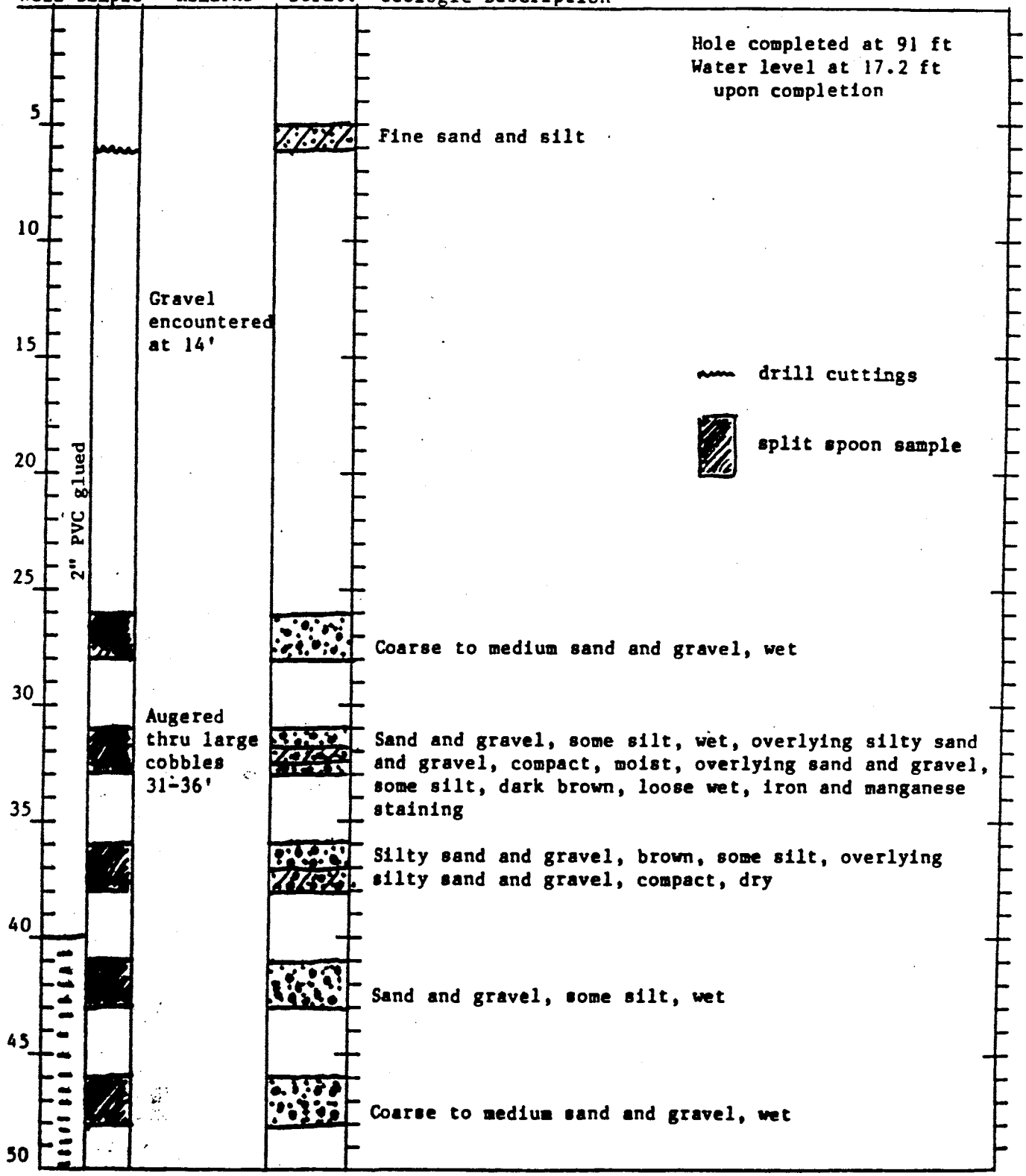
Site: USGS-14B

Date Aug. 7, 1984

Location: C. Jones property, Conklin

Land surface elevation 847

Measuring point 848.26



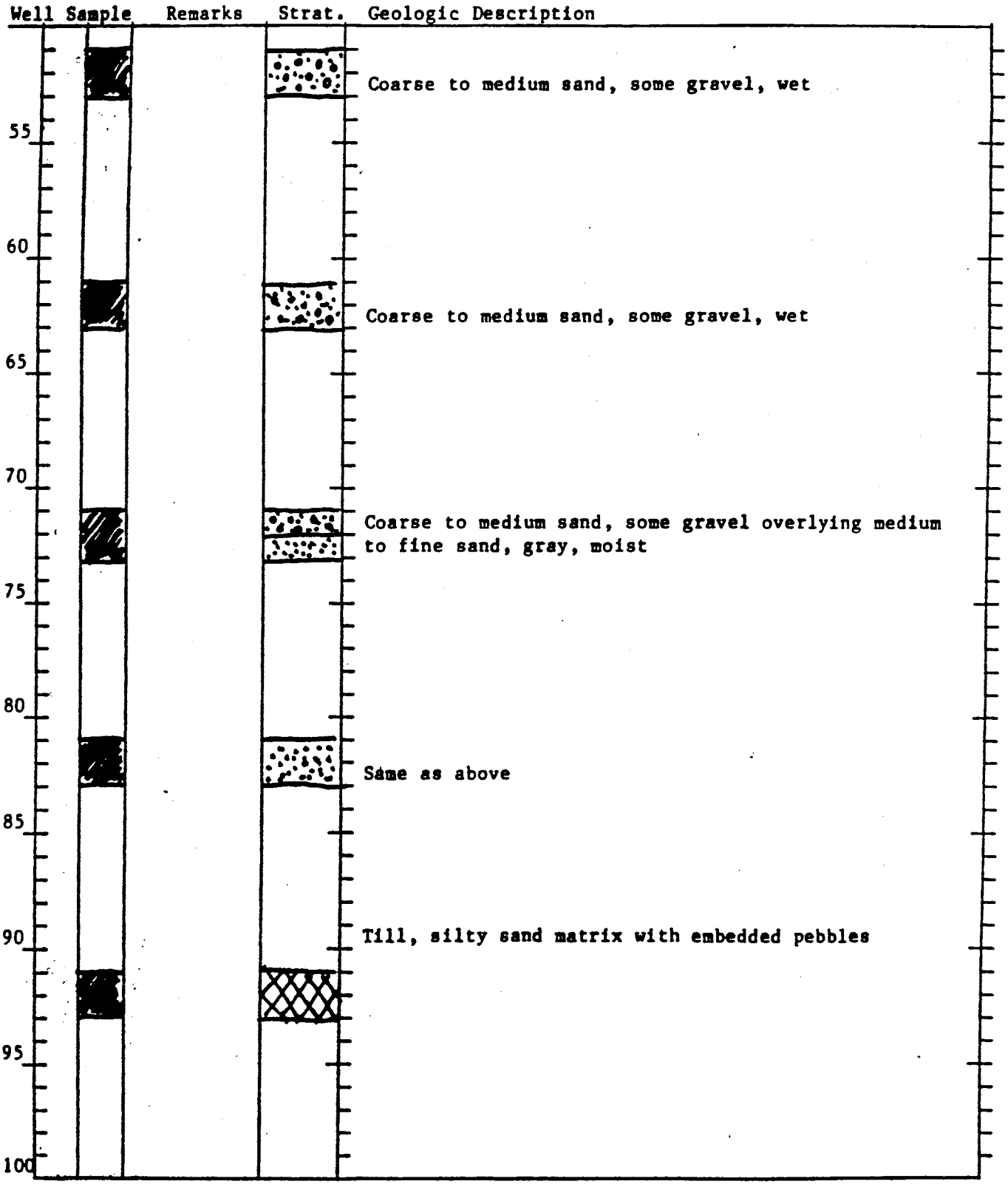
Site: USGS-14B

Date Aug. 7, 1984

Location: C. Jones property, Conklin

Land surface elevation 847

Measuring point 848.26



URS # 15A

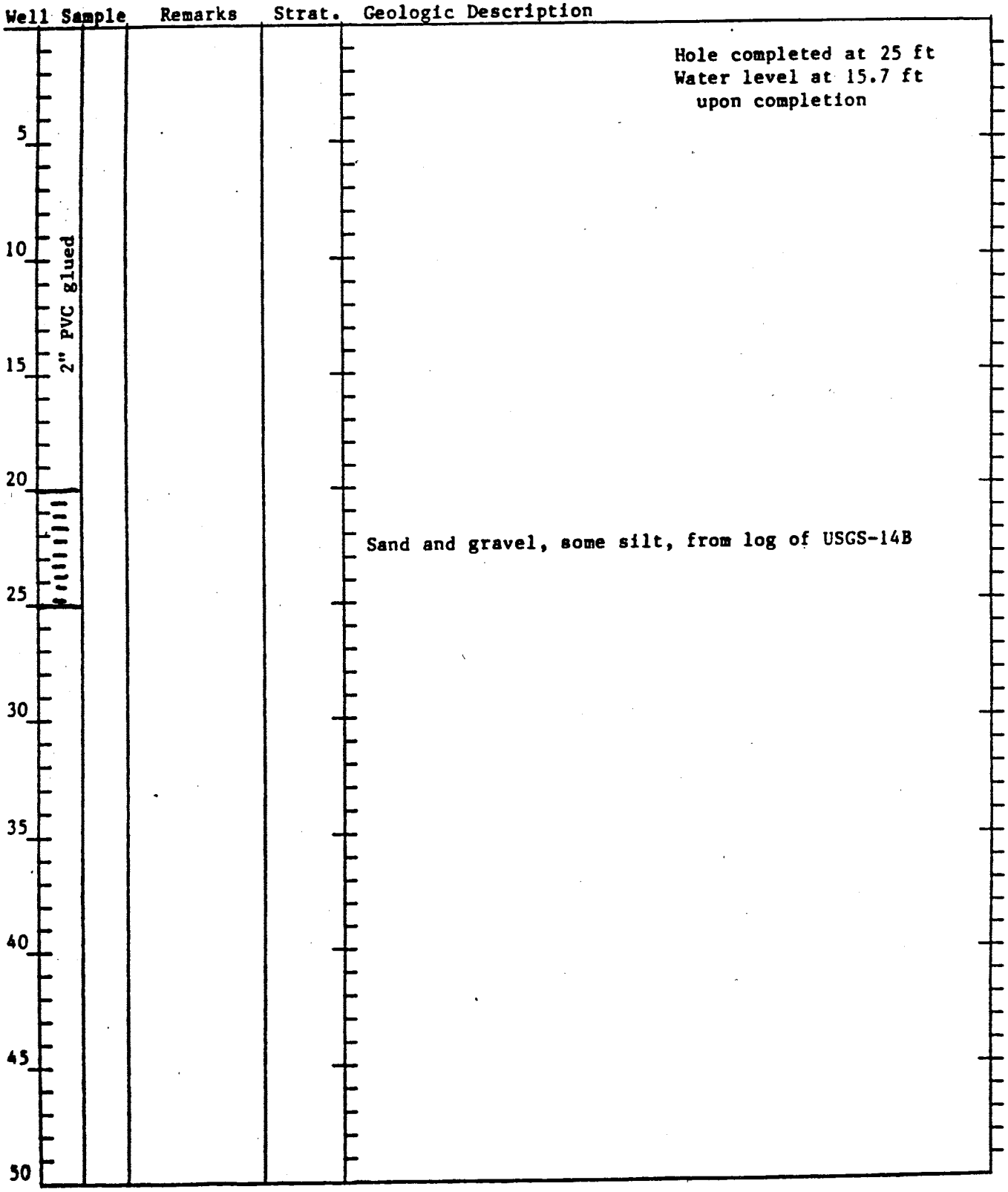
Site: USGS-15A

Date Aug. 3, 1984

Location: Town of Kirkwood property

Land surface elevation 845

Measuring point 846.56



Sheet # 1 of 1

URS #15B

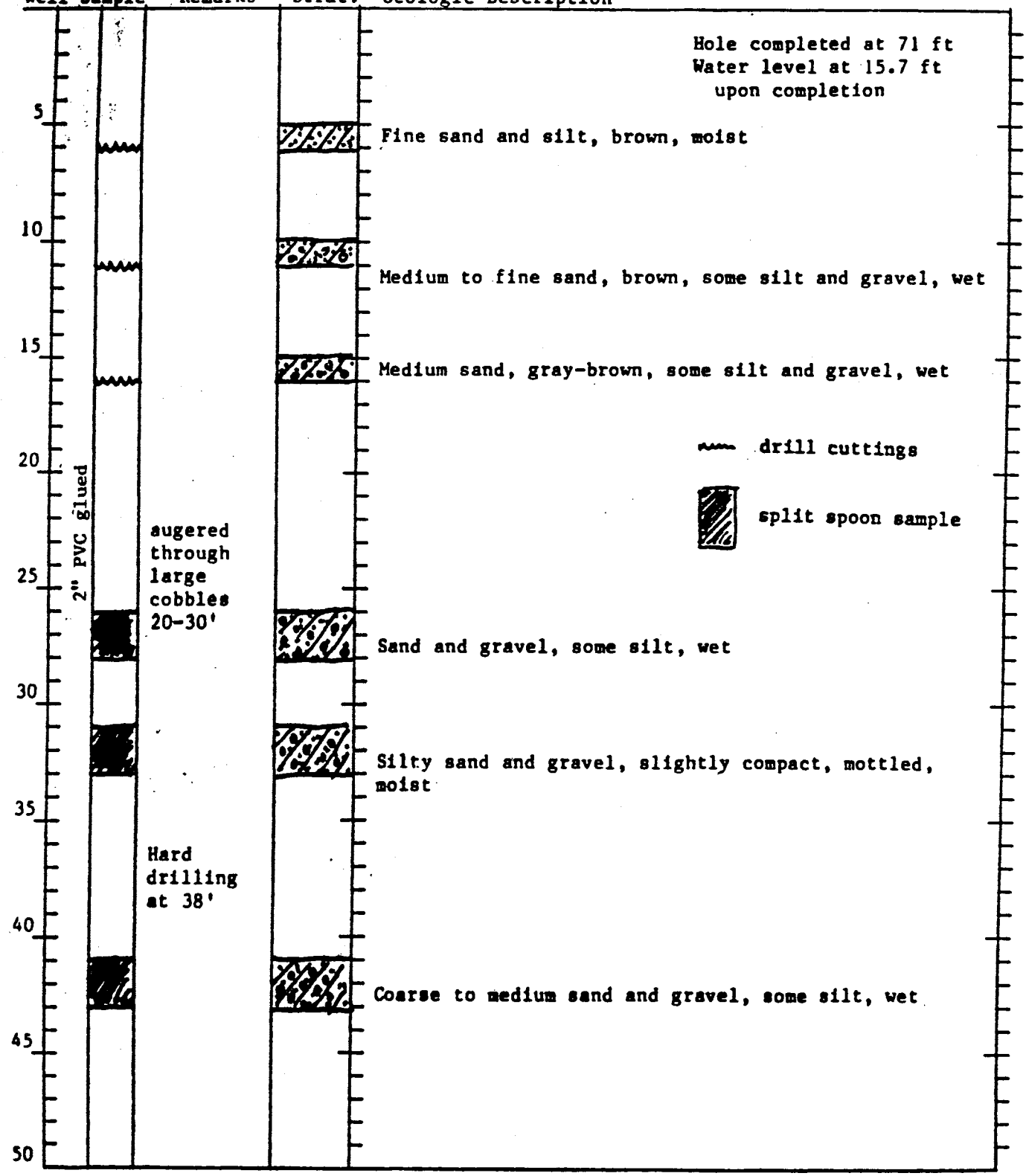
Site: USGS-15B

Date Aug. 2, 1984

Location: Town of Kirkwood property

Land surface elevation 845

Measuring point 846.42



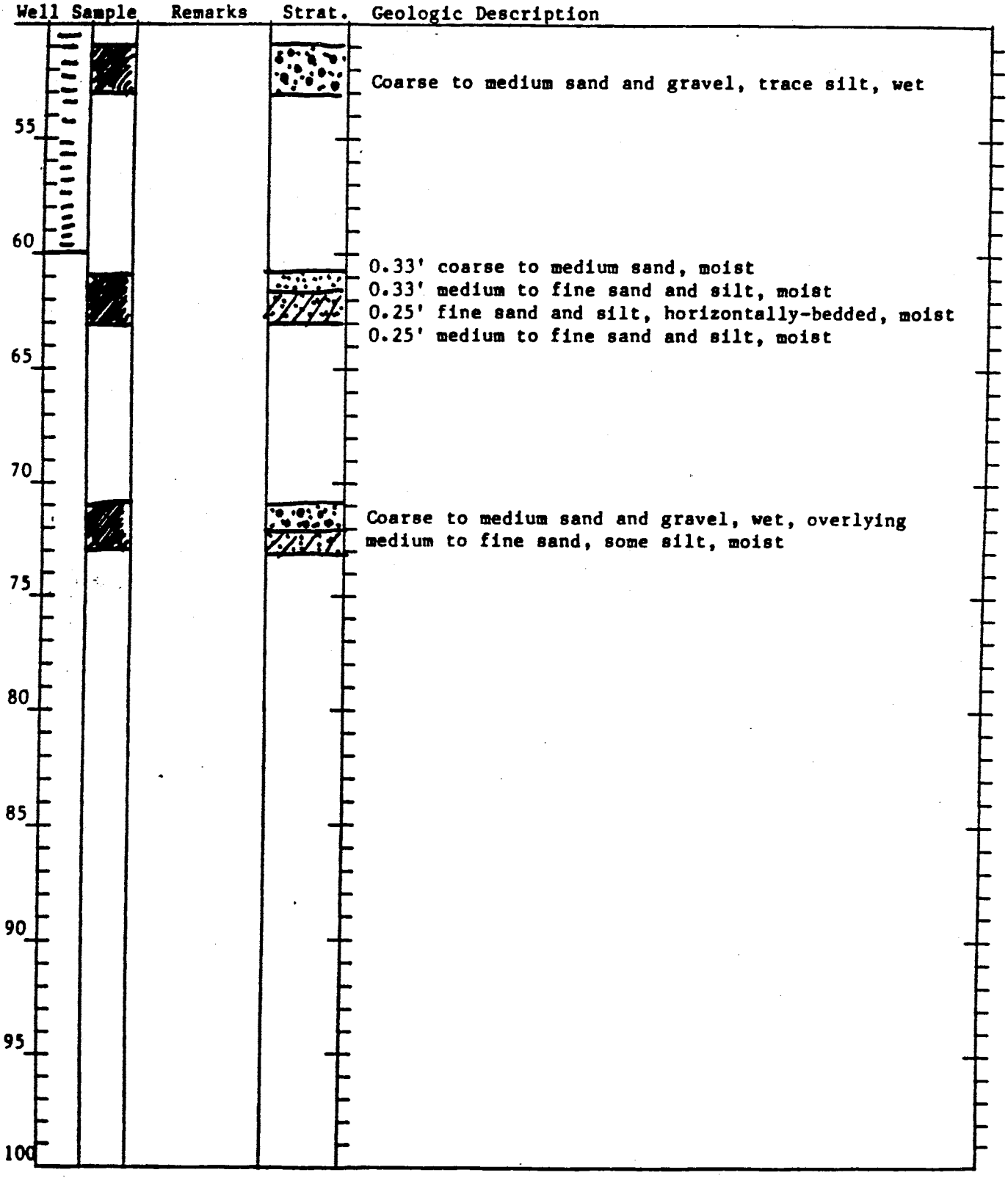
Site: USGS-15B

Date Aug. 2, 1984

Location: Town of Kirkwood property

Land surface elevation 845

Measuring point 846.42



Well Destroyed

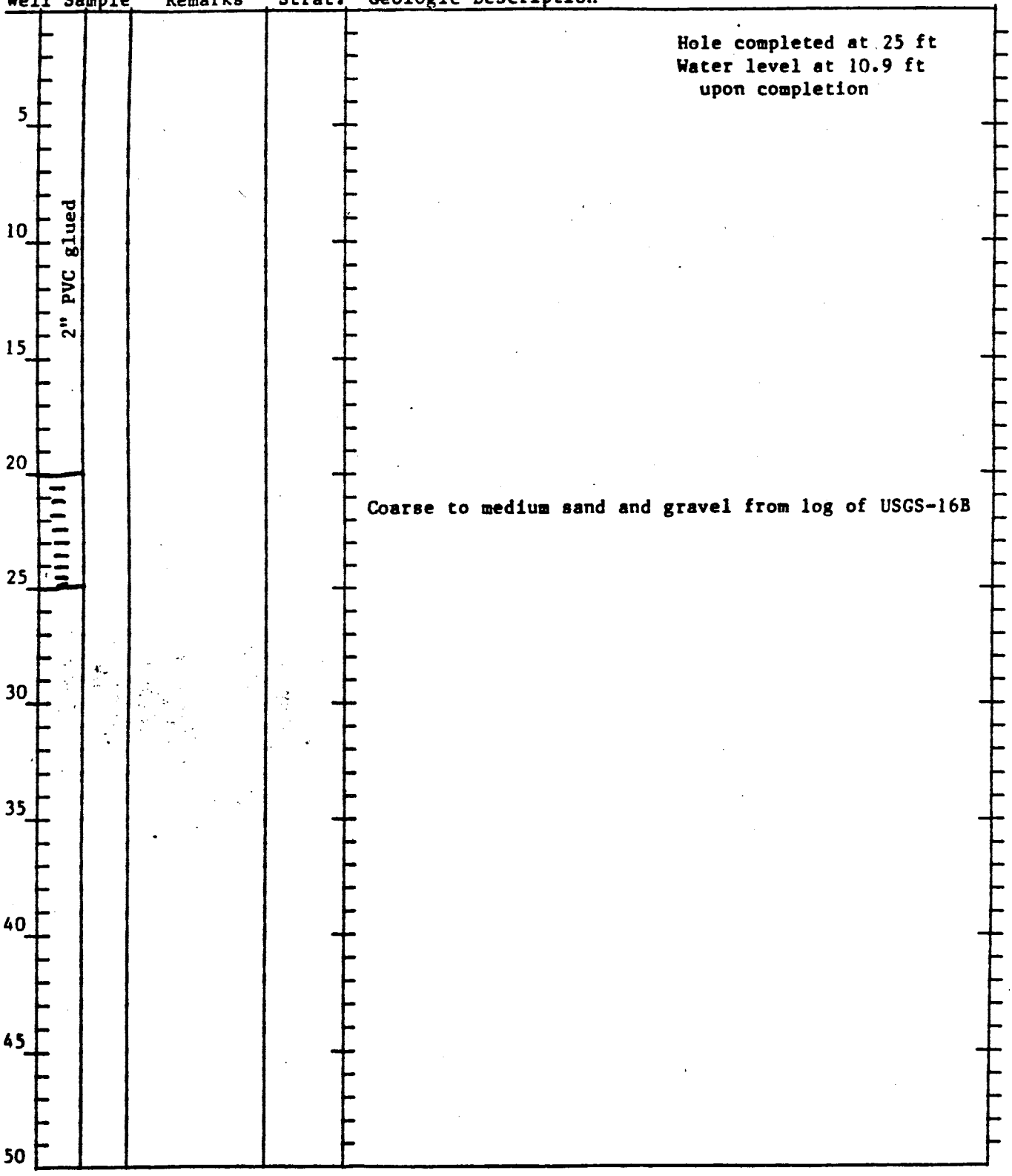
Site USGS-16A

Date Aug. 2, 1984

Location: Gorick property, Kirkwood

Land surface elevation 840

Measuring point 840.93



Sheet # 1 of 1

Well Destroyed

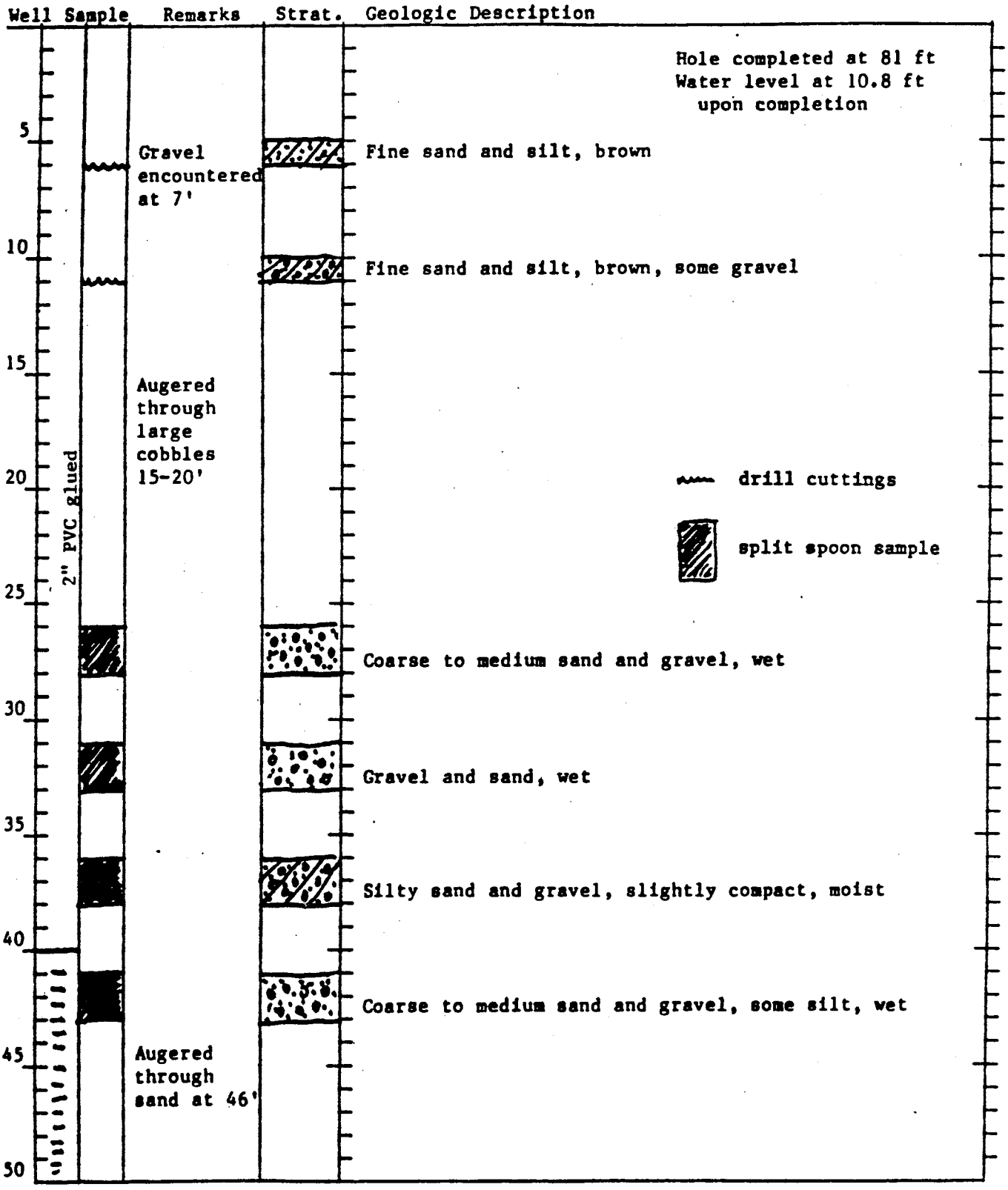
Site: USGS-16B

Date: Aug. 2, 1984

Location: Gorick property, Kirkwood

Land surface elevation 840

Measuring point 840.89



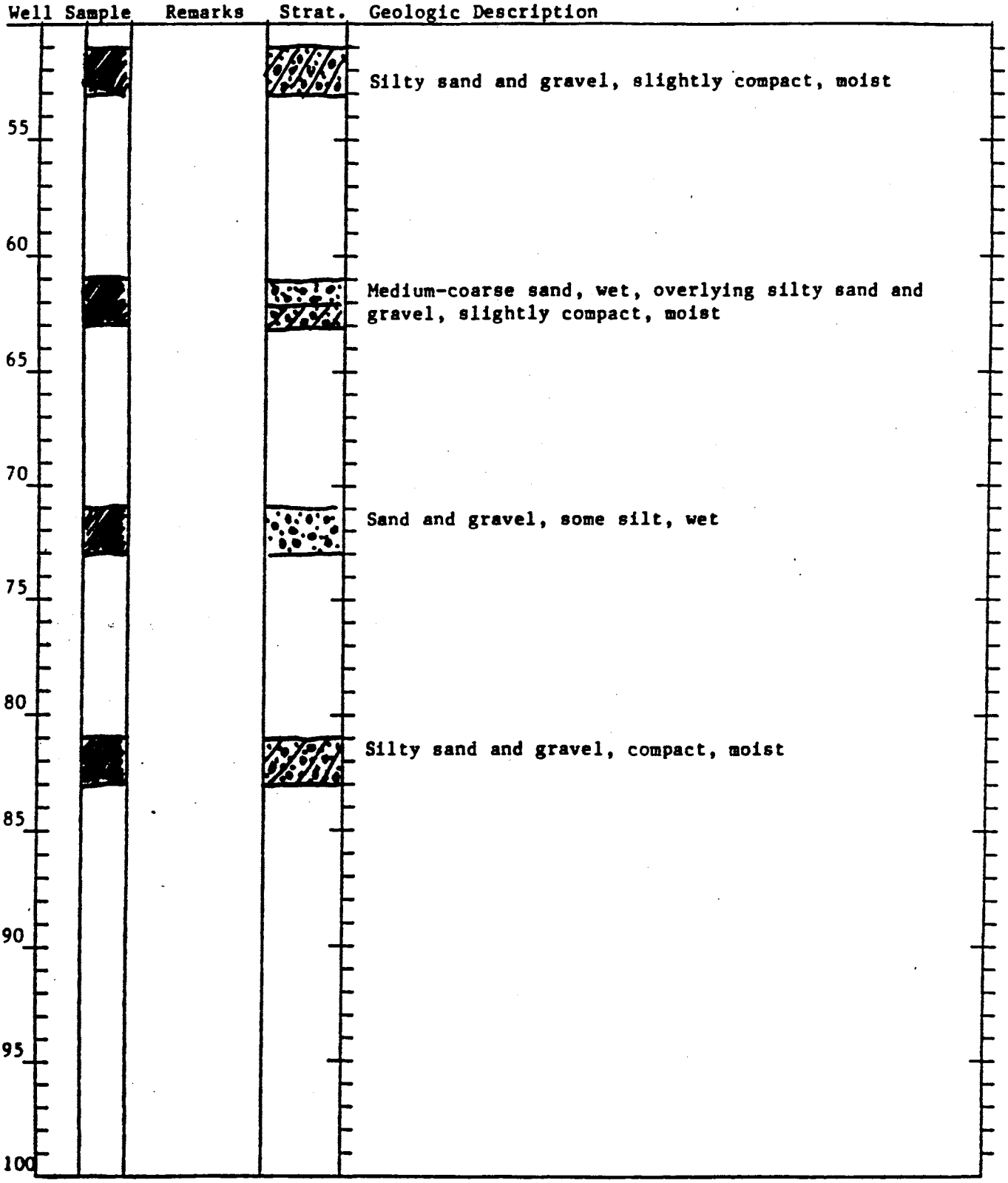
Site: USGS-16B

Date Aug. 2, 1984

Location: Gorick property, Kirkwood

Land surface elevation 840

Measuring point 840.89



Sheet # 2 of 2

Well Destroyed

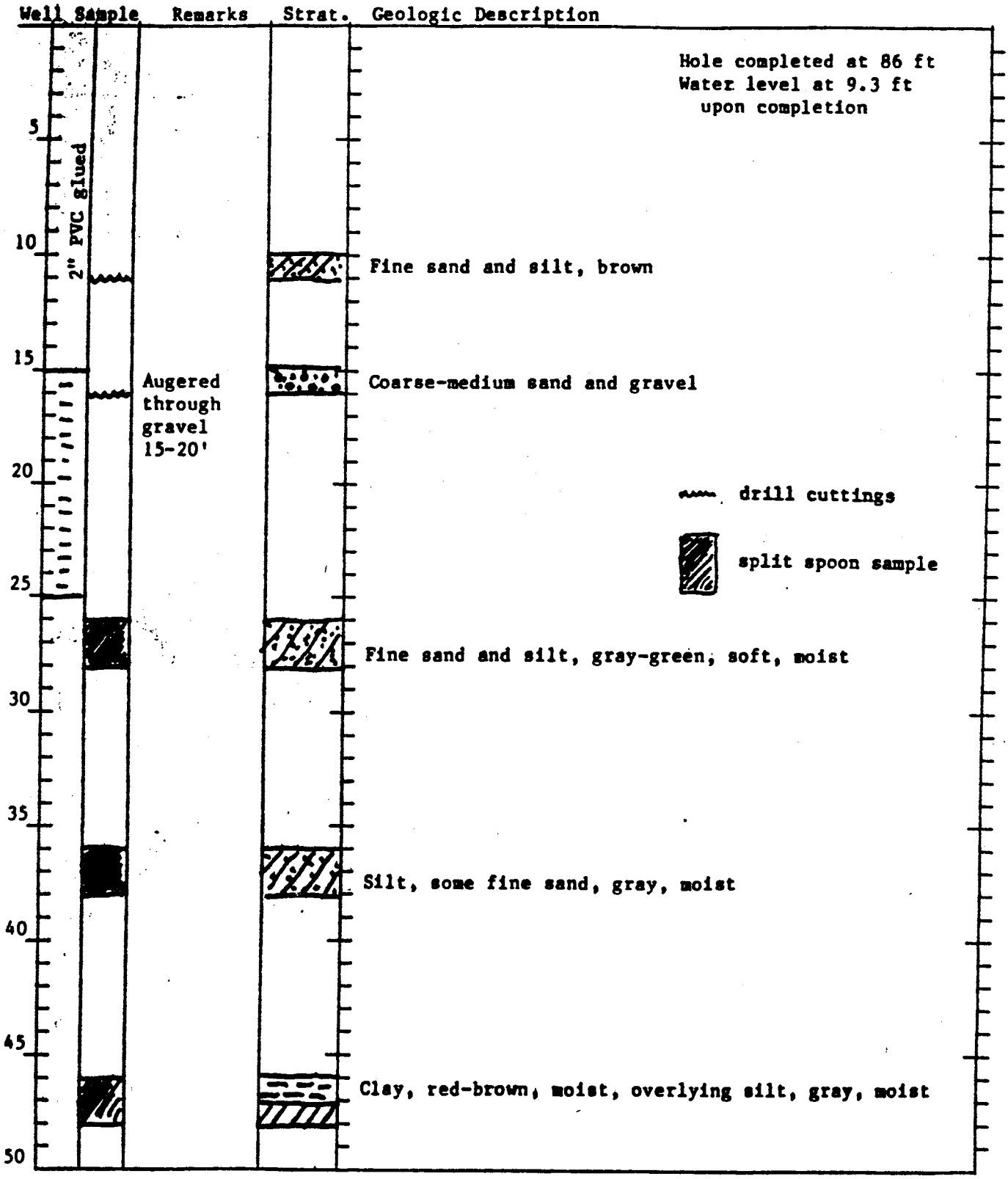
Site: USGS 17

Date Aug. 8, 1984

Location: Susquehanna Valley High School, Conklin

Land surface elevation 849

Measuring point 849.29



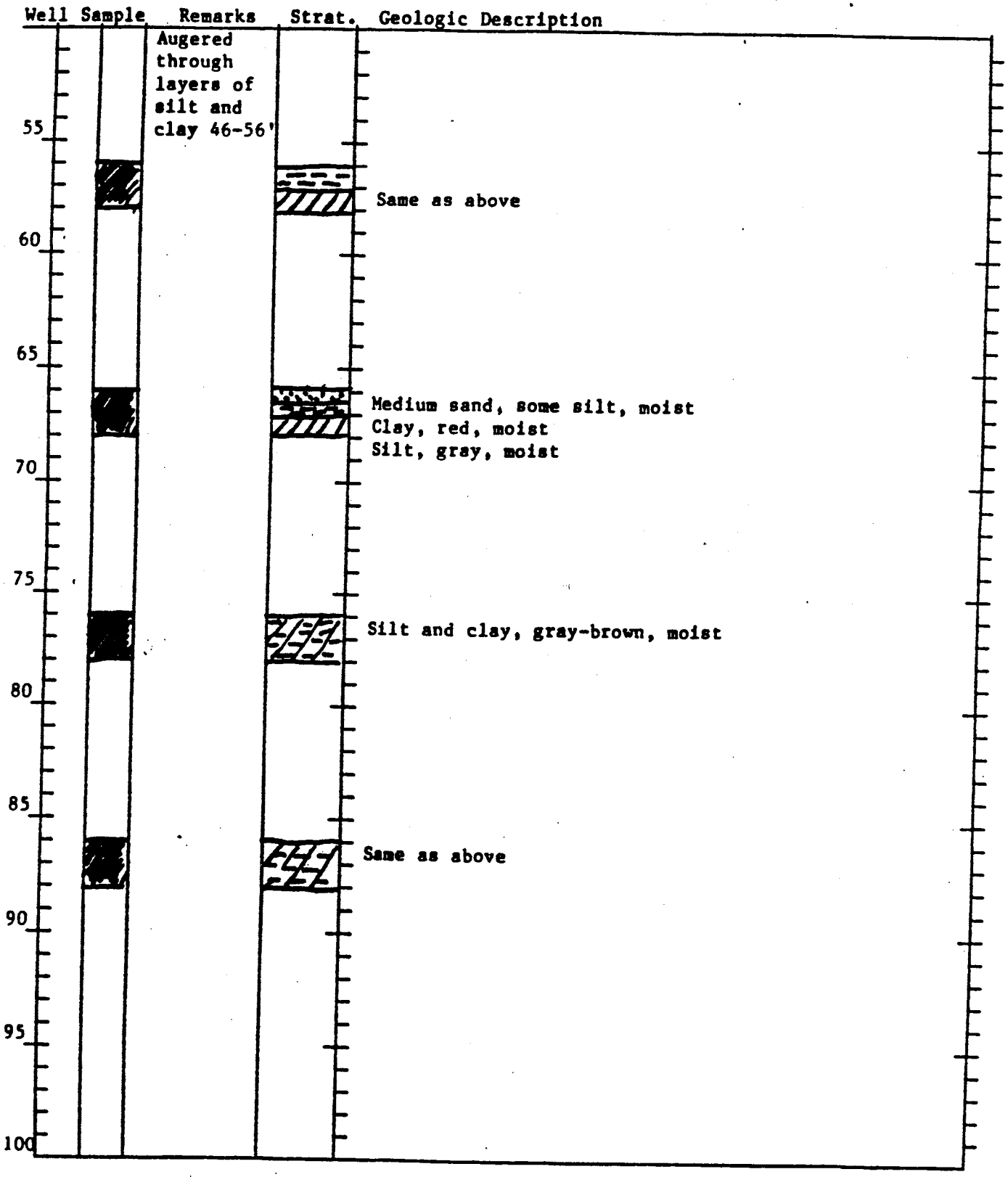
Site: USGS-17

Date Aug. 8, 1984

Location: Susquehanna Valley High School, Conklin

Land surface elevation 849

Measuring point 849.29



Well Destroyed

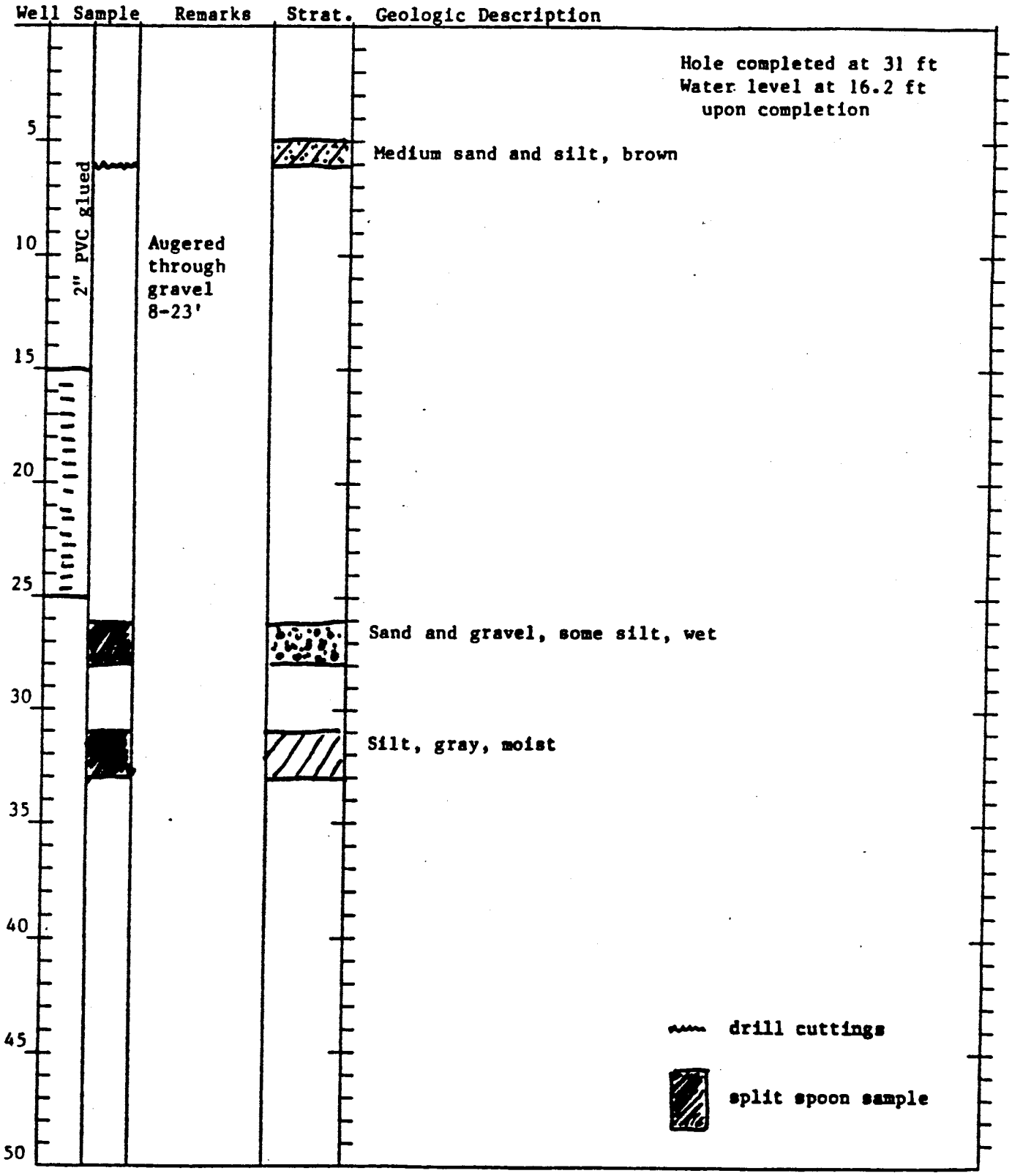
Site: USGS-18

Date Aug. 8, 1984

Location: McIntosh Labs, Inc., Conklin

Land surface elevation 855

Measuring point 855.69



Sheet # 1 of 1

Well Destroyed

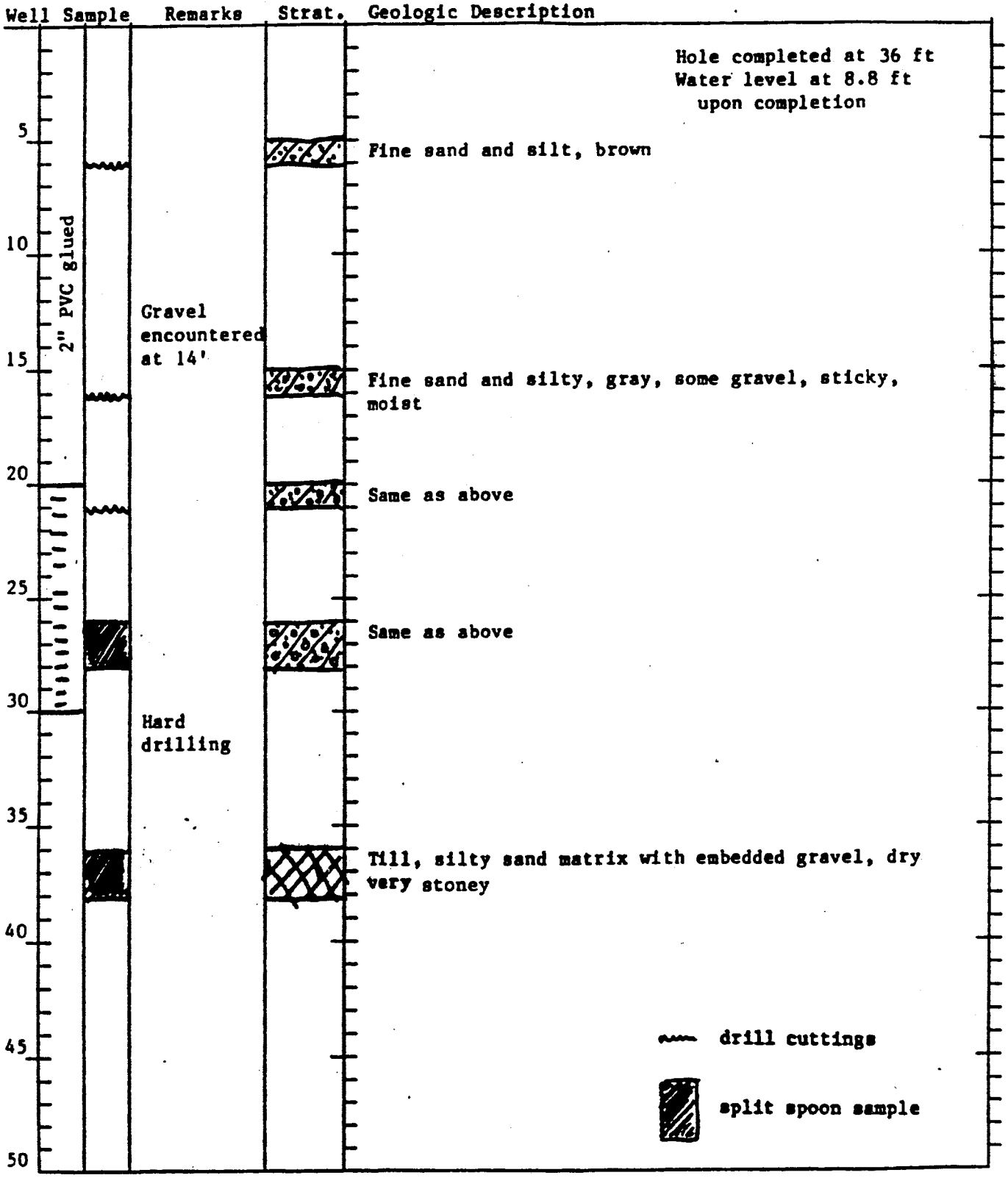
Site: USGS-19

Date Aug. 9, 1984

Location: Bares property, Conklin

Land surface elevation 848

Measuring point 849.48



Sheet # 1 of 1

URS#: Town #3

LAYNE WELL & PUMP DIVISION

LOG OF WELL

Job. No. 083809 Test No.

Well for (Owner) Kirkwood Water

Address Kirkwood N.Y.

Representatives, if any

Located at Kirkwood in County, State of NY

Sketch of location Date Drilling started 1/25/84 Date Test Hole Completed 2/2/84

Depth to bottom of Well 68' Diameter Test Hole 48"x36" Elevation at Ground Level, if available

Rise at Ground Level, if available Distance from where measurements were taken to ground level

Stands when not pumping 10' feet inches from the surface of the ground

Measurements taken from

THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATA	Length of Core Taken	FORMATION FOUND EACH STRATUM
3'	0'-3'		Sand and Gravel Fill
9'	3'-12'		Sandy, Silty Top Soil
10'	12'-22'		Gray Brown Sand, Fine To Course Gravel, Boulders, Some Clay
20'	22'-42'		Gray Brown Fine To Course Sand and Gravel
7'	42'-49'		Same as above except Brown, Very little Sand
3'	49'-52'		Same But Black
15'	52'-67'		Same But Greyish Brown Very little Soil
1'	67'-68'		Fine To Course Brown Silty Sand and Gravel Brown Clay Tighter

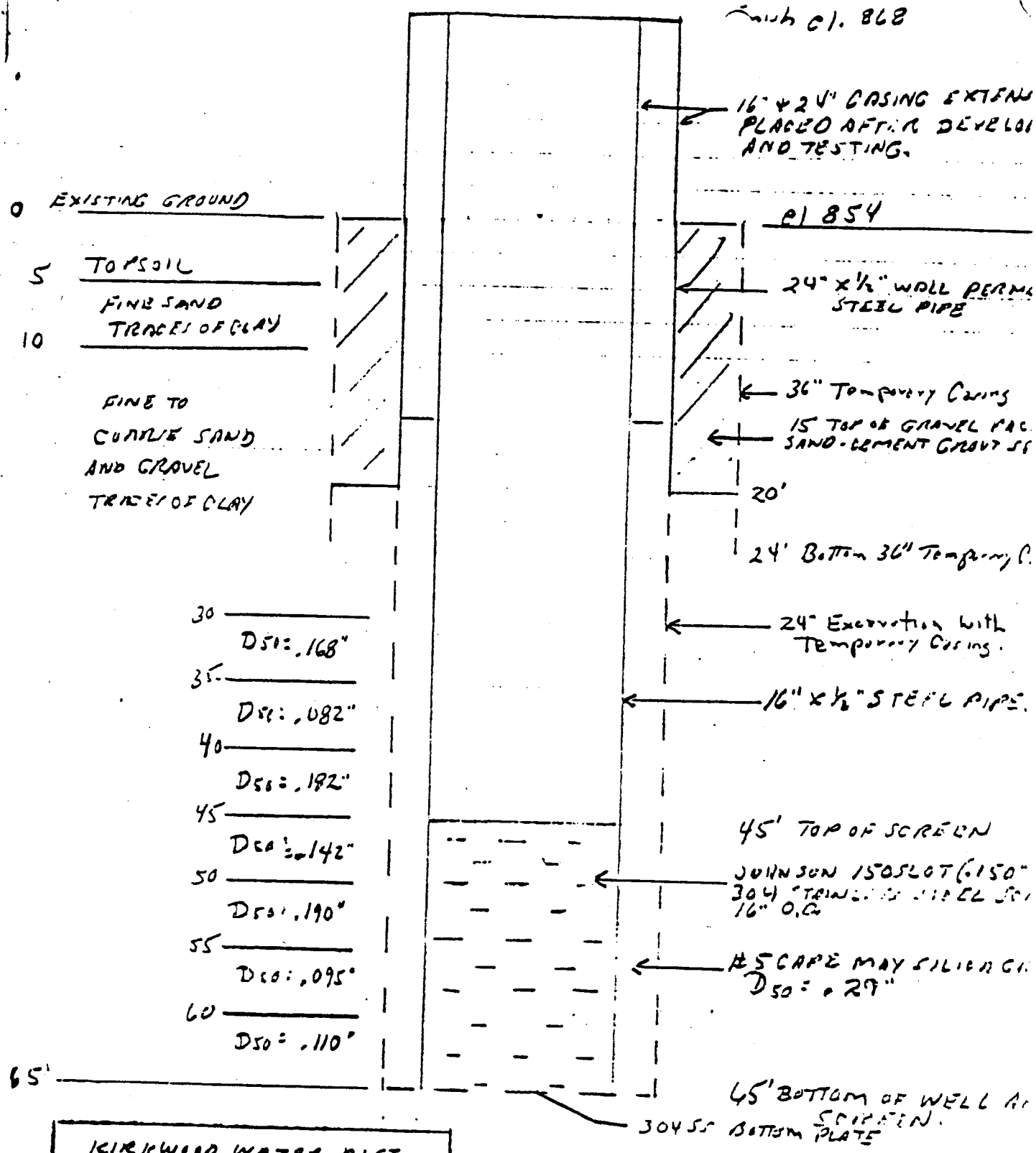
Remarks and opinion of Test

Very little Sand in Formation

CHECK TYPE OF RIG USED: Reverse Rotary, Cable Tool ✓, Wash

Driller

Town #1



KIRKWOOD WATER DIST. KIRKWOOD, N.Y.			
PROPOSED COMPLETION PLAN WELL # 1			
DATE: 5/31/77	SCALE V 1"=10' H 1"=1'	C	SHEET 1
LAYNE-NEW ENGLAND CO. BRANCH OF LAYNE-NEW YORK CO., INC. ARLINGTON, MASS.			

RECEIVED
DATE 8-26-77
BY HB

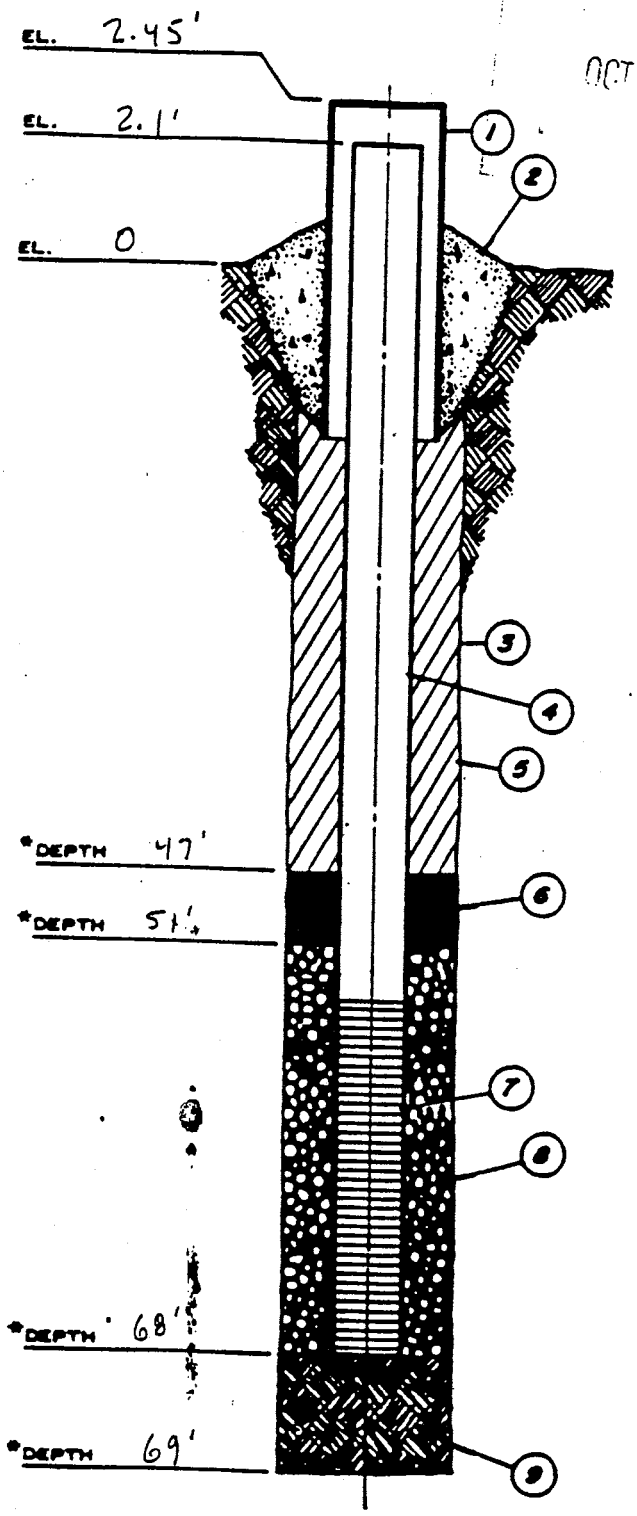
URS #31

MONITOR WELL COMPLETION REPORT :

WELL Nº MW-1 JOB Nº _____

PROJECT KIRKWOOD NY

OCT - 4 1988



1. PROTECTIVE CASING I.D. 6 INCHES.
2. SURFACE SEAL TYPE Portland Cement
3. BOREHOLE DIAMETER 8 INCHES.
4. RISER PIPE:
   a. Type PVC
   b. I.D. 2 INCHES
   c. Length 55 FEET
   d. Joint Type Threaded
5. BACKFILL:
   a. Type Cement Grout
   b. Installation _____
6. Type of SEAL Bentonite
7. SCREEN
   a. Type PVC
   b. I.D. 2 INCHES
   c. Slot Size 0.010 INCHES (10-slot)
   d. Length 15 FEET
8. SCREEN FILTER TYPE #2 Gravel
9. BACKFILL TYPE #2 Gravel and cuttings

*Depth in feet below grade.

HYDRO GROUP

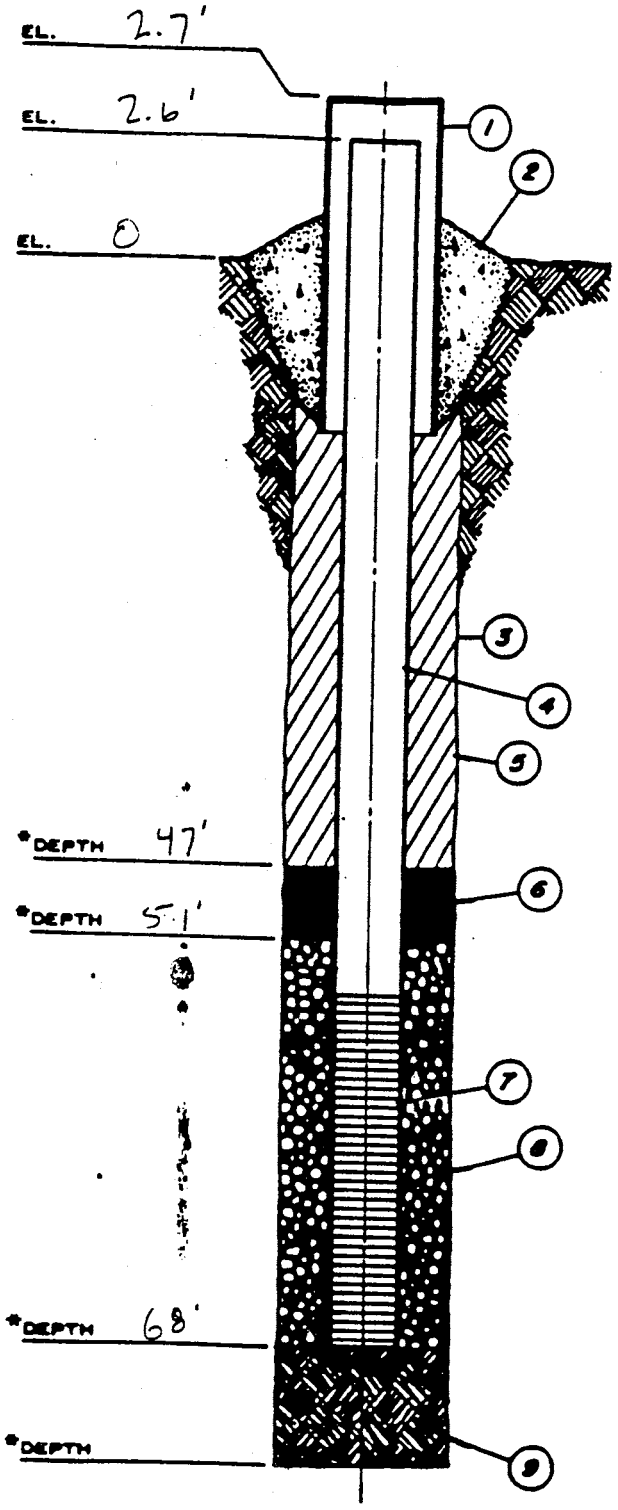
GROUND WATER ASSOCIATES, I

URS #32

MONITOR WELL COMPLETION REPORT :

WELL Nº MW-2 JOB Nº

PROJECT Kirkwood NY



*Depth in feet below grade.

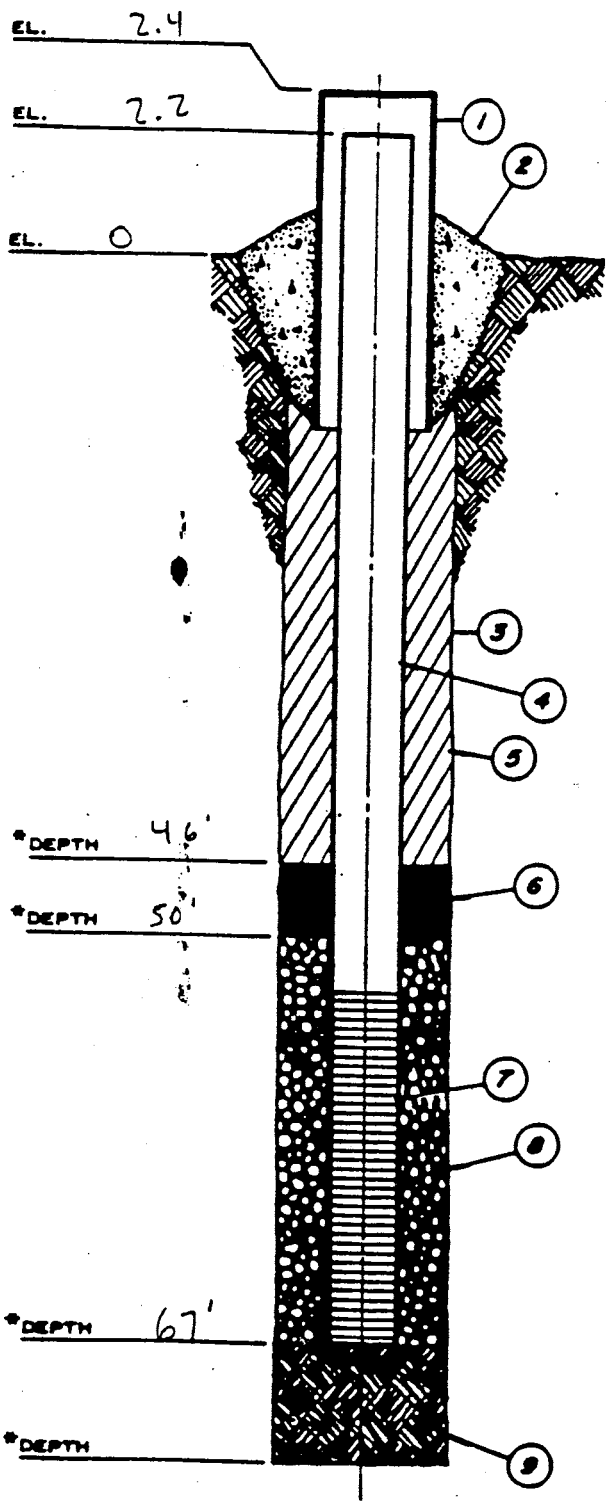
1. PROTECTIVE CASING I.D. 6 INCHES.
2. SURFACE SEAL TYPE Portland Cement
3. BOREHOLE DIAMETER 8 INCHES.
4. RISER PIPE:
   a. Type PVC
   b. I.D. 2 INCHES
   c. Length 55.6 FEET
   d. Joint Type threaded
5. BACKFILL:
   a. Type Cement Grout
   b. Installation
6. Type of SEAL Bentonite
7. SCREEN
   a. Type PVC
   b. I.D. 2 INCHES
   c. Slot Size 0.010 INCHES (10-slot)
   d. Length 15 FEET
8. SCREEN FILTER TYPE #2 Gravel
9. BACKFILL TYPE #2 Gravel + cuttings

URS #33

MONITOR WELL COMPLETION REPORT :

WELL Nº MW-3 JOB Nº _____

PROJECT Kirkwood NY



1. PROTECTIVE CASING I.D. 6" INCHES.
2. SURFACE SEAL TYPE Portland Cement
3. BOREHOLE DIAMETER 8 INCHES.
4. RISER PIPE:
   a. Type PVC
   b. I.D. 2 INCHES
   c. Length 54.2 FEET
   d. Joint Type Threaded
5. BACKFILL:
   a. Type Cement Grout
   b. Installation _____
6. Type of SEAL Bentonite
7. SCREEN
   a. Type PVC
   b. I.D. 2 INCHES
   c. Slot Size 0.010 INCHES (10-slot)
   d. Length 15 FEET
8. SCREEN FILTER TYPE #2 Gravel
9. BACKFILL TYPE #2 Gravel + cuttings

*Depth in feet below grade.

URS #33

HYDRO GROUP

Ground Water Associates, Inc.
CONSULTING HYDROGEOLOGISTS

15 Ryder Street
Arlington, MA 02174

JOB NO

BORE HOLE NO MW-3

PROJECT

LOCATION Kirkwood NY

DRILLING CONTRACTOR

DRILLING EQUIPMENT

GWA HYDROGEOLOGIST R. Francis

DRILLER

DATE START / TIME 6/15/88 8:00 Am

DATE FINISH / TIME 6/16/88 5:30 PM

SURFACE ELEVATION

TOTAL DEPTH

WELL CASING

SCREEN TYPE

LENGTH

SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE				
6/21/88	16:32	10.8'		DIAMETER				
6/27/88	13:00	10.96'		HAMMER WEIGHT				
				FALL				

REMARKS

DEPTH (FT.)	SAMPLE NO	BLOW COUNT PER 6 IN.	RECOVERY (IN.)	BORE HOLE LOG LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
		4		0-2 ft Dry brown soil		
		2		2-4 ft Dry brown soil		
		3		4-6 ft Moist brown soil		
		3.5		6-8 ft Moist Dark brown soil with sand and gravel		
		4.5		8-10 ft Moist brown sand and gravel with clay		
		5.5		10-12 ft Wet brown sand and gravel with clay		

Boulders encountered at 25 and 55 feet.

Screen set at 68'

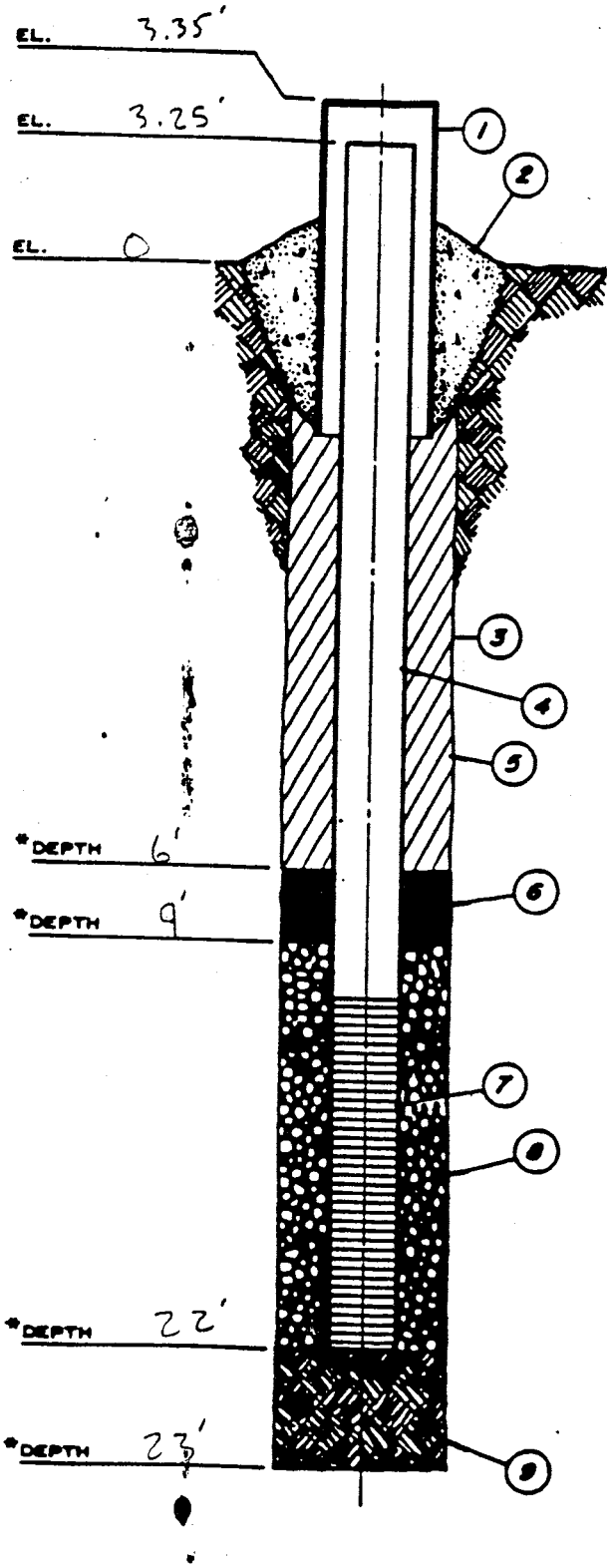
Hole depth ≈ 69'

URS # 35

MONITOR WELL COMPLETION REPORT :

WELL Nº MW-4S JOB Nº

PROJECT Kirkwood NY



*Depth in feet below grade.

1. PROTECTIVE CASING I.D. 6 INCHES.
2. SURFACE SEAL TYPE Portland Cement
3. BOREHOLE DIAMETER 8 INCHES.
4. RISER PIPE:
   a. Type PVC
   b. I.D. 2 INCHES
   c. Length 15.25 FEET
   d. Joint Type Threaded
5. BACKFILL:
   a. Type Cement Grout
   b. Installation
6. Type of SEAL Bentonite
7. SCREEN
   a. Type PVC
   b. I.D. 2 INCHES
   c. Slot Size 0.010 INCHES (10-slot
   d. Length 10 FEET
8. SCREEN FILTER TYPE #2 Gravel
9. BACKFILL TYPE #2 Gravel, cuttings, 8" wood plug

URS #35

HYDRO GROUP INC.

Ground Water Associates, Inc.
CONSULTING HYDROGEOLOGISTS
15 Ryder Street
Arlington, MA 02174

JOB NO	BORE HOLE NO MW-4S
PROJECT	LOCATION Kirkwood NY
DRILLING CONTRACTOR	DRILLING EQUIPMENT
GWA HYDROGEOLOGIST R. Francis	DRILLER
DATE START / TIME 6/20/88 12:45	DATE FINISH / TIME 6/20/88 17:40
SURFACE ELEVATION	TOTAL DEPTH 23'
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE				
6/20/88	17:09	13.5'		DIAMETER				
6/21/88	16:30	12.55		HAMMER WEIGHT				
				FALL				

REMARKS

BORE HOLE LOG

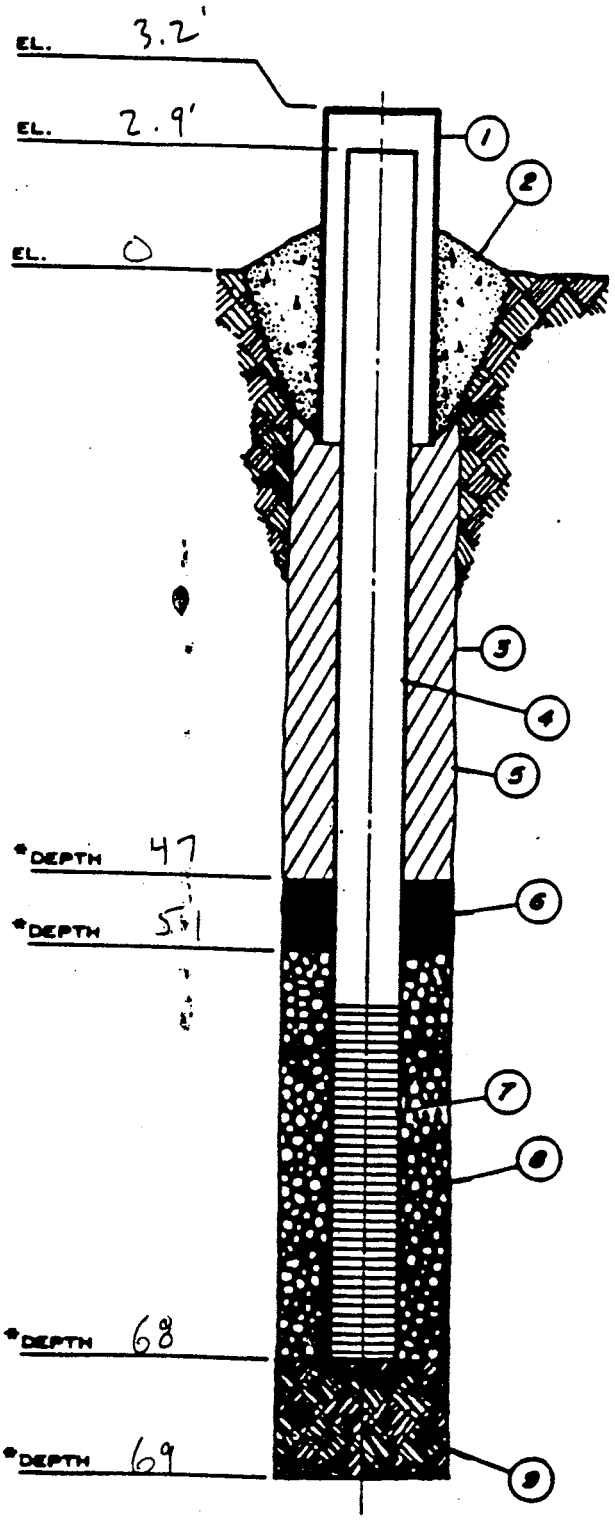
DEPTH (FT.)	SAMPLE NO	BLOW COUNT PER 6 IN.	RECOVERY (IN.)	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
		3.5	24	0-2 ft Dry Brown Soil		
		3	24	2-4 ft Brown soil		
		2	24	4-6 ft Moist Brown Soil		
		2	24	6-8 ft Moist Brown soil with clay		
		3	24	8-10 ft Moist Brown Soil, with: grey clay with brown banding; grey sandy clay with wood fragments		
		5.5	22			
		14.	19			
		7	10	10-12 ft Moist grey sandy clay to moist grey medium sand and coarse gravel with clay		
				12-14 ft Moist to wet grey fine to medium sand with gravel and clay to wet brown medium-coarse sand and coarse gravel		
				14-16 ft Soupy, brown medium-coarse sand with medium-coarse gravel and silt to grey coarse sand and gravel with silt.		
				Screen set at 22 ft		

URS #36

MONITOR WELL COMPLETION REPORT :

WELL Nº MW-4D JOB Nº

PROJECT Kirkwood NY



1. PROTECTIVE CASING I.D. 6" INCHES.
2. SURFACE SEAL TYPE Portland Cement
3. BOREHOLE DIAMETER 8 INCHES.
4. RISER PIPE:
   a. Type PVC
   b. I.D. 2 INCHES
   c. Length 55.9 FEET
   d. Joint Type Threaded
5. BACKFILL:
   a. Type Cement Grout
   b. Installation
6. Type of SEAL Bentonite
7. SCREEN
   a. Type PVC
   b. I.D. 2 INCHES
   c. Slot Size 0.010 INCHES (10-slot)
   d. Length 15 FEET
8. SCREEN FILTER TYPE #2 Gravel
9. BACKFILL TYPE #2 Gravel + cuttings

*Depth in feet below grade.

URS #36

HYDRO GROUP INC.

Ground Water Associates, Inc.
CONSULTING HYDROGEOLOGISTS
15 Ryder Street
Arlington, MA 02174

PAGE 1 OF 1

JOB NO		BORE HOLE NO	MW-4D
PROJECT		LOCATION	Kirkwood
DRILLING CONTRACTOR		DRILLING EQUIPMENT	
GWA HYDROGEOLOGIST		DRILLER	
DATE START / TIME 6/21/88 8:00	DATE FINISH / TIME 6/21/88 16:30	SURFACE ELEVATION	TOTAL DEPTH
WELL CASING	SCREEN TYPE	LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE				
6/21/88	16:42	7.63'		DIAMETER				
6/22/88	13:07	12.44'		HAMMER WEIGHT				
				FALL				

REMARKS

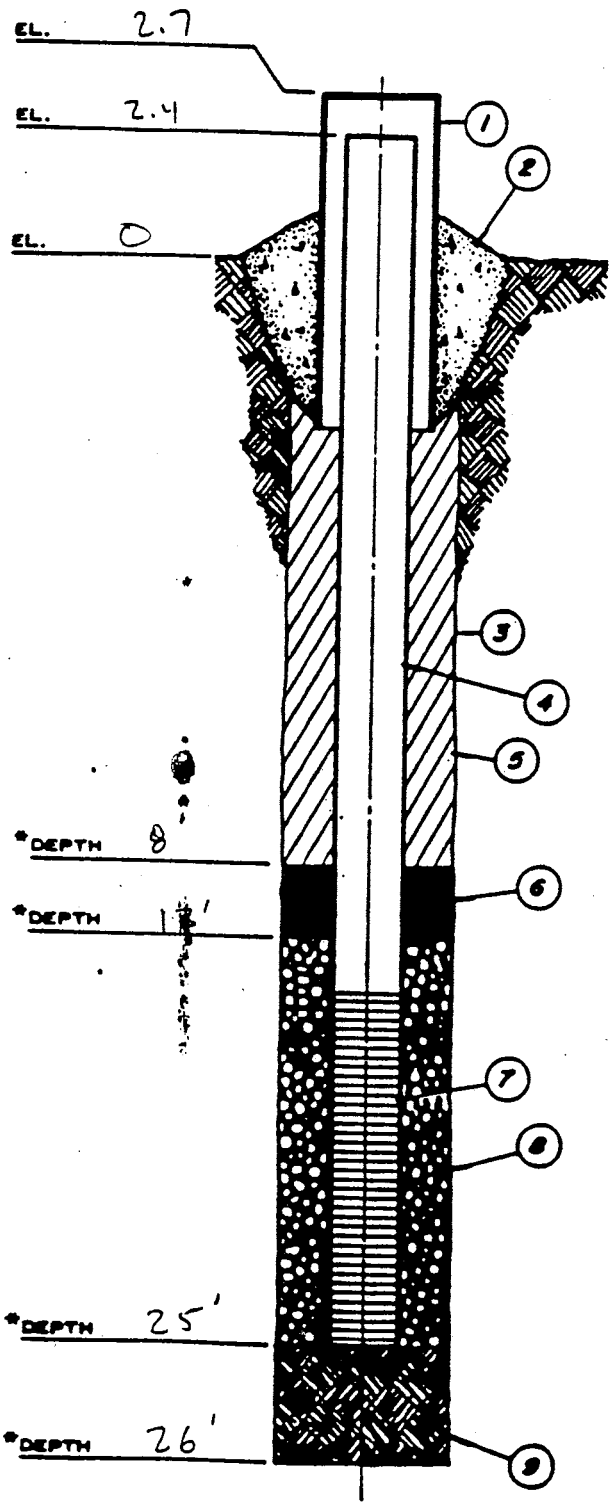
DEPTH (FT.)	SAMPLE NO	BLOW COUNT PER 6 IN.	RECOVERY (IN.)	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
				0-2 ft Dry Brown Soil		
				2-4 ft Dry Brown soil		
				4-6 ft Moist Brown Soil		
				6-8 ft moist Brown soil with clay		
				8-10 ft Moist Brown soil - moist grey clay with brown bands - moist grey sandy clay		
				10-12ft Moist grey sandy clay grading to moist grey medium sand with coarse gravel and clay		
				12-14 ft Wet grey fine to medium sand with clay and gravel; brown, medium to coarse sand and coarse gravel		
				14-16 Sandy brown medium to coarse sand with silt and medium coarse gravel; grey coarse sand and gravel		
				Screen set at 68'		
				Bottom of hole at 69'		

URS #37

MONITOR WELL COMPLETION REPORT :

WELL Nº MW-55 JOB Nº _____

PROJECT Kirkwood NY



1. PROTECTIVE CASING I.D. 6 INCHES.
2. SURFACE SEAL TYPE Portland Cement
3. BOREHOLE DIAMETER 8 INCHES.
4. RISER PIPE:
   a. Type PVC
   b. I.D. 2 INCHES
   c. Length 17.4 FEET
   d. Joint Type _____
5. BACKFILL:
   a. Type Cement Grout
   b. Installation _____
6. Type of SEAL Bentonite
7. SCREEN
   a. Type PVC
   b. I.D. 2 INCHES
   c. Slot Size 0.010 INCHES (10-slot
   d. Length 10 FEET
8. SCREEN FILTER TYPE #2 Gravel
9. BACKFILL TYPE #2 Gravel + cuttings

*Depth in feet below grade.

URS #37

HYDRO GROUP Inc.

Ground Water Associates, Inc.
CONSULTING HYDROGEOLOGISTS

PAGE 1 OF 1

JOB NO

15 Ryder Street
Arlington, MA 02174

BORE HOLE NO MW-5S

PROJECT	LOCATION
DRILLING CONTRACTOR	DRILLING EQUIPMENT
GWA HYDROGEOLOGIST R. Francis	DRILLER
DATE START / TIME 6/22/88 9:45	DATE FINISH / TIME 6/22/88 14:00
SURFACE ELEVATION	TOTAL DEPTH
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE				
6/22/88	15:04	18.45		DIAMETER				
				HAMMER WEIGHT				
				FALL				

REMARKS

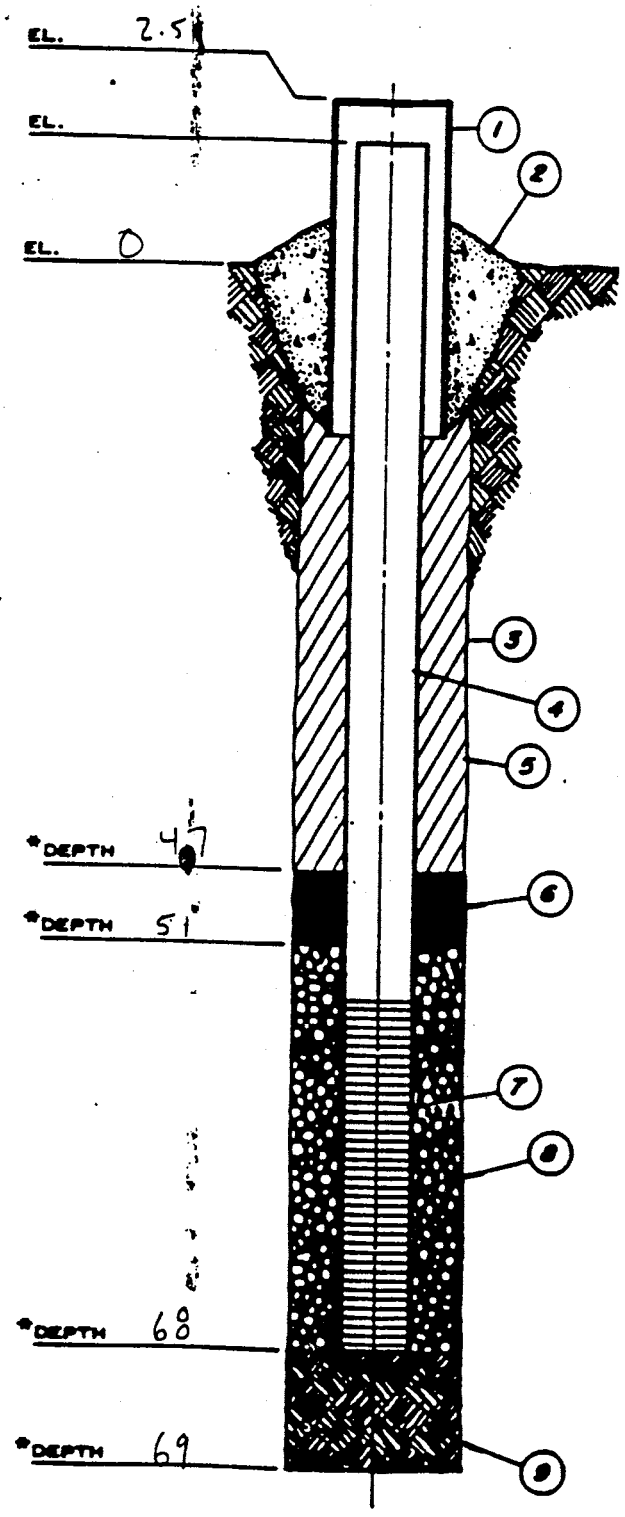
DEPTH (FT.)	SAMPLE NO	BLOW COUNT PER 6 IN.	RECOVERY (IN.)	BORE HOLE LOG — LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
				0-2 ft Dry Brown Soil	PID READINGS	
				2-4 ft Dry Brown soil	0-2 ft ØPPM	
				4-6 ft Moist Brown soil	2-4 ft ØPPM	
				6-8 ft Moist Brown soil with occasional gravel	4-6 ft ØPPM	
				8-10 ft Moist brown and grey clayey soil; banded and mottled in appearance	6-8 ft 0.2 PPM	
				10-12 ft Moist grey clay with orange banding; fine grey sand at 12 ft.	8-10 ft ØPPM	
				12-14 ft moist grey fine sand and clay with brown clay layers and gravel	10-12 ft 0.3 PPM	
				14-16 ft Moist grey fine sand and clay with brown clay layers and gravel	12-14 ft 0.4 PPM; large wood chip	
				16-18 ft wet grey fine sand and gravel with clay	14-16 ft ØPPM	
				Screen set at 25 ft	16-18 ft ØPPM	
				hole drilled to 26 ft.		

URS #34

MONITOR WELL COMPLETION REPORT :

WELL Nº MW-6 JOB Nº _____

PROJECT Kirkwood NY



1. PROTECTIVE CASING I.D. 6 INCHES.
2. SURFACE SEAL TYPE Portland Cement
3. BOREHOLE DIAMETER 8 INCHES.
4. RISER PIPE:
   a. Type PVC
   b. I.D. 2 INCHES
   c. Length 55.5 FEET
   d. Joint Type Threaded
5. BACKFILL:
   a. Type Cement Grout
   b. Installation _____
6. Type of SEAL Clay
7. SCREEN
   a. Type PVC
   b. I.D. 2 INCHES
   c. Slot Size 0.010 INCHES (10-slot)
   d. Length 15 FEET
8. SCREEN FILTER TYPE #2 Gravel
9. BACKFILL TYPE #2 Gravel + cuttings

*Depth in feet below grade.

URS #34

HYDRO GROUP INC.

Ground Water Associates, Inc.
CONSULTING HYDROGEOLOGISTS

15 Ryder Street
Arlington, MA 02174

JOB NO	BORE HOLE NO MW-6
PROJECT	LOCATION Kirkwood NY
DRILLING CONTRACTOR	DRILLING EQUIPMENT
GWA HYDROGEOLOGIST R. Francis	DRILLER
DATE START / TIME 6/23/98 12:10	DATE FINISH / TIME
SURFACE ELEVATION	TOTAL DEPTH
WELL CASING	SCREEN TYPE
LENGTH	SLOT

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE				
				DIAMETER				
				HAMMER WEIGHT				
				FALL				

REMARKS

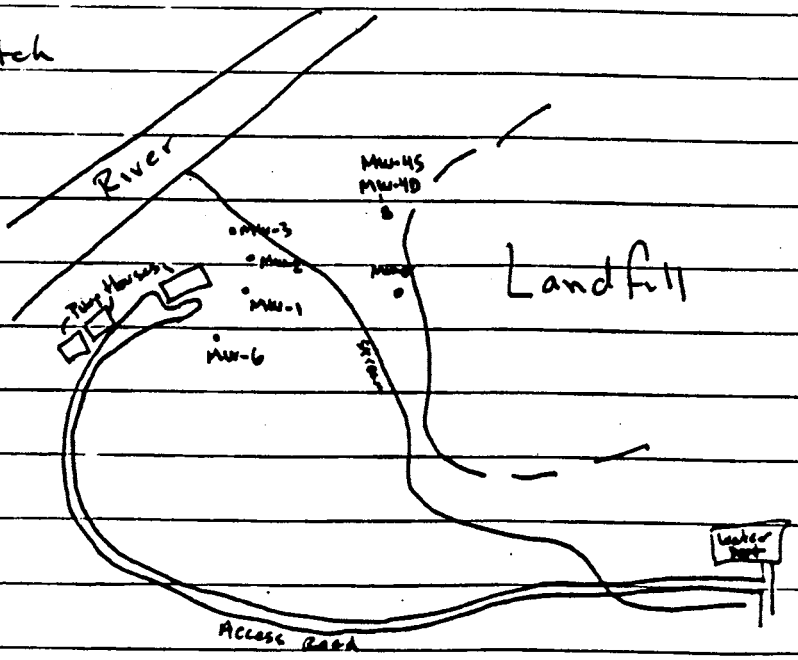
BORE HOLE LOG

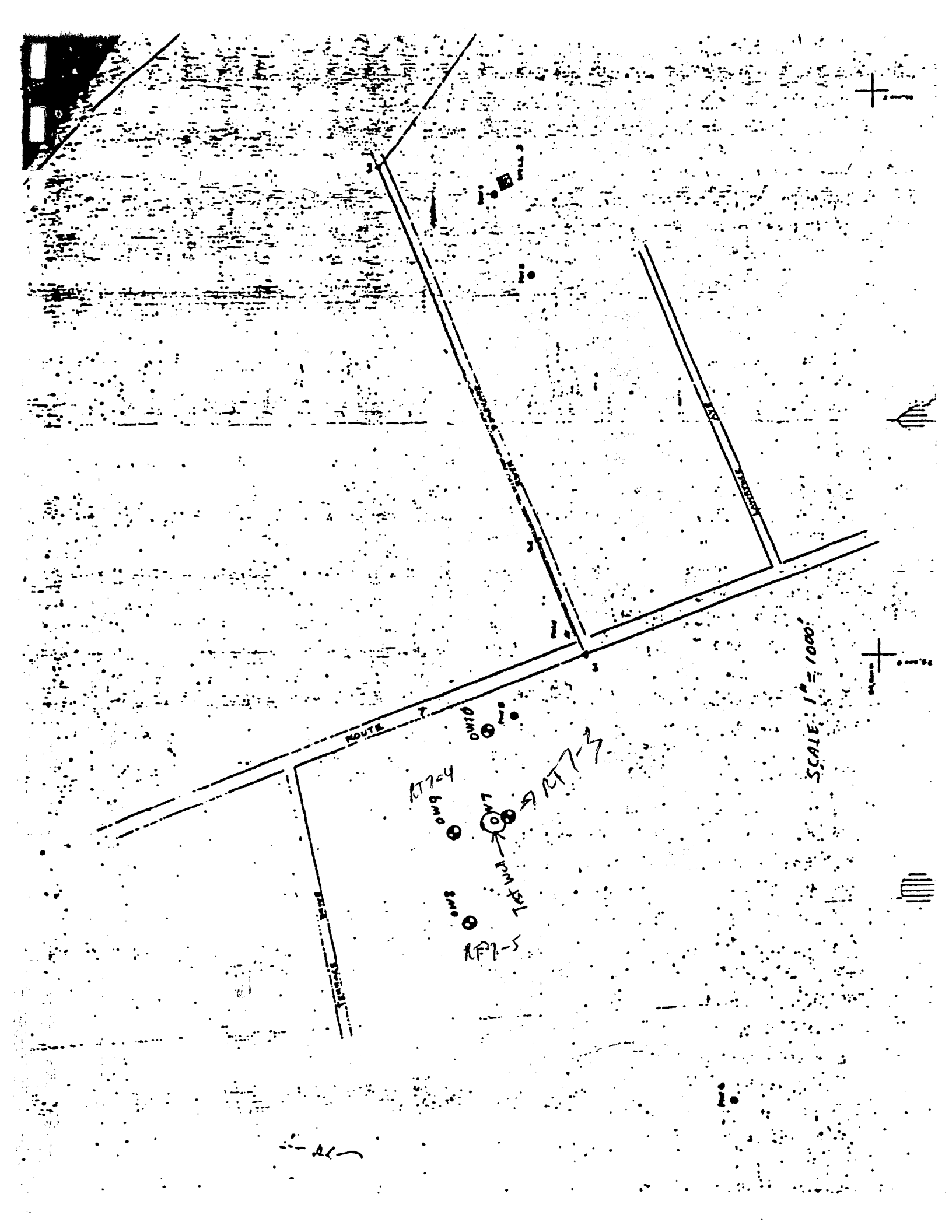
DEPTH (FT.)	SAMPLE NO	BLOW COUNT PER 6 IN.	RECOVERY (IN.)	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
		5	24	0-2 ft Brown soil		
		3.5	21	2-4 ft Moist Brown Soil		
		1.5	21	4-6 ft moist brown soil with orange spots		
		1.5	23	6-8 ft Moist brown soil with orange spots to grey clay with orange spots		
		6	23			
		12.5	20	8-10 ft Moist grey clay with orange spots and bands to grey fine sand with silt and orange bands occasional gravel.		
				10-12 ft Moist grey fine sand with silt and coarse gravel to wet grey medium sand, coarse gravel and clay		
		20	18	12-14 ft Wet medium sand and coarse gravel with clay : grey to brown.		

Construction Diagram Key

GWA well #	driller's well #	VRS #
mw-1	T-2	#31
mw-2	T-3	#32
mw-3	T-4	#33
mw-4	T-5+6	#35, 36
mw-5	T-7	#37
mw-6	T-1	#34

Rough Site sketch




ROUTE 7
OW10
RT7-4
OW9
OW7
RT7-3
OW8
RT7-5
SCALE: 1" = 1000'

wolff inc

TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

RT7-3

PROJECT — Town of Conklin Replacement Supply Well
LOCATION — Conklin, New York
DATE STARTED — 4/24/86 DATE COMPLETED — 4/25/86

HOLE NO. OW-7-86-443
SURF. EL.
JOB NO. 8650
GROUND WATER DEPTH WHILE DRILLING 10.0'
BEFORE CASING REMOVED At surfac
AFTER CASING REMOVED At surfa

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
"/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

SHEET 1 OF 3
File #2465.006

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'-	1		Auger		Brown moist SILT, little clay	
	2.0'			Sample			
5.0							5.0'
	5.0'-	2		4/5		Brown moist stiff SILT, some fine sand	
	6.5'			5	10		
10.0 ▼							10.5'
WL	10.0'-	3		7/11		Brown moist medium dense fine to coarse SAND, some fine to medium gravel, little silt	
	11.5'			9	20		
15.0							15.5'
	15.0'-	4		10/5		Brown wet medium dense fine SAND, trace silt	
	16.5'			5	10		
20.0							20.0'
	20.0'-	5		6/6		Brown moist loose to medium dense fine to coarse SAND, little to trace silt, trace fine gravel	
	21.5'			9	15		
25.0							
	25.0'-	6		4/5			
	26.5'			5	10		
30.0							
	30.0'-	7		2/2			
	31.5'			2	4		
35.0							
	35.0'-	8		12/12			
	36.5'			12	24		
40.0							

wolffino

TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT Town of Conklin
LOCATION Replacement Supply Well
Conklin, New York
DATE STARTED 4/24/86 DATE COMPLETED 4/25/86

HOLE NO. OW-7-86-443
SURF. EL.
JOB NO. 8650
GROUND WATER DEPTH
WHILE DRILLING 10.0'
BEFORE CASING
REMOVED Mud surface
AFTER CASING
REMOVED Mud surface

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
"/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

File #2465.006

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	40.0'-	9		5/6		Brown moist loose to medium dense fine to coarse SAND, little to trace silt, trace fine gravel (Fine to medium gravel layers 36.0' - 40.0')	
	41.5'			7	13		
45.0							41.0'
	45.0'-	10		8/7		Brown wet medium dense coarse to fine GRAVEL, some coarse to fine sand, trace silt	
	46.5'			7	14		
50.0							
	50.0'-	11		11/12		Note: Sand rose 5.0' in casing after sampling @ 50.0'.	
	51.5'			10	22		
55.0						Water level 2.4' 4/24/86 5:30 P.M. Water level 9.8' 4/25/86 7:30 A.M.	
	55.0'-	12		11/8			
	56.5'			13	21		
60.0							
	60.0'-	13		17/16			
	62.0'			15/16	31		
	62.5'-	14		11			62.5'
	64.5'			12/13	25	Brown wet medium dense medium to fine GRAVEL and coarse to fine SAND, little silt	
65.0				13			
	65.0'-	15		13/10			
	66.5'			10/12	20		
70.0							70.0'
	70.0'-	16		12/14		Brown wet medium dense fine to coarse SAND, some fine to medium gravel, trace silt	
	72.0'			15/15	29		
75.0							75.0'
	75.0'-	17		11/13		Brown wet very stiff SILT, some fine to medium gravel, some fine to coarse sand	
	77.0'			15/16	28		
80.0							

wolff inc

TEST BORING LOG

EAST SYRACUSE, N.Y. 13057

PROJECT Town of Conklin
LOCATION Replacement Supply Well
Conklin, New York
DATE STARTED 4/24/86 DATE COMPLETED 4/25/86

HOLE NO. OW-7-86-443
SURF. EL.
JOB NO. 8650
GROUND WATER DEPTH
WHILE DRILLING 10.0'
BEFORE CASING
REMOVED At surface
AFTER CASING
REMOVED At surface

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
"/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

SHEET 3 OF 3
File #2465.006

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	80.0'-	18A		12/15		Brown wet hard SILT, little fine to	
	81.0'	18B		17/25	32	medium sand	81.0'
	81.0'-					Brown wet hard SILT, little fine to	
	82.0'					coarse sand, little fine to medium	
85.0						gravel, little clay	
						Bottom of Boring	82.0'
						Note: Installed 2" PVC riser 80.0' to 60.0', 2" PVC screen 60.0' to 40.0', 2" PVC riser to surface with locking cover.	

wolff inc

TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT — Town of Conklin
LOCATION — Replacement Supply Well RT1-4
Conklin, New York
DATE STARTED — 4/29/86 DATE COMPLETED — 4/29/86

HOLE NO. OW-9-86-445
SURF. EL.
JOB NO. 8650
GROUND WATER DEPTH WHILE DRILLING 12.5'
BEFORE CASING REMOVED At surface
AFTER CASING REMOVED 8.6'

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
*/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

SHEET 1 OF 2
File #2465.006

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'-	1		Auger		Brown moist SILT	
	2.0'			Sample			
5.0							5.0'
	5.0'-	2		5/5		Brown moist to wet medium dense fine SAND, little silt	
	7.0'			6/7	11		
10.0							
	10.0'-	3		4/6			
WL ▼	12.0'			9/25	15		11.5'
15.0						Brown moist medium dense fine to coarse SAND, little fine to medium gravel, trace silt	14.0'
	15.0'-	4		6/6		Brown wet medium dense fine to coarse SAND, trace silt	
	17.0'			7/7	13		
20.0							20.0'
	20.0'-	5		4/6		Brown wet medium dense fine to medium GRAVEL, little silt, little fine to coarse sand	
	22.0'			6/6	12		
25.0							25.0'
	25.0'-	6		5/7		Gray wet medium dense fine SAND, trace silt	
	27.0'			8/10	15		
30.0							31.0'
	30.0'-	7		5/8		Gray-brown wet medium dense fine to medium SAND, trace silt	
	32.0'			8/11	16		
35.0							35.0'
	35.0'-	8		6/8		Brown wet medium dense coarse to fine SAND, trace silt	
	37.0'			13/12	21		
40.0							

wolff inc

TEST-BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT: Town of Conklin
LOCATION: Replacement Supply Well, Conklin, New York
DATE STARTED: 4/29/86 DATE COMPLETED: 4/29/86

HOLE NO. OW-9-86-445
SURF. EL.
JOB NO. 8650
GROUND WATER DEPTH WHILE DRILLING 12.0'
BEFORE CASING REMOVED At surface
AFTER CASING REMOVED 8.6'

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
"/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

File #2465.006

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	40.0'-	9		4/5		Brown wet medium dense coarse to fine SAND, trace silt	
	42.0'			5/5	10		
45.0							45.5'
	45.0'-	10		4/7		Brown wet medium dense coarse to fine SAND, some fine to medium gravel, trace silt	
	47.0'			8/8	15		
50.0							50.0'
	50.0'-	11		6/8		Brown wet medium dense coarse to fine SAND and fine to coarse GRAVEL, trace silt	
	52.0'			12/14	20		
55.0							55.0'
	55.0'-	12		14/11		Brown wet medium dense fine to coarse GRAVEL, little to some coarse to fine sand, little silt	
	57.0'			11/13	22		
60.0							
	60.0'-	13		11/12			
	62.0'			12/14	24		
65.0							
	65.0'-	14		8/11			
	67.0'			11/8	22		
70.0							
	70.0'-	15		17/19			
	72.0'			23/17	42		
75.0						Bottom of Boring	72.0'

Note: Installed 2" PVC riser 70.0' to 60.0', 2" PVC screen 60.0' to 40.0', 2" PVC riser 40.0' to surface with locking cover.

NT7-4

TEST BORING LOG

Parratt Wolff Inc
FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT — Town of Conklin Replacement Supply Well
LOCATION — Conklin, New York
HOLE NO. RT1-5 (OW-8-86-444)
DATE STARTED 4/28/86 DATE COMPLETED 4/28/86
SURF. EL.
JOB NO. 8650
GROUND WATER DEPTH WHILE DRILLING 13.0'
BEFORE CASING REMOVED At surface
AFTER CASING REMOVED 2.6'

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
"/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

SHEET 1 OF 3
File #2465.006

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'- 2.0'	1		Auger Sample		Brown moist SILT, trace fine sand	
5.0							5.0'
	5.0'- 7.0'	2		5/7 7/8	14	Brown moist medium dense fine to coarse SAND, trace fine to medium gravel, trace silt	
10.0							8.5'
	10.0' 12.0'	3		14/12 12/15	24	Brown dry medium dense fine to coarse GRAVEL and fine to coarse SAND, trace silt	
WL ▼ 15.0							13.0'
	15.0'- 17.0'	4		20/18 14/10	32	Brown wet dense to medium dense fine to medium GRAVEL, some coarse to fine sand, trace silt, trace clay	
20.0							
	20.0'- 22.0'	5		9/7 10/12	17		
25.0							25.0'
	25.0'- 27.0'	6		6/4 5/5	9	Brown wet loose coarse to fine SAND, some fine to medium gravel, trace silt	25.5'
30.0						Brown wet loose fine SAND, little clay, trace silt	28.0'
	30.0'- 32.0'	7		7/9 11/9	20	Brown wet medium dense fine to medium GRAVEL and coarse to fine SAND, trace silt	
35.0							35.0'
	35.0'- 37.0'	8		7/11 8/11	19	Gray wet medium dense fine to medium SAND, trace silt, little fine gravel and fine to coarse sand layers	
40.0							

parratt wolff inc

TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT Town of Conklin
LOCATION Replacement Supply Well
Conklin, New York
DATE STARTED 4/28/86 DATE COMPLETED 4/28/86

HOLE NO. OW-8-86-444
SURF. EL.
JOB NO. 8650
GROUND WATER DEPTH
WHILE DRILLING 13.0'
BEFORE CASING
REMOVED At surface
AFTER CASING
REMOVED 2.6'

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING
30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
*/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

File #2465.006

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	40.0'-	9		11/12		Brown wet medium dense to dense fine to coarse GRAVEL, some to little coarse to fine sand, trace silt, trace clay	
	42.0'			11/12	23		
45.0							
	45.0'-	10		14/11			
	47.0'			11/11	22		
50.0							
	50.0'-	11		16/16			
	52.0'			11/11	27		
55.0							
	55.0'-	12		25/22			
	57.0'			18/19	40		
60.0							
	60.0'-	13		11/11			
	62.0'			10/12	21		
65.0							
	65.0'-	14		14/13			
	67.0'			13/14	26		
70.0							
	70.0'-	15		20/14			
	72.0'			15/14	29		
75.0							75.0'
	75.0'-	16		11/14		Brown wet medium dense fine to coarse SAND, little fine gravel, trace silt	
	77.0'			13/15	27		
80.0							79.0'

[redacted] wolffino

TEST BORING LOG

[redacted] FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT — Town of Conklin
LOCATION — Replacement Supply Well, Conklin, New York
DATE STARTED — 4/28/86 DATE COMPLETED — 4/28/86

HOLE NO. OW-8-86-444
SURF. EL.
JOB NO. 8650
GROUND WATER DEPTH WHILE DRILLING 13.0'
BEFORE CASING REMOVED At surface
AFTER CASING REMOVED 2.6'
SHEET 3 OF 3
File #2465.006

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING
"/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	80.0'-	17		17/22		Gray moist hard SILT, some fine gravel, little fine to coarse sand, trace clay	
	82.0'			27/59	49		
85.0						Bottom of Boring	82.0'
						Note: Installed 2" PVC riser 80.0' to 50.0', 2" PVC screen 50.0' to 30.0', 2" PVC riser to surface with locking cover.	

APPENDIX L

ANALYTICAL RESULTS FROM PREVIOUS INVESTIGATIONS

APPENDIX L

ANALYTICAL RESULTS FROM PREVIOUS INVESTIGATIONS

All analytical results from previous investigations at, or near, the site obtained by URS from any source are tabulated in this appendix. These sources include analytical results, reports, letters, memos, etc., from the files of Lake Engineering, the NYSDEC, and the Broome County Department of Health. No representation is made by URS for the accuracy of these results.

GORICK C&D LANDFILL REMEDIAL INVESTIGATION
SUMMARY OF PREVIOUS ANALYSES - VOLATILE ORGANIC COMPOUNDS (2)

DATE	(1)	CONTAMINANT	TOWN #1	TOWN #2	TOWN #3	#37	#36	#35	#34	#33	#32	#31	#20	GS-13	GS-12	GS-10	GS-7	VO-5	VO-4	VO-3	VO-2	VO-1	AP&P (3)
5/12/81	*	TCE	1.6	(5)																			
		1,2-DCE	1.3	(5)																			
2/22/82	*	TCE	2.1	0.27																			
		1,2-DCE	1.3																				
6/14/82	*	METHYLENE CHLORIDE	9	4																3		9	
		TCE	2																				
9/29/82	*	TCE	2																				
11/2/82	*	TOTAL HYDROCARBONS																		11			47
		XYLENE																		1			
3/3/83	*	1,1-DICHLOROETHANE																					24
		1,2-DICHLOROETHANE																					320
		Other Priority Pollutant																					nd
5/17/83	*	TOTAL HYDROCARBONS																	5	3	14	1	2
		XYLENE																	1				
6/13/83	*	TOLUENE																	387				1
		TOTAL HYDROCARBONS																1	11	2	1		444
		XYLENE																	1				22
7/5/83		TOTAL HYDROCARBONS	1	nd														nd	nd	nd	nd	nd	42
		BENZENE	nd	nd														nd	nd	nd	nd	nd	nd
		TOLUENE	nd	nd														nd	nd	nd	nd	nd	nd
		XYLENE	nd	nd														nd	nd	nd	nd	nd	4
8/22/83		TCE	3	nd														nd	nd	nd	nd		nd,2
		CYCLOHEXANONE																					3.9,6.7
		CHLOROFORM	nd	nd														nd	nd	nd	nd		nd,nd
		1,1-DICHLOROETHANE	nd	nd														nd	nd	nd	nd		nd,nd
		1,2-DICHLOROETHANE	nd	nd														nd	nd	nd	nd		nd,208
9/8/83	*	TRANS-1,2-DCE																					2
		TCE																					1
9/15/83	*	TCE	3																				1
		1,2-DICHLOROETHANE																					382

Numbers in parentheses indicate notations at the end of the table.

GORICK C&D LANDFILL REMEDIAL INVESTIGATION
SUMMARY OF PREVIOUS ANALYSES - VOLATILE ORGANIC COMPOUNDS (2)

DATE	(1)	CONTAMINANT	TOWN #1	TOWN #2	TOWN #3	#37	#36	#35	#34	#33	#32	#31	#20	GS-13	GS-12	GS-10	GS-7	VO-5	VO-4	VO-3	VO-2	VO-1	AP&P (3)
1/13/84		EPA Method 624																					nd
7/11/84		BROMOFORM																					nd,nd,15
		DIBROMOCHLORO-METHANE																					nd,nd,3
		METHYLENE CHLORIDE																					14,nd,nd
		METHYLENE CHLORIDE																					nd,4,nd
		TETRACHLOROETHENE																					6,nd,nd
		1,1,1-TRICHLORO-ETHANE																					nd,nd,11
		TCE																					2,nd,nd
		Other EPA 624																					nd,nd,nd
10/30/84	*	1,2-DICHLOROETHANE																					2
12/3/84		TCE																					nd
		1,1-DICHLOROETHANE																					nd
		1,2-DICHLOROETHANE																					nd
		CYCLOHEXANONE																					nd
		XYLENE																					nd
12/4/84		TCE																					nd
		1,1-DICHLOROETHANE																					nd
		1,2-DICHLOROETHANE																					nd
		CYCLOHEXANONE																					nd
		XYLENE																					nd
12/5/84		TCE																					1
		1,1-DICHLOROETHANE																					nd
		1,2-DICHLOROETHANE																					nd
		CYCLOHEXANONE																					nd
		XYLENE																					nd

Numbers in parentheses indicate notations at the end of the table.

GORICK C&D LANDFILL REMEDIAL INVESTIGATION
SUMMARY OF PREVIOUS ANALYSES - VOLATILE ORGANIC COMPOUNDS (2)

DATE	(1)	CONTAMINANT	TOWN #1	TOWN #2	TOWN #3	#37	#36	#35	#34	#33	#32	#31	#20	GS-13	GS-12	GS-10	GS-7	VO-5	VO-4	VO-3	VO-2	VO-1	AP&P (3)
3/9/85	*	1,2-DICHLOROETHANE																					4
		METHYLENE CHLORIDE																					2
		TCE																					36
		BENZENE																		1		7	
		TOLUENE																				47	4
		XYLENE																		3		27	1
3/19/85	*	XYLENE	3																				
4/4/85		PURGEABLE HALOCARBONS																					nd
		AROMATIC HYDROCARBONS																					nd
		ENDRIN																					nd
		LINDANE																					nd
		METHOXYCHLOR																					nd
		TOXAPHENE																					nd
12/19/85	*	1,2-DCE		2																			
		TCE		5																			
6/12/86	*	CHLORODIBROMO-METHANE			2																		
		BROMOFORM			2																		
		BROMODICHLORO-METHANE			25																		
6/25/86	*	1,2-DCE			3																		
		TCE			7																		
		CHLORODIBROMO-METHANE			7																		
		BROMODICHLORO-METHANE			1																		
10/7/86		CHLOROFORM			64																		
		BROMODICHLORO-METHANE			20																		
		CHLORODIBROMO-METHANE			7																		
		BROMOFORM			3																		

Numbers in parentheses indicate notations at the end of the table.

GORICK C&D LANDFILL REMEDIAL INVESTIGATION
SUMMARY OF PREVIOUS ANALYSES - VOLATILE ORGANIC COMPOUNDS (2)

DATE	(1)	CONTAMINANT	TOWN #1	TOWN #2	TOWN #3	#37	#36	#35	#34	#33	#32	#31	#20	GS-13	GS-12	GS-10	GS-7	VO-5	VO-4	VO-3	VO-2	VO-1	AP&P (3)
10/30/86		TRICHLOROFLUORO-METHANE												nd		1	nd						nd
		Other EPA 601,602												nd		nd	nd						nd
2/3/87		HEPTANE															nd	nd	nd	nd		nd	
		OCTANE															nd	nd	nd	nd		nd	
		TCE															nd	nd	nd	nd		nd	
		1,2-DICHLOROETHANE															nd	nd	nd	nd		nd	
		1,1-DICHLOROETHANE															nd	nd	nd	nd		nd	
		CHLOROFORM															nd	nd	nd	nd		nd	
		METHYLENE CHLORIDE															nd	nd	nd	nd		nd	
		CYCLOHEXANE															nd	nd	nd	nd		nd	
		BENZENE															nd	nd	nd	nd		nd	
		TOLUENE															nd	nd	nd	nd		nd	
		XYLENE															nd	nd	nd	nd		nd	
2/9/87		TRANS-1,2-DCE													48								
		TCE													45								
		Other EPA 624													nd								
3/10/87		EPA 601,602												nd	nd	nd	nd						
6/19/87	*	NITROSODI-MEHTYLAMINE																					40
6/25/87		TCE																					5.8
		Other EPA 624																					nd
7/16/87		CHLOROFORM	nd		1														nd	nd		nd	
		TCE	nd		4														nd	nd		nd	
		Other EPA 601,602	nd		nd														nd	nd		nd	
8/31/87		TCE			7																		
		CHLOROFORM			nd																		
9/17/87		CIS-1,2-DCE			7																		
		TCE			5																		
		Other EPA 502.1, 503.1			nd																		
10/4/87	*	TCE			4										21				3				

Numbers in parentheses indicate notations at the end of the table.

GORICK C&D LANDFILL REMEDIAL INVESTIGATION
SUMMARY OF PREVIOUS ANALYSES - VOLATILE ORGANIC COMPOUNDS (2)

DATE	(1)	CONTAMINANT	TOWN #1	TOWN #2	TOWN #3	#37	#36	#35	#34	#33	#32	#31	#20	GS-13	GS-12	GS-10	GS-7	VO-5	VO-4	VO-3	VO-2	VO-1	AP&P (3)
10/29/87		METHYLENE CHLORIDE TOLUENE Other EPA 624,8240																					10(b),7(b) nd,6 nd,nd
1/14/88	*	TCE			4.9										24								
1/29/88	*	TCE	1		8																		
2/25/88		TCE	nd		9,10								nd			nd	nd		nd		nd		
3/8-9/88		TCE	nd		10,12								nd			nd	nd	nd	nd		nd		nd
3/16-17/88		TCE	nd		7,8								nd			nd	nd	nd	nd	nd	nd		
3/23/88		TCE	nd		5								nd			nd	nd	nd	nd	nd	nd		
3/30/88		TCE	nd		16											nd	nd	nd	nd	nd	nd		
4/7/88	*	TCE			6																		
4/12/88	*	1,2-DCE 2-BUTANONE BROMOFORM TCE			14 7 5 9																		
4/20/88	*	TCE	3		20																		
4/21/88		1,2-DCE 2-BUTANONE TCE	2 3 6		11 4 15																		
4/25/88	*	TCE TCE	6 8																				
4/27/88	*	TCE	5																				
4/28/88	*	TCE	2		6																		
5/3/88	*	TCE	6																				
5/5-6/88		TCE TCE TCE	2 4 6		44																		
5/9/88		EPA Method 8010																					nd
5/9-10/88		TCE TCE	nd nd		30 35																		

Numbers in parentheses indicate notations at the end of the table.

GORICK C&D LANDFILL REMEDIAL INVESTIGATION
SUMMARY OF PREVIOUS ANALYSES - VOLATILE ORGANIC COMPOUNDS (2)

DATE	(1)	CONTAMINANT	TOWN #1	TOWN #2	TOWN #3	#37	#36	#35	#34	#33	#32	#31	#20	GS-13	GS-12	GS-10	GS-7	VO-5	VO-4	VO-3	VO-2	VO-1	AP&P (3)
5/13/88		TCE	nd		10																		
		Other EPA 624			nd																		
		TIC: (4)																					
		1,2-DCE			6																		
5/16/88	*	TCE			9																		
5/20/88	*	TCE			12																		
5/23/88	*	TCE			6																		
5/26/88		TCE	nd		6																		
5/31/88	*	TCE			8																		
6/2/88	*	TCE			7																		
6/9/88		TOLUENE																					5
		Other EPA 624,8240																					nd
6/10/88	*	TCE			10																		
6/13/88	*	TCE			11																		
6/17/88	*	TCE			6																		
6/20/88	*	TCE			8																		
6/24/88		TCE	nd		4																		
6/27/88		EPA Method 601																					nd
6/29/88	*	TCE			7																		
6/30/88		TCE			11																		nd
7/25/88		TCE			6																		nd
8/8/88	*	TCE			3																		
8/22/88		TCE	nd		5																		

Numbers in parentheses indicate notations at the end of the table.

GORICK C&D LANDFILL REMEDIAL INVESTIGATION
SUMMARY OF PREVIOUS ANALYSES - VOLATILE ORGANIC COMPOUNDS (2)

DATE		CONTAMINANT (1)	TOWN #1	TOWN #2	TOWN #3	#37	#36	#35	#34	#33	#32	#31	#20	GS-13	GS-12	GS-10	GS-7	VO-5	VO-4	VO-3	VO-2	VO-1	AP&P (3)
8/23/88		VINYL CHLORIDE				nd	nd	nd	nd	nd	26	2(j)	nd										
		ACETONE				nd	nd	nd	27	nd	2(j)	19	nd										
		1,2-DCE (TOTAL)				nd	170	64	nd	nd	nd	47	nd										
		1,1,1-TRICHLORO-ETHANE				nd	nd	nd	nd	nd	nd	1(j)	nd										
		TCE				nd	430	88	nd	3(j)	4(j)	80	nd										
		TOLUENE				nd	nd	nd	nd	nd	1(j)	1(j)	nd										
		BENZENE				nd	nd	nd	nd	nd	nd	3(j)	nd										
		2-HEXANONE				6(j)	nd	nd	nd	nd	nd	nd	nd										
		Other TCL VOA'S				nd	nd	nd	nd	nd	nd	nd	nd										
		TIC: (4)																					
		1-PROPENE										5(j)											
		BICYCLO[2.2.1]-HEPTAN-2-ONE,1,3,3-TRIMETHYL-,(1R)										13(j)											
		CYCLOPENTANE, METHYL-					37(j)	29(j)	15(j)	11(j)			19(j)										
		PENTANE,2,2,3-TRIMETHYL							1(j)														
		PENTANE,3-METHYL							25(j)														
8/24/88		1,1-DCE				nd	1	2				nd	nd										
		1,1-DICHLOROETHANE				nd	2	nd				nd	nd										
		1,1,1-TRICHLORO-ETHANE				nd	5	6				1	nd										
		CIS-1,2-DCE				nd	261	100				48	nd										
		TRANS-1,2-DCE				nd	2	nd				nd	nd										
		TCE				nd	468	175	nd	3	3	93	nd										
		Other EPA 601				nd	nd	nd				nd	nd										

Numbers in parentheses indicate notations at the end of the table.

GORICK C&D LANDFILL REMEDIAL INVESTIGATION
SUMMARY OF PREVIOUS ANALYSES - VOLATILE ORGANIC COMPOUNDS (2)

DATE	(1)	CONTAMINANT	TOWN #1	TOWN #2	TOWN #3	#37	#36	#35	#34	#33	#32	#31	#20	GS-13	GS-12	GS-10	GS-7	VO-5	VO-4	VO-3	VO-2	VO-1	AP&P (3)
9/6/88		TCE	nd		5																		
9/21/88		TCE	nd		14																		
10/4/88	*	TCE			4.9																		
10/6/88		CHLOROFORM	nd		1																		
		Other EPA 502.1, 503.1 PEST/PCB, KETONES, HERBICIDES	nd		nd																		
10/14/88		TCE	nd		4.9																		
10/17/88	*	TCE			12																		
10/31/88	*	TCE			11																		
11/28/88		TCE	nd		6.4																		
12/6/88		CIS-1,2-DCE	nd		2.5																		
		TCE	nd		5.5																		
		Other EPA 502.2	nd		nd																		
12/12/88		TCE	nd		8																		
1/10/89		TCE	nd		5																		
1/23/89		TCE	nd		6																		
2/20/89		TCE	nd		8																		
2/28/89	*	TCE			7																		
3/30/89		CIS-1,2-DCE			0.8																		
		TCE			3.5																		
		Other EPA 502.1, 503.1			nd																		
4/14/89		BROMOFORM			5.3																		
		DIBROMOCHLORO-METHANE			4.8																		
		TCE			7.3																		
		Other EPA 502.2			nd																		
		EPA 503.1			nd																		
4/21/89		TCE			8.1																		
		Other EPA 503.1			nd																		

Numbers in parentheses indicate notations at the end of the table.

GORICK C&D LANDFILL REMEDIAL INVESTIGATION
SUMMARY OF PREVIOUS ANALYSES - VOLATILE ORGANIC COMPOUNDS (2)

DATE	(1)	CONTAMINANT	TOWN #1	TOWN #2	TOWN #3	#37	#36	#35	#34	#33	#32	#31	#20	GS-13	GS-12	GS-10	GS-7	VO-5	VO-4	VO-3	VO-2	VO-1	AP&P (3)
4/21/89		BROMODICHLORO-METHANE			0.5																		
		BROMOFORM			4.8																		
		DIBROMOCHLORO-METHANE			3.1																		
		TCE			6.5																		
		CIS-1,2-DCE			2.1																		
		Other EPA 502.2			nd																		
8/8/89		CIS-1,2-DCE			2																		
		TCE			4																		
		Other EPA 502.1			nd																		
8/24/89		TCE			nd,4																		

NOTES:

(1) * Indicates that URS has no copy of a laboratory results report for this sampling event.
These values have been obtained from summary reports (letters, memos, etc.) prepared by others.
Such reports usually do not contain a listing of non-detected compounds.

(2) All results (including non-detected compounds) are shown for each sampling event.
Blank entries indicate that no samples from that well were obtained or analyzed at that time.

(3) Values separated by commas indicate more than one analysis for that compound in the same day.
Analyses are always listed in the same order for each compound (i.e. the first results listed
for all the compounds are all from the same sample, as are the second, etc.).

(4) TIC: Tentatively Identified Compound. Values for such detections are approximated.

(5) Values obtained this day are reported as being obtained from the "distribution system", i.e. they may be from either well #1 or #2.

(b) Compound also detected in the associated lab blank.

(j) Compound detected at a concentration below the quantifiable limit.

nd Compound not detected.

APPENDIX M

CLIMATOLOGICAL DATA

APPENDIX M

CLIMATOLOGICAL DATA

Climatological data is for the Edwin A. Link air field, 10 miles north-northwest of, and 700 feet higher in elevation than, Binghamton. It is the nearest reporting weather station to the Gorick Landfill.

PRECIPITATION (inches)

BINGHAMTON, NEW YORK

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1960	2.36	3.98	1.56	3.02	4.45	9.46	2.63	4.27	5.57	1.78	1.01	0.94	41.03
1961	1.40	3.37	2.82	4.68	3.13	3.91	5.08	4.87	0.61	1.22	3.12	1.52	35.73
1962	2.43	2.27	2.31	3.34	0.78	2.57	1.88	2.93	3.45	7.15	1.89	1.61	32.61
1963	1.79	1.69	2.86	2.43	4.73	4.24	2.51	3.39	1.87	0.26	4.15	2.53	32.45
1964	3.00	2.00	4.56	5.09	2.01	1.22	4.80	1.85	0.66	1.06	1.90	3.18	31.33
1965	4.15	1.55	2.23	2.88	1.73	1.90	2.23	4.25	3.72	3.02	2.30	1.69	31.65
1966	3.19	3.62	2.86	2.51	2.56	2.90	1.45	1.41	3.26	1.40	2.87	2.75	30.78
1967	1.60	1.60	2.78	2.09	5.04	2.90	3.45	4.92	3.11	3.29	4.45	2.49	37.72
1968	2.26	0.51	3.25	1.61	6.46	6.96	1.66	2.26	5.49	3.14	5.62	3.17	42.39
1969	2.00	0.97	0.69	2.78	1.60	4.00	4.32	1.96	1.84	2.25	3.71	4.85	30.97
1970	0.76	2.22	2.41	3.58	3.03	1.15	4.50	3.97	3.85	2.07	2.45	3.58	33.57
1971	1.68	4.36	2.77	2.02	3.31	1.73	4.60	2.10	1.66	1.89	3.17	4.16	33.45
1972	1.29	3.74	3.79	2.83	5.17	9.18	1.68	3.79	2.03	2.17	7.52	4.85	48.04
1973	1.60	1.95	2.01	3.74	3.29	2.93	1.93	2.40	3.12	2.72	1.85	5.81	33.35
1974	2.20	1.70	4.05	2.02	3.19	3.48	4.23	1.69	2.98	0.98	3.51	3.05	33.08
1975	2.55	3.97	2.16	1.77	4.42	2.90	6.13	5.33	8.41	3.48	2.49	3.22	46.83
1976	3.69	2.88	2.78	2.69	2.53	4.42	6.40	6.79	3.85	6.30	1.12	1.71	45.16
1977	1.68	1.54	5.11	2.73	1.72	3.17	3.27	2.95	9.66	4.76	5.10	4.84	46.53
1978	6.06	1.26	2.36	1.92	2.55	3.85	2.54	4.61	1.16	3.57	1.29	3.16	34.33
1979	6.39	1.67	2.73	3.13	4.26	0.98	1.45	2.44	5.70	2.46	3.70	1.83	36.74
1980	1.08	1.08	6.00	5.48	1.54	5.68	2.09	1.58	2.81	2.86	2.96	1.60	34.76
1981	0.89	3.88	0.69	3.18	1.94	3.42	1.99	1.99	3.40	4.72	1.67	2.49	30.26
1982	3.40	2.26	2.61	2.29	3.89	7.09	1.87	2.94	1.86	0.93	4.04	1.90	35.08
1983	2.56	1.50	2.57	8.57	4.05	4.08	2.20	3.21	1.53	2.61	3.58	6.11	42.57
1984	1.59	3.34	2.19	5.07	6.09	2.65	5.44	3.07	1.92	1.58	3.55	3.15	39.64
1985	1.30	1.30	3.63	0.98	2.69	2.61	4.14	2.72	4.76	2.47	4.63	2.19	33.42
1986	2.13	4.00	3.01	2.99	3.22	4.80	7.36	3.01	3.27	2.45	5.75	2.48	44.47
1987	3.04	0.67	1.91	4.20	1.29	3.82	4.35	4.17	4.54	2.66	1.79	2.18	34.62
1988	1.57	3.77	1.61	2.76	3.89	1.05	4.94	5.22	2.05	2.58	2.93	1.19	33.56
1989	1.50	1.95	4.15	1.37	5.82	5.89	3.48	3.40	4.29	3.35	1.95	1.61	38.76
Record Mean	2.41	2.34	2.83	3.19	3.33	3.66	3.61	3.39	3.27	2.94	3.11	2.83	36.92

See Reference Notes on Page 6B.

AVERAGE TEMPERATURE (deg. F)

BINGHAMTON, NEW YORK

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1960	25.7	26.1	22.8	48.2	56.8	64.5	66.8	68.0	62.2	48.6	40.6	20.8	45.9
1961	16.8	25.6	32.0	39.8	52.3	64.6	68.3	66.9	65.9	53.2	37.3	25.1	45.6
1962	19.8	18.9	31.0	44.3	59.1	64.5	66.1	66.9	56.9	49.2	34.8	21.6	44.4
1963	19.2	16.6	35.5	45.6	53.6	65.4	67.0	62.8	54.7	54.8	41.0	19.3	44.6
1964	24.0	18.9	31.9	43.0	58.4	62.0	70.3	65.2	61.2	48.3	42.9	28.0	46.2
1965	19.8	22.7	28.7	40.3	59.2	63.1	66.7	66.6	60.8	46.8	36.9	30.4	45.2
1966	19.1	22.8	33.2	41.5	50.6	65.9	71.2	69.4	56.8	46.9	41.1	26.5	45.4
1967	29.0	18.5	29.4	43.6	47.6	68.2	67.8	66.2	59.1	48.6	32.9	28.9	45.0
1968	17.1	17.3	34.5	48.4	51.3	62.9	69.4	67.1	61.8	49.9	36.7	23.6	45.0
1969	22.1	23.0	29.9	47.0	56.3	63.8	67.0	67.6	60.1	48.0	37.9	23.5	45.5
1970	16.5	25.0	28.9	45.0	57.0	62.8	67.9	67.2	60.6	50.9	39.2	24.2	45.5
1971	15.6	23.6	28.4	40.7	54.3	66.3	65.9	64.1	62.8	55.4	35.8	30.9	45.3
1972	24.7	20.6	28.2	40.4	58.8	62.2	71.5	65.8	59.9	42.9	33.6	29.4	44.8
1973	25.8	20.1	40.0	45.4	51.5	66.3	70.2	69.7	59.7	52.6	39.8	29.0	47.5
1974	27.3	22.2	32.1	48.7	52.5	63.2	69.7	68.7	56.9	44.9	37.3	27.9	46.0
1975	24.9	24.5	27.2	37.0	62.0	66.5	72.8	67.4	56.5	51.4	44.6	26.3	46.8
1976	16.9	30.3	35.5	47.0	52.8	67.0	65.7	65.5	57.3	43.7	31.1	20.3	44.4
1977	12.0	24.1	38.0	47.4	59.0	61.8	70.0	66.5	60.3	46.7	40.2	24.6	45.9
1978	19.1	15.0	27.6	41.5	58.6	63.7	68.4	69.5	58.3	47.6	39.2	27.9	44.7
1979	21.2	13.6	37.9	42.5	55.0	62.1	69.0	65.7	58.7	48.4	42.6	31.2	45.6
1980	23.5	20.2	31.8	46.5	58.8	62.0	70.4	70.6	62.2	44.9	33.7	21.4	45.5
1981	15.3	30.7	32.3	47.5	57.3	65.2	69.4	67.8	58.4	46.3	38.2	26.5	46.2
1982	14.9	24.4	32.3	42.2	59.7	62.1	70.0	64.4	61.0	50.6	42.1	34.4	46.5
1983	24.7	28.0	35.9	43.2	53.4	66.8	72.3	70.9	63.7	50.6	39.7	23.8	47.8
1984	19.7	33.1	25.9	45.2	53.0	66.4	68.3	70.0	58.1	54.0	38.3	34.2	47.2
1985	18.9	26.1	33.3	49.1	58.9	61.2	68.8	67.4	61.3	50.0	39.9	22.4	46.6
1986	22.7	21.6	35.9	47.3	59.9	62.4	68.5	66.1	60.8	49.3	35.4	31.1	46.8
1987	23.3	23.0	38.5	48.7	57.8	66.4	71.1	66.1	59.1	45.2	39.0	29.4	47.3
1988	20.2	23.0	33.2	43.5	57.7	63.0	73.5	69.8	57.2	43.0	40.1	25.1	45.8
1989	27.2	21.9	31.9	41.5	55.4	65.1	68.6	65.7	59.2	50.5	35.7	14.0	44.7
Record Mean	20.8	23.2	31.9	44.6	55.6	64.3	69.2	67.3	59.8	49.0	38.2	26.3	45.9
Max	27.9	30.5	39.5	53.7	65.3	74.0	78.7	76.6	68.9	57.6	44.9	32.5	54.2
Min	13.7	15.9	24.2	35.4	45.9	54.6	59.6	57.9	50.7	40.3	31.5	20.0	37.5

See Reference Notes on Page 6B.

HEATING DEGREE DAYS Base 65 deg. F

BINGHAMTON, NEW YORK

SEASON	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
1960-61	36	12	114	502	724	1365	1490	1099	1016	748	394	81	7581
1961-62	38	37	117	362	825	1228	1392	1288	1049	639	246	73	7294
1962-63	21	39	261	478	900	1339	1414	1348	911	583	356	68	7718
1963-64	53	94	306	315	714	1409	1265	1333	1018	654	231	151	7543
1964-65	9	61	165	510	657	1142	1392	1176	1119	734	211	140	7316
1965-66	41	76	184	558	836	1063	1417	1173	981	696	447	88	7560
1966-67	8	16	252	552	709	1186	1107	1297	1098	634	531	27	7417
1967-68	26	40	178	505	953	1113	1477	1375	940	493	416	119	7635
1968-69	29	62	106	465	843	1279	1323	1171	1081	536	292	100	7287
1969-70	30	40	195	525	808	1280	1499	1116	1113	599	261	124	7590
1970-71	20	31	179	431	769	1258	1525	1154	1130	723	339	56	7615
1971-72	45	85	144	296	872	1050	1243	1280	1133	732	205	116	7201
1972-73	19	56	173	680	937	1097	1210	1250	770	584	411	47	7234
1973-74	5	27	200	374	749	1109	1160	1192	1016	495	384	90	6801
1974-75	14	5	251	615	825	1144	1237	1127	1164	833	147	65	7427
1975-76	0	39	250	415	604	1192	1487	999	910	554	374	50	6874
1976-77	31	62	241	653	1013	1382	1636	1137	831	537	237	130	7890
1977-78	15	61	166	560	736	1246	1415	1392	1150	699	248	100	7788
1978-79	53	7	208	533	765	1143	1351	1437	832	667	325	127	7448
1979-80	37	73	204	522	669	1040	1278	1294	1022	548	214	144	7045
1980-81	7	11	143	617	929	1349	1537	951	1006	522	266	56	7394
1981-82	19	21	215	573	799	1185	1549	1135	1006	679	178	102	7461
1982-83	19	72	147	439	685	944	1241	1031	897	649	356	68	6548
1983-84	10	13	130	447	750	1271	1399	917	1205	588	373	65	7168
1984-85	19	19	222	341	795	947	1424	1083	914	488	213	129	6594
1985-86	13	31	169	458	747	1315	1304	1209	897	522	191	116	6972
1986-87	29	58	154	480	880	1041	1284	1168	816	486	260	52	6708
1987-88	14	59	185	606	773	1095	1384	1212	981	640	246	142	7337
1988-89	18	45	232	674	739	1231	1164	1199	1019	698	322	69	7410
1989-90	9	62	201	446	875	1576							

See Reference Notes on Page 6B.
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COOLING DEGREE DAYS Base 65 deg. F

BINGHAMTON, NEW YORK

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
1969	0	0	0	0	30	71	101	127	55	0	0	0	384
1970	0	0	0	7	22	66	117	109	52	0	0	0	373
1971	0	0	0	0	13	101	82	61	84	5	0	0	346
1972	0	0	0	0	19	36	228	90	27	0	0	0	400
1973	0	0	0	4	0	92	175	180	50	0	0	0	501
1974	0	0	0	12	5	42	168	128	17	0	0	0	372
1975	0	0	0	0	59	119	251	121	1	1	0	0	552
1976	0	0	0	21	3	119	61	82	15	0	0	0	301
1977	0	0	3	14	56	39	174	115	33	0	0	0	434
1978	0	0	0	0	58	68	165	154	14	0	0	0	459
1979	0	0	0	0	23	47	167	98	22	14	0	0	371
1980	0	0	0	0	30	61	183	191	66	1	0	0	532
1981	0	0	0	4	30	68	161	115	22	0	0	0	400
1982	0	0	0	0	20	23	179	60	35	0	8	0	325
1983	0	0	0	1	0	129	240	205	98	7	0	0	680
1984	0	0	0	0	9	111	128	182	21	4	0	0	455
1985	0	0	0	17	31	21	138	116	67	0	0	0	390
1986	0	0	2	0	43	44	144	98	35	0	0	0	366
1987	0	0	0	2	44	101	213	101	15	0	0	0	476
1988	0	0	0	0	26	89	288	201	7	1	0	0	612
1989	0	0	0	0	30	76	128	89	36	3	0	0	362

See Reference Notes on Page 6B.
Page 5B

STATION LOCATION

BINGHAMTON, NEW YORK

Location	Occupied from	Occupied to	Airline distance and direction from previous location	Latitude North	Longitude West	Elevation above Sea level: Ground at temperature site	Elevation above Ground: Wind instruments	Extreme thermometers	Psychrometer	Sunshine Switch	Tipping bucket rain gage	Weighing rain gage	8" rain gage	Hygrothermometer	Automatic Observing Equipment *	* Type M = AMOS T = AUTOB Remarks
COOPERATIVE																
Binghamton State Hosp., 425 Robinson Street	7/1/90	10/1/96	NA													No instrument record.
CITY																
Post Office Wall & Henry Streets	10/1/96	7/22/13	2.25 mi. SW	42° 06'	75° 55'	875	88	78	78		71		71			First Order Weather Bureau Office established.
Post Office Wall & Henry Streets	7/23/13	4/7/19	NA	42° 06'	75° 55'	875	70	10	10		3		3			
Post Office Wall & Henry Streets	4/8/19	7/6/32	NA	42° 06'	75° 55'	875	84	10	10		3		3			
Post Office Wall & Henry Streets	7/7/32	9/30/35	300' N	42° 06'	75° 55'	841	68	60	60		53		53			
Post Office Washington & Henry Sts.	10/1/35	5/31/51	1300' E	42° 06'	75° 55'	858	79	56	56		49		49			Instruments moved to new quarters in Post Office Building.
COOPERATIVE																
Post Office Washington & Henry Sts.	6/1/51	8/31/68	NA	42° 06'	75° 55'	858		56					49			
AIRPORT																
Tri-Cities Airport Endicott, New York	5/19/41	12/4/42	NA	42° 05'	76° 06'	828	43		4				3			CAA operation.
Tri-Cities Airport Endicott, New York	12/5/42	5/24/51	NA	42° 05'	76° 06'	828	43	4	4			3	3			Change of status from CAA to WB.
Broome County Airport Binghamton, New York	5/24/51	1/21/58	11 mi. NE	42° 13'	75° 59'	1601	76	4	4	NA a76	3	3	3	NA	NA	WBO & WBAS consolidated at Broome County Airport. Wind instruments on tower cab; other instruments on plot 135 feet N of office. a - Commissioned 6/1/51.
Terminal Building Broome County Airport Binghamton, New York	1/21/58	Present	No Change	42° 13'	75° 59'	1590	22	4 c	NA d25	76 f30	3	4 e5	NA d3 e3	b b5	NA	Instruments moved to plot 750' SE of office. b - Dew cell (30') 1/21/58-11/2/60 On radar tower 25' N of office. Hygro. comm. 11/2/60 on instrument plot 750' SE of office. c - Removed 11/2/60. d - Installed 11/2/60. e - Moved 800' NNW of instrument plot to a site 21' E of term. building 7/1/63. f - Effective 7/12/80.

SUBSCRIPTION:
Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801

USCOMM-NOAA-ASHEVILLE, N.C. - 395

APPENDIX N

GROUNDWATER SURFACE ELEVATIONS

GROUNDWATER SURFACE ELEVATIONS - PHASE I

1990

WELL #:	TOP OF RISER	GROUND SURFACE	SCREENED INTERVAL		Sept. 25	Sept. 28	Oct. 1	Oct. 3	Oct. 4	Oct. 8	Oct. 9	Oct. 11	Oct. 12	Oct. 15	Oct. 16	Oct. 17	Oct. 18	Oct. 24	Oct. 25	Oct. 29
MW-1S	875.18	874.0	843.9 - 833.9							865.38	865.23	865.38	867.38	865.73	865.87	865.98	865.98	866.58	865.93	865.53
MW-2S	859.94	857.6	851.6 - 841.6			850.46	850.57	850.59	850.63	850.63	850.51	850.49	850.65	850.70	850.40	850.62	850.61	851.27	851.16	850.74
MW-3S	844.86	842.4	833.4 - 823.4								832.27	832.06	832.04	834.06	834.09	833.96	834.08		840.97	837.71
MW-4S	843.74	842.1	833.1 - 823.1																	
MW-4I	843.73	841.3	815.1 - 805.1																	
MW-5S	841.15	839.2	833.7 - 823.7																	
MW-5I	841.45	839.1	814.6 - 804.6																	
MW-5D	841.34	838.9	782.9 - 772.9																	
MW-6S	842.25	839.5	832.5 - 822.5										833.80	835.53	834.90	834.55	834.15			837.83
MW-6I	842.29	839.3	816.6 - 811.6										832.73	835.01	834.71	834.34	834.21			838.00
MW-7S	851.96	849.4	835.4 - 825.4			832.66	832.56		832.46	832.61	832.71	832.65	832.96	834.26	834.46	834.61	834.53	837.96	841.46	840.03
MW-8S	862.17	859.7	835.7 - 825.7																	
MW-9S	860.72	859.2	836.2 - 826.2																	
MW-10S	858.08	856.4	838.8 - 828.8																	
#20	839.35	837.9	776 - 766		831.85	831.79		832.24	832.01	832.50	832.43	832.13		834.28	833.93	834.17				
#31	841.30	839.3	786 - 771		831.79	831.49	831.40	831.45	831.74	831.60	832.43	831.81	831.75	834.16	833.93	833.60	834.13			836.81
#32	842.64	840.2	787 - 772		831.82	831.48	831.43	831.49	831.77	831.64	832.43	831.84	831.79	834.18	833.96	833.62	834.12			836.85
#33	842.91	840.9	789 - 774		831.73	831.52	831.46		831.80	831.67	832.49	831.88	831.81	834.22	834.00	833.65	834.18			836.87
#34	844.29	841.1	788 - 773		831.80	831.48	831.39	831.47	831.73	831.60	832.44	831.82	831.74	834.14	833.91	833.58	834.11		840.55	836.81
#35	846.08	842.9	831 - 821		832.34	831.61	831.57		832.21	831.77	832.37	832.12	831.88	834.25	834.05	833.75	834.13		840.39	837.26
#36	845.77	842.9	790 - 775		832.39	831.64	831.60		832.04	831.78	832.41	832.04	831.93	834.26	834.08	833.75	834.14		840.13	837.15
#37	847.58	845.2	832 - 822		832.31	831.62	831.60		832.16	831.76	832.35	832.10	831.88	834.22	834.03	833.76	834.16	840.94	840.40	837.31
GS7	843.39	841.7	831 - 816		832.24	831.59	831.60	831.65	831.87	831.74	832.06	831.96	832.03	833.86	833.89	833.74	833.82		840.74	837.45
GS10	848.45	845.0	825 - 805		831.92	831.56	831.54		831.95	831.73	832.41	831.97	831.86	834.19	834.01	833.70	834.14	840.53	840.45	837.11
GS13	862.05	859.4	847 - 842		851.79	851.84	851.83	851.84	851.83	851.84	851.84	851.78	851.95	851.97	851.93	851.90	851.90	852.56	852.24	852.01
GS15A	848.29	846.5	826 - 821		831.82	831.57	831.56	831.62	831.89	831.73	832.11	831.93	831.84	834.18	834.03	833.72	833.91		840.29	837.17
GS15B	848.19	846.5	796 - 786		831.74	831.53	831.50	831.56	831.82	831.68	832.23	831.89	831.81	834.17	833.99	833.69	833.86		840.28	836.96
VO1	856.91	855.4	824 - 774	*															840.67	837.01
VO3	841.70	841.4	832 - 782	*	831.88	831.51	831.47	831.55	831.83	831.68	832.41	831.90	831.80	834.22	834.00	833.66	834.13			836.89
VO4	845.58	843.5	823 - 777	*	831.91	831.33	831.31	831.38	831.65	831.49	831.97	831.73	831.91	833.89	833.80	833.54	833.59		840.12	836.96
VO5	846.48	846.5	837 - 797	*	831.91	831.65				831.82	832.25	832.05	831.93	834.29	834.13	833.82	833.93		840.16	837.23
SG #2	835.0		NOT APPLICABLE																	
SG #3	838.6		NOT APPLICABLE																	

Elevations are given in feet, MSL.

* Screened Intervals Estimated from Construction Materials List;

Field Measurements Do Not Agree With Well Depths Listed on the Diagrams.

SURFACE WATER ELEVATIONS - PHASE II
1991

STREAM GAGE #:	ELEVATION AT BOTTOM OF ROD	June 5	June 7	June 12	June 13	June 14	June 17	June 18	June 19	June 20	June 21	June 24	June 25	June 26	June 27	June 28	July 1	July 2	July 10	Sept. 4
SG #2	834.96	gage removed - unusable due to low water level																		
SG #2A	832.37	833.70	833.66	833.19	833.36	833.52	833.14	833.25	833.22		833.12		832.83			832.75		832.66	832.80	
SG #3	838.57	gage gone																		
SG #3A	837.78				838.95	838.95	838.95	838.95	838.96		838.97		838.95	838.95		838.95		838.95	838.94	838.61
SG #4	832.82	833.43	833.36	832.80	833.03	833.22	832.74	832.89	832.86											
SG #4B	831.26							832.84	832.80		832.72		832.39			832.30		832.21	832.34	832.04

Elevations are given in feet, MSL.

APPENDIX O

NYSDEC WETLANDS CLASSIFICATION SHEETS

APPENDIX O

NYSDEC WETLANDS CLASSIFICATION SHEETS

These sheets explain the basis for the classifications of the 3 NYSDEC regulated wetlands within a 2 mile radius, or 9 miles downstream, of the Gorick Landfill. Notations following each applicable characteristic refer to the sections of 6 NYCRR 664.5 in which that characteristic is listed.

FRESHWATER WETLANDS ACT
CLASSIFICATION

Wetland Identification

BE-1 County Wetland No.
Binghamton East 2056 Quad Name
7 DEC Region
BROOME County
Kirkwood Town
_____ Village
_____ _____ Grid No.

Classification

III REGULATORY CLASS
_____ Reclassification

Applicable Characteristics (664.5)

Class I

1. _____ Classic kettlehole bog 664.6 (b) (2)
2. _____ Endg. anim., resident hab. (c) (2),(4)
3. _____ Endg. plant, resident hab. (c) (2),(4)
4. _____ Anim. abund./divers.: region (c) (1),(6)
5. _____ Trib. to subst'l dev'm't (d) (1)
6. _____ Public H_2O supply (d) (2),(3),(4)
7. _____ 4/+ Class II char's (b) (6)-(8)

Class II

1. _____ Emerg. marsh < 2/3 purple loose. /reed (a) (2)
2. _____ 2/+ structural groups (b) (1)
3. _____ Tidal Wetland (b) (3)
4. _____ Assoc. w/perm. open H_2O (b) (4)
5. _____ Assoc. w/C (t)/+ stream (b) (5)
6. _____ Endg. anim., migrat. hab. (c) (3),(4)
7. _____ Vuln. anim., resident hab. (c) (2),(5)
8. _____ Vuln. plant (c) (5)
9. _____ Anim. abund./divers.: County (c) (7)
10. _____ Archeo./paleontological (c) (8)

Class II - Continued

11. _____ Geological feature (c) (9)
12. _____ Trib. to lt. or planned dev., agr. (d) (1)
13. _____ Connected to aquifer (d) (4)
14. _____ 3 ary sewage (d) (3)
15. _____ Urbanized area (e) (1)
16. _____ 3 largest, city town/boro (e) (3)
17. _____ Public recreation area (e) (4)

Class III - Type III predominates

1. _____ Emerg. marsh 2/3+ purple loose./read (a) (2)
2. ✓ ~~Deciduous swamp~~ (a) (3)
3. ✓ ~~Shrub swamp~~ (a) (5)
4. _____ Float/submerg. veg. (a) (6)
5. _____ Is open water (a) (7)
6. _____ Has Island (b) (6)
7. _____ Alk. 50 per million (c) (10)
8. _____ Fertile upland (c) (11)
9. _____ Vuln. anim, migr. hab. - major region (c) (1), (2), (3)
10. _____ Vuln. plant - maj. reg. (c) (1) (5)
11. _____ Open H_2O, pollution (d) (3)
12. _____ Visible - trans. corridor (e) (2)
13. _____ 3 largest covertype, town (e) (3)
14. _____ Town: wetland < 1% (e) (3)
15. _____ Public, open to public (e) (5)

Class IV

_____
_____
_____

Attach field notes confirming each characteristic checked. Cite sources used.

Weather

Day of Visit:

Preceding Week:

Remarks

F&W - UM915
1:56-5 - Green

Investigator: _____

Title Date

Approved by: _____

Title Date

FRESHWATER WETLANDS ACT
CLASSIFICATION

Wetland Identification

BE-2 County Wetland No.
2056 Quad Name

_____ DEC Region
_____ County
Kirkland Town
_____ Village
431.0 661.1 Grid No.

Classification

~~BE~~ ~~REGULATORY CLASS~~
_____ Reclassification

Applicable Characteristics (664.5)

Class I

1. ____ Classic kettlehole bog 664.6 (b) (2)
2. ____ Endg. anim., resident hab. (c) (2),(4)
3. ____ Endg. plant, resident hab. (c) (2),(4)
4. ____ Anim. abund./divers.: region (c) (1),(6)
5. ____ Trib. to subst'l dev'm't (d) (1)
6. ____ Public H_2O supply (d) (2),(3),(4)
7. ____ 4/+ Class II char's (b) (6)-(8)

Class II

1. ____ Emerg. marsh < 2/3 purple loose. /reed (a) (2)
2. 6 ~~2/3 structural groups (b) (1)~~
3. ____ Tidal Wetland (b) (3)
4. ____ Assoc. w/perm. open H_2O (b) (4)
5. ____ Assoc. w/C (t)/+ stream (b) (5)
6. ____ Endg. anim., migrat. hab. (c) (3),(4)
7. ____ Vuln. anim., resident hab. (c) (2),(5)
8. ____ Vuln. plant (c) (5)
9. ____ Anim. abund./divers.: County (c) (7)
10. ____ Archeo./paleontological (c) (8)

Class II - Continued

11. ____ Geological feature (c) (9)
12. ____ Trib. to lt. or planned dev., agr. (d) (1)
13. ____ Connected to aquifer (d) (4)
14. ____ 3 ary sewage (d) (3)
15. ____ Urbanized area (e) (1)
16. 6 3 largest, city town/boro (e) (3)
17. ____ Public recreation area (e) (4)

Class III

1. ____ Emerg. marsh 2/3+ purple loose./reed (a) (2)
2. ____ Deciduous swamp (a) (3)
3. ____ Shrub swamp (a) (5)
4. ____ Float/submerg. veg. (a) (6)
5. ____ Is open water (a) (7)
6. ____ Has Island (b) (6)
7. ____ Alk. 50 per million (c) (10)
8. ____ Fertile upland (c) (11)
9. ____ Vuln. anim, migr. hab. - major region (c) (1), (2), (3)
10. ____ Vuln. plant - maj. reg. (c) (1) (5)
11. ____ Open H_2O, pollution (d) (3)
12. ____ Visible - trans. corridor (e) (2)
13. ____ 3 largest covertype, town (e) (3)
14. ____ Town: wetland < 1% (e) (3)
15. ____ Public, open to public (e) (5)

Class IV

_____
_____
_____

Attach field notes confirming each characteristic checked. Cite sources used.

Weather

Day of Visit:

Preceding Week:

Remarks

Investigator: _____

Title Date

Approved by: _____

Title Date

FRESHWATER WETLANDS ACT
CLASSIFICATION

Wetland Identification

BE-3 County Wetland No.
2056 Quad Name
_____ DEC Region
_____ County
CONKLIN Town
_____ Village
432.1 657.8 Grid No.

Classification

II REGULATORY CLASS
_____ Reclassification

Applicable Characteristics (664.5)

Class I

1. _____ Classic kettlehole bog 664.6 (b) (2)
2. _____ Endg. anim., resident hab. (c) (2),(4)
3. _____ Endg. plant, resident hab. (c) (2),(4)
4. _____ Anim. abund./divers.: region (c) (1),(6)
5. _____ Trib. to subst'l dev'm't (d) (1)
6. _____ Public H_2O supply (d) (2),(3),(4)
7. _____ 4/+ Class II char's (b) (6) - (8)

Class II

1. _____ Emerg. marsh < 2/3 purple loose. /reed (a) (2)
2. _____ 2/+ structural groups (b) (1)
3. _____ Tidal Wetland (b) (3)
4. _____ Assoc. w/perm. open H_2O (b) (4)
5. _____ Assoc. w/C (t)/+ stream (b) (5)
6. _____ Endg. anim., migrat. hab. (c) (3),(4)
7. _____ Vuln. anim., resident hab. (c) (2),(5)
8. _____ Vuln. plant (c) (5)
9. _____ Anim. abund./divers.: County (c) (7)
10. _____ Archeo./paleontological (c) (8)

Class II - Continued

11. _____ Geological feature (c) (9)
12. _____ Trib. to lt. or planned dev., agr. (d) (1)
13. _____ Connected to aquifer (d) (4)
14. _____ 3 ary sewage (d) (3)
15. _____ Urbanized area (e) (1)
16. C 3 largest, city town/boro (e) (3)
17. C Public recreation area (e) (4)

Class III

1. _____ Emerg. marsh 2/3+ purple loose./read (a) (2)
2. _____ Deciduous swamp (a) (3)
3. _____ Shrub swamp (a) (5)
4. _____ Float/submerg. veg. (a) (6)
5. _____ Is open water (a) (7)
6. _____ Has Island (b) (6)
7. _____ Alk. 50 per million (c) (10)
8. _____ Fertile upland (c) (11)
9. _____ Vuln. anim, migr. hab. - major region (c) (1), (2), (3)
10. _____ Vuln. plant - maj. reg. (c) (1) (5)
11. _____ Open H_2O, pollution (d) (3)
12. _____ Visible - trans. corridor (e) (2)
13. _____ 3 largest covertype, town (e) (3)
14. _____ Town: wetland < 1% (e) (3)
15. _____ Public, open to public (e) (5)

Class IV

_____

_____

_____

Attach field notes confirming each characteristic checked. Cite sources used.

Weather

Day of Visit:

Preceding Week:

Remarks

Investigator: _____

Title Date

Approved by: _____

Title Date

APPENDIX P

TECHNICAL PROFILES OF CHEMICALS OF POTENTIAL CONCERN

APPENDIX P

TECHNICAL PROFILES

Following are brief descriptions of all chemicals of potential concern with relevant information about toxicity and health effects. The characteristics of these chemicals are discussed in general terms, as are the potential toxic effects. Specific toxicological data is presented in Section 6.5 of the RI report. It should be noted that the following profiles discuss potential toxic effects of the chemical in pure form, and do not imply that these effects will be experienced at the concentrations found at the Gorick Landfill site.

BENZO(A)ANTHRACENE

Benzo[a]anthracene is one of the polycyclic aromatic hydrocarbon (PAH) compounds. Because it is formed when gasoline, garbage, or any animal or plant material burns, it is usually found in smoke and soot. This chemical combines with dust particles in the air and is carried into water and onto soil and crops. Benzo[a]anthracene is found in coal tar pitch used by industry as an adhesive.

People may be exposed to benzo[a]anthracene from environmental sources such as air, water, and soil, and from cigarette smoke and overcooked food. Typical exposures are not usually to benzo[a]anthracene alone, but to a mixture of similar chemicals.

Classification

The weight-of-evidence classification for benzo[a]anthracene is B2--probable human carcinogen based on no human data and sufficient data from animal bioassays.

Health Effects

Benzo[a]anthracene produced tumors in mice exposed by gavage, intraperitoneal, subcutaneous or intramuscular injection, and topical application. Benzo[a]anthracene produced mutations in bacteria and in mammalian cells, and transformed mammalian cells in culture.

Although there are no human data that specifically link exposure to benzo[a]anthracene to human cancers, benzo[a]anthracene is a component of mixtures that have been associated with human cancer. These include coal tar, soots, coke oven emissions and cigarette smoke.

BENZO(B)FLUORANTHENE

Benzo(b)fluoranthene (B(b)F), in its pure form, is a colorless crystalline solid at room temperature and has a molecular weight of 252.32 g/mole. It has a vapor pressure of 5×10^{-7} and an octanol water coefficient of $1/15 \times 10^{6}$, and is therefore expected to have poor mobility in the environment. B(b)F is a polycyclic aromatic hydrocarbon that is formed during combustion of fossil fuels and organic material. It is found environmentally in mixtures with other PAH compounds including B(a)P.

Classification

The USEPA weight of evidence classification for B(b)F is B2- probable human carcinogen. Sufficient evidence of carcinogenicity in animals exists, in the absence of positive human data.

Health Effects

There are no data available to assess significant exposure levels of B(b)F alone for humans. Reports of adverse health effects such as carcinogenicity by the inhalation and dermal routes of exposure do exist for mixtures that include B(b)F thus providing some information to qualitatively assess the role of B(b)F as a human carcinogen.

No information has been found about specific levels of B(b)F that have caused harmful effects in humans after ingestion, inhalation, or dermal contact. The carcinogenicity of B(b)F has not been adequately studied, there are no reports directly correlating human B(b)F exposure and tumor development, although humans are likely to be exposed by all routes. There are a number of reports associating human cancer with exposure to mixtures of PAHs that include B(b)F. B(b)F is a skin carcinogen in animals following dermal application, and a lung carcinogen following intratracheal instillation. It is likely that B(b)F could cause cancer in humans as well.

BENZO(K)FLUORANTHENE

Benzo[k]fluoranthene is one of the polycyclic aromatic hydrocarbon (PAH) compounds. Because it is formed when gasoline, garbage, or any animal or plant material burns, it is usually found in smoke and soot. This chemical combines with dust particles in the air and is carried into water and onto soil and crops. Benzo[k]fluoranthene is found in coal tar pitch used by industry as an adhesive.

People may be exposed to benzo[k]fluoranthene from environmental sources such as air, water, and soil, and from cigarette smoke and overcooked food. Typical exposures are not usually to benzo[k]fluoranthene alone, but to a mixture of similar chemicals.

Classification

The USEPA weight-of-evidence classification for benzo[k]fluoranthene is B2, a probable human carcinogen on the basis that no human data and sufficient data from animal bioassays exists.

Health Effects

Benzo[k]fluoranthene produced tumors after lung implantation in mice and when administered with a promoting agent in skin-painting studies. Equivocal results have been found in a lung adenoma assay in mice. Benzo[k]fluoranthene is mutagenic in bacteria. Although there are no human data that specifically link exposure to benzo[k]fluoranthene to human cancers, benzo[k]fluoranthene is a component of mixtures that have been associated with human cancer. These include coal tar, soots, coke oven emissions and cigarette smoke.

BENZO(G,H,I)PERYLENE

Benzo[g,h,i]perylene is one of the polycyclic aromatic hydrocarbon (PAH) compounds. Because it is formed when gasoline, garbage, or any animal or plant material burns, it is usually found in smoke and soot. This chemical combines with dust particles in the air and is carried into water and onto soil and crops. Benzo[g,h,i]perylene is found in coal tar pitch used by industry as an adhesive.

People may be exposed to benzo[g,h,i]perylene from environmental sources such as air, water, and soil, and from cigarette smoke and overcooked food. Typical exposures are not usually to benzo[g,h,i]perylene alone, but to a mixture of similar chemicals.

Classification

USEPA weight-of-evidence classification-- D; not classifiable as to human carcinogenicity based upon no human data and inadequate animal data from lung implant, skin-painting and subcutaneous injection bioassays.

Health Effects

Benzo[g,h,i]perylene appeared to increase lung epidermoid tumors when administered with trioctanonin in a lung implant study. In a lifetime implant study, 3-month-old female Osborne-Mendel rats received a lung implant of benzo[g,h,i]perylene. Epidermoid carcinomas in the lung and thorax were observed. The apparent increased incidence of tumors was not statistically significant and no distant tumors were seen.

BENZO(A)PYRENE

Benzo(a)pyrene (B(a)P), $C_{20}H_{12}$, is a polycyclic aromatic hydrocarbon (PAH) compound. It is formed when any organic material burns and is usually found in smoke and soot as a combustion by-product. B(a)P is found in coal tar pitch used by industry, and is found in creosote.

Classification

B(a)P weight of evidence is B2 because of sufficient evidence of carcinogenicity in experimental animals, but inadequate evidence of cancer in humans from epidemiologic studies.

Health Effects

Short term and intermediate oral exposure to very high levels of B(a)P resulted in death in experimental animals fed B(a)P in the diet. The induction of cancer is the key endpoint of toxicity following chronic exposures to lower doses of B(a)P in the diet. Lethal effects from high doses of B(a)P were caused by bone marrow depression. There is no information available for the potential of human carcinogenicity following oral B(a)P exposure. Studies with experimental animals have produced leukemia and tumors of the forestomach and lung following intermediate exposures in mice.

No short term or intermediate inhalation exposure effects are available for B(a)P. The induction of cancer is the key long term effect. B(a)P is a moderately potent experimental carcinogen in many species by many routes of exposure. There are no reports directly correlating human B(a)P exposure and tumor development, although humans are likely to be exposed by all routes. There are a number of reports associating human cancer and exposure to mixtures of PAHs that include B(a)P. In view of these observations and it's well established carcinogenic activity in laboratory animals, it is reasonable to conclude that B(a)P would be expected to be carcinogenic to humans by all routes of exposure.

BIS(2-ETHYLHEXYL)PHTHALATE

Bis(2-ethylhexy)phthalate, $C_6H_4(COOCH_2C_2H_5CH_2CH_2CH_2CH_3)_2$, is as colorless oily liquid with almost no odor. It is also known a BEHP. BEHP is produced by the reaction of 2-ethylhexyl alcohol and phthalic anhydride. It is used as a plasticizer for resin and in the manufacture of organic pump fluids.

Classification

The USEPA weight of evidence has classified BEHP in Group B2: a probable human carcinogen. This is based on studies where orally administered BEHP produced significant dose-related increases in liver tumor responses in rats and mice of both sexes.

Health Effects

BEHP can be inhaled, ingested, and be a skin and eye irritant. It may affect the upper respiratory and gastrointestinal systems. Symptoms may include irritation of the eyes and mucous membranes; nausea; and diarrhea (Sittig, 1985).

BUTYLBENZYLPHTHALATE

Butylbenzylphthalate, $C_4H_9OOCC_6H_4OOC_7H_7$, is a clear, oily liquid with a slight odor. It is also known as benzylbutylphthalate on BBP. It has a melting point of less than -35°C, boiling point of 370°C and density of 1.116. Butylbenzylphthalate is used as a plasticizer for polyvinyl and cellulosic resins and as an organic intermediate.

Classification

Butylbenzylphthalate has a weight of evidence of C. It is considered a possible human carcinogen based on a significant increase in mononuclear cell leukemia in female rats. There is no data on human carcinogenity.

Health Effects

Oral administration of butylbenzylphthalate to rats resulted in decreased body weight gain, small testes, testicular lesions, and decreased hemoglobin, hematocrit and red blood cell count. Liver and kidney effects were also reported. No information on human health effects was found.

CHRYSENE

Chrysene is one of the polycyclic aromatic hydrocarbon (PAH) compounds. Because it is formed when gasoline, garbage, or any animal or plant material burns, it is usually found in smoke and soot. This chemical combines with dust particles in the air and is carried into water and onto soil and crops. Chrysene is found in coal tar pitch used by industry as an adhesive.

People may be exposed to chrysene from environmental sources such as air, water, and from tobacco smoke and overcooked food. Typical exposures are not usually to chrysene alone, but to mixtures of similar compounds.

Classification

The USEPA weight-of-evidence classification for chrysene is B2, a probable human carcinogen on the basis that no human data and sufficient data from animal bioassays exists.

Health Effects

Chrysene produced carcinomas and malignant lymphoma in mice after intraperitoneal injection and skin carcinomas in mice following dermal exposure. In mouse skin painting assays chrysene tested positive in both initiation and complete carcinogen studies. Chrysene produced chromosomal abnormalities in hamsters and mouse germ cells after gavage exposure, positive responses in bacterial gene mutation assays and transformed mammalian cells exposed in culture. It was shown to be a complete carcinogen. Chrysene has produced positive results for initiating activity in several mouse strains when applied in combination with various promoting agents producing skin papillomas and carcinomas.

Although there are no human data that specifically link exposure to chrysene to human cancers, chrysene is a component of mixtures that have been associated with human cancer. These include coal tar, soots, coke oven emissions and cigarette smoke.

DIBENZOFURAN

Dibenzofuran is formed as a by-product in the manufacture of chlorinated herbicides, and is produced during the combustion of PCBs. It is not found in a pure form, but as a component of mixtures of dioxins and furans produced in a similar fashion.

Classification

The USEPA weight-of-evidence classification of dibenzofuran is D, not classifiable as to human carcinogenicity based upon no human data and no animal data for dibenzofuran alone.

Health Effects

There is no data on the possible carcinogenicity of dibenzofuran alone in humans. Studies have evaluated exposure to a mixture of polychlorinated biphenyls (PCBs), polychlorinated dibenzofurans (PCDFs) and polychlorinated quinones (PCQs) by consumption of contaminated rice oil. However, these studies have limited value because they do not assess dibenzofuran or correlate exposure with cancer risk. Additionally, because of the multiple exposures, the extent to which the various components contributed to the increase in cancer mortality cannot be determined.

No animal carcinogenicity data on dibenzofuran is currently available. The U.S. EPA (1986) noted that the biological activity of PCDFs varies greatly, so that risk assessment of dibenzofuran by analogy to any of these more widely studied compounds would not be recommended.

CIS 1,2-DICHLOROETHENE

Cis 1,2-Dichloroethene (acetylene dichloride), $C_2H_2Cl_2$, is a colorless, flammable liquid with a pleasant odor. It exists in two isomers: 60 percent cis and 40 percent trans. It is used as a general solvent for organic materials, especially for waxes, resins, and acetylcellulose. It is also used in the extraction of rubber, in pharmaceuticals manufacture, and in the extraction of oils and fat from fish and meat.

Classification

Not yet classified.

Health Effects

Systemic health effects include principally central nervous system depression.

Symptoms of acute exposure include dizziness, nausea, frequent vomiting and central nervous system intoxication similar to that caused by alcohol. Toxic by ingestion, inhalation, and skin contact.

DI-N-OCTYLPHTHALATE

Di-n-octylphthalate, $C_6H_4(COOC_8H_{17})_2$, is a liquid which is also known as DOP. It is used as a plasticizer in the manufacture of plastics products.

Classification

Not classified for carcinogenicity by USEPA.

Health Effects

Di-n-octylphthalate is an eye and skin irritant. As a group, the phthalic acid esters are oily liquids used as intermediates in manufacturing or as lubricants. They are generally toxic in high concentrations and some are considered to be carcinogenic.

FLUORANTHENE

Fluoranthene is one of the polycyclic aromatic hydrocarbon (PAH) compounds. Because it is formed when gasoline, garbage, or any animal or plant material burns, it is usually found in smoke and soot. This chemical combines with dust particles in the air and is carried into water and onto soil and crops. Fluoranthene is found in coal tar pitch used by industry as an adhesive.

People may be exposed to fluoranthene from environmental sources such as air, water, and from tobacco smoke and overcooked food. Typical exposures are not usually to fluoranthene alone, but to mixtures of similar compounds.

Classification

The USEPA weight-of-evidence classification for fluoranthene is D, not classifiable as to human carcinogenicity on the basis of no human data and inadequate data from animal bioassays.

Health Effects

Although fluoranthene has not exhibited the properties of a mutagen or primary carcinogen, there is concern about its toxicity. This concern is based on the fact that it is widespread in the environment and that it belongs to the PAH group which includes numerous potent carcinogens.

In a 13 week mouse oral subchronic toxicity study where mice were gauged with a range of doses of fluoranthene, all treated mice exhibited nephropathy, increased salivation, increased liver enzyme levels and increased liver weights in a dose-dependent manner. Microscopic liver lesions (indicated by pigmentation) were observed in 65 and 87.5% of the mid- and high-dose mice, respectively.

FLUORENE

Fluorene is one of the polycyclic aromatic hydrocarbon (PAH) compounds. Because it is formed when fossil fuels, garbage, or any other plant or animal material is burned, it is usually found in smoke and soot. This chemical combines with dust particles in the air and is carried into water and onto soil and crops. Fluorene is found in coal tar pitch used by industry as an adhesive.

Although there is no human data that specifically links exposure to fluorene with human cancers, it is a component of mixtures that have been associated with human cancer. These include coal tar, soot, coke oven emissions, over-cooked food and tobacco smoke.

Classification

USEPA weight-of-evidence classification for fluorene is D, not classifiable as to human carcinogenicity based upon no human data and inadequate data from animal bioassays.

Health Effects

Mice were exposed to fluorene suspended in corn oil by gavage for 13 weeks. Increase salivation, hypoactivity, and urine-wet abdomens in males were observed in all treated animals. The percentage of mice exhibiting hypoactivity was dose-related. Labored respiration, ptosis (drooping eyelids), and unkempt appearance were also observed. A significant decrease in red blood cell count, packed cell volume, and hemoglobin concentration was observed. Increased total serum bilirubin levels were also observed. A dose-related increase in relative liver weight was observed in treated mice. A significant increase in absolute and relative spleen and kidney weight was observed in mice exposed to fluorene. Increases in the absolute and relative liver and spleen weights in high-dose males and females were accompanied by histopathological increases in the amounts of hemosiderin in the spleen and in the Kupffer cells of the liver. No other histopathological lesions were observed.

PHENANTHRENE

Phenanthrene, $C_{14}H_{10}$, is one of the polycyclic aromatic hydrocarbon (PAH) compounds. It is a colorless, shining crystalline solid. Because it is formed when gasoline, garbage, or any animal or plant material burns, it is usually found in smoke and soot. This chemical combines with dust particles in the air and is carried into water and onto soil and crops. Phenanthrene is found in coal tar pitch used by industry as an adhesive. It is used in dyestuffs, explosives, drug synthesis, and biochemical research.

People may be exposed to phenanthrene from environmental sources such as air, water, and soil, and from cigarette smoke and overcooked food. Typical exposures are not usually to phenanthrene alone, but to a mixture of similar chemicals.

Classification

The USEPA weight-of-evidence classification for phenanthrene is D, not classifiable as to human carcinogenicity on the basis that no human data and inadequate data from a single gavage study in rats and skin painting and injection studies in mice exists.

Health Effects

Phenanthrene is a skin photosensitizer.

PYRENE

Pyrene, $C_{16}H_{10}$, is a condensed ring hydrocarbon. It is a colorless solid which is derived from coal tar. Pyrene is used for biochemical research.

Classification

The USEPA weight-of-evidence classification for pyrene is D, not classifiable as to human carcinogenicity on the basis of no human data and inadequate data from animal bioassays.

Health Effects

Pyrene is absorbed by the skin and is a skin irritant. Workers exposed to 3 to 5 mg/m^3 of pyrene exhibited some teratogenic effects. Pyrene is a polycyclic aromatic hydrocarbon (PAH). The acute toxicity of pure PAHs appears low when administered orally or dermally to rats or mice. Human exposure to PAHs is almost exclusively via the gastrointestinal and respiratory tracts, and approximately 99 percent is ingested in the diet. Despite the high concentrations of pyrene to which humans may be exposed through food, there is currently little information available to implicate diet-derived PAHs as the cause of serious health effects.

1,1,1-TRICHLOROETHANE

1,1,1-Trichloroethane, $C_2H_3Cl_3$, is a colorless liquid with a sweet odor. It is also known as 1,1,1-TCE and methyl chloroform. 1,1,1-TCE has found wide use as a substitute for carbon tetrachloride. It is used as a dry cleaning agent, vapor degreasing agent, in textile processing, for cleaning precision instruments, as a propellant and as a pesticide.

Classification

Weight-of-evidence classification by the USEPA is Group C, a possible human carcinogen. Documented evidence of carcinogenicity in animals is available. No evidence in humans is available.

Health Effects

Acute health effects of 1,1,1-TCE may include: eye irritation, mild conjunctivitis, dizziness, incoordination, drowsiness, increased reaction time, unconsciousness, and death. It acts as a narcotic and depresses the central nervous system. Repeated skin contact may cause a dry, scaly, and fissured dermatitis. 1,1,1-TCE may be injurious to the liver and kidneys.

TRICHLOROETHENE

Trichloroethene C_2HCl_3, a nonflammable mobile liquid, has a characteristic odor resembling chloroform. It is primarily used as a solvent in vapor degreasing. It is also used for extracting caffeine from coffee, as a dry cleaning agent, and as a chemical intermediate in the production of pesticides, waxes, gums, resins, tars, paints, and varnishes.

Classification

The EPA has classified trichloroethene in Group B2: sufficient evidence in animals and inadequate evidence in humans. It has been found to induce hepatocellular carcinomas in tests on mice.

Health Effects

Trichloroethene is a poison by inhalation, intravenous and subcutaneous routes. It is moderately toxic by ingestion. Mutagenic data exist. It is an experimental teratogen, carcinogen, and tumorigen. It is a strong skin and eye irritant. Inhalation of high concentrations cause narcosis and anesthesia. A form of addiction has been observed in exposed workers. Prolonged inhalation of moderate concentrations causes headache and drowsiness. Fatalities following sever, acute exposure have been attributed to ventricular fibrillation resulting in cardiac failure. There may also be damage to the liver and other organs from chronic exposure.

APPENDIX Q

TEST PIT/TRENCH LOGS

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/10/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-1	Trench depth: 13'
Sheet 1 of 1	Water table depth: 7' (perched)
Location: N 761,922.901 E 706,308.564	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-	0	Dark yellowish brown (10YR4/4) moist, loose, homogeneous silty loam with some poorly sorted gravel (fill or reworked material).
	-3-	0	Dark yellowish brown (10YR4/4) moist, fine to coarse sand with dark brown (10YR3/3), thin, platy clay interbeds.
	-8-	0	Dark grayish brown (2.5Y4/2) to olive gray (5Y4/2) silty clay with some coarse sand and fine subrounded to rounded gravel, trace cobbles and boulders. Material was very moist on the upper boundary surface, then moist below 7' depth. Probably a till.
	-11-	0	
	-12-	0	
			BOTTOM OF TRENCH

Comments:

The top 2' of material appeared to be homogeneous and reworked--quite probably fill. No soil development apparent in the profile. From 2'-13' depth, the material appeared to be natural and undisturbed. The excavator bucket periodically would pierce balloon-size lenses of perched water just above the olive gray till at 7' depth. Puddles of water formed atop this olive gray till layer after about 15 minutes. Trenching was difficult in the till layer due to its compactness and its cobble and boulder content.

Piezometer P-15 was installed in this trench. The piezometer had a ten foot long screen which was set from 7'-17' depth.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/10/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-2 #1	Trench depth: 12'
Sheet 1 of 1	Water table depth: 7' (perched)
Location: N 761,879.488 E 706,300.776	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-	0	Dark yellowish brown (10YR4/4) moist, loose, homogeneous silty loam with some poorly sorted gravel (fill or reworked material).
	-3-		Dark yellowish brown (10YR4/4) moist, fine to coarse sand with some fine gravel interbedded with light olive brown (2.5Y5/4) clay layers 1"-10" thick. Trace of cobble and boulder size angular platy shale pieces in the upper few feet
	-4-	0	
	-5-		
	-6-		
	-7-	0	
	-8-		Greenish gray (5GY5/1) to olive gray (5Y4/2) moist silty clay with some coarse sand and fine subrounded to rounded gravel. Also some cobbles and boulders. Material was very moist on the upper boundary surface, then moist below 7' depth. Probably a till.
	-9-	0	
	-10-		
	-11-	0	
	-12-		
	-13-		**BOTTOM OF TRENCH**
	-14-		
	-15-		
	-16-		
	-17-		
	-18-		
	-19-		
	-20-		
	-21-		

Comments:

Test trench TP-2 was a west to east trending trench approximately 75' long. This log is representative of the material encountered approximately 20' from the west end of the trench.

The top 2' of material appeared to be homogeneous and reworked--quite probably fill. No soil development apparent in the profile. From 2'-12' depth, the material appeared to be natural and undisturbed. The excavator bucket periodically would pierce balloon-size lenses of perched water just above the olive gray till at 7' depth. Puddles of water formed atop this olive gray till layer after about 15 minutes. Trenching was difficult in the till layer due to its compactness and its cobble and boulder content.

Sample TP3-1 was taken from groundwater collecting on the trench bottom.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/10/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-2 #2	Trench depth: 16' maximum
Sheet 1 of 1	Water table depth: not encountered
Location: N 761,879.488 E 706,300.776	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-	0	Dark yellowish brown (10YR4/4) well graded sandy loam with occasional black silty lenses with cinders. The silty lenses were up to 3' long by 6" thick. Wood and angle iron in spots.
	-2- -3- -4- -5- -6- -7- -8- -9- -10- -11- -12- -13- -14- -15-	0 0 0 0	Dark yellowish brown (10YR4/4) clayey silt matrix with well graded subangular to rounded gravel (30%), cobbles (10%), and boulders (2%). Material was moist from 2'-10' depth and very moist from 10'-16' depth.
	-16- -17- -18- -19- -20- -21-		**BOTTOM OF TRENCH**

Comments:

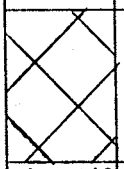
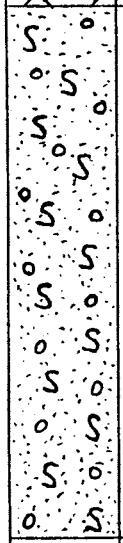
Test trench TP-2 was a west to east trending trench approximately 75' long. This log is representative of the material encountered approximately 40' from the west end of the trench.

The top 2'-3' of material definitely appeared to be fill or reworked material. The material from 2'-16' depth was of very consistent composition. Farther downtrench to the south, the matrix material coarsened to a fine sand. No till layer was encountered at 16' maximum depth. The material at 16' depth was very moist but not saturated and no water puddles formed in the trench bottom in this area.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/10/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-3	Trench depth: 13'
Sheet 1 of 1	Water table depth: 9'
Location: N 761,872.253 E 706,206.117	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1- -2- -3-	0	C&D debris (wood,rebar, concrete, metal) in a very dark gray (2.5Y3/0) silty-fine sandy matrix.
	-4- -5- -6- -7- -8- -9- -10- -11- -12- -13-	0 0 0	Dark yellowish brown (10YR4/4) silty-fine sand with some coarse sand and fine gravel, trace coarse gravel and cobbles. Water seeps from 9'-13' depth.
	-14- -15- -16- -17- -18- -19- -20- -21-		**BOTTOM OF TRENCH**

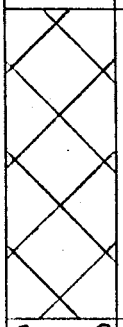
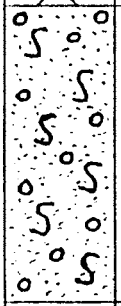
Comments:

The top 3' of material is C&D debris in a foundry ash-like matrix material. Water seeps started at 9' depth. Olive gray till appeared at the bottom of the trench (13' depth). PID readings from a bucket of saturated material from the bottom of the trench were zero.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/10/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-4	Trench depth: 11.5'
Sheet 1 of 1	Water table depth: 9.5'
Location: N 761,916.169 E 706,199.721	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1- -2- -3- -4- -5- -6-	0 0	C&D debris (wood,rebar, concrete, metal) in a very dark gray (2.5Y3/0) fine sandy matrix.
	-7- -8- -9- -10- -11-	0	Dark yellowish brown (10YR4/4) silty-fine sand with some coarse sand and fine gravel. Water seeps from 9.5'. Material saturated 10.5'-11.5'.
	-12- -13- -14- -15- -16- -17- -18- -19- -20- -21-		**BOTTOM OF TRENCH**

Comments:

Very dark gray fine sandy matrix material in top 5'-7' of section is foundry ash- or sand-like in appearance.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/10/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-5	Trench depth: 13'
Sheet 1 of 1	Water table depth: near 13'

Location: N 761,982.479 E 706,141.977

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	–1–		C&D debris (wood,rebar, concrete, metal) in a very dark gray (2.5Y3/0) to black (2.5Y2/0) fine sandy matrix.
	–2–	0	
	–3–		
	–4–		
	–5–		
	–6–	0	
	–7–		
	–8–		
	–9–	0	
	–10–		
	–11–		
	–12–		
	–13–	0	
	–14–		**BOTTOM OF TRENCH**
	–15–		
	–16–		
	–17–		
	–18–		
	–19–		
	–20–		
	–21–		

Comments:

Very dark gray to black fine sandy matrix material is foundry ash–or sand–like in appearance. Material was partially saturated from 12'–13' depth.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/10/91
Geologist: Steven Moeller	Surface elevation: 860.35'
Trench Number: TP-6	Trench depth: 15'
Sheet 1 of 1	Water table depth: not encountered

Location: N 761,928.665 E 706,056.723

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	–1–	0	C&D debris (wood,rebar, concrete, metal) in a very dark grayish brown (10YR3/2) sandy loam matrix.
	–5–	0	
	–6–		
	–7–		C&D debris (wood,rebar, concrete, metal) in a very dark gray (2.5Y3/0) fine sandy matrix.
	–8–	0	
	–9–		
	–10–		Brown (10YR4/3) silty loam with some well graded gravel and a trace of cobbles. Appeared to be natural, undisturbed material.
	–11–	0	
	–14–	0	
	–15–		**BOTTOM OF TRENCH**
	–16–		
	–17–		
	–18–		
	–19–		
	–20–		
	–21–		

Comments:

Found a crushed white drum at 5' depth, PID reading from drum was zero.
Very dark gray to black fine sandy matrix material is foundry ash–
or sand-like in appearance.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/11/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-7	Trench depth: 12'
Sheet 1 of 1	Water table depth: not encountered
Location: N 761,886.379 E 705,934.674	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	0 1 2 3 4 5 6 7 8 9 10 11	0 0 0	C&D debris (wood, cinder block, metal) in a dark brown (10YR3/3) fine sandy loam matrix. In places, the matrix material is very dark gray (2.5Y3/0) to black (2.5Y2/0) well graded sand and fine gravel with cinders.
	11 12	0	Light olive brown (2.5Y5/4) silty clay with some angular coarse sand and fine gravel.
	12 13 14 15 16 17 18 19 20 21		**BOTTOM OF TRENCH**

Comments:

The top few feet of the trench sequence consisted of nearly solid C&D debris in very little soil matrix. The amount of matrix material increased with depth. The silty clay layer from 11'-12' depth may be an old capping layer.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/11/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-8	Trench depth: 19'
Sheet 1 of 1	Water table depth: not encountered
Location: N 761,936.162 E 705,960.758	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	–1– –2– –3– –4– –5– –6– –7– –8–	0 0	C&D debris (wood, cinder block, metal) in a dark brown (10YR3/3) loamy matrix.
	–9–	0	Very dark gray (2.5Y3/0) silty-fine sand.
	–10– –11–	0	Yellowish brown (10YR5/6, 10YR5/8) silty-clay with some coarse sand and fine gravel. Trace of cobbles.
	–12– –13– –14–	0	Interlayered- - Yellowish brown (10YR5/6, 10YR5/8) silty-clay with some coarse sand and fine gravel. Trace of cobbles. - C&D debris in a very dark gray (2.5Y3/0) to black (2.5Y2/0) cindery fine sand matrix.
	–15– –16– –17– –18– –19–	0	C&D debris in a very dark gray (2.5Y3/0) to black (2.5Y2/0) cindery fine sand matrix.
	–20– –21–		**BOTTOM OF TRENCH**

Comments:

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/11/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-9	Trench depth: 15'
Sheet 1 of 1	Water table depth: not encountered
Location: N 761,905.195 E 705,943.717	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	–1– –2– –3– –4– –5– –6– –7– –8	0	C&D debris (wood, cinder block, metal) in a dark brown (10YR3/3) loamy matrix.
		0	Black (2.5Y2/0) fine sand.
	9	0	Yellowish brown (10YR5/6) silty-clay with some coarse sand and fine gravel.
	–10–	0	Light olive brown (2.5Y5/4) silty-clay with some angular coarse sand and well graded gravel. Trace of cobbles.
	11 – –12–	0	C&D debris (wood, brick, cinder block, crushed drums, metal) in a dark brown (10YR3/3) sandy loam matrix.
	–13–	0	
	–14– 15	0	
	– –16– – –17– – –18– – –19– – –20– – –21–		**BOTTOM OF TRENCH**

Comments:

Empty, crushed drums were found in the C&D debris from 11'–15' depth but no PID readings above background were detected from the drum remains.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/11/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-10	Trench depth: 18.5'
Sheet 1 of 1	Water table depth: 17.5'
Location: N 762,061.490 E 706,006.211	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-	0	Light olive brown (2.5Y5/4) clayey-silt with many distinct yellowish brown (10YR4/6, 10YR5/6) mottles.
	-4-	0	C&D debris in a dark gray (5Y4/1) sandy-clay matrix with some rounded, well graded, coarse sand and gravel; trace cobbles. Also some greenish gray (5GY5/1) clay areas in the matrix.
	-8-	0	
	-11-	0	
	-14-	0	
	-17-		Very moist to saturated brown sandy-silt with some rounded, well graded, coarse sand and gravel; trace of cobbles. Appears to be natural material.
	-19-		**BOTTOM OF TRENCH**

Comments:

Material is very moist from 14.5'-17.5' in depth, saturated from 17.5' to bottom of trench. Water pooled at bottom of trench.

The material from 16' depth down appeared to be natural and undisturbed.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/11/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-11	Trench depth: 17.5'
Sheet 1 of 1	Water table depth: 17'
Location: N 762,002.408 E 705,954.530	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-	0	Light olive brown (2.5Y4/4, 2.5Y5/4) silty-clay with some angular, well graded gravel and trace angular cobbles.
	-2-	0	Dark gray (2.5Y4/0) silty-fine sand.
	-3-	0	Light olive brown (2.5Y5/4) silty-clay with some rounded, well graded gravel and cobbles.
	-4-		C&D debris (wood, brick, metal, tires, concrete) in a dark brown (10YR3/3) fine sandy loam matrix.
	-5-		
	-6-	0.2	--Excavated 3 rusted 55 gallon drums of grease (maximum PID reading from drums was 0.2ppm).
	-7-		
	-8-	0	
	-9-		
	-10-		--Sweet, acetone-like odor coming from trench.
	-11-	0	
	-12-		
	-13-		
	-14-	0	
	-15-		
	-16-		
	-17-	0.2	
	-18-		**BOTTOM OF TRENCH**
	-19-		

Comments:

The top three thin layers all had variable thicknesses and undulatory boundaries across the trench face.

At 6' depth, (3) 55 gallon drums of grayish-black grease were uncovered (maximum PID reading was 0.2ppm). The grease drums were overpacked.

At 9.5' depth, a sweet acetone-like odor started emanating from the trench, but dissipated after 1 hour. During the backfilling of the trench the odor returned. The soil at the surface (after backfilling) had blobs of a blackish-brown resin in places. The resin gave off an aromatic, acetone-like odor. The resin blobs gave PID readings as high as 300ppm. Sample TP2-11-1 was taken from soil which contained some of the resin material (maximum PID reading 90ppm). Sample TP2-11-2 was a waste sample of the resin alone (maximum PID reading 300ppm).

Saturated material was encountered at 17' depth. Water present in the excavator bucket from 17' depth gave a PID reading of 0.2ppm.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/12/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-12	Trench depth: 17'
Sheet 1 of 1	Water table depth: 16.5'
Location: N 762,013.039 E 705,866.032	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	–		Very dark gray (2.5Y3/0) silty-fine sand.
	–1–		Light olive brown (2.5Y5/4) silty-clay with many distinct yellowish brown (10YR5/6)
	–	0.8	mottles and some rounded, well graded coarse sand and gravel; trace cobbles.
	–2–		
	–		Dark gray (2.5Y4/0) clay with some rounded, well graded coarse sand and gravel;
	–3–	0	trace cobbles.
	–		
	–4–		
	–		C&D debris (concrete, wire rope, plastic sheeting, tree stumps and limbs) in a very
	–5–		dark grayish brown (10YR3/2, 10YR3/3) loamy matrix with some rounded, well
	–		graded coarse sand and gravel; trace cobbles.
	–6–	0	
	–		
	–7–		
	–		
	–8–	0	
	–		
	–9–		
	–		
	–10–		
	–		
	–11–		
	–		
	–12–	1	
	–		
	–13–	0	
	–		
	–14–	0	
	–		
	–15–	0	
	–		
	–16–	0	
	–	0	--Water in trench, PID reading=0.
	–17–		
	–		**BOTTOM OF TRENCH**
	–18–		
	–		
	–19–		

Comments:

Found a crushed drum (grease ?) at 3' depth, PID reading was zero.

Found another rusted drum at 8' depth, PID reading was zero. The drum was filled with metal turnings and wire.

The material at 16.5' depth was saturated. It may have been natural, undisturbed material, but due to the degree of soil saturation this determination could not be made for certain.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/12/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-13	Trench depth: 18'
Sheet 1 of 1	Water table depth: 16.5'
Location: N 762,016.653 E 705,912.637	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	0	0	Dark brown (10YR3/3) medium sandy loam with some rounded, well graded coarse sand, gravel, and cobbles.
	1	0	Very dark gray (2.5Y3/0) silty-fine sand.
	2		
	3		C&D debris (steel piping with valves, tires, roofing material, wood) in a very dark grayish brown (10YR3/2) to dark brown (10YR3/3) fine sandy-silt matrix with some rounded, well graded gravel and a trace of rounded cobbles.
	4	0	
	5		
	6		
	7		
	8	0	
	9		
	10		
	11		
	12	0	
	13		--Found a piece of 6" pipe with a valve on the end, PID reading=0.6ppm.
	14	0	
	15	0	--Roofing material from 15'-18' depth, maximum PID reading=4ppm.
	16		
	17	0	--Water in trench, PID reading=0.
	18	0	
	19		**BOTTOM OF TRENCH**

Comments:

Found a drum (grease ?) at 3' depth, PID reading=0.

Found a piece of 6" pipe with a valve on the end at 12.5' depth, thought the pipe had a naphthalene odor. PID reading was 0.6ppm.

Material was very moist at 14' depth. Encountered saturated material at 16.5' depth. Water pooled in the trench bottom. PID reading on the pooled water was zero.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/12/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-14	Trench depth: 18'
Sheet 1 of 1	Water table depth: 18'
Location: N 762,070.000 E 705,944.930	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-	0	Light olive brown (2.5Y5/4) silty loam with some angular coarse sand. Also some rounded, well graded gravel and cobbles.
	-2-	0.4	Very dark gray (2.5Y3/0) silty-fine sand.
	-3-		
	-4-	0	C&D debris (wood, concrete, wire, tree limbs and stumps) in a very dark grayish brown (10YR3/2) to dark brown (10YR3/3) fine sandy-silt matrix with some rounded, well graded gravel and a trace of rounded cobbles.
	-5-		
	-6-		
	-7-		
	-8-		
	-9-		
	-10-		
	-11-	0	
	-12-		
	-13-	3	
	-14-	5	
	-15-		--Black, tar-like material. Maximum PID reading was 25ppm.
	-16-		
	-17-		
	-18-	0	--Water in trench, PID reading=0.
	-19-		**BOTTOM OF TRENCH**

Comments:

The upper two layers of material had slight variations (up to 1') in thickness and undulatory boundaries across the trench face.

Material was very moist at 14' depth and became saturated at 18' depth.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/12/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-15	Trench depth: 19'
Sheet 1 of 1	Water table depth: not encountered
Location: N 762,127.277 E 705,996.498	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	1	0.5	Very dark gray (2.5Y3/0) silty-fine sand with cinders
	2		Strong brown (7.5YR5/6) to yellowish brown (10YR5/6) silty-fine sand with some rounded, well graded coarse sand, gravel, and a trace of rounded cobbles.
	3		Light olive brown (2.5YR5/4) silty-fine sand with some rounded, well graded coarse sand, gravel, and a trace of rounded cobbles.
	4		
	5	0	C&D debris (wood, concrete, brick, metal) in a very dark grayish brown (10YR3/2) to dark brown (10YR3/3) medium sandy-silt matrix with some well rounded, well graded coarse sand, gravel, and a trace of rounded cobbles.
	6	0	
	7	0	
	8	0	
	9	0	
	10	0	
	11	0	
	12	0	
	13	0	
	14	0	
	15	0	
	16	0	
	17	0	
	18	0	
	19	0	Light olive brown (2.5Y5/4) medium sandy loam with some angular coarse sand and some rounded, well graded gravel and cobbles (may be natural material).
			BOTTOM OF TRENCH

Comments:

The layer of material from 2'-2.5' depth appeared oxidized.

The material from 18.5' depth down may have been natural, undisturbed soil, but it appeared to contain red brick fragments.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/12/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-16	Trench depth: 18'
Sheet 1 of 1	Water table depth: 18'
Location: N 762,243.165 E 705,871.158	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	0	0	Very dark gray (2.5Y3/0) silty-fine sand with cinders
	1		Light olive brown (2.5YR5/4) silty-fine sand with some well rounded, well graded gravel, and cobbles.
	2	0	
	3	0	C&D debris (wood, pipe, tires, and much red brick) in a very dark grayish brown (10YR3/2) to dark brown (10YR3/3) silty-medium sand matrix with some well
	4	0	rounded, well graded coarse sand, gravel, and a trace of rounded cobbles.
	5	0	
	6	0	
	7	0	
	8	0	
	9	0	
	10	8	--8ppm reading appeared to come from one brick.
	11	0	
	12	0	
	13	0	
	14	0	
	15	0	
	16	0	
	17	0	
	18		**BOTTOM OF TRENCH**
	19		

Comments:

Water pooled on the pit bottom at 18' depth. PID reading on this water was zero.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/12/91
Geologist: Steven Moeller	Surface elevation: 852.03'
Trench Number: TP-17	Trench depth: 19'
Sheet 1 of 1	Water table depth: 19'
Location: N 762,175.544 E 705,902.765	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-	0	Light olive brown (2.5YR5/4) clay loam with some rounded, well graded coarse sand, gravel, and a trace of rounded cobbles. There was a 1" thick yellowish brown (10YR5/6) oxidized iron layer at the bottom of this layer.
	-2-		Very dark gray (2.5Y3/0), very compact silty-fine sand with some subangular to rounded, well sorted coarse sand and gravel.
	-3-	0	C&D debris (wood, concrete, brick, cinder block, steel plate) in a very dark grayish brown (10YR3/2) to dark brown (10YR3/3) silty-medium sand matrix with some well graded, angular to well rounded coarse sand to coarse gravel; trace of rounded cobbles.
	-4-		
	-5-	0	
	-6-		
	-7-	0	
	-8-		
	-9-	0	
	-10-	5	
	-11-		
	-12-	0	
	-13-		
	-14-	0	
	-15-		
	-16-		
	-17-		
	-18-	0	Dark brown, rounded medium sand with some well graded, coarse sand and gravel; may be undisturbed, natural material.
	-19-		
	-		**BOTTOM OF TRENCH**

Comments:

At 10' depth, got a PID reading of 5ppm on a piece of asphalt.

A drum fragment fell into the trench as one of the sidewalls slumped. The depth the drum came from is uncertain. It appeared to be filled with cork. PID reading on the drum was zero.

Natural, undisturbed material may have been encountered at 17' depth.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/12/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-18	Trench depth: 18'
Sheet 1 of 1	Water table depth: not encountered
Location: N 762,192.986 E 705,968.916	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-		Very dark gray (2.5Y3/0) to black (2.5Y2/0) silty-fine sand.
		0	
	-2-		Lenses of light olive brown (2.5Y5/4) silty-clay with rounded gravel and cobbles.
	-3-		C&D debris (mostly red brick with some wood, concrete) in a strong brown (7.5YR4/6 to 7.5YR5/8), very compact, almost indurated fine to medium sandy matrix. Induration of the material was probably due to iron oxide cementation. In spots, the matrix material was dark brown (10YR3/3) silty-medium sand.
	-4-		
	-5-	0	
	-6-		
	-7-		
	-8-		
	-9-		
	-10-		
	-11-	0	
	-12-		
	-13-		
	-14-		
	-15-	0	
	-16-		
	-17-		
	-18-	0	
	-19-		**BOTTOM OF TRENCH**

Comments:

Material was very damp from 15' depth down, but no visible water was present in the trench bottom.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/13/91
Geologist: Steven Moeller	Surface elevation: 853.02'
Trench Number: TP-19	Trench depth: 20'
Sheet 1 of 1	Water table depth: 19.5'
Location: N 762,122.354 E 705,897.836	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	1		Light olive brown (2.5Y5/4) to olive brown (2.5Y4/4) silty-clay with some subangular to subrounded, poorly sorted coarse sand and a trace of subangular to rounded gravel and cobbles.
	2		Very dark gray (2.5Y3/0), compact silty-fine sand.
	3	0	Dark grayish brown(2.5Y4/2), compact silty-clay with a trace of rounded gravel and cobbles.
	4		C&D debris (red brick, wood, concrete, steel, tires) in a dark brown (10YR3/3) to very dark grayish brown (10YR3/2) coarse sandy loam matrix with some poorly sorted, subrounded to well rounded gravel and cobbles.
	5		
	6		
	7		
	8	0	
	9		
	10	0	
	11		
	12	0	
	13		
	14	0	
	15		--Material damp.
	16		
	17		Well rounded gravel with some olive (5Y5/3) to olive gray (5Y5/2) medium sandy-clay, trace of well rounded cobbles. Some dark brown (7.5YR4/4 to 7.5YR4/3) iron oxide staining. Appears to be natural material.
	18	0	
	19		
	20	0	
			BOTTOM OF TRENCH

Comments:

PID reading on the water at 19.5' depth was not above background.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/13/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-20	Trench depth: 16'
Sheet 1 of 1	Water table depth: 15.5'
Location: N 762,214.459 E 705,750.552	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-	0	Dark grayish brown(2.5Y4/2) medium sandy loam with a trace of subangular to rounded gravel and cobbles. Some dark yellowish brown (10YR4/4 to 10YR4/6) iron stains.
	-3-	0	C&D debris (red brick, wood, concrete, pipe, tires, metal, cinder block, gypsum wall board) in a dark brown (10YR3/3) to very dark grayish brown (10YR 3/2) sandy loam matrix with some rounded to well rounded gravel and cobbles. There was a light olive brown (2.5YR5/4) silty-clay layer with some rounded gravel and cobbles about 6" thick at about 3.5' depth.
	-5-	0	
	-8-	0	
	-11-	0	
	-13-	0	
	-14-		--Material damp.
	16	0	**BOTTOM OF TRENCH**

Comments:

Found a crushed drum fragment at 5' depth, PID reading was background.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/13/91
Geologist: Steven Moeller	Surface elevation: 850.58'
Trench Number: TP-21	Trench depth: 18.5'
Sheet 1 of 1	Water table depth: 18'
Location: N 762,102.552 E 705,822.374	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-		Very dark gray (2.5Y3/0), compact fine sandy-silt.
	-2-		Dark brown(2.5Y3/3) silty-clay with a trace of poorly sorted, rounded gravel and cobbles. A few red bricks between 2' to 4' depth.
	-3-	0	
	-4-		
	-5-	0	C&D debris (red brick, wood, pipe, tires, metal, plastic, bottles, drum fragments) in a dark brown (10YR3/3) to very dark grayish brown (10YR 3/2) sandy loam matrix with some poorly sorted, well rounded gravel and cobbles.
	-6-		
	-7-		
	-8-		
	-9-		
	-10-		
	-11-	0	
	-12-		
	-13-	0	
	-14-		
	-15-		
	-16-		
	-17-		Very damp, dark brown (10YR3/3) medium sandy loam with some well rounded, poorly sorted gravel. Probably natural material.
	-18-	0	
	-19-		**BOTTOM OF TRENCH**

Comments:

PID reading on pooled water at 18' depth was at background.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/13/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-22	Trench depth: 18'
Sheet 1 of 1	Water table depth: 17'
Location: N 762,026.172 E 705,950.685	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1-		Olive brown (2.5Y4/4), compact silt with a trace of angular gravel and cobbles.
	2		Dark gray (2.5Y4/0), compact fine sandy-silt.
	-3-	0	Light olive brown (2.5Y5/4) silty-clay with a trace of poorly sorted, rounded gravel and cobbles.
	-4-		
	-5-	0	C&D debris (red brick, wood, pipe, tires, concrete, cinder block, plastic sheet) in a dark brown (10YR3/3) medium sandy loam matrix.
	-6-		
	-7-		
	-8-		
	-9-		
	-10-		
	-11-	0	
	-12-		
	-13-	0	
	-14-		-- Material damp.
	-15-		
	-16-		
	-17-		--Pooled water, PID reading was at background.
	18	0	
	-19-		**BOTTOM OF TRENCH**

Comments:

Natural material may have been present from 15' down, but this was very difficult to ascertain due to trench sidewall slumping.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/13/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-23	Trench depth: 17.5'
Sheet 1 of 1	Water table depth: 17'
Location: N 762,035.382 E 705,918.561	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	1	0	Olive brown (2.5Y4/4) silty-clay with a trace of angular gravel and cobbles.
	2		Very dark gray (2.5Y3/0) fine sandy-silt.
	3	0	C&D debris (red brick, wood, metal) in a very dark grayish brown (10YR3/2) to dark brown (10YR3/3) medium sandy-silt matrix with a trace to some poorly sorted, rounded gravel and cobbles.
	4		
	5	0	
	6		
	7		
	8	0	
	9		
	10		
	11		
	12		
	13		
	14		
	15	0	--- Material damp.
	16		
	17	0	--Pooled water, PID reading was at background.
	18		**BOTTOM OF TRENCH**
	19		

Comments:

Natural material may have been present from 15.5' down, but this was very difficult to ascertain due to trench sidewall slumping.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/13/91 – 6/14/91
Geologist: Steven Moeller	Surface elevation: 851.85'
Trench Number: TP–24	Trench depth: 19'
Sheet 1 of 1	Water table depth: 18.5'
Location: N 761,986.064 E 705,987.914	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	–1–	0	Black (2.5Y2/0) fine sandy–silt with angular gravel, cinders, and some C&D debris (brick, wood, pipe).
	–3–	0	Olive brown (2.5Y4/4) silty–clay with a trace of poorly sorted, rounded gravel and cobbles. 1″–2″ thick dark yellowish brown (10YR4/6) iron oxide zone at 4.5' depth.
	–5–	0	Olive gray (5Y4/2 to 5Y5/2), very firm clay with a trace of poorly sorted, rounded gravel.
	–7– –8– –9– –10– –11–	0	C&D debris (red brick, wood, metal, concrete, steel) in a very dark grayish brown (10YR3/2) to dark brown (10YR3/3) medium sandy loam matrix with a trace to some poorly sorted, rounded gravel and cobbles.
	–12– –13– –14– –15–	5	Found a drum and a drum liner at 12'–13' depth that contained a blue and white solid with a lacquer odor. Maximum PID reading on the material was 500ppm. Sample TP–24–1 was taken from this material.
	16	8	
	–17– –18–	20 50	Dark grayish brown (10YR4/2 to 2.5Y4/2) poorly sorted, well rounded gravel and cobbles with some coarse sand and silt.
	19	2	
			BOTTOM OF TRENCH

Comments:

At 18' depth, found another drum of the blue and white solid, maximum PID reading was 500ppm.

Water pooled at 18.5' depth, PID reading on water was at background.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 6/14/91
Geologist: Steven Moeller	Surface elevation: NA
Trench Number: TP-25	Trench depth: 16.5'
Sheet 1 of 1	Water table depth: not encountered
Location: N 761,982.254 E 706,007.872	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	-1- -2- -3- -4-	0	C&D debris (brick, concrete, steel, pipe) in a very dark gray (10YR3/1) silty-fine sand matrix with some angular gravel.
	-5-	0	Very dark gray (2.5Y3/0) fine to medium sand and cinders with some angular, poorly sorted gravel.
	-6- -7-		Olive brown (2.5Y4/4) to light olive brown (2.5Y5/4) silty loam with some poorly sorted subangular to subrounded gravel and cobbles.
	-8-	0	Olive gray (5Y4/2 to 5Y5/2), very compact clay with some poorly sorted gravel and cobbles.
	-9- -10- -11- -12- -13- -14- -15- -16-	8 0 0	C&D debris (metal pieces, wood, plastic sheeting, concrete, steel, tires, roofing, materials) in a dark brown (10YR3/3) to very dark grayish brown (10YR3/2) medium sandy loam matrix with some to a trace of poorly sorted gravel and cobbles.
	-17- -18- -19-		**BOTTOM OF TRENCH**

Comments:

A piece of tar at 11' depth gave the 8 ppm PID reading.

Abandoned trench at 16.5' depth upon encountering a large I-beam.

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 7/1/91
Geologist: Dan Sheldon	Surface elevation: NA
Trench Number: TP-27	Trench depth: 23.5'
Sheet 1 of 1	Water table depth: not encountered
Location: N 761,856.993 E 705,870.012	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	–1– –2– –3–		C&D debris (wood, glass, metal) in a brown silt matrix.
	–4– –5– –6– –7– –8– –9–	0	C&D debris (metal, wood) in a black matrix.
	–10–		Light brown clayey-silt with some fine to medium, subrounded to rounded gravel (moist).
	–11– –12–		Dense, dry, gray silty-sand.
	–13– –14– –15– –16– –17– –18– –19– –20– –21– –22– –23–		C&D debris in a loamy matrix with trace amounts of rounded gravel (moist).
	–24–		**BOTTOM OF TRENCH**

Comments:

URS CONSULTANTS, INC.

TEST TRENCH LOG

Client: NYSDEC	Contractor: F.G. Leib
Project: Gorick Landfill	Operator: Wendell Tracey
Project Number: 35232	Date: 7/1/91
Geologist: Dan Sheldon	Surface elevation: NA
Trench Number: TP-28	Trench depth: 23.5'
Sheet 1 of 1	Water table depth: 19'
Location: N 761,924.948 E 705,897.374	

SECTION	DEPTH (feet)	PID (ppm)	DESCRIPTION
	–1– –2– –3– –4– –5– –6– –7– –8– –9– –10–		C&D debris (wood, metal) in a brown silty loam matrix.
	–11– –12–		Grayish brown silty sand.
	–13– –14– –15– –16– –17– –18– –19–		C&D debris in a silty loamy matrix.
	–20– –21– –22– –23–		Gray silty sand (wet) with water logged timbers and brick fragments.
	–24–		**BOTTOM OF TRENCH**

Comments:

APPENDIX R

ANALYTICAL DATA ASSESSMENT

"ANALYTICAL DATA ASSESSMENT - FIRST PHASE"

ANALYTICAL DATA ASSESSMENT

FOR

FIRST-ROUND CHEMICAL ANALYSES FOR THE GORICK LANDFILL

Performed by:

IEA, INC., MONROE, CT

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

By:

URS CONSULTANTS, INC.

MARCH 1991

INTRODUCTION: This assessment represents the best judgement of URS Consultants, Inc. (URS) concerning the useability and defensibility of chemical data produced by IEA, Inc., a subcontractor to URS, as part of a Remedial Investigation/Feasibility Study at the Gorick Landfill in the Township of Kirkwood, New York. This project is being funded by the New York State Department of Environmental Conservation (NYSDEC), Standby Work Assignment No. D002340-5. The data being evaluated is from first-round sampling of waste, shallow probe soils, soil borings, surface waters, stream sediments, leachate seeps, and groundwater samples. All analyses performed by IEA, Inc. were subject to NYSDEC Analytical Services Protocol - September 1989.

Data documentation and Chain-of-Custody procedures were performed in accordance with NYSDEC Analytical Services Protocol - September 1989. Data validation, reduction, and determination of useability for organic analyses were performed in accordance with USEPA SOP No. HW-3 CLP Organic Data Review. The inorganic data validation processes were performed in accordance with USEPA SOP No. 788 for Inorganic Analysis including Revisions 2/89 and 6/89.

CATEGORIES: The following table summarizes our assessment of data useability on a sample-by-sample and fraction-by-fraction basis. In

evaluating this data, we have established four (4) categories which are, for the most part, gradational in nature. The categories are defined as follows:

Category 1a - Useable and Defensible - Fully useable, despite possible minor deviations from ASP criteria.

Category 1b - Useable Though Not Fully Defensible - Useable with caution; cumulative deviations from ASP criteria are greater than Category 1a, though not considered so significant as to jeopardize the chemical representativeness of the sample results.

Category 2a - Rejected Fraction(s)/Compound(s) Due to Holding Time Violations - Did not comply with ASP holding times.

Category 2b - Rejected Fraction(s)/Compound(s) Due to Various ASP Deviations - In a sample fraction, some compounds may be useable and defensible, other compounds may be rejected, or the sample fraction may be rejected due to various deviations from ASP. See Table Notes for rationale of rejected fractions and Tables 2, 4, 6, 8, 10, and 12 for list of rejected compounds.

In Tables 1, 3, 5, 7, 9, and 11 some fractions are assigned single categories, indicating that they are either considered useable in their entirety or rejected in their entirety. The notes accompanying this table indicate the reason for rejections (Categories 2a, 2b) and for only conditional acceptances (Category 1b). Also on Tables 1, 3, 5, 7, 9, and 11 some fractions are assigned dual categories. This indicates that, while some compounds within the fraction are useable, others are rejected due to contamination in one or more of the method blanks. Tables 2, 4, 6, 8, 10, and 12 identify the specific compounds within each sample which are rejected due to blank contamination.

SUMMARY ASSESSMENT: In summary, we feel that the analytical data is useable for Category 1a, useable with caution for Category 1b and rejected for Categories 2a and 2b. Of the total analyses performed (by sample and fraction), we would categorize the overall data package as follows:

Laboratory Report No. 3090-1789

Category	VOA	SVOA	Pest/ PCB	Metals	Cyanide	Phenols	Wet Chem.	RCRA	EP Tox Metals	EP Tox Pest.	EP Tox Herb.
1a	1	0	13	13	12	12	10	3	5	2	2
1a,2b	13	5	0	0	0	0	0	0	0	0	0
1b	0	1	0	0	0	0	0	0	0	0	0
1b,2b	1	9	0	0	0	0	0	0	0	0	0
Total	15	15	13	13	12	12	10	3	5	2	2

Laboratory Report No. 3091-0041

Category	VOA	SVOA	Pest/ PCB	Metals	Cyanide	Phenols	Wet Chem.
1a	1	1	6	6	5	5	5
1a,2b	6	5	0	0	0	0	0
Total	7	6	6	6	5	5	5

Laboratory Report No. 3091-0139

Category	VOA	SVOA	Pest/ PCB	Metals	Cyanide	Phenols	Wet Chem.	RCRA	EP Tox Metals	EP Tox Pest.	EP Tox Herb.
1a	3	4	8	10	8	7	1	4	3	6	6
1a,2b	6	0	0	0	0	0	0	0	0	0	0
1b	0	3	0	0	0	0	0	0	0	0	0
1b,2b	1	2	0	0	0	0	0	0	0	0	0
2a	0	0	0	1	0	0	1	0	3	0	0
Total	10	9	8	11	8	7	1	4	6	6	6

Laboratory Report No. 3091-0302

Category	VOA	SVOA	Pest/ PCB	Metals	Cyanide	Phenols	Wet Chem.	RCRA	EP Tox Metals	EP Tox Pest.	EP Tox Herb.
1a	7	8	25	25	23	19	21	3	5	5	5
1a,2b	18	11	0	0	0	0	0	0	0	0	0
1b	0	6	0	0	0	0	0	0	0	0	0
1b,2b	1	1	0	0	0	0	0	0	0	0	0
2a	0	1	0	0	0	0	0	0	0	0	0
2b	0	1	0	0	0	0	0	0	0	0	0
Total	26	28	25	25	23	19	21	3	5	5	5

Laboratory Report No. 3091-0302A

Category	VOA	SVOA	Pest/ PCB	Metals	Cyanide	Phenols	Wet Chem.
1a	3	1	18	22	21	21	20
1a,2b	20	11	0	0	0	0	0
1b	0	2	4	0	0	0	1
1b,2b	0	13	0	0	0	0	0
2b	0	2	0	0	0	0	0
Total	23	29	22	22	21	21	21

Laboratory Report No. 3091-0302B

Category	VOA	SVOA	Pest/ PCB	Metals	Cyanide	Phenols	Wet Chem.
1a	0	0	2	3	2	2	1
1a,2b	4	1	0	0	0	0	0
1b	0	0	0	0	0	0	1
1b,2b	0	2	0	0	0	0	0
Total	4	3	2	3	2	2	2

We recommend acceptance and use of all data in Category 1a and 1b. It is understood, however, that the use of Category 1b data involves some risk in the event of a legalistic challenge based upon noncompliance with strict ASP criteria. We recommend rejection of all data in Categories 2a and 2b.

for James Lanzo
Project Manager

Thomas Knickerbocker
QA/QC Officer

NOTES FOR TABLE 1

1. See Table 2 for list of rejected compounds.

2. One out of three surrogates were outside acceptable limits in the volatile matrix spike sample. The matrix spike was not reanalyzed.

3. The standard associated to this semivolatile sample is not within NYSDEC ASP 1989 criteria or USEPA 3/90 Statement of Work. The method blank associated to this sample was also associated to a standard which did not meet the criteria.

4. The semivolatile sample had one of the internal standards outside acceptable recovery limits. The sample was reanalyzed, as per NYSDEC ASP, with the same results substantiating a matrix interference.

5. The semivolatile sample had one of the internal standards outside acceptable recovery limits. The matrix spike and matrix spike duplicate performed on this sample with the sample results, substantiating a matrix interference.

6. The semivolatile sample required reanalysis because one of the internal standards was outside recovery limits. The sample also had one compound exceed the linear calibration range, therefore a dilution was required. The reanalysis was performed on the dilution with the same internal standards outside the recovery limits, substantiating matrix interference.

TABLE 2

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
MW1-S-SB	Acetone (VOA)	25	21	13
SPS-1	Acetone (VOA)	30	21	13
SPS-2	Acetone (VOA)	20	20	14
"	Methylene Chloride (VOA)	3	0	2
SPS-3	Methylene Chloride (VOA)	5	0	3
"	Acetone (VOA)	24	28	20
SPS-4	Acetone (VOA)	25	13	13
"	Methylene Chloride (VOA)	7	0	2
SPS-5	Methylene Chloride (VOA)	8	0	2
"	Acetone (VOA)	23	12	15
MW2-S-SB	Methylene Chloride (VOA)	3	0	2
"	Acetone (VOA)	10	19	4
"	2-Butanone (VOA)	3	0	1
WS-1	Methylene Chloride (VOA)	5	0	3
"	Acetone (VOA)	19	15	18
WS-2A	Methylene Chloride (VOA)	7	0	3
"	Acetone (VOA)	33	14	17

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 2 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
MW7-S-SB	Methylene Chloride (VOA)	2	--	2
"	Acetone (VOA)	15	--	1
"	2-Butanone (VOA)	6	--	1
SPS-4-MSB	Methylene Chloride (VOA)	2	0	2
"	Acetone (VOA)	13	11	13
SPS-4-MS	Methylene Chloride (VOA)	4	0	2
"	Acetone (VOA)	26	13	11
"	2-Butanone (VOA)	3	0	1
SPS-4-MSD	Methylene Chloride (VOA)	4	0	2
"	Acetone (VOA)	34	13	11
"	2-Butanone (VOA)	3	0	1
HB-REF-34	Acetone (VOA)	--	11	23
MW1-S-SB	Bis(2-ethylhexyl)phthalate (SVOA)	490	--	105
SPS-1	Benzoic Acid (SVOA)	33	--	19
"	Diethylphthalate (SVOA)	44	--	71
"	Di-n-butylphthalate (SVOA)	42	--	37
"	Bis(2-ethylhexyl)phthalate (SVOA)	220	--	181

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 2 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
SPS-1	Di-n-octylphthalate (SVOA)	5	--	8
SPS-2	Benzoic Acid (SVOA)	9	--	18
"	Diethylphthalate (SVOA)	27	--	65
"	Di-n-butylphthalate (SVOA)	25	--	34
"	Bis(2-ethylhexyl)phthalate (SVOA)	150	--	167
SPS-3	Benzoic Acid (SVOA)	19	--	34
"	Diethylphthalate (SVOA)	30	--	65
"	Di-n-butylphthalate (SVOA)	36	--	34
"	Bis(2-ethylhexyl)phthalate (SVOA)	160	--	165
"	Di-n-octylphthalate (SVOA)	8	--	8
SPS-3-RE	Benzoic Acid (SVOA)	13	--	34
"	Diethylphthalate (SVOA)	37	--	65
"	Di-n-butylphthalate (SVOA)	28	--	34
"	Bis(2-ethylhexyl)phthalate (SVOA)	190	--	165
"	Di-n-octylphthalate (SVOA)	8	--	8
SPS-4	Benzoic Acid (SVOA)	39	--	12
"	Diethylphthalate (SVOA)	23	--	26

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 2 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
SPS-4	Di-n-butylphthalate (SVOA)	28	--	30
"	Bis(2-ethylhexyl)phthalate (SVOA)	110	--	111
SPS-5	Benzoic Acid (SVOA)	57	--	11
"	Di-n-butylphthalate (SVOA)	42	--	28
SPS-5-DL	Benzoic Acid (SVOA)	53	--	22
"	Di-n-butylphthalate (SVOA)	47	--	56
MW2-S-SB	Di-n-butylphthalate (SVOA)	33	--	34
"	Bis(2-ethylhexyl)phthalate (SVOA)	1500	--	1800
WS-1	Benzoic Acid (SVOA)	56	--	14
"	Diethylphthalate (SVOA)	32	--	31
"	Di-n-butylphthalate (SVOA)	37	--	35
"	Bis(2-ethylhexyl)phthalate (SVOA)	140	--	130
WS-2A	Benzoic Acid (SVOA)	38	--	12
"	Diethylphthalate (SVOA)	23	--	27
"	Di-n-butylphthalate (SVOA)	29	--	30
"	Bis(2-ethylhexyl)phthalate (SVOA)	100	--	110
SPS-4-MSB	Benzoic Acid (SVOA)	14	--	10

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 2 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
SPS-4-MSB	Diethylphthalate (SVOA)	23	--	22
"	Di-n-butylphthalate (SVOA)	21	--	25
"	Bis(2-ethylhexyl)phthalate (SVOA)	63	--	93
SPS-4-MS	Benzoic Acid (SVOA)	44	--	12
"	Diethylphthalate (SVOA)	22	--	26
"	Di-n-butylphthalate (SVOA)	30	--	30
"	Bis(2-ethylhexyl)phthalate (SVOA)	86	--	110
SPS-4-MSD	Benzoic Acid (SVOA)	40	--	12
"	Diethylphthalate (SVOA)	24	--	26
"	Di-n-butylphthalate (SVOA)	26	--	30
"	Bis(2-ethylhexyl)phthalate (SVOA)	140	--	110

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 3

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: soil boring

Laboratory Report Number: 3091-0041
Assessment Categories: 1a,1b,2a,2b

Sample ID	VOA	SVOA	Pest/ PCB	Metals	CN	Phenols	Wet Chem.	Notes
MW3-S-SB	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW5-D-SB	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW6-SB	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW6-SB-MS	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW6-SB-MSD	1a,2b	1a,2b	1a	--	--	--	--	1
MW6-SB-MSB	1a,2b	1a	1a	--	--	--	--	1
MW6-SB-L	--	--	--	1a	--	--	--	
HB1-REF-34	1a	--	--	--	--	--	--	
MW6-SB-DUP	--	--	--	1a	1a	1a	1a	

Abbreviations/Legend:

VOA - Target Compound List (TCL) Volatiles
SVOA - TCL Semivolatiles
Pest/PCB - TCL Pesticides/PCBs
Metals - Target Analyte List (TCL) Metals
CN - Cyanide
Phenols - Total Phenols
Wet Chem. - Wet Chemistry Parameters includes Schedule C soils

MS - Matrix Spike
MSD - Matrix Spike Duplicate
MSB - Matrix Spike Blank
RE - Reanalysis
SB - Soil Boring
HB - Holding Blank
L - Serial Dilution
S - Shallow
D - Deep
MU - Monitoring Unit
DUP - Duplicate

NOTES FOR TABLE 3

1. See Table 4 for list of rejected compounds.

TABLE 4

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample I.D.	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
MW3-S-SB	Acetone (VOA)	6	0	12
MW6-SB	Acetone (VOA)	5	0	15
MW5-D-SB	Methylene Chloride (VOA)	4	0	3
MW5-D-SB	Acetone (VOA)	25	0	11
MW5-D-SB	2-Butanone (VOA)	3	0	1
MW5-D-SB	Toluene (VOA)	1	0	0.7
MW6-SB-MS	Chloroform (VOA)	1	1	0
MW6-SB-MS	Acetone (VOA)	5	0	15
MW6-SB-MS	Methylene Chloride (VOA)	1	0	3
MW6-SB-MSD	Methylene Chloride (VOA)	2	0	3
MW6-SB-MSD	Chloroform (VOA)	1	1	0
MW6-SB-MSB	Methylene Chloride (VOA)	1	0	2
MW6-SB-MSB	Acetone (VOA)	6	0	11
MW3-S-SB	Bis(2-ethylhexyl)phthalate (SVOA)	350	--	190
MW3-S-SB	Di-n-octylphthalate (SVOA)	29	--	34
MW6-SB	Bis(2-ethylhexyl)phthalate (SVOA)	500	--	65
MW5-SB	Bis(2-ethylhexyl)phthalate (SVOA)	330	--	320
MW6-SB-MS	Bis(2-ethylhexyl)phthalate (SVOA)	230	--	65
MW6-SB-MSD	Bis(2-ethylhexyl)phthalate (SVOA)	480	--	65

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 5

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Soil Borings, Waste and Drill Water

Laboratory Report Number: 3091-0139
Assessment Categories: 1a,1b,2a,2b

Sample ID	VOA	SVOA	Pest/ PCB	Metals	CN	Phenols	Wet Chem.	RCRA	EP-Tox Metals	EP-Tox Pest	EP-Tox Herb	Notes
WS-8	1a,2b	1b,2b	1a	2a	1a	1a	--	1a	1a	1a	1a	1,3,5
WS-8-DL	--	1b,2b	--	--	--	--	--	--	--	--	--	1,3
WS-9	1a,2b	1b	1a	1a	1a	1a	--	1a	2a	1a	1a	1,4,5
WS-9-MS	1b,2b	1b	1a	1a	1a	1a	-	--	2a	1a	1a	1,2,4, 5
WS-9-MSD	1a,2b	1b	1a	--	--	--	--	--	--	1a	1a	4,5
WS-9-MSB	1a,2b	1a	1a	--	--	--	--	--	--	1a	1a	1
WS-9-DUP	--	--	--	1a	1a	1a	--	1a	2a	--	--	5
WS-10	1a,2b	1a	1a	1a	1a	1a	--	1a	1a	1a	1a	1
MW-4-S-SB	1a,2b	1a	1a	1a	1a	1a	1a	--	--	--	--	1
DRW-1	1a	1a	1a	1a	1a	1a	--	--	--	--	--	
DRW-1-MS	--	--	--	1a	--	--	--	--	--	--	--	
DRW-1-DUP	--	--	--	1a	1a	--	--	--	--	--	--	
DRW-1-L	--	--	--	1a	--	--	--	--	--	--	--	
WS-8L	--	-	--	--	--	--	--	--	1a	--	--	

TABLE 5 - Continued

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Soil Borings, Waste and Drill Water

Laboratory Report Number: 3091-0139
Assessment Categories: 1a,1b,2a,2b

Sample ID	VOA	SVOA	Pest/ PCB	Metals	CN	Phenols	Wet Chem.	RCRA	EP-Tox Metals	EP-Tox Pest	EP-Tox Herb	Notes
HB1-REF-34	1a	--	--	--	--	--	--	--	--	--	--	
HB2-REF-35	1a	--	--	--	--	--	--	--	--	--	--	
WS-10-L	--	--	--	1a	--	--	--	--	--	--	--	

Abbreviation/Legend

VOA - Target Compound List (TCL) Volatiles
SVOA - TCL Semivolatiles
Pest/PCB - TCL Pesticides/PCBs
Metals - Target Analyte List (TAL) Metals
CN - Cyanide
Phenols - Total Phenols
Wet Chem. - Wet Chemistry Parameters includes, Schedule C soils
EP-Tox Metals - Extraction Procedure Toxicity Metals
EP-Tox Pest - Extraction Procedure Toxicity Pesticides
EP-Tox Herb - Extraction Procedure Toxicity Herbicides

RCRA - Corrosivity, Reactivity, Ignitability

L - Serial Dilution
RB - Rinse Blank
TB - Trip Blank
DL - Dilution
SB - Soil Boring
WS - Waste Sample
HB - Holding Blank
RE - Reanalysis
MS - Matrix Spike
MSD - Matrix Spike Duplicate
MSB - Matrix Spike Blank
DUP - Duplicate
DRW - Drill Water Supply

NOTES FOR TABLE 5

1. See Table 6 for list of rejected compounds.

2. In the volatile fraction, one of the internal standards was outside acceptable limits of recovery. Both the sample and matrix spike duplicate were just within acceptable recovery limits.

3. The semivolatile sample required reanalysis because one of the internal standards was outside acceptable recovery limits and also because one compound exceeded the linear calibration range. The reanalysis was performed on the dilution with the same internal standard outside the recovery limits, thus substantiating a matrix interference.

4. The semivolatile sample had one of the internal standards outside acceptable recovery limits. The matrix spike and matrix spike duplicate was performed on this sample, with the same results, substantiating a matrix interference.

5. The mercury analysis exceeded NYSDEC ASP holding times.

TABLE 6

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
WS-8	Acetone (VOA)	7	0	10
"	Methylene Chloride (VOA)	5	1	0
WS-9	Acetone (VOA)	11	0	21
WS-10	Acetone (VOA)	38	0	22
MW-4-S-SB	Methylene Chloride (VOA)	4	0	2
"	Acetone (VOA)	18	45	11
WS-9-MS	Acetone (VOA)	21	0	21
"	Methylene Chloride (VOA)	6	1	0
WS-9-MSD	Methylene Chloride (VOA)	5	1	0
"	Acetone (VOA)	20	0	21
WS-9-MSB	Acetone (VOA)	5	0	12
WS-8	Bis(2-ethylhexyl)phthalate (SVOA)	1500	--	160
WS-8-DL	Bis(2-ethylhexyl)phthalate (SVOA)	1400	--	320

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 7

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Stream Sediments, Waste, Groundwater, Surface Waters and Leachate Seeps

Laboratory Report Number: 30910-0302
Assessment Categories: 1a,1b,2a,2b

Sample ID	VOA	SVOA	Pest/ PCB	Metals	CN	Phenols	Wet Chem.	RCRA	EP-Tox Metals	EP-Tox Pest	EP-Tox Herb	Notes
SS-6	1a,2b	1a,2b	1a	1a	1a	1a	1a	--	--	--	--	1
SS-7	1a,2b	1a,2b	1a	1a	1a	1a	1a	--	--	--	--	1
SS-8	1a,2b	1a,2b	1a	1a	1a	1a	1a	--	--	--	--	1
SS-9	1a	1a,2b	1a	1a	1a	1a	1a	--	--	--	--	
SW-7	1a,2b	1a	1a	1a	1a	1a	1a	--	--	--	--	1
SW-8	1a,2b	1b	1a	1a	1a	1a	1a	--	--	--	--	1,2
SW-8-RE	--	1b	--	--	--	--	--	--	--	--	--	2
SW-9	1a,2b	2b	1a	1a	1a	1a	1a	--	--	--	--	1,3
SW-9-RE	--	2a	--	--	--	--	--	--	--	--	--	3
SW-5	1a,2b	1a	1a	1a	1a	1a	1a	--	--	--	--	1
MW-4I-GW	1a,2b	1b	1a	1a	1a	1a	1a	--	--	--	--	1,4
MW-4I-GW-RE	--	1b,2b	--	--	--	--	--	--	--	--	--	4
SS-5	1a,2b	1a,2b	1a	1a	1a	1a	1a	--	--	--	--	1
WS-3	1a,2b	1a,2b	1a	1a	1a	--	--	1a	1a	1a	1a	1
WS-3-MS	1b,2b	1a,2b	1a	1a	1a	--	--	--	1a	1a	1a	1,6
WS-3-MSD	1a,2b	1a,2b	1a	--	--	--	--	--	--	1a	1a	1
WS-3-DUP	--	--	--	1a	1a	--	--	1a	1a	--	--	
WS-3-MSB	1a,2b	1a,2b	1a	--	--	--	--	--	--	1a	1a	1
SS-1	1a,2b	1a,2b	1a	1a	1a	1a	1a	--	--	--	--	1

TABLE 7 - Continued

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Stream Sediments, Waste, Groundwater, Surface Waters and Leachate Seeps

Laboratory Report Number: 30910-0302
Assessment Categories: 1a,1b,2a,2b

Sample ID	VOA	SVOA	Pest/ PCB	Metals	CN	Phenols	Wet Chem.	RCRA	EP-Tox Metals	EP-Tox Pest	EP-Tox Herb	Notes
WS-3-L	--	--	--	--	--	--	--	--	1a	--	--	
LS-3-L	--	--	--	1a	--	--	--	--	--	--	--	
SS-7-L	--	--	--	1a	--	--	--	--	--	--	--	
SS-10	1a,2b	1a,2b	1a	1a	1a	1a	1a	--	--	--	--	1
SW-1	1a,2b	1a	1a	1a	1a	1a	1a	--	--	--	--	1
LS-3	1a	1b	1a	1a	1a	1a	1a	--	--	--	--	5
LS-3-MS	1a,2b	1b	1a	1a	1a	1a	1a	--	--	--	--	1,5
LS-3-MSD	1a,2b	1b	1a	--	--	--	--	--	--	--	--	1,5
LS-3-DUP	--	--	--	1a	1a	1a	1a	--	--	--	--	
LS-3-MSB	1a,2b	1a	1a	--	--	--	--	--	--	--	--	1
WS-2	1a	1a	1a	1a	1a	--	--	1a	1a	1a	1a	
SW-6	1a	1a	1a	1a	1a	1a	1a	--	--	--	--	
SW-6-MS	--	--	--	--	--	--	1a	--	--	--	--	7
SW-6-DUP	--	--	--	--	--	--	1a	--	--	--	--	7
MW4-S-GW	1a	1a	1a	1a	1a	1a	1a	--	--	--	--	
SS-4	1a	1a	1a	1a	1a	1a	1a	--	--	--	--	
HB1-REF-34	1a	--	--	--	--	--	--	--	--	--	--	

TABLE 7 - Continued

Abbreviation/Legend

VOA - Target Compound List (TCL) Volatiles
SVOA - TCL Semivolatiles
Pest/PCB - TCL Pesticides/PCBs
Metals - Target Compound List (TCL) Metals
CN - Cyanide
Phenols - Total Phenols
Wet Chem. - Wet Chemistry Parameters include Schedule B waters, Schedule C soils
EP-Tox Metals - Extraction Procedure Toxicity Metals
EP-Tox Pesticides - Extraction Procedure Toxicity Pesticides
EP-Tox Herbicides - Extraction Procedure Toxicity Herbicides

RE - Reanalysis
L - Serial Dilution
S - Shallow
SS - Stream Sediment
LS - Leachate Seep
GW - Groundwater
I - Intermediate
SW - Surface Sample
MW - Monitoring Well
WS - Waste Sample
MS - Matrix Spike
MSD - Matrix Spike Duplicate
MSB - Matrix Spike Blank
DUP - Duplicate
HB - Holding Blank

NOTES FOR TABLE 7

1. See Table 10 for list of rejected compounds.

2. One out of six semivolatile internal standards was outside acceptable recovery limits. The sample was reanalyzed with the same results, thus substantiating the matrix interference.

3. Upon initial analysis, the semivolatile sample had surrogates outside recovery limits. The sample was then reextracted, outside NYSDEC ASP holding times, with all surrogates within acceptable recovery limits.

4. The phenol surrogates were outside acceptable recovery limits. The sample was reextracted and reanalyzed with the same results, substantiating a matrix interference.

5. The semivolatile phenol surrogates were outside the ASP recovery limits. A matrix spike and matrix spike duplicate were performed on this sample with the same surrogate recovery results, substantiating a matrix interference.

6. One out of three surrogates were outside acceptable limits in the volatile matrix spike sample.

7. Quality control was performed on this sample for BOD only.

TABLE 8

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
SS-6	Methylene Chloride (VOA)	6	0	3
"	Acetone (VOA)	17	0	13
SS-7	Methylene Chloride (VOA)	8	0	4
"	Acetone (VOA)	35	0	18
SS-8	Methylene Chloride (VOA)	7	0	3
"	Acetone (VOA)	17	0	15
SW-7	Acetone (VOA)	8	0	17
SW-8	Acetone (VOA)	12	0	17
SW-9	Acetone (VOA)	14	0	17
SW-5	Methylene Chloride (VOA)	2	0	3
"	Acetone (VOA)	15	0	39
MW4-I-GW	Acetone (VOA)	12	0	20
SS-5	Methylene Chloride (VOA)	7	0	6
"	Acetone (VOA)	36	0	19
WS-3	Methylene Chloride (VOA)	11	0	11
"	Acetone (VOA)	95	0	33
SS-1	Methylene Chloride (VOA)	7	0	6

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 8 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
SS-1	Acetone (VOA)	22	0	19
SS-10	Methylene Chloride (VOA)	9	0	10
"	Acetone (VOA)	120	0	31
SW-1	Acetone (VOA)	7	0	39
LS-3-MS	Acetone (VOA)	11	0	20
LS-3-MSD	Acetone (VOA)	12	0	20
LS-3-MSB	Methylene Chloride (VOA)	2	0	3
"	Acetone (VOA)	15	0	20
WS-3-MS	Methylene Chloride (VOA)	6	0	11
WS-3-MSD	Acetone (VOA)	52	0	20
WS-3-MSB	Methylene Chloride (VOA)	3	0	5
SS-6	Bis(2-ethylhexyl)phthalate (SVOA)	760	--	120
SS-7	Bis(2-ethylhexyl)phthalate (SVOA)	460	--	140
SS-8	Bis(2-ethylhexyl)phthalate (SVOA)	420	--	130
SS-9	Bis(2-ethylhexyl)phthalate (SVOA)	400	--	130
MW4-I-GW-RE	Bis(2-ethylhexyl)phthalate (SVOA)	2	--	2

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 8 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
WS-2	Bis(2-ethylhexyl)phthalate (SVOA)	840	--	260
"	Di-n-octylphthalate (SVOA)	120	--	38
SS-5	Di-n-butylphthalate (SVOA)	21	--	17
"	Bis(2-ethylhexyl)phthalate (SVOA)	190	--	260
"	Di-n-octylphthalate (SVOA)	24	--	22
WS-3	Bis(2-ethylhexyl)phthalate (SVOA)	340	--	170
"	Di-n-octylphthalate (SVOA)	21	--	25
SS-1	Di-n-octylphthalate (SVOA)	31	--	16
"	Bis(2-ethylhexyl)phthalate (SVOA)	230	--	130
"	Di-n-octylphthalate (SVOA)	40	--	19
SS-10	Bis(2-ethylhexyl)phthalate (SVOA)	750	--	250
"	Di-n-octylphthalate (SVOA)	59	--	36
WS-3-MS	Di-n-butylphthalate (SVOA)	66	--	20
"	Bis(2-ethylhexyl)phthalate (SVOA)	300	--	170
"	Di-n-octylphthalate (SVOA)	23	--	25
WS-3-MSD	Di-n-butylphthalate (SVOA)	64	--	200
"	Bis(2-ethylhexyl)phthalate (SVOA)	290	--	170

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 8 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
WS-3-MSD	Di-n-octylphthalate (SVOA)	19	--	25
WS-3-MSB	Di-n-butylphthalate (SVOA)	17	--	13
"	Bis(2-ethylhexyl)phthalate (SVOA)	150	--	110
"	Di-n-octylphthalate (SVOA)	16	--	16

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 9

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Groundwater, Leachate Seep, and Surface Water

Laboratory Report Number: 30910-0302A
Assessment Categories: 1a,1b,2a,2b

Sample ID	VOA	SVOA	Pest/ PCB	Metals	CN	Phenols	Wet Chem.	Notes
LS-2	1a,2b	1b	1a	1a	1a	1a	1a	1,2
LS-2-RE	--	1b,2b	--	--	--	--	--	1,2
SW-4	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW33-GW	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW34-GW	1a	1a,2b	1a	1a	1a	1a	1a	1
MW31-GW	1a,2b	1a,2b	1b	1a	1a	1a	1a	1,7
MW35-GW	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW3-S-GW	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW2-S-GW	1a	1b,2b	1a	1a	1a	1a	1a	1,3
MW2-S-GW-RE	--	1b,2b	--	--	--	--	--	1,3
MW32-GW	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW36-GW	1a,2b	2b	1b	1a	1a	1a	1a	1,4,7
MW36-GW-RE	--	2b	--	--	--	--	--	4
MW8-S-GW	1a,2b	1b,2b	1b	1a	1a	1a	1a	1,5,7
MW8-S-GW-MS	1a,2b	1b,2b	1a	1a	1a	1a	1a	1,5
MW8-S-GW-MSD	1a,2b	1b,2b	1a	--	--	--	--	1,5

TABLE 9 - Continued

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Groundwater, Leachate Seep, and Surface Water

Laboratory Report Number: 30910-0302A
Assessment Categories: 1a,1b,2a,2b

Sample ID	VOA	SVOA	Pest/ PCB	Metals	CN	Phenols	Wet Chem.	Notes
MW8-S-GW-DUP	--	--	--	1a	1a	1a	1a	
MW8-S-GW-MSB	1a,2b	1a,2b	1b	--	--	--	--	1,7
MW8-S-GW-L	--	--	--	1a	--	--	--	
MW7-S-GW	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW10-S-GW	1a,2b	1b,2b	1a	1a	1a	1a	1a	1,2
MW10-S-GW-RE	--	1b,2b	--	--	--	--	--	1,2
MW9-S-GW	1a,2b	1a,2b	1a	1a	1a	1a	1a	1
MW5-S-GW	1a,2b	1b,2b	1a	1a	1a	1a	1a	1,2
MW5-S-GW-RE	--	1b,2b	--	--	--	--	--	1,2
MW5-I-GW	1a,2b	1b,2b	1a	1a	1a	1a	1a	1,2
MW5-I-GW-RE	--	1b,2b	--	--	--	--	--	1,2
MW5-D-GW	1a,2b	1b	1a	1a	1a	1a	1a	1,6
MW5-D-GW-RE	--	1b,2b	--	--	--	--	--	1,6
MW1-S-GW	1a,2b	1a,2b	1a	1a	1a	1a	1b	1,8
SW-10	1a	1a	1a	1a	1a	1a	1a	
HB1-R-34	1a,2b	--	--	--	--	--	--	1

Abbreviations/Legend:

VOA - Target Compound List (TCL) Volatiles
SVOA - TCL Semivolatiles
Pest/PCB - TCL Pesticides/PCBs
Metals - Target Compound List (TCL) Metals
CN - Cyanide
Phenols - Total Phenols
Wet Chem. - Wet Chemistry includes parameters Schedule B waters

HB - Holding Blank
D - Bedrock
RE - Reanalysis
TB - Trip Blank
RB - Rinse Blank
L - Serial Dilution
SW - Surface Water
LS - Leachate Seep
MS - Matrix Spike
MSD - Matrix Spike Duplicate
DUP - Duplicate
MSB - Matrix Spike Blank
GW - Groundwater
MW - Monitoring Well
S - Shallow
I - Intermediate

NOTES FOR TABLE 9

1. See Table 10 for list of rejected compounds.

2. The phenol surrogates were outside acceptable limits of recovery in the semivolatile sample. The sample was reextracted and reanalyzed with the same results, thus substantiating a matrix interference.

3. Two of six surrogates were outside acceptable recovery limits in the semivolatile sample., Upon reextraction and reanalysis only one of the six surrogates were outside the recovery limits, but a second surrogate was within the limits by less than 0.5%, thus substantiating a matrix interference.

4. The phenol surrogates were outside the recovery limits in the semivolatile sample. Due to lack of volume a reextraction could not be performed, as per NYSDEC ASP, thus the sample was reanalyzed. The data is therefore not useable.

5. The semivolatile sample was analyzed with some of the surrogates outside acceptable recovery limits. Quality control was performed on this sample. The matrix spike duplicate had the same results as the sample, but was extracted outside the acceptable holding time. The matrix spike surrogate recoveries were within acceptable limits. There appears to be a matrix interference resulting in anomoulous surrogate recoveries.

6. The internal standards and the phenol surrogates were outside acceptable recovery limits. Upon reextraction and reanalysis the surrogates were still outside the acceptable recovery limits, but the internal standards were within the recovery limits. The matrix interference is substantiated by the comparable results of the surrogates.

7. The standards associated to this pesticide/PCB sample were not within the NYSDEC ASP 1989 criteria.

8. The TSS analysis was performed outside NYSDEC ASP holding times, while within the Federal Register's holding times.

TABLE 10

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample I.D.	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Drill Water Supply	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
LS-2	Methylene Chloride (VOA)	2	--	0	3
"	Acetone (VOA)	17	--	7	39
SW-4	Acetone (VOA)	8	--	7	20
MW33-GW	Acetone (VOA)	11	--	7	39
MW31-GW	Acetone (VOA)	10	--	7	39
MW35-GW	Acetone (VOA)	9	--	7	39
MW36-GW	Acetone (VOA)	16	--	7	39
MW3S-GW	Acetone (VOA)	8	0	7	39
MW32-GW	Methylene Chloride (VOA)	1	--	0	3
HB1-R-34	Acetone (VOA)	7	--	--	39
MW8-S-GW	Acetone (VOA)	10	--	7	20
"	Methylene Chloride (VOA)	2	--	0	5
MW7-S-GW	Methylene Chloride (VOA)	2	--	0	5
"	Acetone (VOA)	16	--	7	20
MW10-S-GW	Methylene Chloride (VOA)	2	--	0	5
"	Acetone (VOA)	12	--	7	20
MW9-S-GW	Methylene Chloride (VOA)	2	--	0	5
"	Acetone (VOA)	8	--	7	20

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 10 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample I.D.	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Drill Water Supply	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
MW5-S-GW	Methylene Chloride (VOA)	2	--	0	5
MW5-I-GW	Methylene Chloride (VOA)	2	0	0	5
"	Acetone (VOA)	30	0	7	27
MW5-D-GW	Methylene Chloride (VOA)	2	0	0	5
"	Acetone (VOA)	14	0	7	27
MW1-S-GW	Methylene Chloride (VOA)	1	--	0	5
"	Acetone (VOA)	12	--	7	27
MW8-S-GW-MS	Methylene Chloride (VOA)	2	--	0	5
"	Acetone (VOA)	10	--	7	27
MW8-S-GW-MSD	Methylene Chloride (VOA)	2	--	0	5
"	Acetone (VOA)	8	--	7	27
MW8-S-GW-MSB	Methylene Chloride (VOA)	3	--	0	5
"	Acetone (VOA)	9	--	7	27
LS-2-RE	Bis(2-ethylhexyl)phthalate (SVOA)	4	--	--	4
SW-4	Bis(2-ethylhexyl)phthalate (SVOA)	4	--	--	3
MW33-GW	Bis(2-ethylhexyl)phthalate (SVOA)	2	--	--	4
MW34-GW	Bis(2-ethylhexyl)phthalate (SVOA)	2	--	--	4
MW31-GW	Bis(2-ethylhexyl(phthalate (SVOA)	2	--	--	4

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 10 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample I.D.	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Drill Water Supply	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
MW35-GW	Bis(2-ethylhexyl)phthalate (SVOA)	17	--	--	4
MW3-S-GW	Bis(2-ethylhexyl)phthalate (SVOA)	10	0	--	4
MW2-S-GW	Bis(2-ethylhexyl)phthalate (SVOA)	5	--	--	4
MW32-GW	Bis(2-ethylhexyl)phthalate (SVOA)	3	--	--	4
MW2-S-GW-RE	Bis(2-ethylhexyl)phthalate (SVOA)	3	--	--	2
MW36-GW	Bis(2-ethylhexyl)phthalate (SVOA)	5	--	--	2
MW36-GW-RE	Bis(2-ethylhexyl)phthalate (SVOA)	7	--	--	2
MW8-S-GW	Bis(2-ethylhexyl)phthalate (SVOA)	4	--	--	2
MW8-S-GW-RE	Bis(2-ethylhexyl)phthalate (SVOA)	3	--	--	2
MW7-S-GW	Bis(2-ethylhexyl)phthalate (SVOA)	2	--	--	2
MW10-S-GW	Bis(2-ethylhexyl)phthalate (SVOA)	4	--	--	2
MW10-S-GW-RE	Bis(2-ethylhexyl)phthalate (SVOA)	5	--	--	2
MW9-S-GW	Bis(2-ethylhexyl)phthalate (SVOA)	4	--	--	2
MW5-S-GW	Bis(2-ethylhexyl)phthalate (SVOA)	4	--	--	2
MW5-S-GW-RE	Bis(2-ethylhexyl)phthalate (SVOA)	2	--	--	2
MW5-I-GW	Bis(2-ethylhexyl)phthalate (SVOA)	4	0	--	2
MW5-I-GE-RE	Bis(2-ethylhexyl)phthalate (SVOA)	2	0	--	2
MW5-D-GW-RE	Bis(2-ethylhexyl(phthalate (SVOA)	9	0	--	2

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 10 - Continued

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample I.D.	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Drill Water Supply	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
MW1-S-GW	Bis(2-ethylhexyl)phthalate (SVOA)	5	--	--	2
MW8-S-GW-MS	Bis(2-ethylhexyl(phthalate (SVOA)	2	--	--	2
MW8-S-GW-MSD	Bis(2-ethylhexyl)phthalate (SVOA)	19	--	--	2
MW8-S-GW-MSB	Bis(2-ethylhexyl)phthalate (SVOA)	3	--	--	2

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

TABLE 11

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: groundwater, town water

Laboratory Report Number: 3091-0302B
Assessment Categories: 1a,1b,2a,2b

Sample ID	VOA	SVOA	Pest/ PCB	Metals	CN	Phenols	Wet Chem.	Notes
MW6-I-GW	1a,2b	1b,2b	1a	1a	1a	1a	1a	1,2
MW6-I-GWRE	--	1b,2b	--	--	--	--	--	1,2
MW6-S-GW	1a,2b	1a,2b	1a	1a	1a	1a	1b	1
PW-1	1a,2b	--	--	--	--	--	--	1
HB1R-35	1a,2b	--	--	--	--	--	--	1
MW6-I-GW-L	--	--	--	1a	--	--	--	

Abbreviations/Legend:

VOA - Target Compound List (TCL) Volatiles
SVOA - TCL Semivolatiles
Pest/PCB - TCL Pesticides/PCBs
Metals - Target Compound List (TAL) Metals
CN - Cyanide
Phenols - Total Phenols
Wet Chem. - Includes Schedule B waters, Schedule C soils
MW - Monitoring Well

HB - Holding Blank
PW - Town Water
RE - Reanalysis
MW - Monitoring Well
GW - Groundwater
S - Shallow
I - Intermediate
L - Serial Dilution
DUP- Duplicate

NOTES FOR TABLE 11

1. See Table 12 for list of rejected compounds.

2. The phenol surrogates are outside NYSDEC ASP recovery limits. The sample was reanalyzed, as per NYSDEC ASP, with the same results substantiating a matrix interference.

TABLE 12

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING OF GORICK C&D LANDFILL*

Sample I.D.	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Drill Water Supply	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
MW6-I-GW	Acetone (VOA)	15	0	20	27
MW6-S-GW	Methylene Chloride (VOA)	2	--	2	5
PW-1	Acetone (VOA)	9	--	20	27
HB1R-35	Methylene Chloride (VOA)	2	--	--	5
"	Acetone (VOA)	20	--	--	27
MW6-I-GW	Bis(2-ethylhexyl)phthalate (SVOA)	5	0	--	2
MW6-I-GW-RE	Bis(2-ethylhexyl)phthalate (SVOA)	3	0	--	2
MW6-S-GW	Bis(2-ethylhexyl)phthalate (SVOA)	17	--	--	2

* For volatile and semivolatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks.

"ANALYTICAL DATA ASSESSMENT - SECOND PHASE"

SUMMARY ASSESSMENT: In summary, we feel that the analytical data is useable for Category 1a, useable with caution for Category 1b and rejected for Categories 2a and 2b. It should be noted that the use of Category 1b involves some risk in the event of a legalistic challenge based upon noncompliance with strict ASP criteria. Of the total analyses performed (by sample and fraction), the overall data package is categorized as follows:

Laboratory Report No. 30910-1227

Category	VOA	TCLP VOA
1a,2b	3	1
1b,2b	0	1
Total	3	2

Laboratory Report No. 30910-1352 and -1441

Category	VOA	Phenols
1a	15	4
1a,2b	11	0
Total	26	4

Laboratory Report No. 30910-1352A and -1352A Addendum

Category	VOA	SVOA
1a	11	0
1a,2b	9	2
1b,2b	0	4
Total	20	6

The Laboratory Reports identified above are in compliance with the terms and conditions of the laboratory contract, other than the conditions detailed in the following tables. Release of the data for this phase of the investigation has been authorized by the Project Manager and QA/QC Officer by the following signatures.

James Lanzo
Project Manager

Thomas Knickerbocker
QA/QC Officer

TABLE 1

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Test Pits
Laboratory Report Number: 30910-1227
Assessment Categories: 1a, 1b, 2a, 2b

Sample ID	VOA	TCLP VOA	Notes
TP-2-11-1	1a, 2b	-	1,2
TP-2-11-2	-	1a, 2b	1,3
TP-2-11-2-MSC	-	1b, 2b	1,3,4
TP-2-24-1	1a, 2b	-	1,2
TP-3-1	1a, 2b	-	1

Abbreviation/Legend:

VOA - Target Compound List (TCL Compound)
TCLP VOA - Toxicity Characteristic Leaching Procedure Volatiles
MSC - Matrix Spike Correction
TP - Test Pit

NOTES FOR TABLE 1

1) See Table 2 for list of rejected compounds.

2) The initial TCL volatile analysis was performed at a secondary dilution, thus resulting in the surrogates being diluted out. The data has been flagged accordingly.

3) The TCLP volatile analytical results have been corrected for analytical bias and reported as such, as per Federal Register, Vol. 55, No. 61 and 126, March and June 1990.

4) The analyte 2-butanone, for the TCLP volatile analysis, was rejected in the matrix spike.

TABLE 2*

ORGANIC COMPOUNDS REJECTED FROM THE SECOND ROUND SAMPLING FOR GORICK C AND D LANDFILL

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Rinse Blank	Conc. (ppb) of Compound in the Trip Blank	Conc. (ppb) of Compound in the TCLP Blank	Conc. (ppb) of Compound in the Method Blank
TP-3-1	Acetone (VOA)	10	0	0	0	7
TP-2-11-1	Methylene chloride (VOA)	46,000	0	0	0	44,000
TP-2-11-1	Acetone (VOA)	140,000	0	0	0	59,000
TP-2-11-1	2-Butanone (VOA)	200,000	0	0	0	22,000
TP-2-11-2	2-Butanone (TCLP VOA)	125,000	0	0	150,000	4,200
TP-2-11-2-FMS	2-Butanone (TCLP VOA)	160,000	0	0	150,000	4,200
TP-2-24-1	Methylene chloride (VOA)	25,000	0	0	0	32,000
TP-2-24-1	Acetone (VOA)	140,000	0	0	0	125,000

* For volatile and semivolatile samples no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks. Quality control blanks should be treated the same as samples, except that any rejected quality control blank can still be utilized to reject sample data.

TABLE 3

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Groundwaters
Laboratory Report Number: 30910-1352 and -1441
Assessment Categories: 1a, 1b, 2a, 2b

Sample ID	VOA	Phenols	Notes
GL-MW-12-S	1a	-	2
GL-MW-12-D	1a	-	2
GL-MW-3-S	1a	-	
GL-MW-34	1a	-	
GL-MW-31	1a	-	
GL-MW-32	1a	-	
GL-MW-33	1a	-	
GL-MW-7-S	1a	-	
GL-MW-4-S	1a	1a	
GL-MW-4-S-DUP	-	1a	
GL-MW-4-S-MS	1a	1a	
GL-MW-4-S-MSD	1a	-	
GL-MW-4-S-MSB	1a	-	
GL-MW-4-I	1a	1a	
GL-MW-35	1a	-	
GL-MW-36	1a,2b	-	1
GL-MW-5-S	1a,2b	-	1
GL-MW-5-I	1a,2b	-	1
GL-MW-5-D	1a,2b	-	1
GL-MW-6-S	1a,2b	-	1
GL-MW-6-I	1a,2b	-	1
GL-MW-6-I-MS	1a,2b	-	1
GL-MW-6-I-MSD	1a,2b	-	1
GL-MW-6-I-MSB	1a,2b	-	1
GL-MW-6-D	1a,2b	-	1

Table 3 (Continued)

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Groundwaters
Laboratory Report Number: 30910-1352 and -1441
Assessment Categories: 1a, 1b, 2a, 2b

Sample ID	VOA	Phenols	Notes
GL-MW-2-S	1a	-	
GL-PW-1-A	1a,2b	-	1

Abbreviation/Legend:

VOA - Target Compound List (TCL Volatiles)
Phenols - Total Phenols
S - Shallow
I - Intermediate
D - Deep
PW - Public Well
A - Second Round Sample
MW - Monitoring Well
GL - Gorick Landfill
MS - Matrix Spike
MSD - Matrix Spike Duplicate
DUP - Duplicate
MSB - Matrix Spike Blank

9-10-91L/35232B

NOTES FOR TABLE 3

1) See Table 4 for list of rejected compounds.

2) The volatile samples taken on 6/26/91 were analyzed but are not included in the data assessment, as per the request of NYSDEC. These samples were resampled on 7/11/91 and analyzed accordingly.

TABLE 4*

ORGANIC COMPOUNDS REJECTED FROM THE SECOND ROUND SAMPLING FOR GORICK C AND D LANDFILL

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Rinse Blank	Conc. (ppb) of Compound in the Trip Blank	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
GL-MW-5-I	Acetone (VOA)	3	0	0	0	8
GL-MW-5-D	Acetone (VOA)	3	0	0	0	8
GL-MW-6-S	Acetone (VOA)	3	0	0	0	8
GL-MW-5S	Acetone (VOA)	4	0	0	0	4
GL-MW-6-I	Acetone (VOA)	5	0	0	0	8
GL-PW-1-A	Acetone (VOA)	3	0	0	0	4
GL-MW-6-I-MS	Acetone (VOA)	11	0	0	0	8
GL-MW-6-I-MSD	Acetone (VOA)	8	0	0	0	8
GL-MW-6-I-MSB	Acetone (VOA)	3	0	0	0	4
GL-MW-6-D	Acetone (VOA)	4	0	0	0	4
GL-MW-36	Acetone (VOA)	9	0	0	0	8

* For volatile and semivolatile samples no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks. Quality control blanks should be treated the same as samples, except that any rejected quality control blank can still be utilized to reject sample data.

TABLE 5

ANALYTICAL DATA ASSESSMENT SUMMARY
MATRIX: Groundwaters, Shallow Probe Soils, Stream Sediments, and Surface Waters
Laboratory Report Number: 30910-1352A and -1352A Addendum
Assessment Categories: 1a, 1b, 2a, 2b

Sample ID	VOA	SVOA	Notes
GL-MW-1-S	1a	-	
GL-MW-8-S	1a	-	
GL-MW-9-S	1a	-	
GL-MW-10-S	1a	-	
GL-MW-11-S	1a	-	
GL-MW-11-I	1a	-	
GL-MW-14-I	1a	-	
GL-MW-14-D	1a	-	
GL-SPS-6	1a,2b	1a,2b	1
GL-SPS-7	1a,2b	1b,2b	1,4
GL-SPS-7-RE	-	1b,2b	1,4
GL-SPS-8	1a,2b	1a,2b	1,2
GL-SPS-8-MS	1a,2b	1b,2b	1,2,3
GL-SPS-8-MSD	1a,2b	1b,2b	1,2,3
GL-SPS-8-MSB	1a,2b	-	1
GL-SS-8	1a,2b	-	1
GL-SS-11	1a,2b	-	1
GL-SS-12	1a,2b	-	1
GL-SW-8	1a	-	
GL-SW-11	1a	-	
GL-SW-12	1a	-	

Abbreviation/Legend:

VOA - Target Compound List (TCL Volatiles)
SVOA - TCL Semivalatiles
MW - Monitoring Well
S - Shallow
I - Intermediate
D - Deep

GL - Gorick Landfill
SPS- Shallow Probe Spike
SW - Surface Water
SS - Stream Sediment
MS - Matrix Spike
MSD - Matrix Spike Duplicate
DUP - Duplicate
MSB - Matrix Spike Blank
RE - Reanalysis

NOTES FOR TABLE 5

1) See Table for list for rejected compounds.

2) The volatile analysis for this sample and its associated QC samples each resulted in surrogate and internal standard outliers. Reanalysis need not be performed, as per NYSDEC ASP criteria, thus substantiating matrix interference.

3) No semivolatile matrix spike blank was performed with this set of matrix spike/matrix spike duplicate.

4) The initial semivolatile analysis was performed at a dilution of 5, with the interval standard perylene-d_{12} exceeding QC limits and three target analytes (phenanthrene, fluoranthene, and benzo(a)pyrene) exceeding the linear range of calibration. The sample was reanalyzed at a secondary dilution with only perylene-d_{12} exceeding QC limits, thus substantiating matrix interference.

TABLE 6*
ORGANIC COMPOUNDS REJECTED FROM THE SECOND ROUND SAMPLING FOR GORICK C AND D LANDFILL

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Rinse Blank	Conc. (ppb) of Compound in the Trip Blank	Conc. (ppb) of Compound in the Holding Blank	Conc. (ppb) of Compound in the Method Blank
GL-SPS-6	Acetone (VOA)	11	0	0	0	11
GL-SPS-7	Acetone (VOA)	14	0	0	0	12
GL-SPS-8	Acetone (VOA)	31	0	0	0	12
GL-SPS-8-MS	Acetone (VOA)	35	0	0	0	12
GL-SPS-8-MSD	Acetone (VOA)	16	0	0	0	12
GL-SPS-8-MSB	Acetone (VOA)	4	0	0	0	11
GL-SS-8	Acetone (VOA)	13	0	0	0	12
GL-SS-11	Acetone (VOA)	13	0	0	0	13
GL-SS-12	Acetone (VOA)	11	0	0	0	12
GL-SPS-6	Di-n-butylphthalate (SVOA)	120	0	0	0	71
GL-SPS-7	Di-n-butylphthalate (SVOA)	330	0	0	0	370
GL-SPS-7-RE	Di-n-butylphthalate (SVOA)	230	0	0	0	740
GL-SPS-7-RE	Bis(2-ethylhexyl)phthalate (SVOA)	1800	0	0	0	460
GL-SPS-8	Di-n-butylphthalate (SVOA)	150	0	0	0	370
GL-SPS-8-MSD	Di-n-butylphthalate (SVOA)	190	0	0	0	370
GL-SPS-8-MSD	Bis(2-ethylhexyl)phthalate (SVOA)	1700	0	0	0	230

* For volatile and semivolatile samples no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, toluene, and phthalates), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks. Quality control blanks should be treated the same as samples, except that any rejected quality control blank can still be utilized to reject sample data.