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SUPPLEMENTAL PHASE II/ RCRA FACILITY INVESTIGATION REPORT FOR HOUSATONIC RIVER AND SILVER LAKE

VOLUME II OF II

General Electric Company

Pittsfield, Massachusetts

SDMS DocID 000212391

January 1996

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

SDIS 008812

SUPPLEMENTAL PHASE II/RCRA FACILITY INVESTIGATION REPORT FOR HOUSATONIC RIVER AND SILVER LAKE

VOLUME II OF II

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

JANUARY 1996

BLASLAND, BOUCK & LEE, INC.
6723 TOWPATH ROAD
SYRACUSE, NY 13214-0066

SUPPLEMENTAL PHASE II/RCRA FACILITY INVESTIGATION
REPORT FOR HOUSATONIC RIVER AND SILVER LAKE

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HOUSATONIC RIVER SEDIMENT PARTICLE SIZE DATA

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

IT ENVIRONMENTAL TECHNOLOGY
DEVELOPMENT CENTER
OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AC9952~~ 3-2A

Project Number: 483565.02

ETDC Number: ETDC-6134

Specific Gravity = 2.6500 Assumed

* Moisture Content = 27.6%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	94.5%
	#4	4.750	88.1%
	#10	2.000	79.0%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	65.2%
	#40	0.425	47.7%
	#60	0.250	37.6%
	#100	0.149	18.7%
	#140	0.106	12.2%
	#200	0.075	8.8%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04824	6.5%
	0.03442	5.6%
	0.02208	4.0%
	0.01290	2.8%
	0.00914	2.5%
	0.00653	1.5%
	0.00463	1.2%
	0.00321	0.9%
	0.00134	0.6%

*DRY SAMPLE BASIS

682A-6-93

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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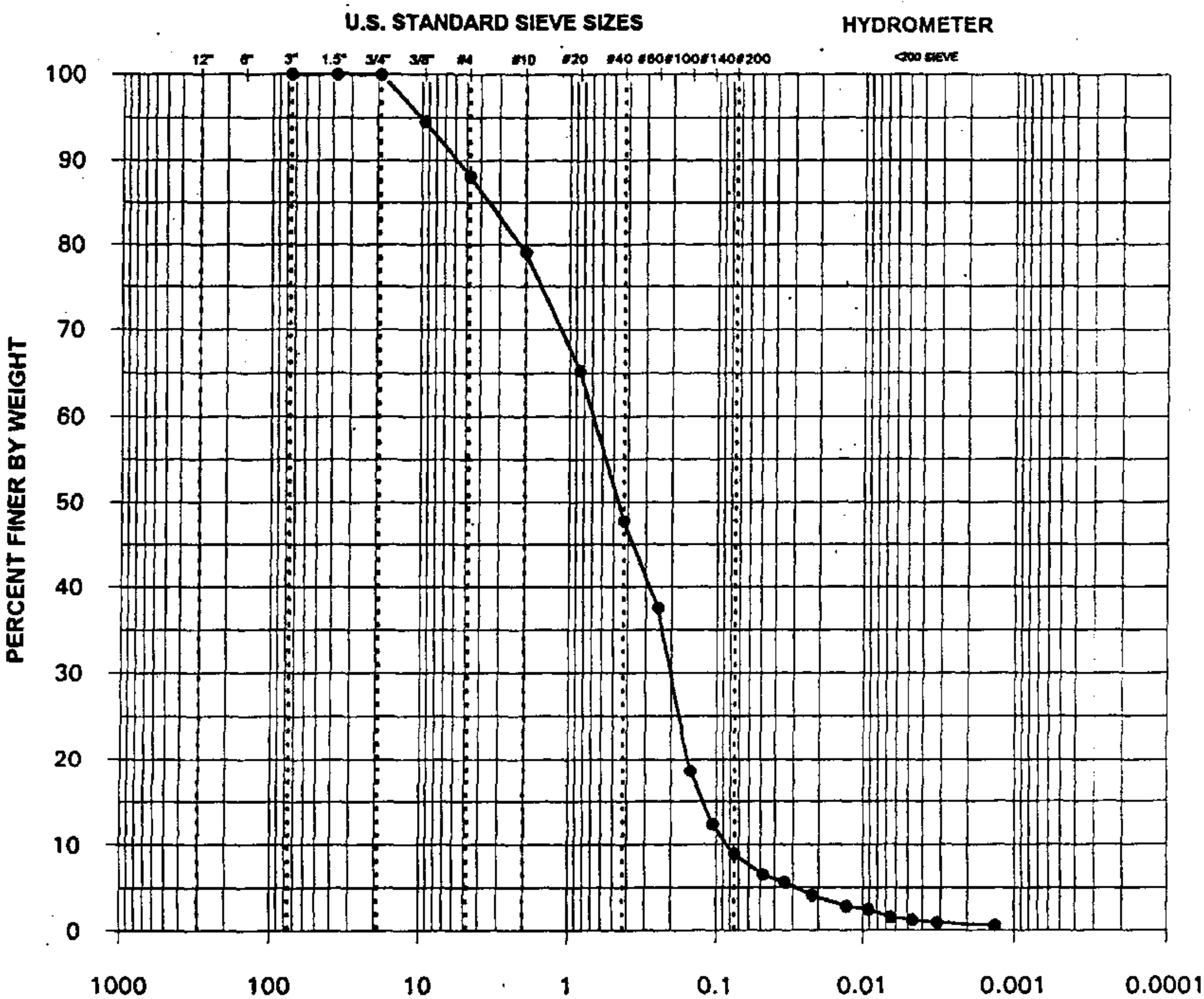
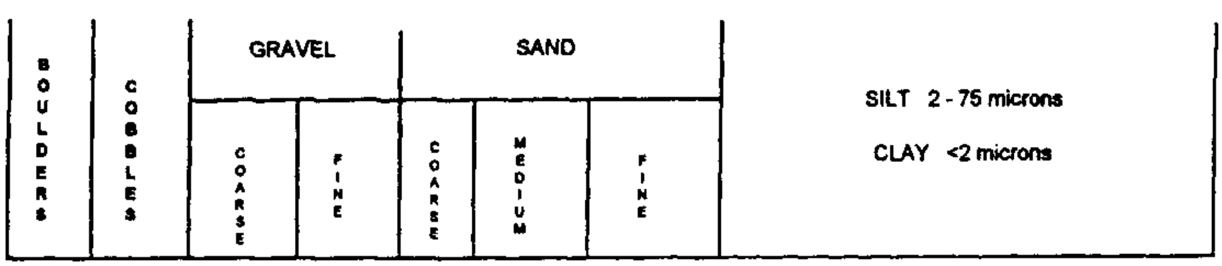
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AC~~9652~~ 3-2A

ETDC SAMPLE NO.: ETDC-6134



682A-6-93

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AC9853~~ 3-6A

Project Number: 483565.02

ETDC Number: ETDC-6135

Specific Gravity = 2.6500 Assumed

* Moisture Content = 15.3%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	97.7%
	0.375"	9.500	89.2%
	#4	4.750	72.8%
	#10	2.000	53.1%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	41.4%
	#40	0.425	29.6%
	#60	0.250	19.0%
	#100	0.149	11.8%
	#140	0.106	9.1%
	#200	0.075	6.9%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04815	5.5%
	0.03454	4.3%
	0.02192	4.0%
	0.01288	2.5%
	0.00914	2.0%
	0.00653	1.3%
	0.00463	1.0%
	0.00321	0.8%
	0.00134	0.5%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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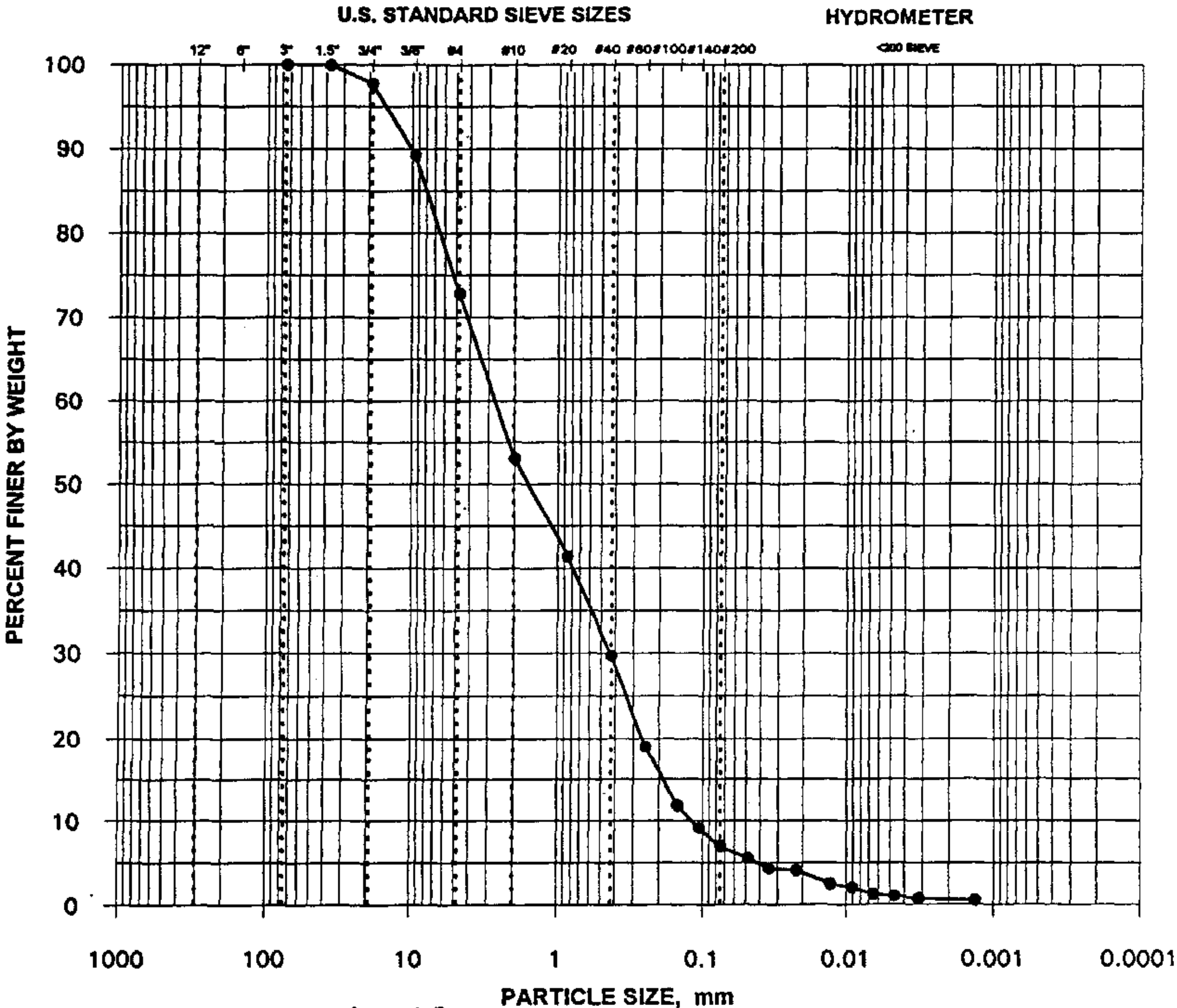
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AC9953~~ 3-6A

ETDC SAMPLE NO.: ETDC-6135

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

682A-6-93

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AC9954~~ 3-7A

Project Number: 483565.02

ETDC Number: ETDC-6136

Specific Gravity = 2.6860 Measured

* Moisture Content = 16.4%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	95.5%
	0.375"	9.500	86.5%
	#4	4.750	74.0%
	#10	2.000	51.4%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	37.5%
	#40	0.425	25.7%
	#60	0.250	16.3%
	#100	0.149	10.2%
	#140	0.106	8.0%
	#200	0.075	6.2%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04709	5.0%
	0.03393	4.0%
	0.02177	3.1%
	0.01275	2.2%
	0.00911	1.7%
	0.00648	1.2%
	0.00460	1.0%
	0.00321	0.7%
	0.00134	0.5%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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OAK RIDGE, TN
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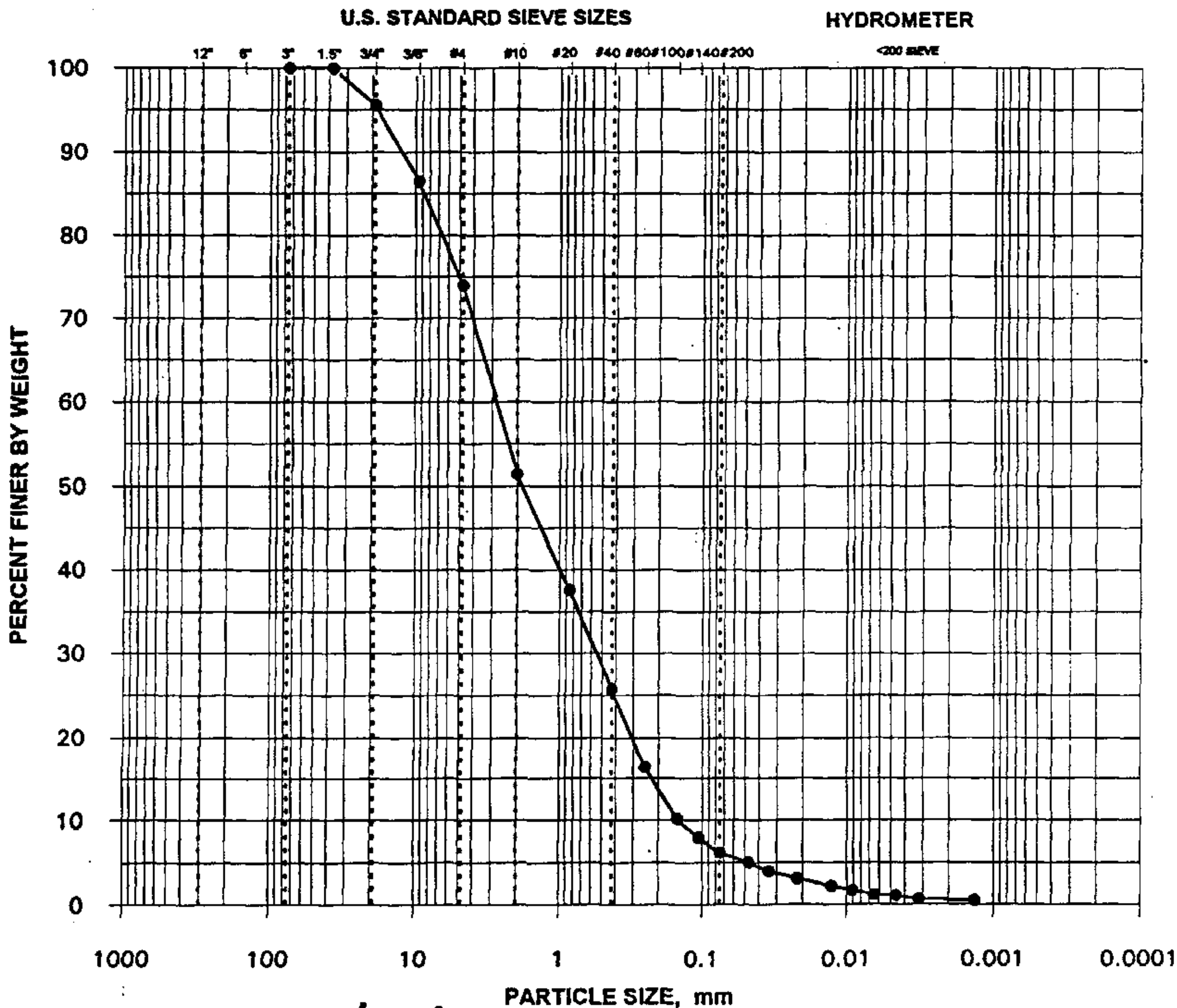
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AC9964~~ 3-7A

ETDC SAMPLE NO.: ETDC-6136

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AC9~~9~~55 3-9B

Project Number: 483565.02

ETDC Number: ETDC-6137

Specific Gravity = 2.6500 Assumed

* Moisture Content = 45.3%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.5%
	#4	4.750	98.3%
	#10	2.000	92.7%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	74.5%
	#40	0.425	50.9%
	#60	0.250	41.4%
	#100	0.149	31.5%
	#140	0.106	24.8%
	#200	0.075	19.7%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04709	15.2%
	0.03355	13.6%
	0.02157	11.0%
	0.01261	7.8%
	0.00908	5.8%
	0.00646	4.2%
	0.00460	3.1%
	0.00320	2.6%
	0.00134	1.6%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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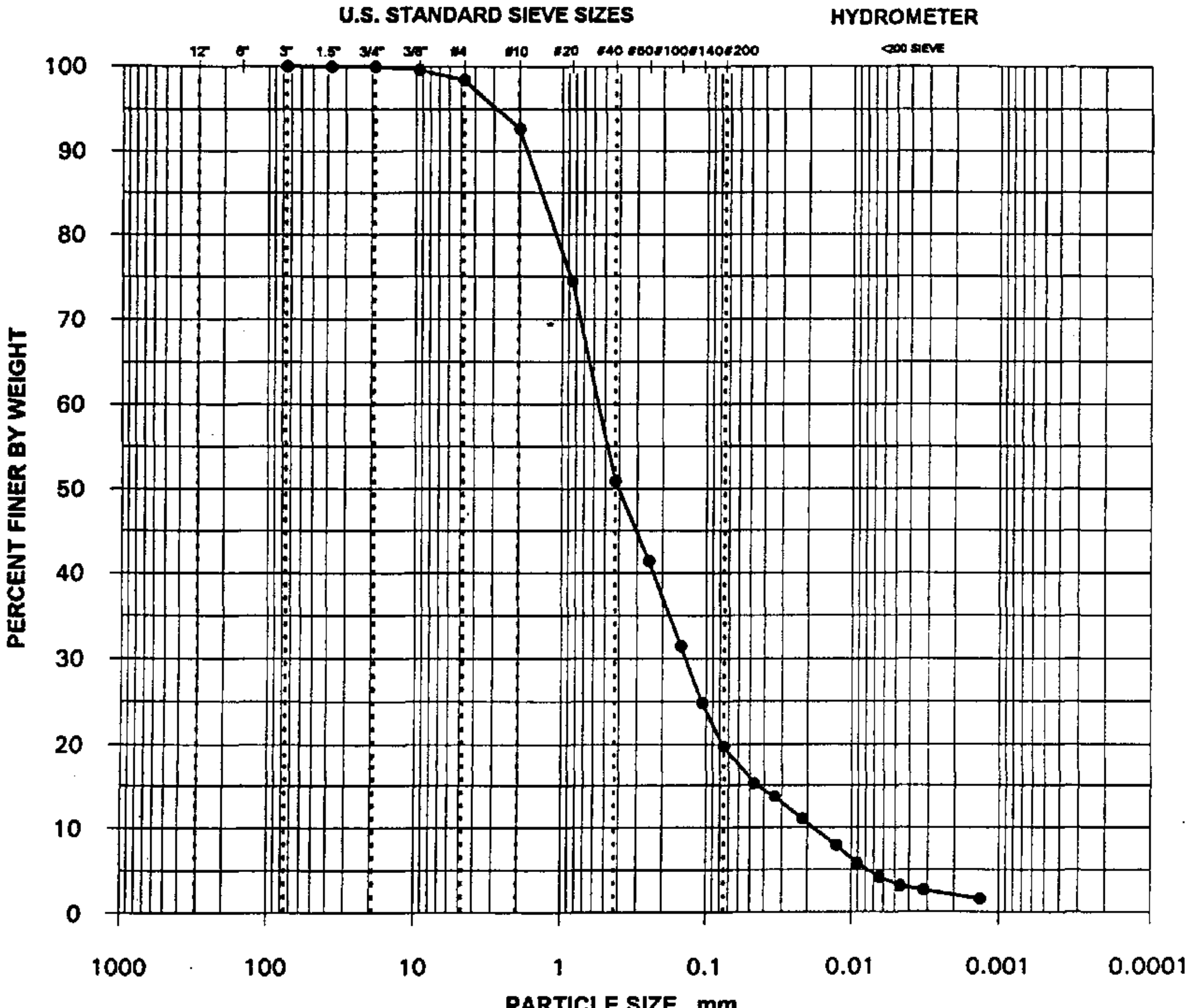
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AC9955~~ 3-9B

ETDC SAMPLE NO.: ETDC-6137

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AC9956~~ 3-10C

Project Number: 483565.02

ETDC Number: ETDC-6138

Specific Gravity = 2.6959 Measured

* Moisture Content = 22.9%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.7%
	#4	4.750	98.9%
	#10	2.000	95.5%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	84.8%
	#40	0.425	61.3%
	#60	0.250	27.6%
	#100	0.149	13.8%
	#140	0.106	10.1%
	#200	0.075	7.5%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04885	7.1%
	0.03491	6.1%
	0.02235	4.3%
	0.01297	3.3%
	0.00920	2.8%
	0.00647	1.9%
	0.00464	1.4%
	0.00321	1.4%
	0.00134	0.9%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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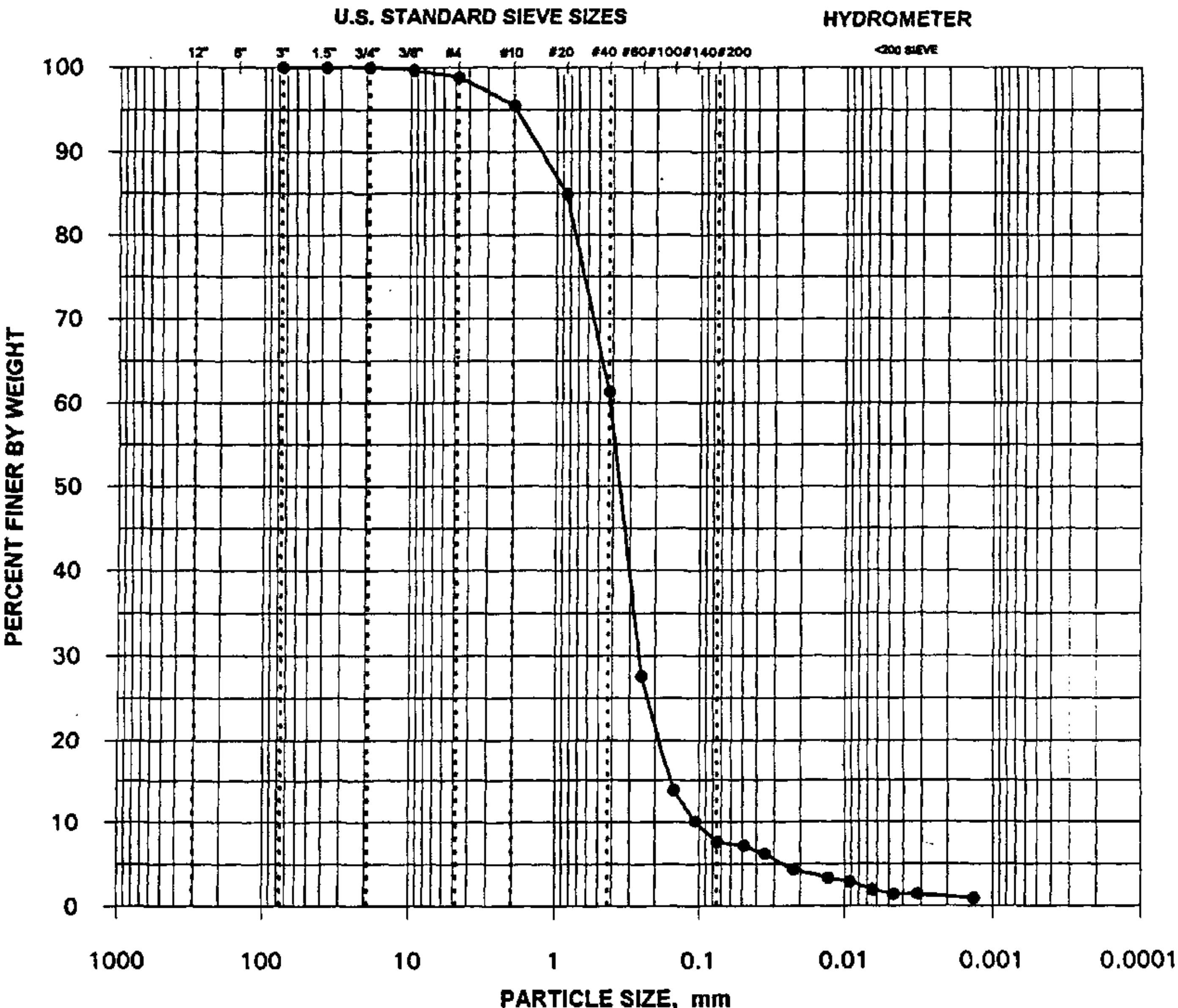
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AC9956~~ 3-10C

ETDC SAMPLE NO.: ETDC-6138

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AC~~9860~~ 4-2B

Project Number: 483565.02

ETDC Number: ETDC-6142

Specific Gravity = 2.6500 Assumed

* Moisture Content = 22.8%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.9%
	#4	4.750	99.4%
	#10	2.000	97.3%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	88.3%
	#40	0.425	61.0%
	#60	0.250	31.0%
	#100	0.149	15.0%
	#140	0.106	10.3%
	#200	0.075	7.4%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04954	5.5%
	0.03533	4.1%
	0.02238	3.6%
	0.01305	2.3%
	0.00915	1.8%
	0.00656	1.4%
	0.00465	0.9%
	0.00322	0.9%
	0.00134	0.9%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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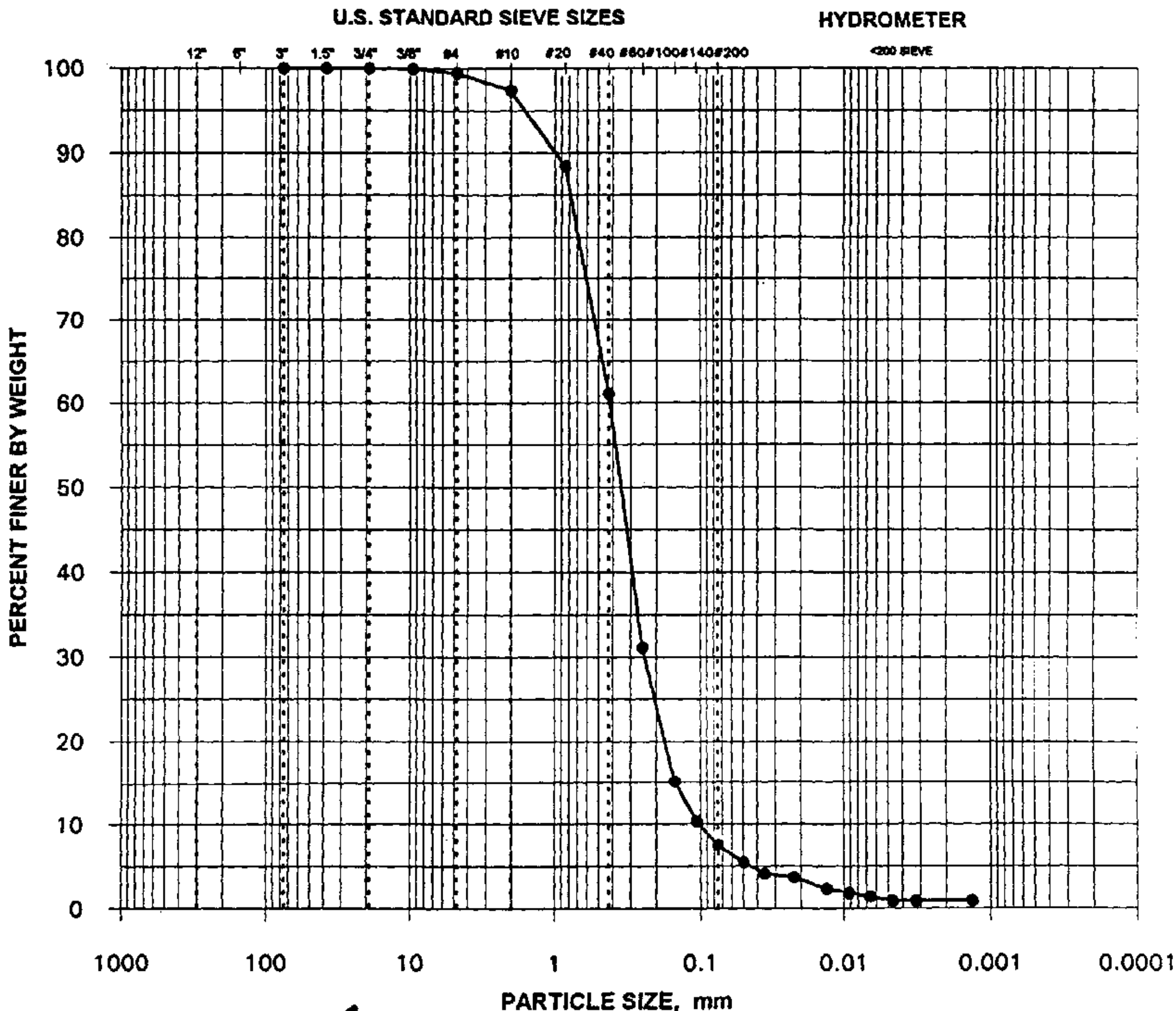
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AC9560 4-2B

ETDC SAMPLE NO.: ETDC-6142

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: A~~C0~~958 4-4B

Project Number: 483565.02

ETDC Number: ETDC-6140

Specific Gravity = 2.6500 Assumed

* Moisture Content = 7.9%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	99.2%
	0.375"	9.500	90.6%
	#4	4.750	77.8%
	#10	2.000	59.5%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	38.4%
	#40	0.425	19.1%
	#60	0.250	8.5%
	#100	0.149	3.6%
	#140	0.106	2.6%
	#200	0.075	1.9%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.05056	1.5%
	0.03587	1.2%
	0.02268	1.2%
	0.01312	0.9%
	0.00929	0.6%
	0.00659	0.3%
	0.00466	0.3%
	0.00323	0.3%
	0.00135	0.3%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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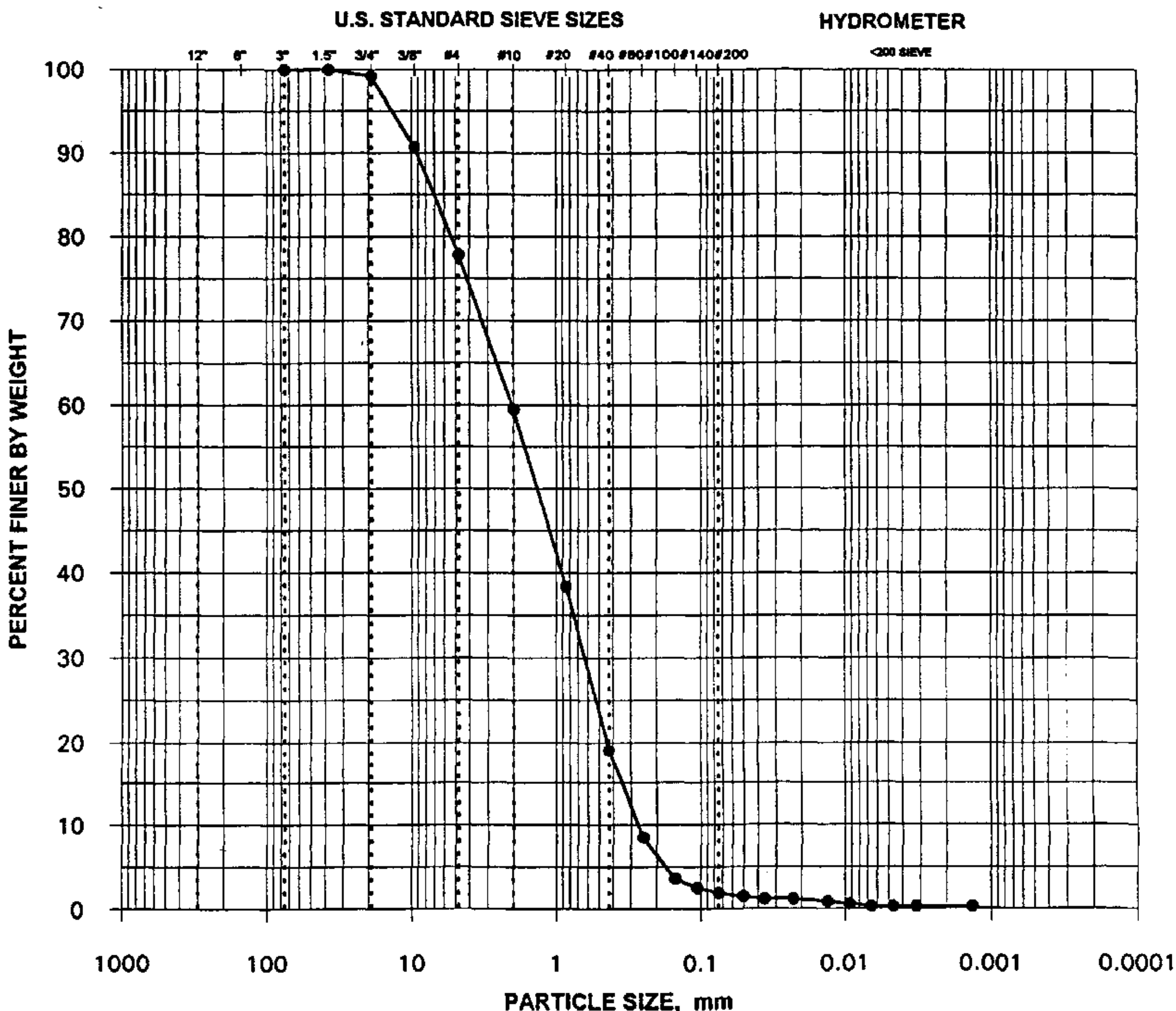
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AC99~~98~~ 4-4B

ETDC SAMPLE NO.: ETDC-6140

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AC9959~~ 4-4E

Project Number: 483565.02

ETDC Number: ETDC-6141

Specific Gravity = 2.6500 Assumed

* Moisture Content = 11.0%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	93.9%
	0.375"	9.500	77.4%
	#4	4.750	59.3%
	#10	2.000	37.7%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	25.4%
	#40	0.425	21.8%
	#60	0.250	16.8%
	#100	0.149	10.0%
	#140	0.106	6.7%
	#200	0.075	4.6%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04903	3.1%
	0.03503	2.3%
	0.02231	1.9%
	0.01297	1.3%
	0.00909	1.1%
	0.00655	0.8%
	0.00464	0.6%
	0.00321	0.6%
	0.00134	0.4%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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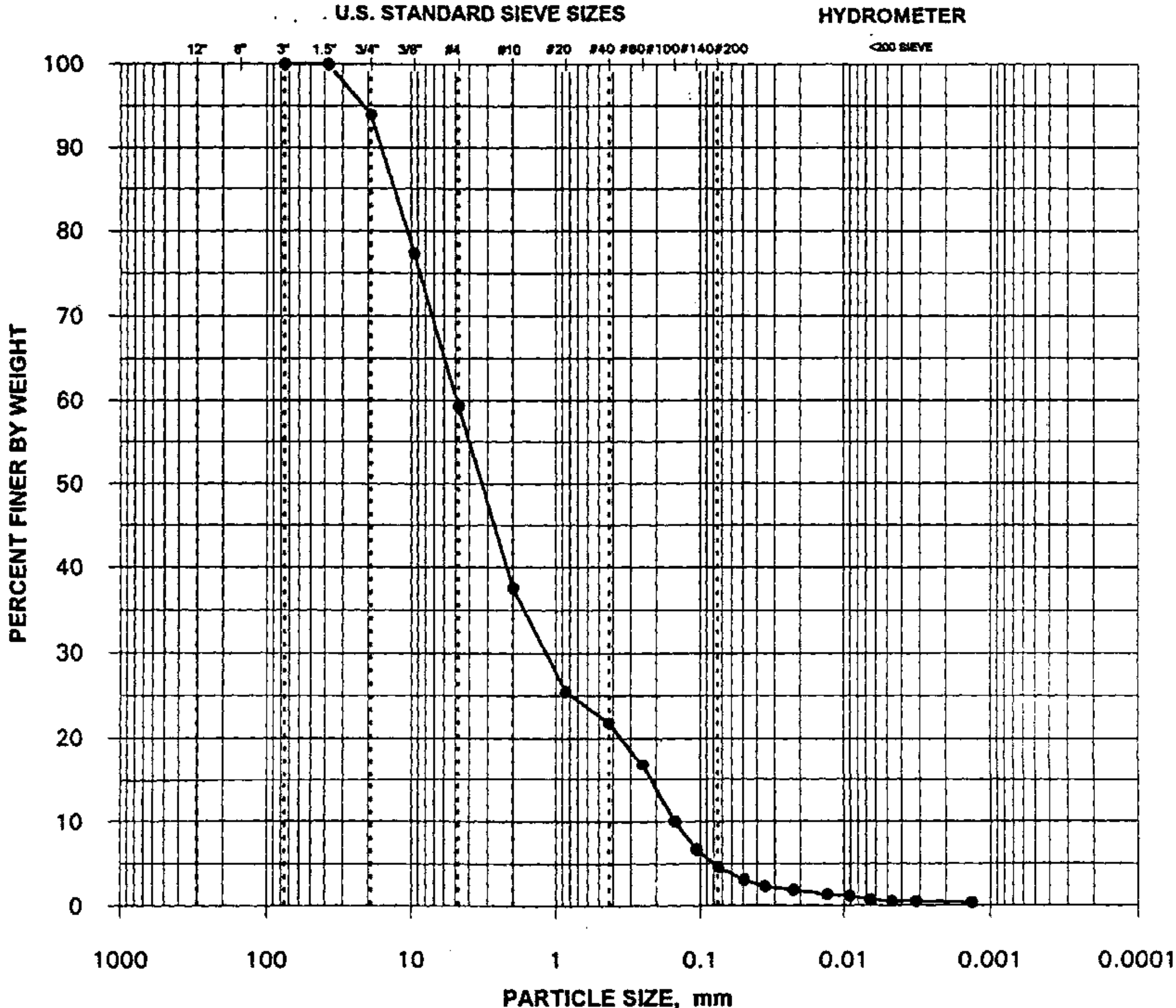
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AC9959~~ 4-4E

ETDC SAMPLE NO.: ETDC-6141

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

682A-6-93

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AC ~~9057~~ 4-5A

Project Number: 483565.02

ETDC Number: ETDC-6139

Specific Gravity = 2.6500 Assumed

* Moisture Content = 13.0%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	96.4%
	0.375"	9.500	79.2%
	#4	4.750	57.7%
	#10	2.000	32.8%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	16.1%
	#40	0.425	8.4%
	#60	0.250	5.0%
	#100	0.149	3.2%
	#140	0.106	2.5%
	#200	0.075	2.0%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04920	1.8%
	0.03527	1.3%
	0.02238	1.0%
	0.01301	0.8%
	0.00926	0.5%
	0.00656	0.4%
	0.00465	0.3%
	0.00322	0.3%
	0.00135	0.1%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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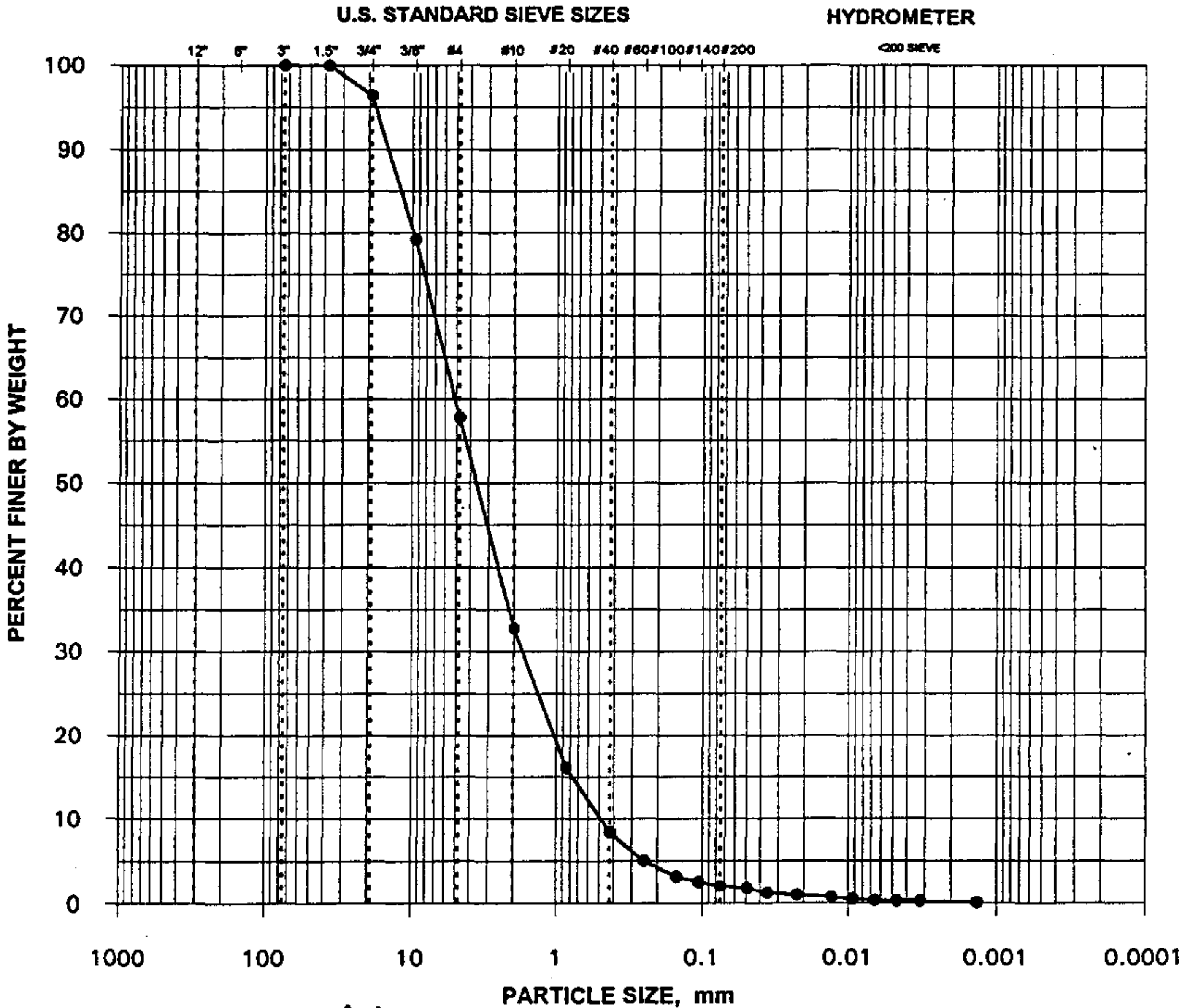
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AC9957~~ 4-5A

ETDC SAMPLE NO.: ETDC-6139

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AC9951~~ 4-5E

Project Number: 483565.02

ETDC Number: ETDC-6133

Specific Gravity = 2.6500 Assumed

* Moisture Content = 10.6%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	97.9%
	0.375"	9.500	92.8%
	#4	4.750	83.2%
	#10	2.000	61.4%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	37.5%
	#40	0.425	19.1%
	#60	0.250	9.9%
	#100	0.149	5.3%
	#140	0.106	4.1%
	#200	0.075	3.2%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04998	3.0%
	0.03558	2.6%
	0.02231	2.3%
	0.01301	1.4%
	0.00923	1.2%
	0.00655	0.9%
	0.00465	0.5%
	0.00322	0.5%
	0.00134	0.5%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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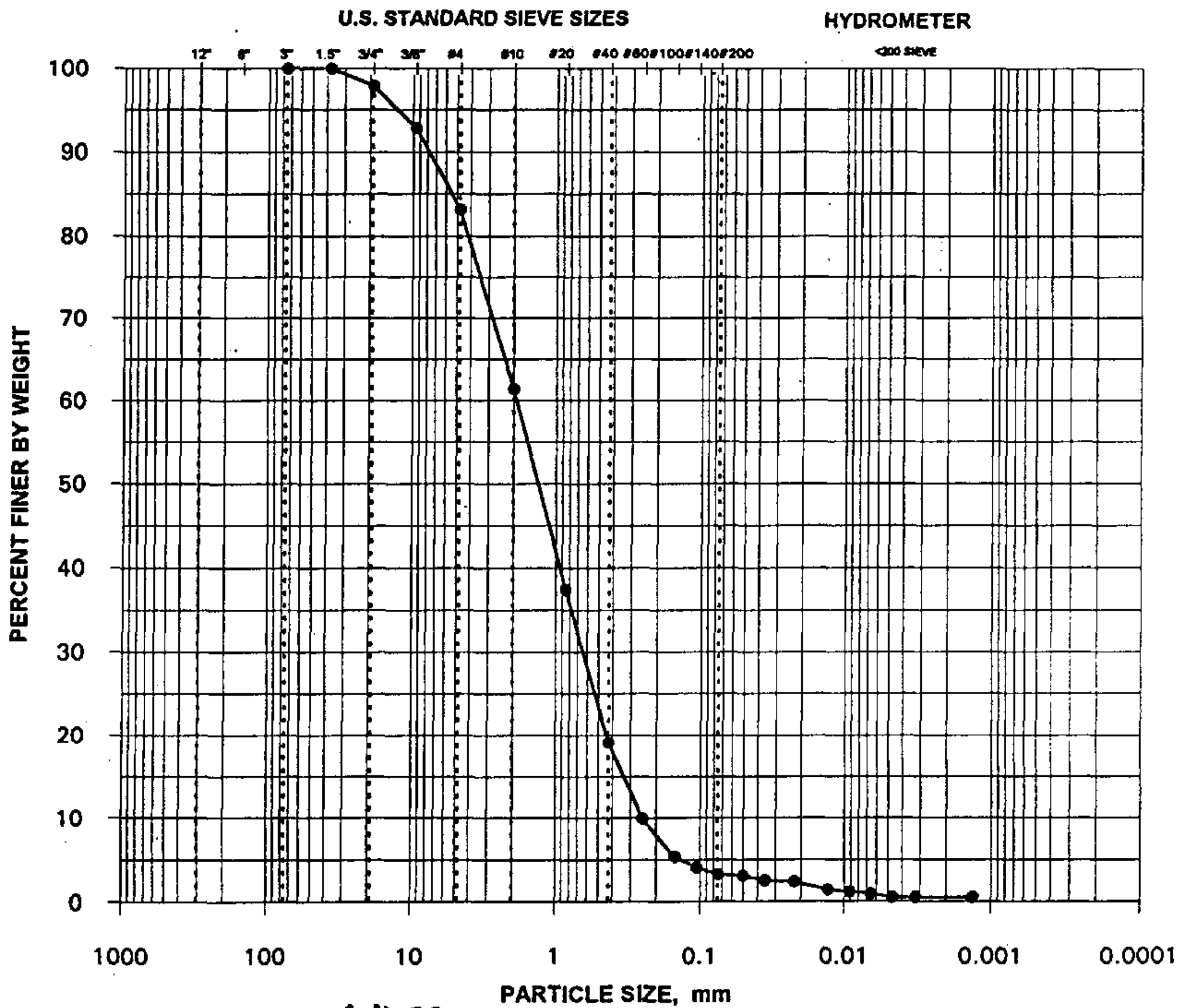
(615) 482-6497

HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AC9551~~ 45E

ETDC SAMPLE NO.: ETDC-6133

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD0479 4-6B

Project Number: 483565.02

ETDC Number: ETDC-6162

Specific Gravity = 2.6500 Assumed

* Moisture Content = 16.8%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	99.9%
	0.375"	9.500	87.9%
	#4	4.750	68.4%
	#10	2.000	40.7%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	30.7%
	#40	0.425	16.5%
	#60	0.250	6.8%
	#100	0.149	3.3%
	#140	0.106	2.4%
	#200	0.075	1.8%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.05107	1.5%
	0.03623	1.1%
	0.02319	1.1%
	0.01348	0.7%
	0.00956	0.6%
	0.00670	0.4%
	0.00480	0.4%
	0.00332	0.4%
	0.00137	0.4%

DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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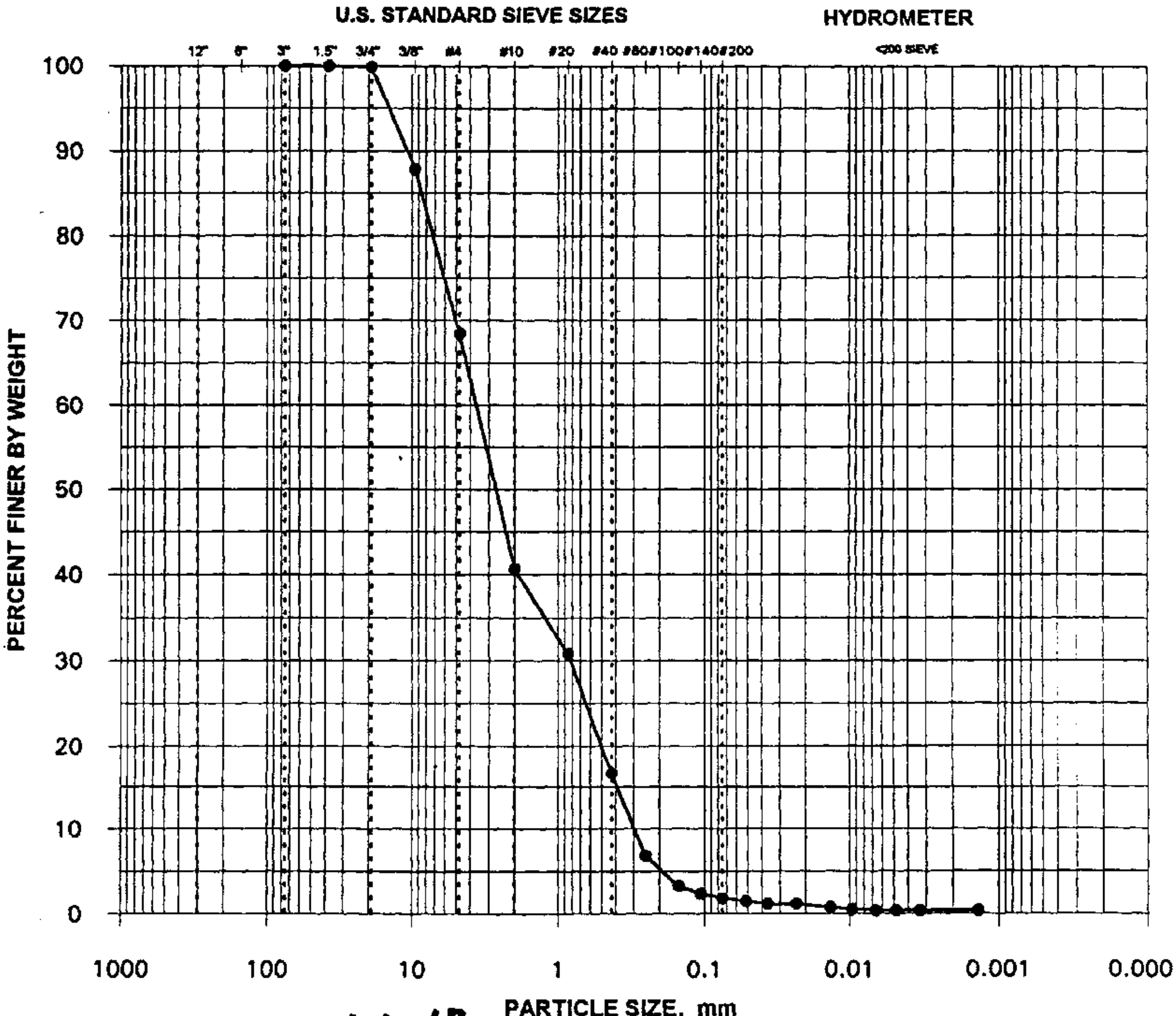
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD0079 4-6B

ETDC SAMPLE NO.: ETDC-6162

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD0480~~ 4-6G

Project Number: 483565.02

ETDC Number: ETDC-6163

Specific Gravity = 2.6500 Assumed

* Moisture Content = 38.8%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.9%
	#10	2.000	98.8%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	96.3%
	#40	0.425	91.7%
	#60	0.250	74.4%
	#100	0.149	40.3%
	#140	0.106	24.7%
	#200	0.075	15.0%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04999	9.1%
	0.03579	7.2%
	0.02264	6.2%
	0.01310	4.8%
	0.00934	3.3%
	0.00662	2.9%
	0.00475	2.4%
	0.00330	1.9%
	0.00136	1.4%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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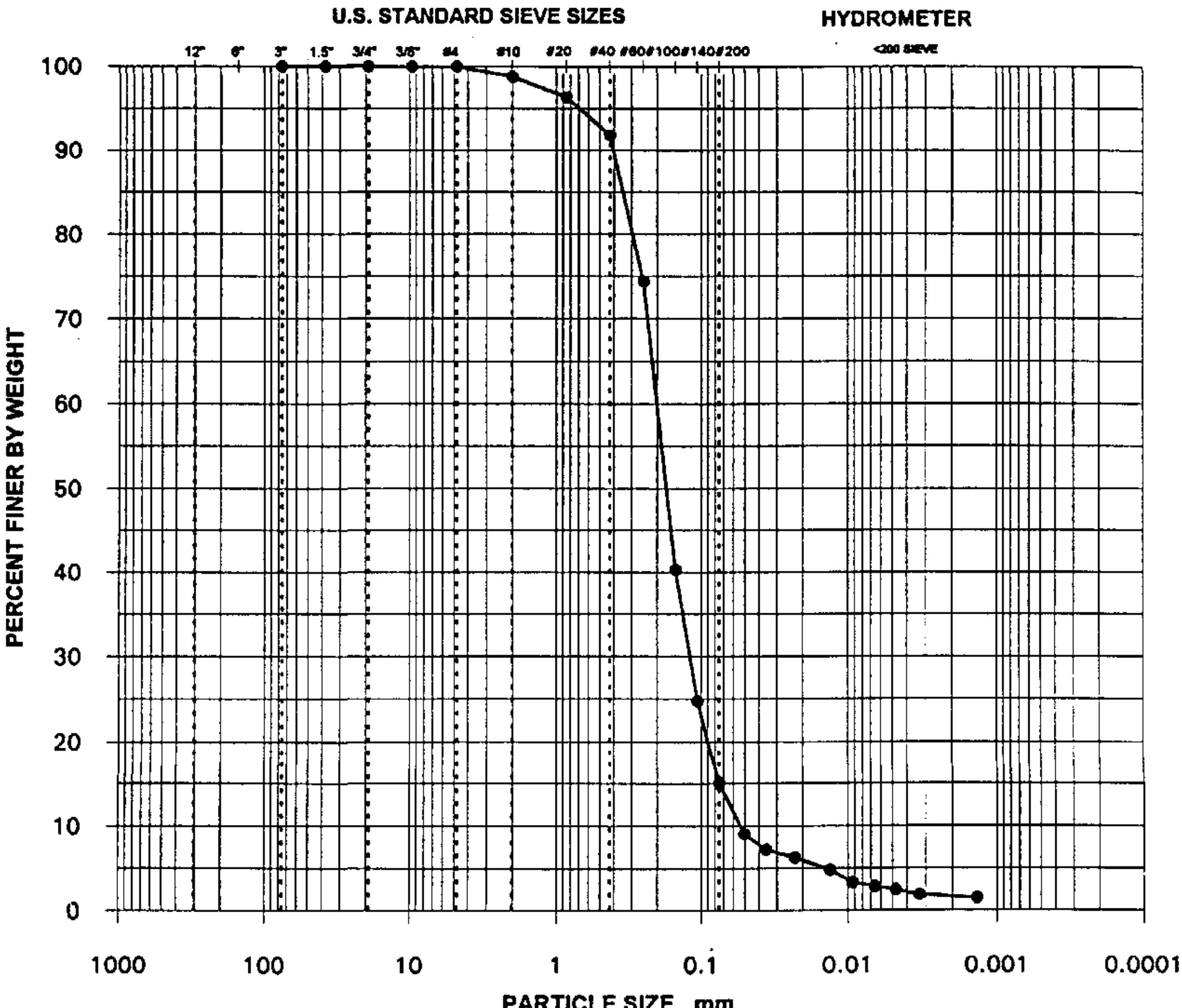
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD~~0480~~ 4-6G

ETDC SAMPLE NO.: ETDC-6163

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD2671 4-7F

Project Number: 483565.04

ETDC Number: ETDC-6255

Specific Gravity = 2.6500 Assumed

* Moisture Content = 32.7%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	99.4%
	0.375"	9.500	97.0%
	#4	4.750	95.7%
	#10	2.000	92.1%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	76.8%
	#40	0.425	41.8%
	#60	0.250	25.2%
	#100	0.149	15.1%
	#140	0.106	11.1%
	#200	0.075	8.4%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.03509	5.5%
	0.02258	3.2%
	0.01308	2.4%
	0.00925	2.4%
	0.00659	1.6%
	0.00469	0.8%
	0.00326	0.0%
	0.00139	0.0%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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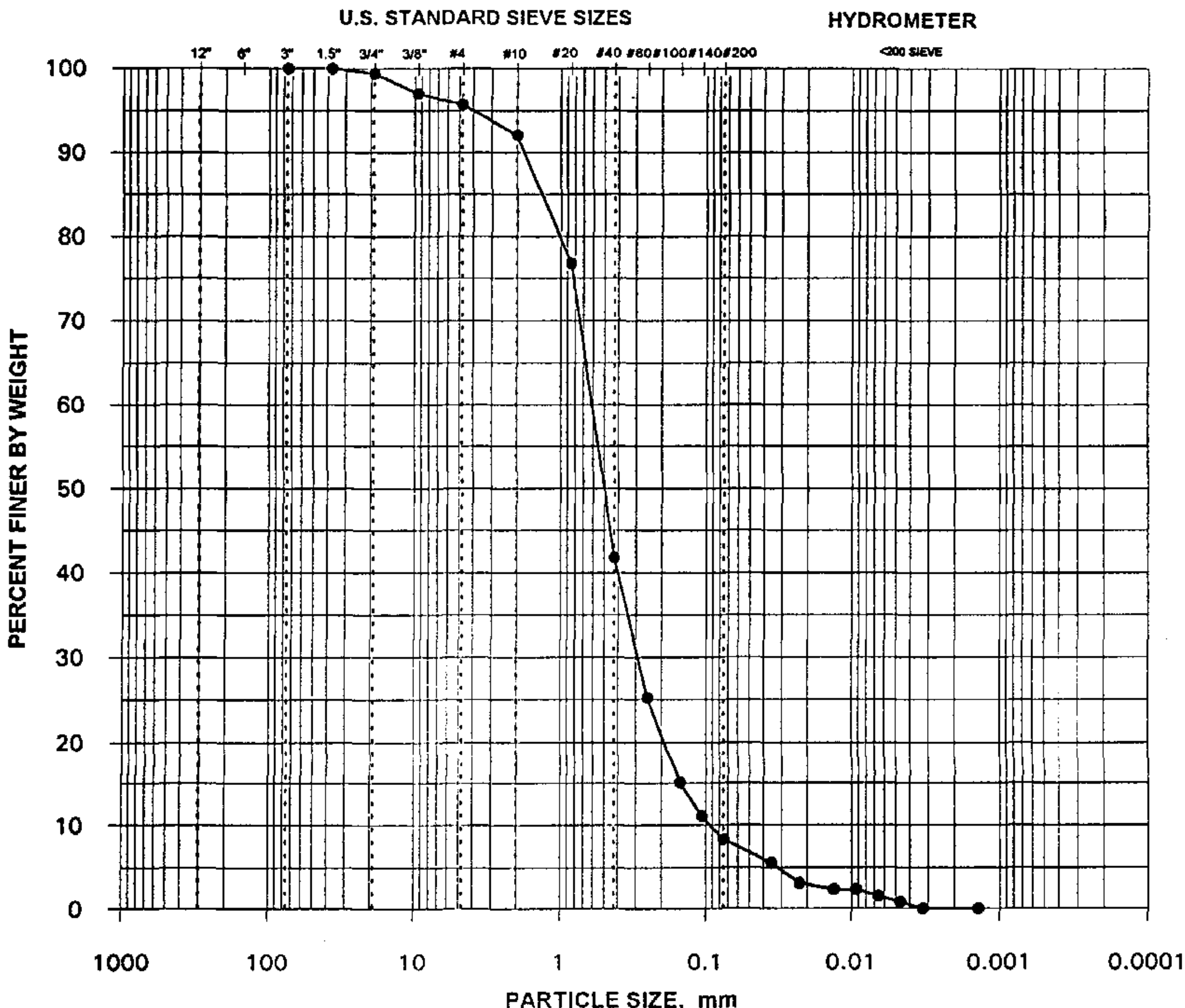
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2971~~ 47F

ETDC SAMPLE NO.: ETDC-6255

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD~~1772~~ 4-9D

Project Number: 483565.03

ETDC Number: ETDC-6224

Specific Gravity = 2.6119 Measured

* Moisture Content = 15.1%

SIEVE ANALYSIS

COARSE Sieve No.	Diameter mm	Percent Finer
3"	75.000	100.0%
1.5"	37.500	100.0%
0.75"	19.000	98.6%
0.375"	9.500	94.5%
#4	4.750	86.4%
#10	2.000	77.1%

FINE Sieve No.	Diameter mm	Percent Finer
#20	0.850	68.1%
#40	0.425	45.5%
#60	0.250	22.0%
#100	0.149	10.6%
#140	0.106	6.6%
#200	0.075	4.5%

HYDROMETER ANALYSIS

HYDROMETER Diameter mm	Percent Finer
0.05135	3.4%
0.03637	3.0%
0.02300	3.0%
0.01317	2.6%
0.00937	1.9%
0.00663	1.9%
0.00471	1.1%
0.00327	0.8%
0.00136	0.8%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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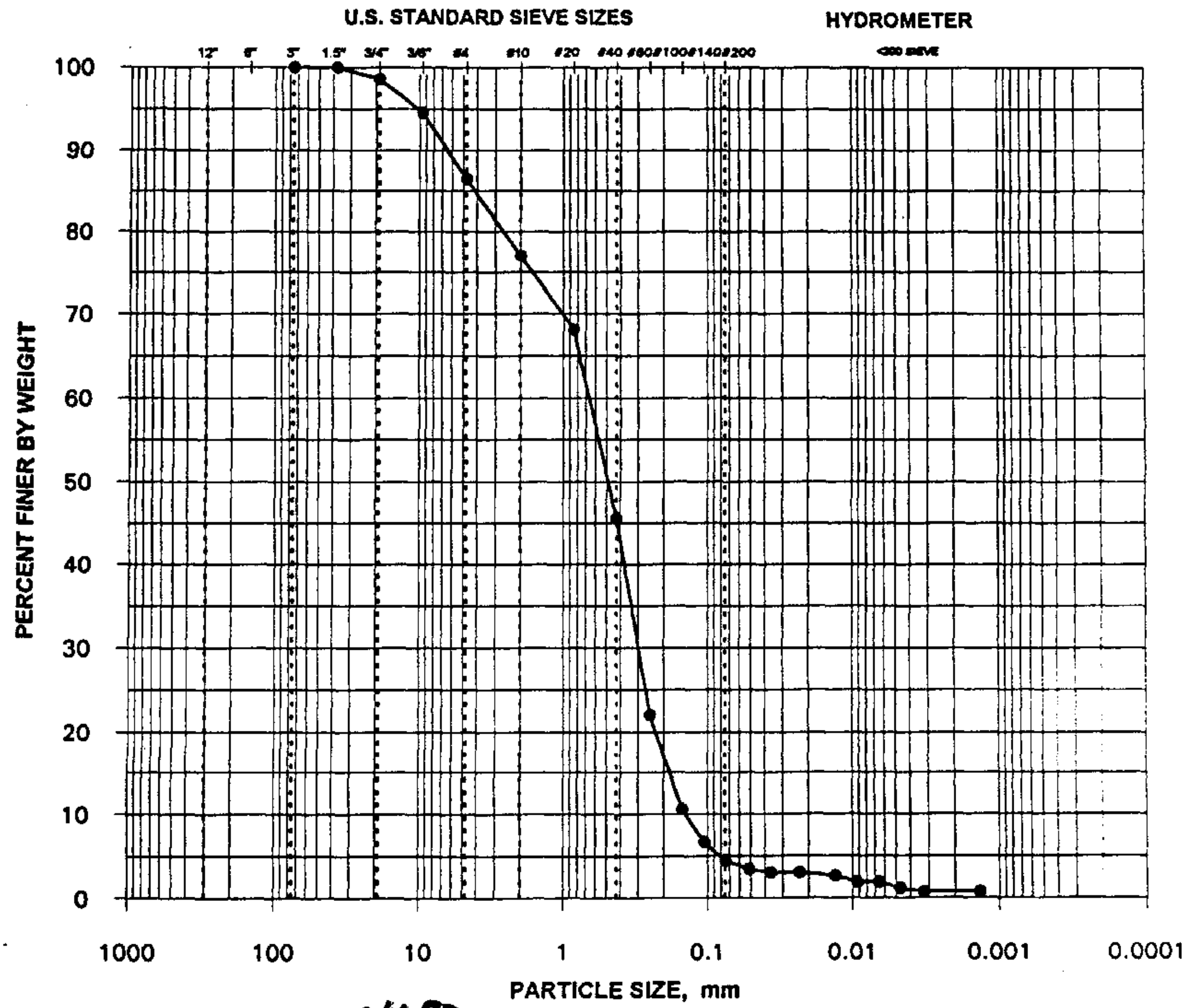
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD1772~~ 4-9D

ETDC SAMPLE NO.: ETDC-6224

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD1773~~ 4911

Project Number: 483565.03

ETDC Number: ETDC-6225

Specific Gravity = 2.6500 Assumed

* Moisture Content = 23.1%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	98.9%
	0.375"	9.500	97.1%
	#4	4.750	86.9%
	#10	2.000	67.6%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	49.7%
	#40	0.425	26.8%
	#60	0.250	13.9%
	#100	0.149	8.6%
	#140	0.106	6.7%
	#200	0.075	5.4%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04980	4.4%
	0.03571	3.1%
	0.02258	3.1%
	0.01292	2.5%
	0.00920	1.9%
	0.00653	1.6%
	0.00462	1.6%
	0.00321	1.2%
	0.00134	0.9%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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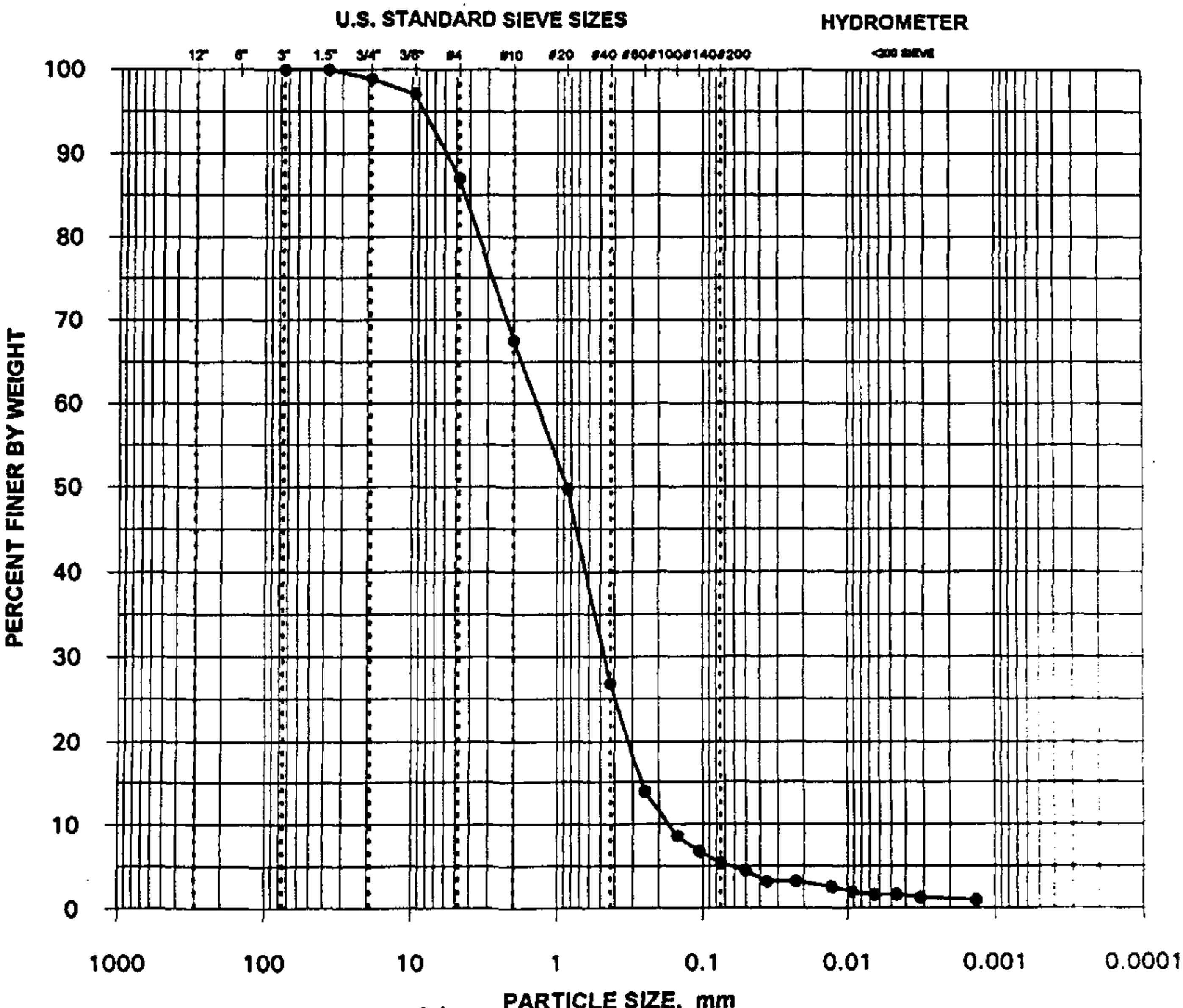
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD173~~ 4-9H

ETDC SAMPLE NO.: ETDC-6225

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD1~~77~~9 4-10B

Project Number: 483565.03

ETDC Number: ETDC-6226

Specific Gravity = 2.6676 Measured

* Moisture Content = 25.2%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	99.7%
	0.375"	9.500	97.0%
	#4	4.750	89.9%
	#10	2.000	70.2%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	47.2%
	#40	0.425	29.7%
	#60	0.250	17.3%
	#100	0.149	8.5%
	#140	0.106	6.2%
	#200	0.075	4.9%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.05144	4.5%
	0.03650	3.8%
	0.02288	3.5%
	0.01265	2.8%
	0.00956	2.4%
	0.00677	2.1%
	0.00479	1.7%
	0.00334	1.0%
	0.00140	1.0%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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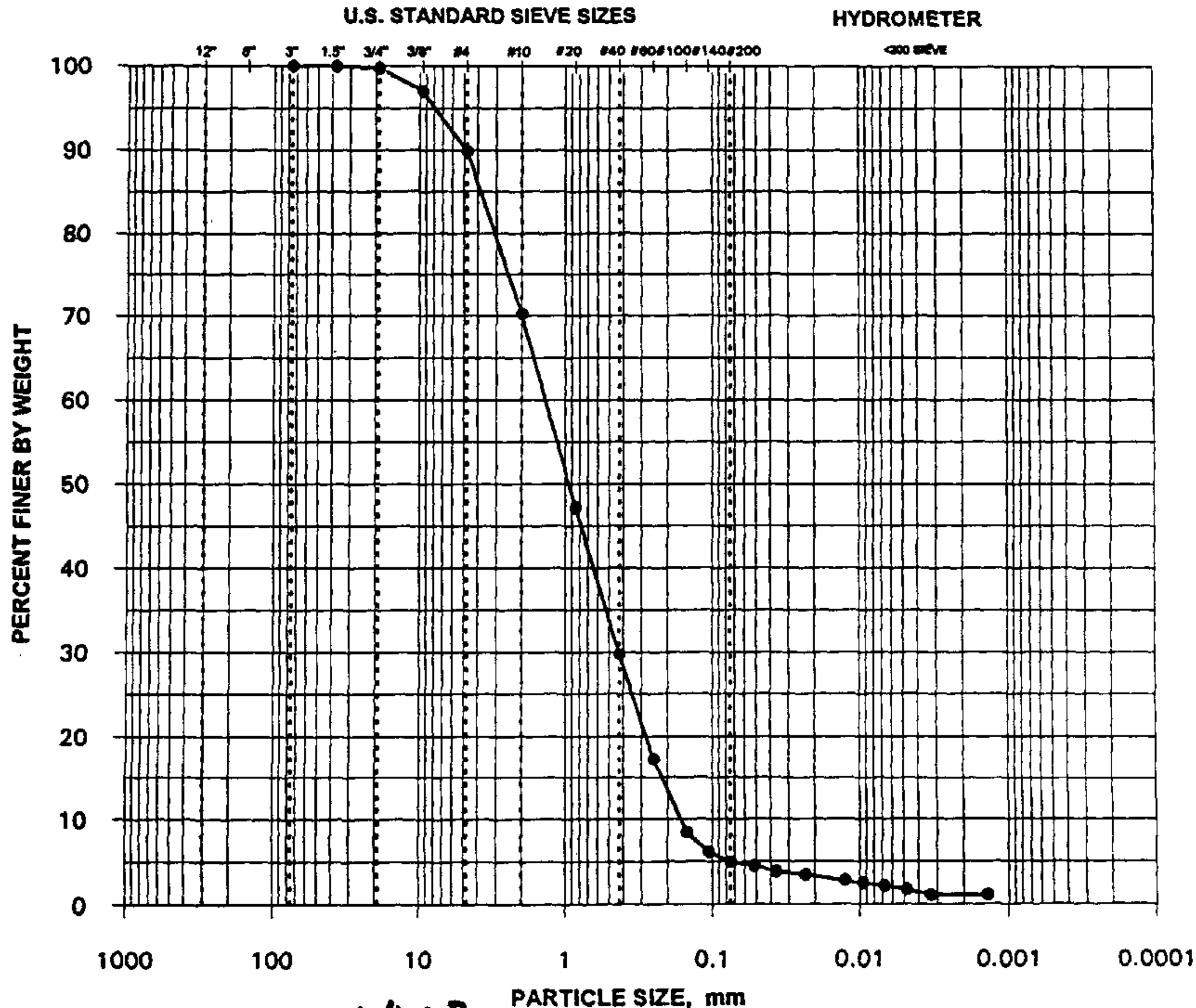
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD1779~~ 4-10B

ETDC SAMPLE NO.: ETDC-6226

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

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Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD0471~~ 5-1E

Project Number: 483565.02

ETDC Number: ETDC-6156

Specific Gravity = 2.6704 Measured

* Moisture Content = 26.1%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	93.0%
	0.375"	9.500	81.4%
	#4	4.750	67.5%
	#10	2.000	48.8%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	38.9%
	#40	0.425	25.9%
	#60	0.250	16.5%
	#100	0.149	11.2%
	#140	0.106	8.6%
	#200	0.075	6.7%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04879	5.6%
	0.03489	4.8%
	0.02223	4.3%
	0.01312	2.9%
	0.00937	2.1%
	0.00668	1.4%
	0.00469	1.0%
	0.00331	0.6%
	0.00137	0.2%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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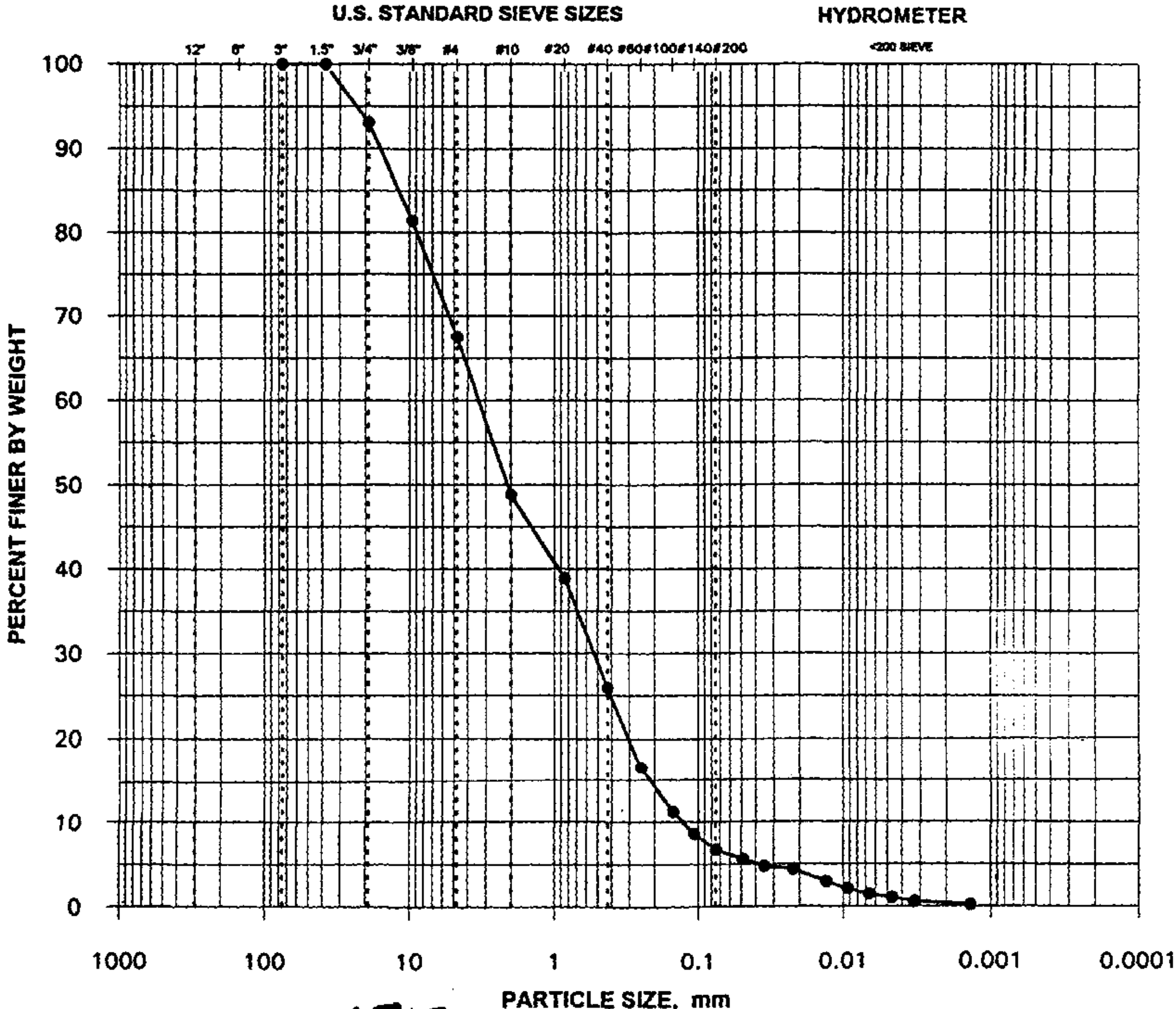

CLIENT SAMPLE NO.: ~~AD0/1~~ 15-IE

ETDC SAMPLE NO.: ETDC-6156

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

682A-6-93

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD0474~~ 5-12

Project Number: 483565.02

ETDC Number: ETDC-6159

Specific Gravity = 2.6500 Assumed

* Moisture Content = 57.9%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	99.9%
	0.375"	9.500	97.5%
	#4	4.750	93.6%
	#10	2.000	84.2%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	77.9%
	#40	0.425	64.1%
	#60	0.250	37.4%
	#100	0.149	13.8%
	#140	0.106	9.6%
	#200	0.075	7.8%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.05026	6.5%
	0.03579	5.0%
	0.02280	4.6%
	0.01330	3.5%
	0.00934	2.7%
	0.00664	1.9%
	0.00471	1.5%
	0.00331	1.2%
	0.00137	0.8%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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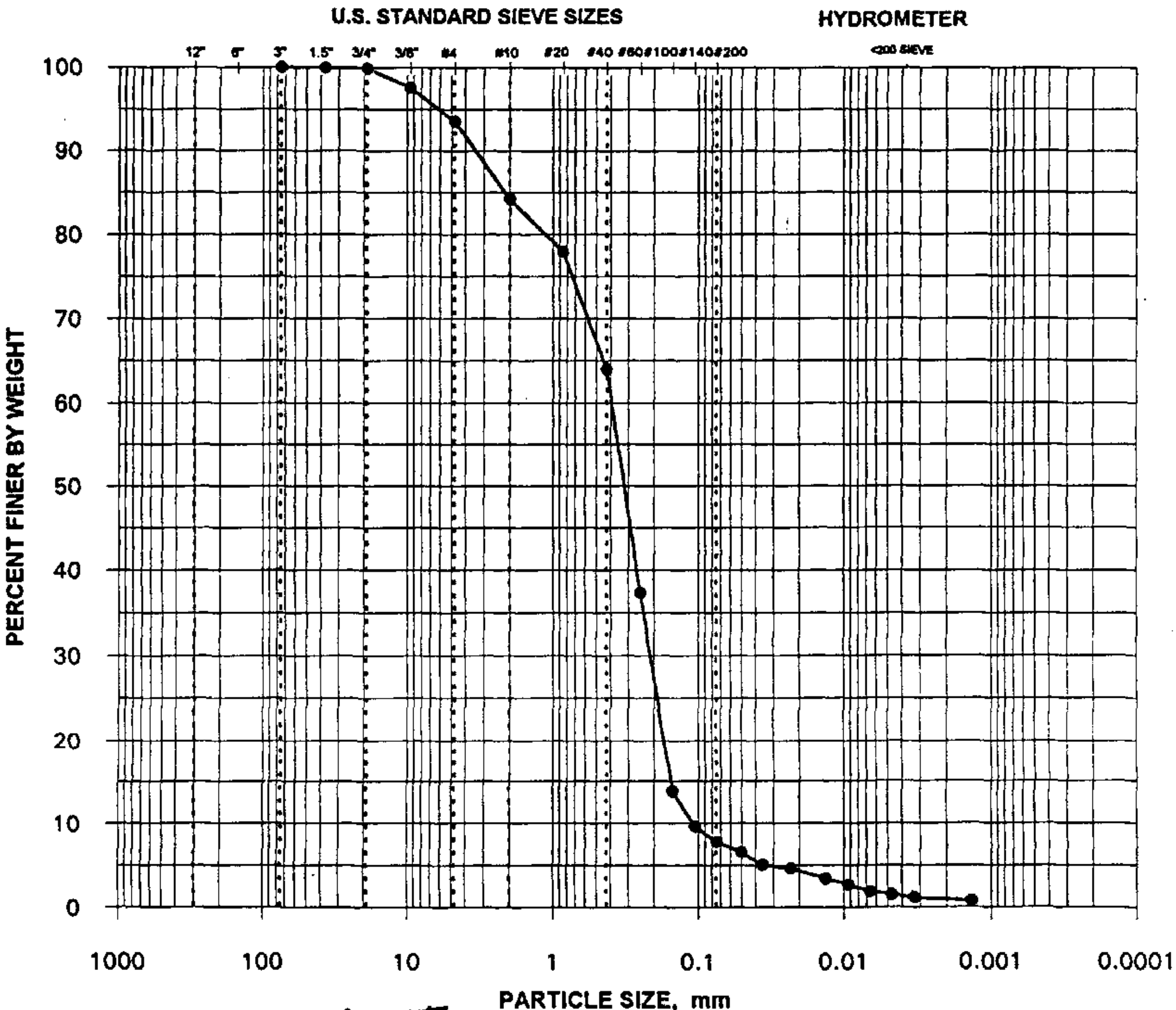

CLIENT SAMPLE NO.: ~~AD0174~~ 5-1I

ETDC SAMPLE NO.: ETDC-6159

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD0472 5-2L

Project Number: 483565.02

ETDC Number: ETDC-6157

Specific Gravity = 2.6887 Measured

* Moisture Content = 57.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.6%
	#4	4.750	97.3%
	#10	2.000	90.5%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	83.9%
	#40	0.425	74.5%
	#60	0.250	66.6%
	#100	0.149	45.0%
	#140	0.106	30.9%
	#200	0.075	21.2%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04728	15.8%
	0.03430	12.3%
	0.02215	9.4%
	0.01302	6.8%
	0.00931	5.1%
	0.00665	3.8%
	0.00467	3.0%
	0.00329	2.1%
	0.00136	1.3%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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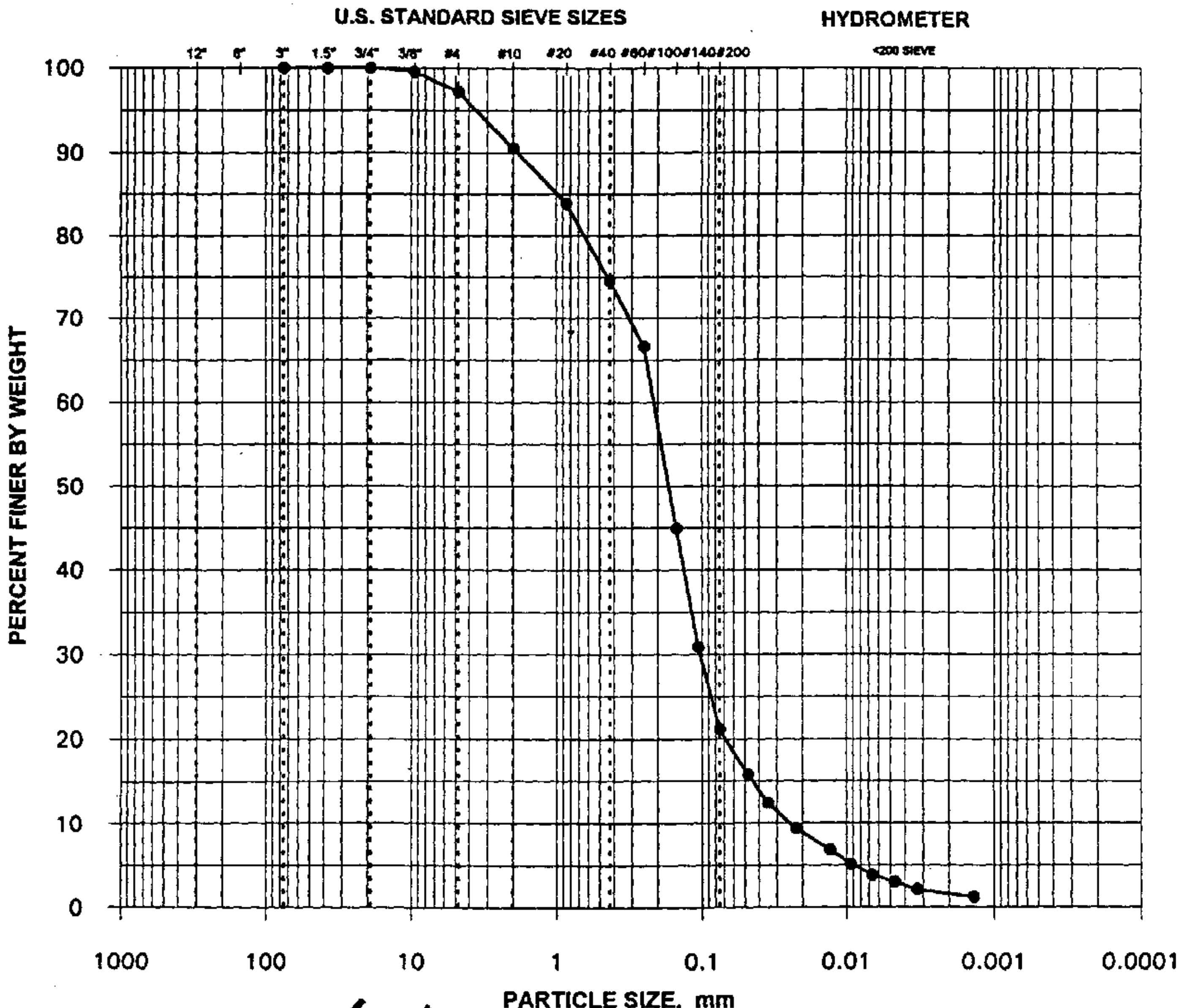
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD0172~~ 52L

ETDC SAMPLE NO.: ETDC-6157

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD0477 5-3A

Project Number: 483565.02

ETDC Number: ETDC-6160

Specific Gravity = 2.6500 Assumed

* Moisture Content = 25.5%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	91.6%
	#4	4.750	83.4%
	#10	2.000	71.7%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	65.3%
	#40	0.425	56.4%
	#60	0.250	39.0%
	#100	0.149	23.7%
	#140	0.106	16.9%
	#200	0.075	12.2%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04879	8.4%
	0.03502	6.8%
	0.02239	5.6%
	0.01291	4.0%
	0.00923	3.4%
	0.00659	2.5%
	0.00468	1.9%
	0.00330	1.2%
	0.00137	0.6%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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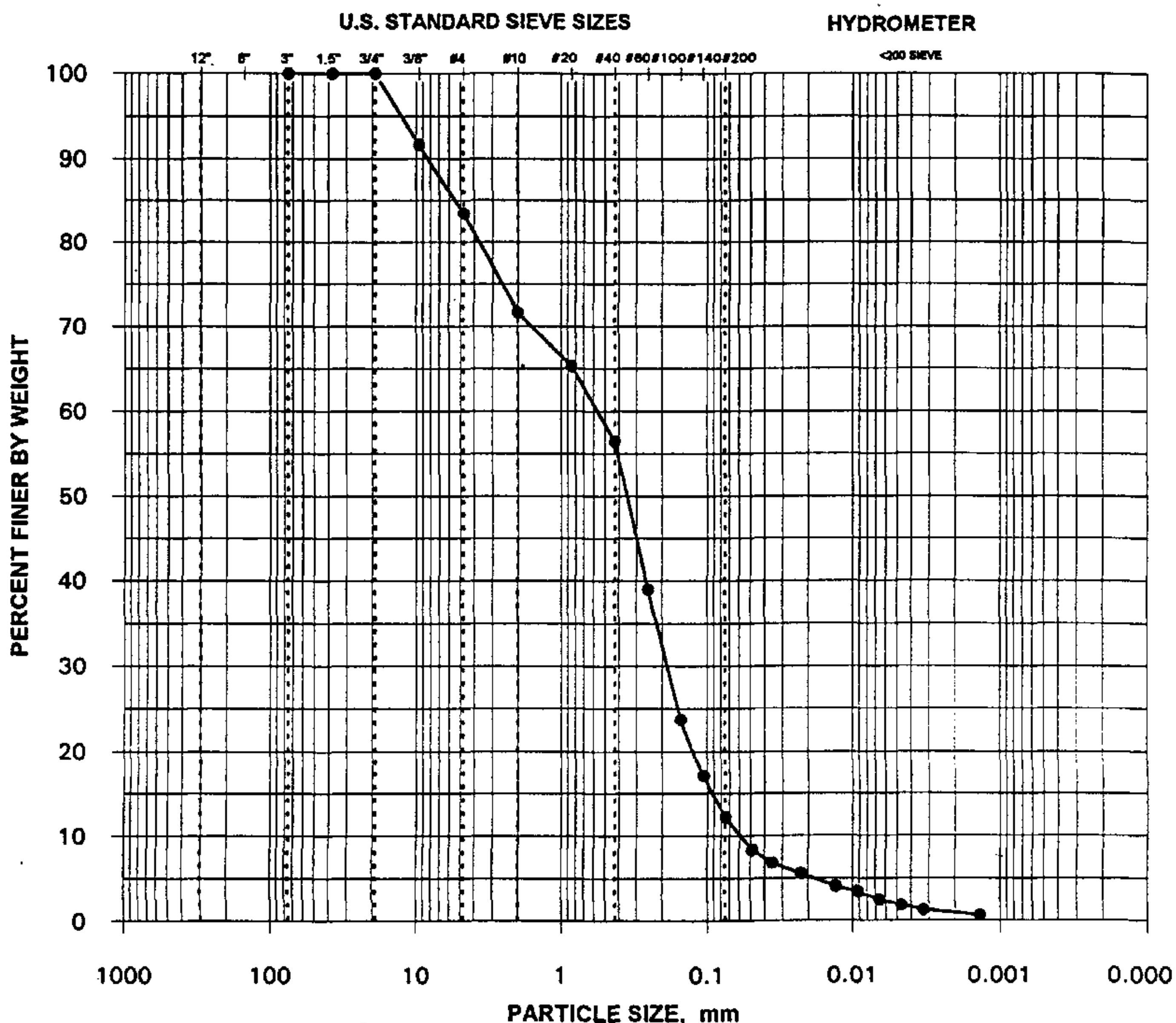
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD0077~~ 5-3A

ETDC SAMPLE NO.: ETDC-6160

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD0473~~ 53F

Project Number: 483565.02

ETDC Number: ETDC-6158

Specific Gravity = 2.6749 Measured

* Moisture Content = 23.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.2%
	#4	4.750	94.1%
	#10	2.000	71.8%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	53.7%
	#40	0.425	32.1%
	#60	0.250	14.1%
	#100	0.149	8.0%
	#140	0.106	6.2%
	#200	0.075	5.0%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.05026	5.0%
	0.03579	3.8%
	0.02296	3.0%
	0.01334	2.4%
	0.00950	1.5%
	0.00666	1.2%
	0.00473	0.9%
	0.00331	0.9%
	0.00137	0.6%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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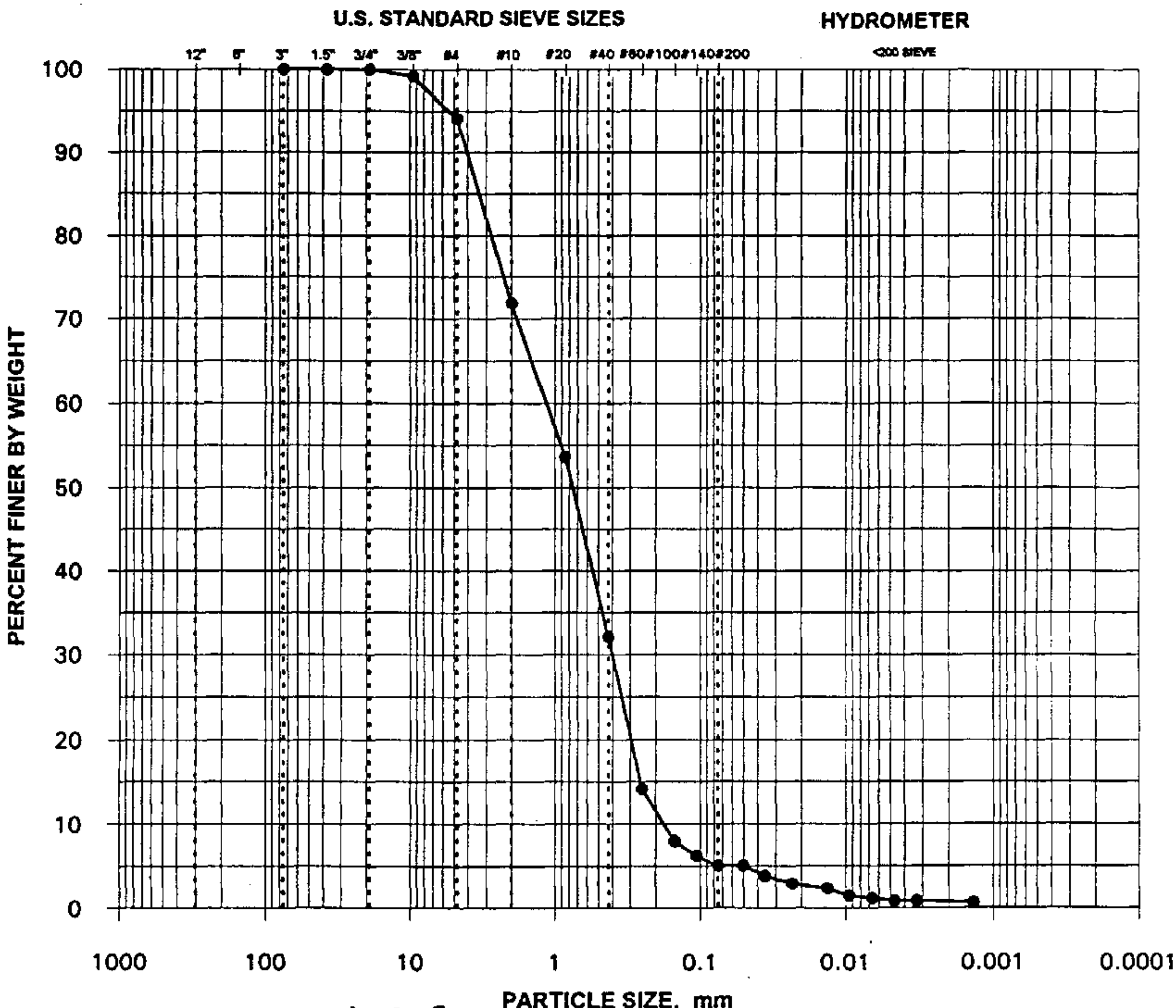
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD0/73~~ 53F

ETDC SAMPLE NO.: ETDC-6158

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name:	HOUSATONIC RIVER	Client Number:	~~AD0478~~ 5-3L
Project Number:	483565.02	ETDC Number:	ETDC-6161

Specific Gravity = 2.6500 Assumed

* Moisture Content = 39.2%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	97.6%
	#4	4.750	96.9%
	#10	2.000	95.9%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	93.6%
	#40	0.425	88.2%
	#60	0.250	74.9%
	#100	0.149	48.4%
	#140	0.106	36.7%
	#200	0.075	28.9%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04690	16.5%
	0.03357	14.7%
	0.02181	10.6%
	0.01307	6.9%
	0.00920	5.5%
	0.00655	4.6%
	0.00467	3.2%
	0.00329	2.3%
	0.00136	1.4%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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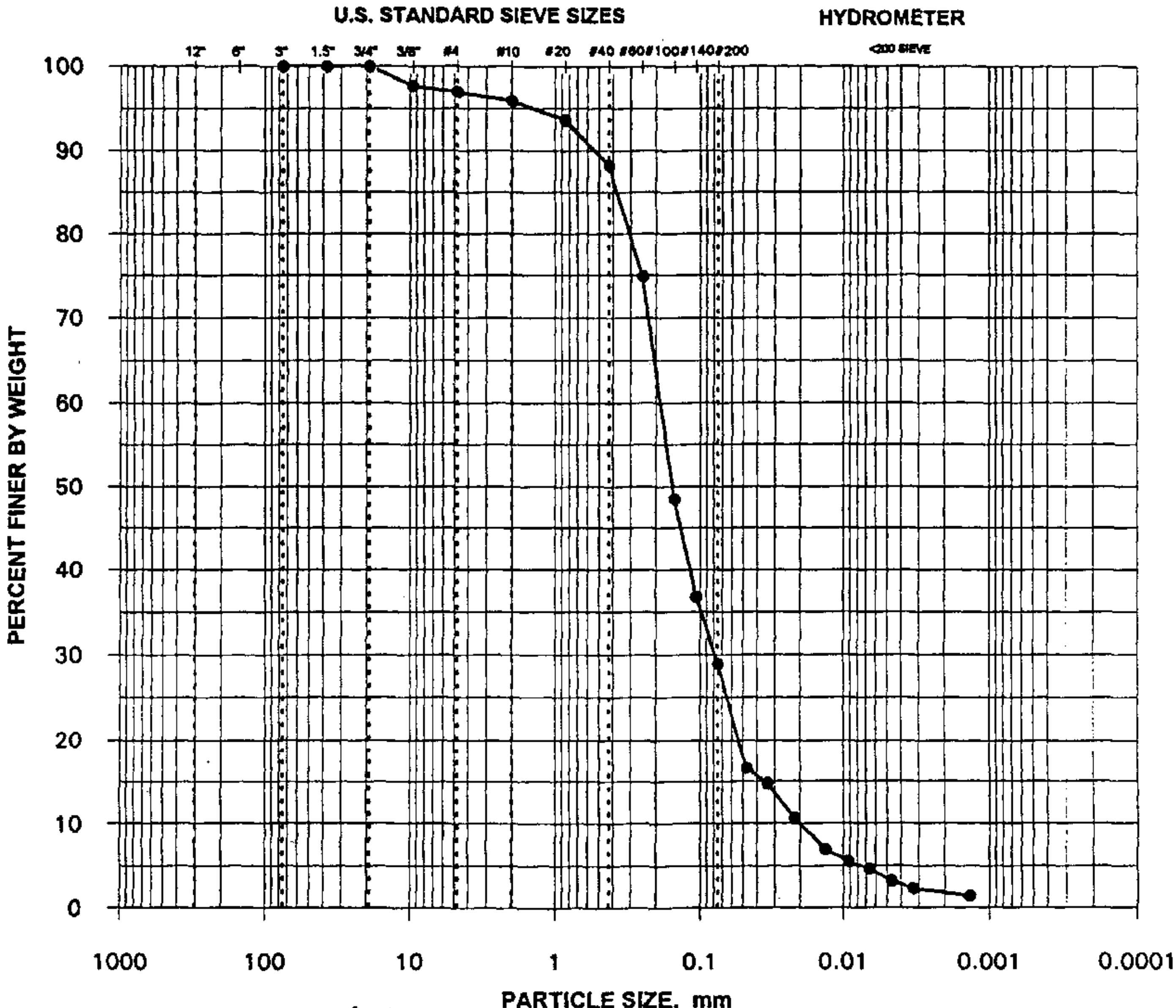
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD0078~~ 53L

ETDC SAMPLE NO.: ETDC-6161

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD1780~~ 5-4B

Project Number: 483565.03

ETDC Number: ETDC-6227

Specific Gravity = 2.6500 Assumed

* Moisture Content = 73.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.9%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.7%
	#40	0.425	99.3%
	#60	0.250	96.9%
	#100	0.149	83.4%
	#140	0.106	70.9%
	#200	0.075	59.4%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04568	44.6%
	0.03337	36.4%
	0.02154	31.0%
	0.01299	21.9%
	0.00924	20.0%
	0.00668	13.7%
	0.00471	10.0%
	0.00329	8.2%
	0.00140	4.6%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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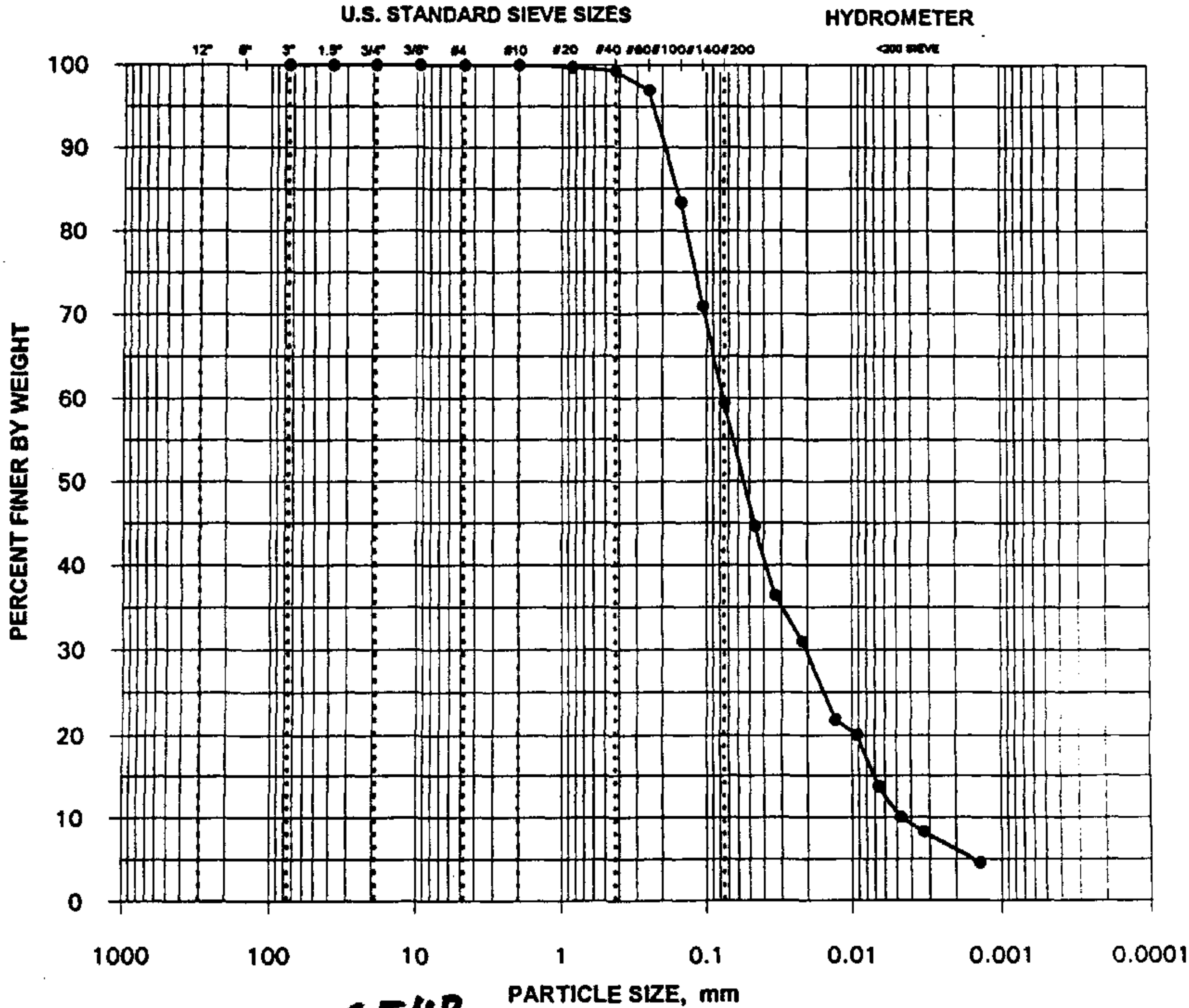
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD1/80~~ 54B

ETDC SAMPLE NO.: ETDC-6227

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD1~~7~~61 54E

Project Number: 483565.03

ETDC Number: ETDC-6228

Specific Gravity = 2.6500 Assumed

* Moisture Content = 46.5%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.8%
	#10	2.000	99.3%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	98.2%
	#40	0.425	89.1%
	#60	0.250	74.9%
	#100	0.149	45.4%
	#140	0.106	31.9%
	#200	0.075	23.1%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04973	17.7%
	0.03591	13.3%
	0.02292	11.4%
	0.01335	9.5%
	0.00947	7.6%
	0.00669	6.3%
	0.00478	4.4%
	0.00332	3.2%
	0.00140	2.5%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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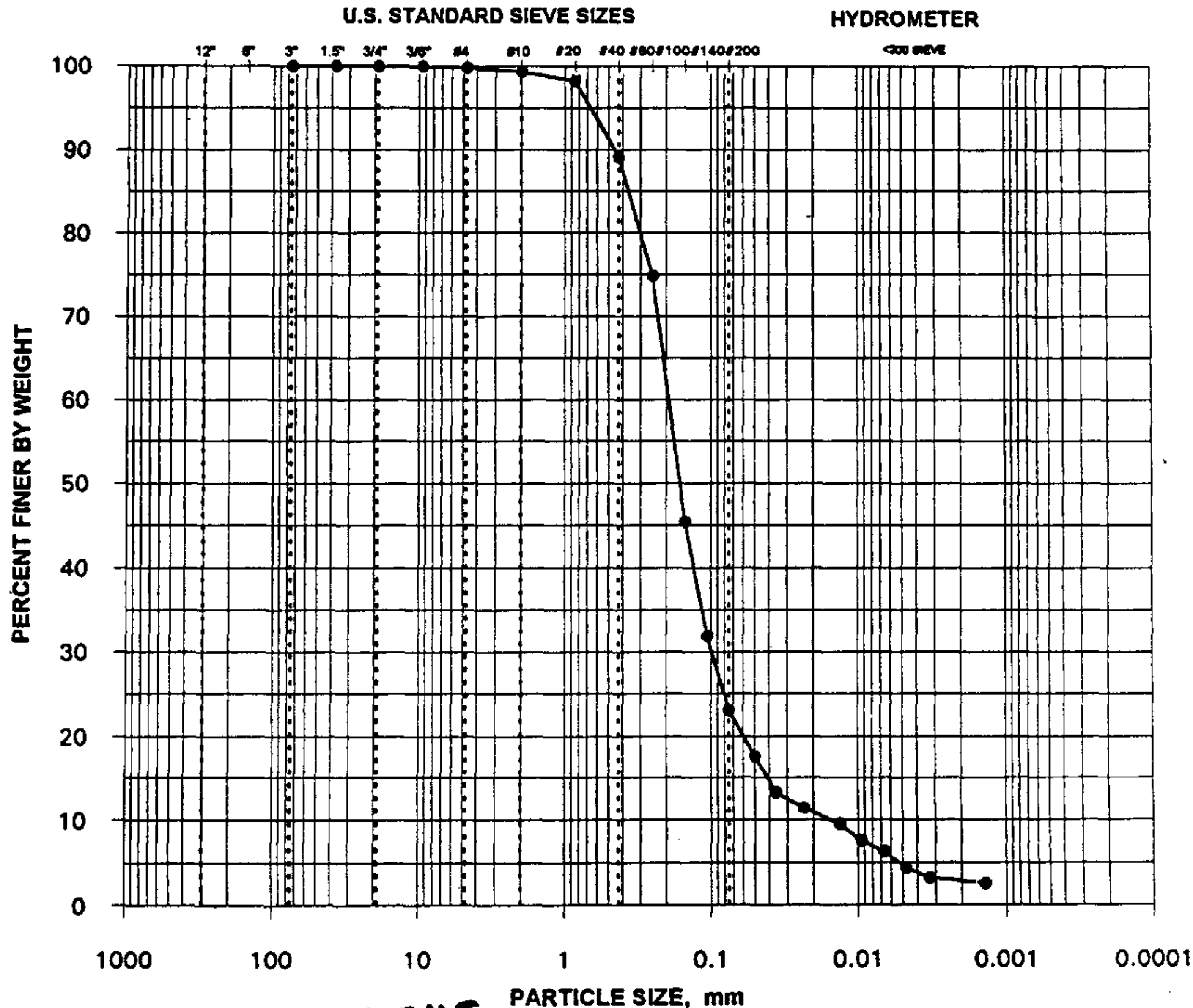
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD1781~~ 5-4E

ETDC SAMPLE NO.: ETDC-6228

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD1~~762~~ 6-1A

Project Number: 483565.03

ETDC Number: ETDC-6229

Specific Gravity = 2.6500 Assumed

* Moisture Content = 93.9%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	100.0%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.5%
	#40	0.425	95.0%
	#60	0.250	87.8%
	#100	0.149	69.8%
	#140	0.106	57.6%
	#200	0.075	48.3%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04728	34.7%
	0.03426	28.5%
	0.02197	24.9%
	0.01309	15.1%
	0.00932	13.4%
	0.00671	8.0%
	0.00478	6.2%
	0.00332	4.5%
	0.00141	3.6%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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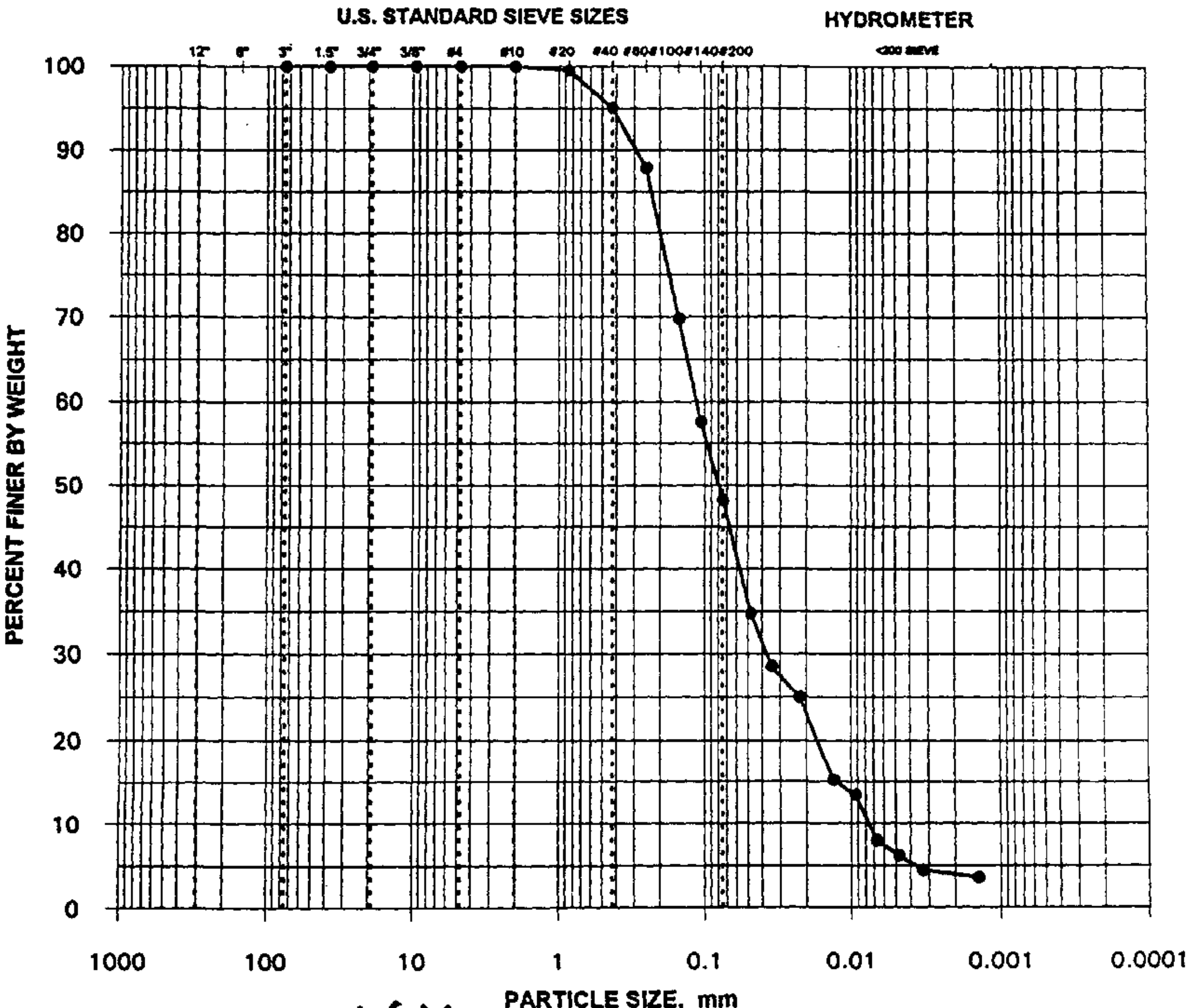
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD~~1782~~ 6-1A

ETDC SAMPLE NO.: ETDC-6229

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD1783~~ 6-1B

Project Number: 483565.03

ETDC Number: ETDC-6230

Specific Gravity =	2.6500 Assumed

* Moisture Content =	68.6%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.9%
	#10	2.000	99.1%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	96.3%
	#40	0.425	86.1%
	#60	0.250	66.5%
	#100	0.149	49.0%
	#140	0.106	41.2%
	#200	0.075	35.3%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04649	27.7%
	0.03371	23.3%
	0.02158	20.8%
	0.01212	13.8%
	0.00924	11.3%
	0.00659	9.4%
	0.00471	6.9%
	0.00331	4.4%
	0.00140	3.1%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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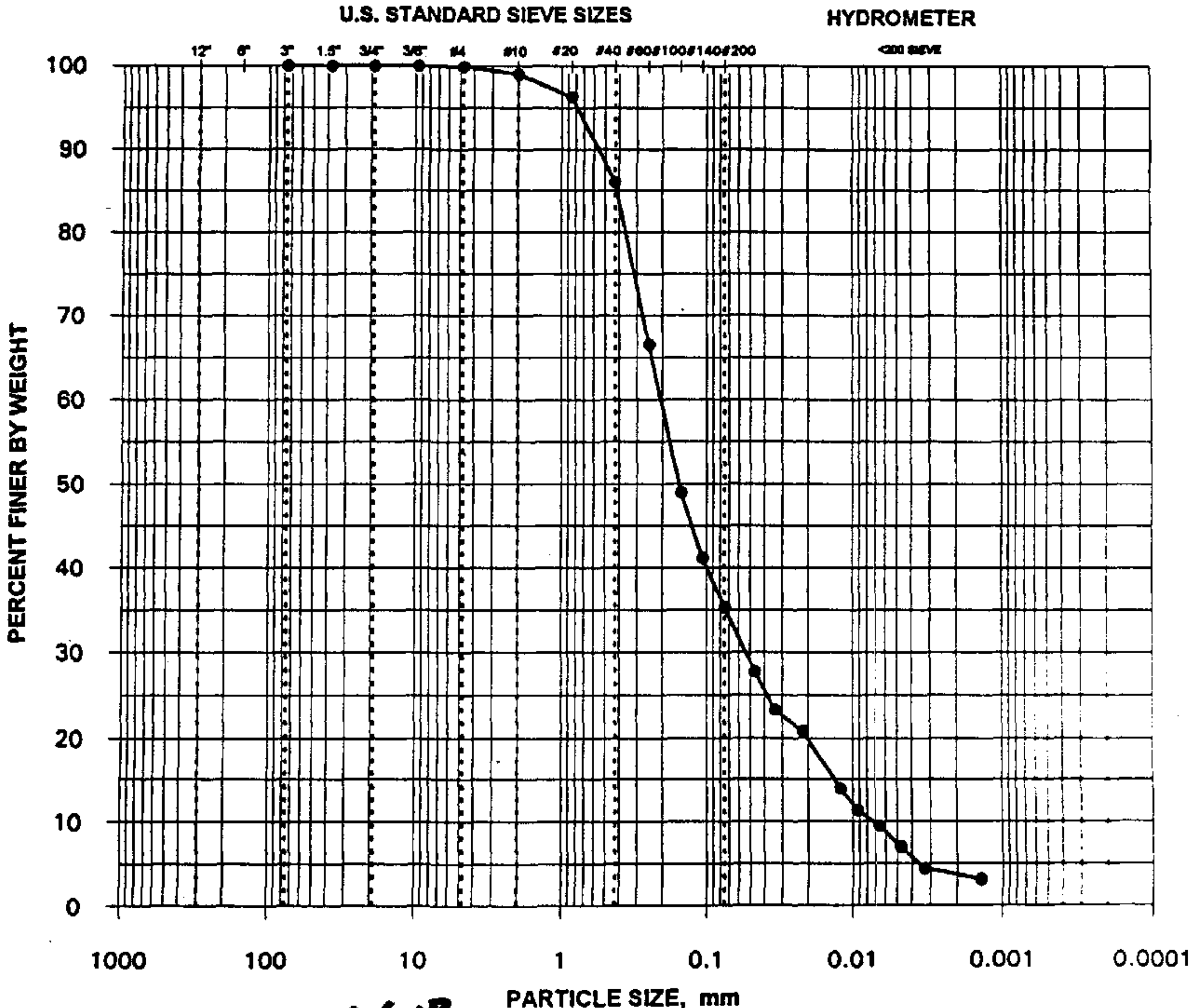
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD1/83 6-1B

ETDC SAMPLE NO.: ETDC-6230

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD1765 6-1C

Project Number: 483565.03

ETDC Number: ETDC-6231

Specific Gravity = 2.6768 Measured

* Moisture Content = 39.8%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.9%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.6%
	#40	0.425	97.8%
	#60	0.250	80.8%
	#100	0.149	38.9%
	#140	0.106	23.6%
	#200	0.075	15.8%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.05052	12.6%
	0.03611	10.0%
	0.02292	8.0%
	0.01337	6.6%
	0.00952	5.3%
	0.00676	4.6%
	0.00479	3.3%
	0.00333	2.7%
	0.00141	2.0%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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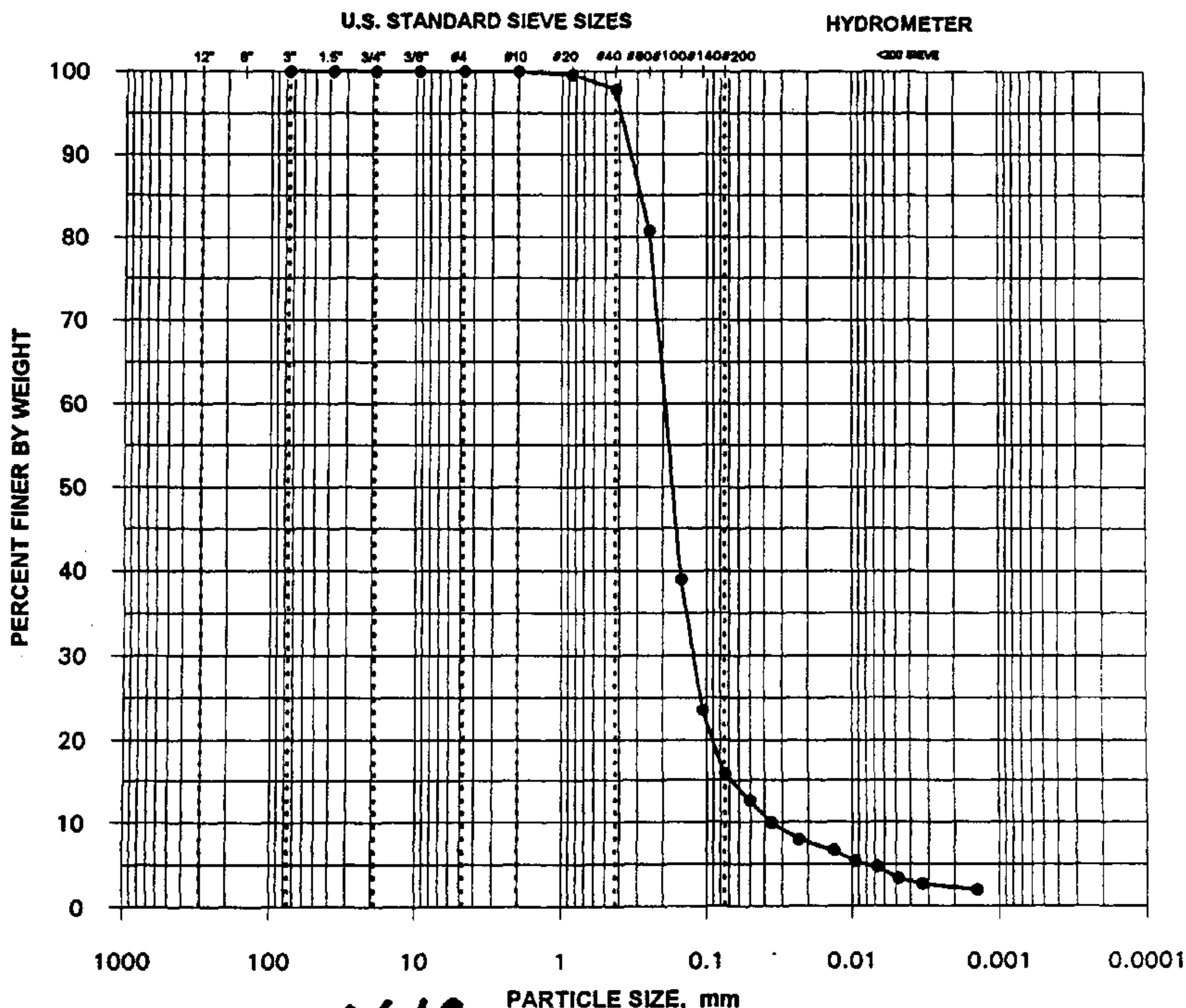
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD1785~~ 61C

ETDC SAMPLE NO.: ETDC-6231

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD~~1600~~ 6-2E

Project Number: 483565.03

ETDC Number: ETDC-6232

Specific Gravity = 2.6500 Assumed

* Moisture Content = 56.0%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.9%
	#4	4.750	99.9%
	#10	2.000	99.8%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	99.0%
	#40	0.425	95.6%
	#60	0.250	79.6%
	#100	0.149	55.5%
	#140	0.106	44.4%
	#200	0.075	34.8%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04766	26.2%
	0.03450	20.7%
	0.02199	18.3%
	0.01291	14.3%
	0.00927	10.3%
	0.00669	7.9%
	0.00478	5.6%
	0.00332	4.8%
	0.00140	4.0%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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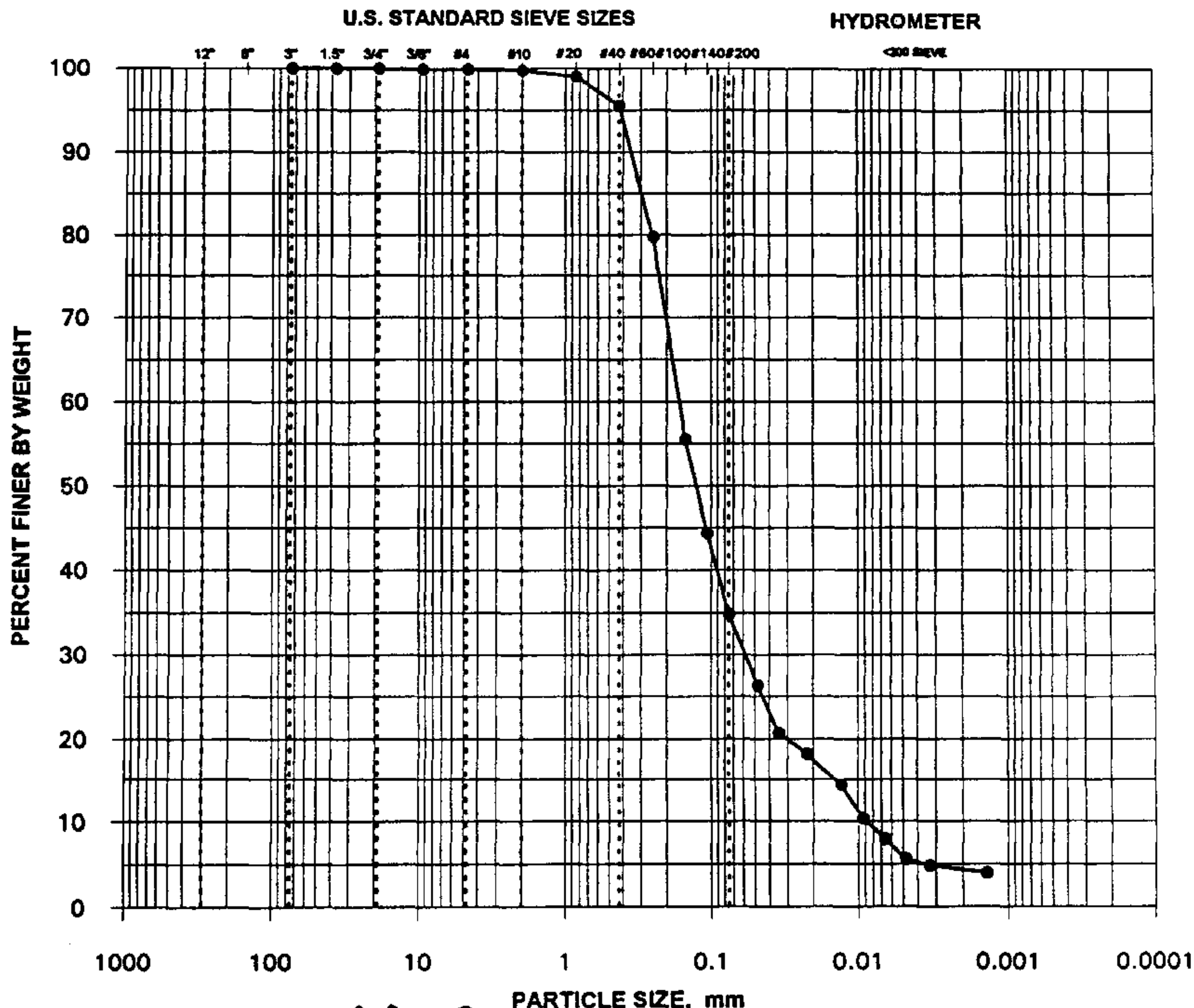
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD~~1500~~ 62E

ETDC SAMPLE NO.: ETDC-6232

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD1601~~ 6-29

Project Number: 483565.03

ETDC Number: ETDC-6233

Specific Gravity = 2.6866 Measured

* Moisture Content = 24.0%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.7%
	#4	4.750	99.4%
	#10	2.000	97.6%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	89.3%
	#40	0.425	62.4%
	#60	0.250	37.8%
	#100	0.149	22.8%
	#140	0.106	16.5%
	#200	0.075	12.1%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04934	9.6%
	0.03541	7.4%
	0.02272	5.7%
	0.01321	4.3%
	0.00949	3.9%
	0.00676	3.0%
	0.00479	2.6%
	0.00332	2.2%
	0.00140	1.7%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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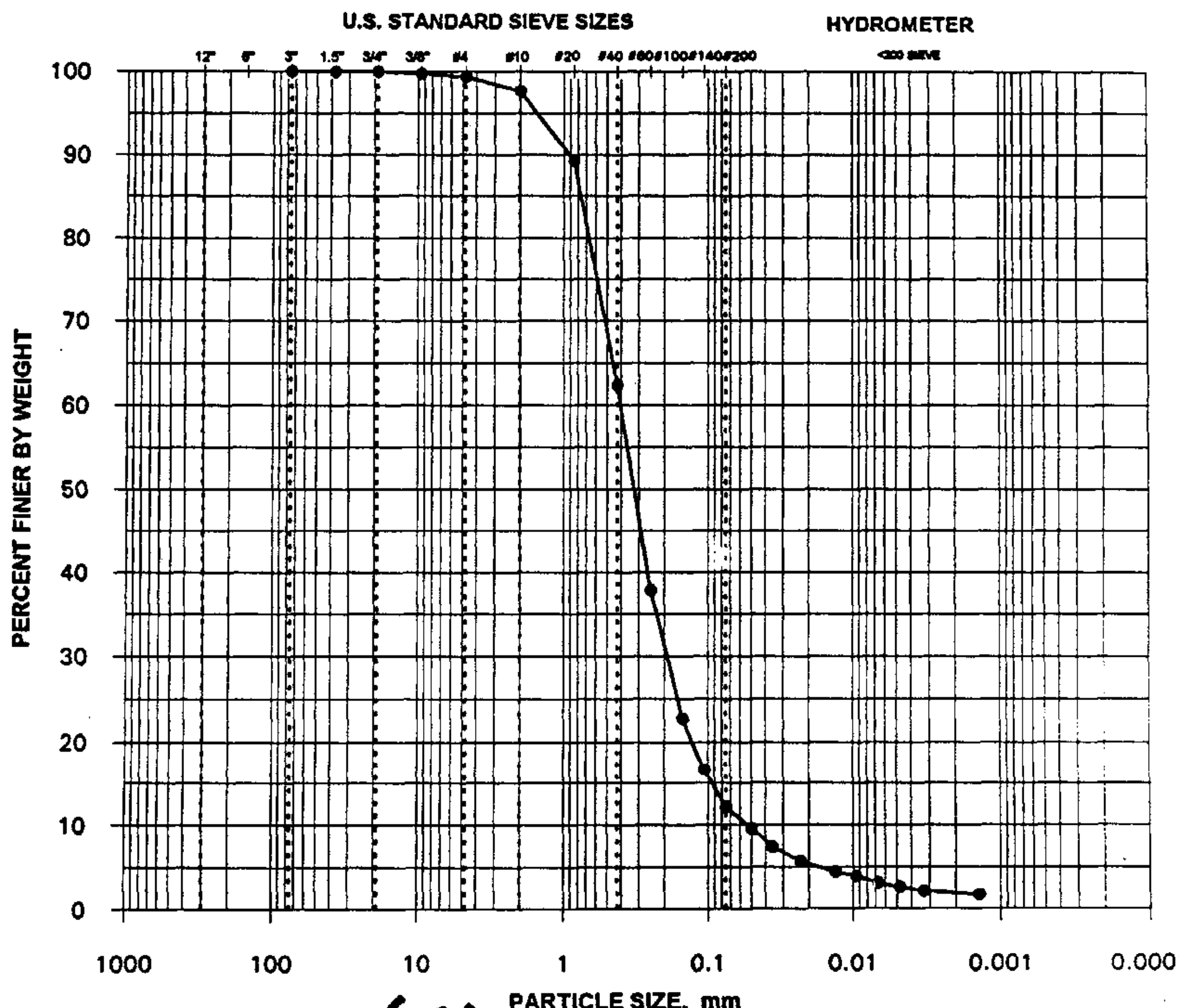
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD1601 6-24

ETDC SAMPLE NO.: ETDC-6233

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD~~1802~~ 6-2N

Project Number: 483565.03

ETDC Number: ETDC-6234

Specific Gravity = 2.6500 Assumed

* Moisture Content = 114.1%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.8%
	#10	2.000	99.3%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	98.1%
	#40	0.425	96.6%
	#60	0.250	92.9%
	#100	0.149	78.3%
	#140	0.106	65.0%
	#200	0.075	52.8%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04295	42.6%
	0.03157	36.1%
	0.02070	29.7%
	0.01241	23.2%
	0.00897	18.7%
	0.00652	12.9%
	0.00470	9.0%
	0.00329	6.4%
	0.00138	3.9%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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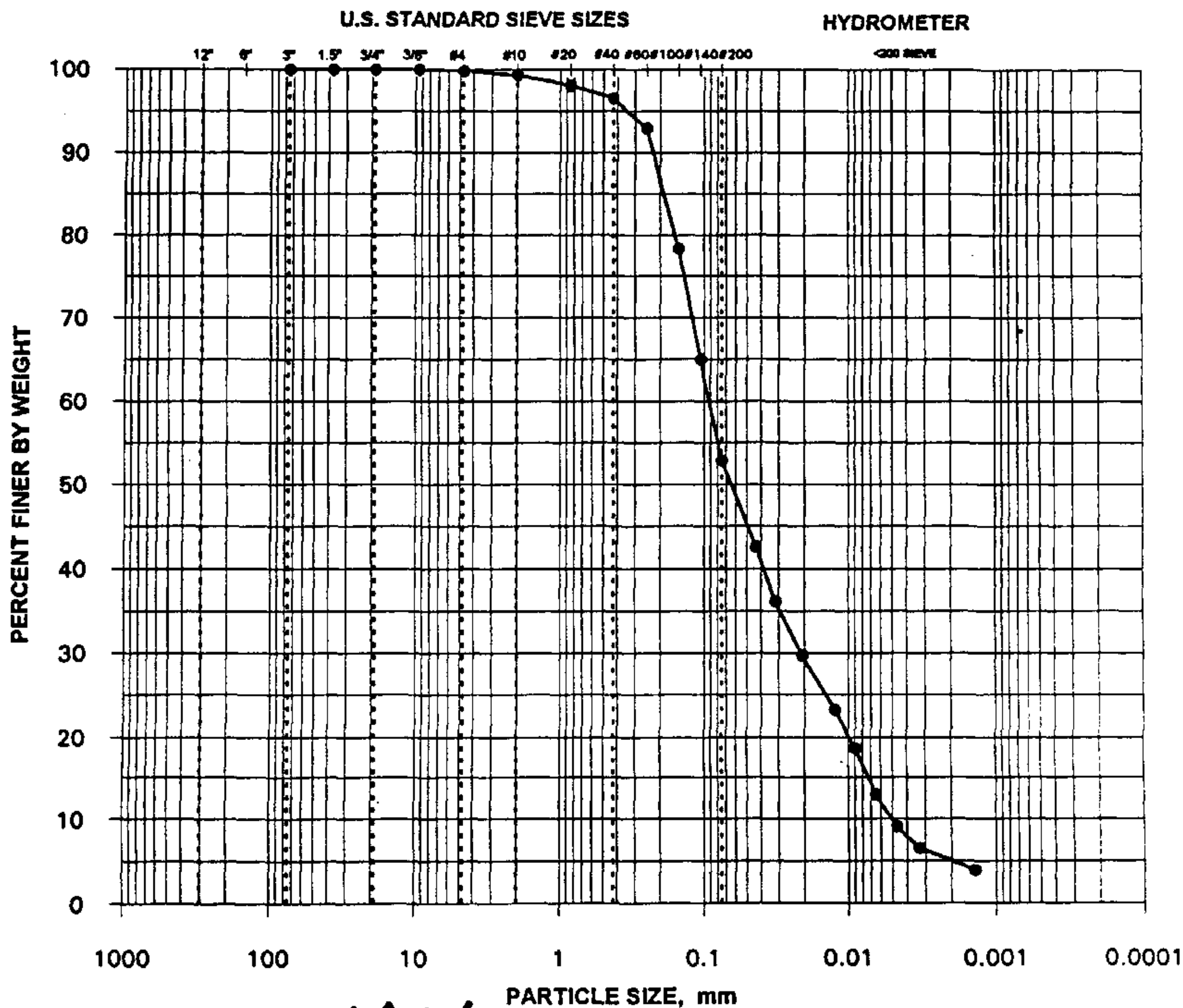
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD1602~~ 6-2N

ETDC SAMPLE NO.: ETDC-6234

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

IT ENVIRONMENTAL TECHNOLOGY
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OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD1803 6-3B

Project Number: 483565.03

ETDC Number: ETDC-6235

Specific Gravity = 2.6500 Assumed

* Moisture Content = 110.6%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.9%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	99.1%
	#40	0.425	97.7%
	#60	0.250	92.6%
	#100	0.149	85.9%
	#140	0.106	79.7%
	#200	0.075	73.8%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04072	61.4%
	0.02998	54.3%
	0.02006	43.3%
	0.01221	31.5%
	0.00888	25.2%
	0.00643	18.9%
	0.00463	14.2%
	0.00324	10.2%
	0.00138	6.3%

*DRY SAMPLE BASIS

Ken Mueller
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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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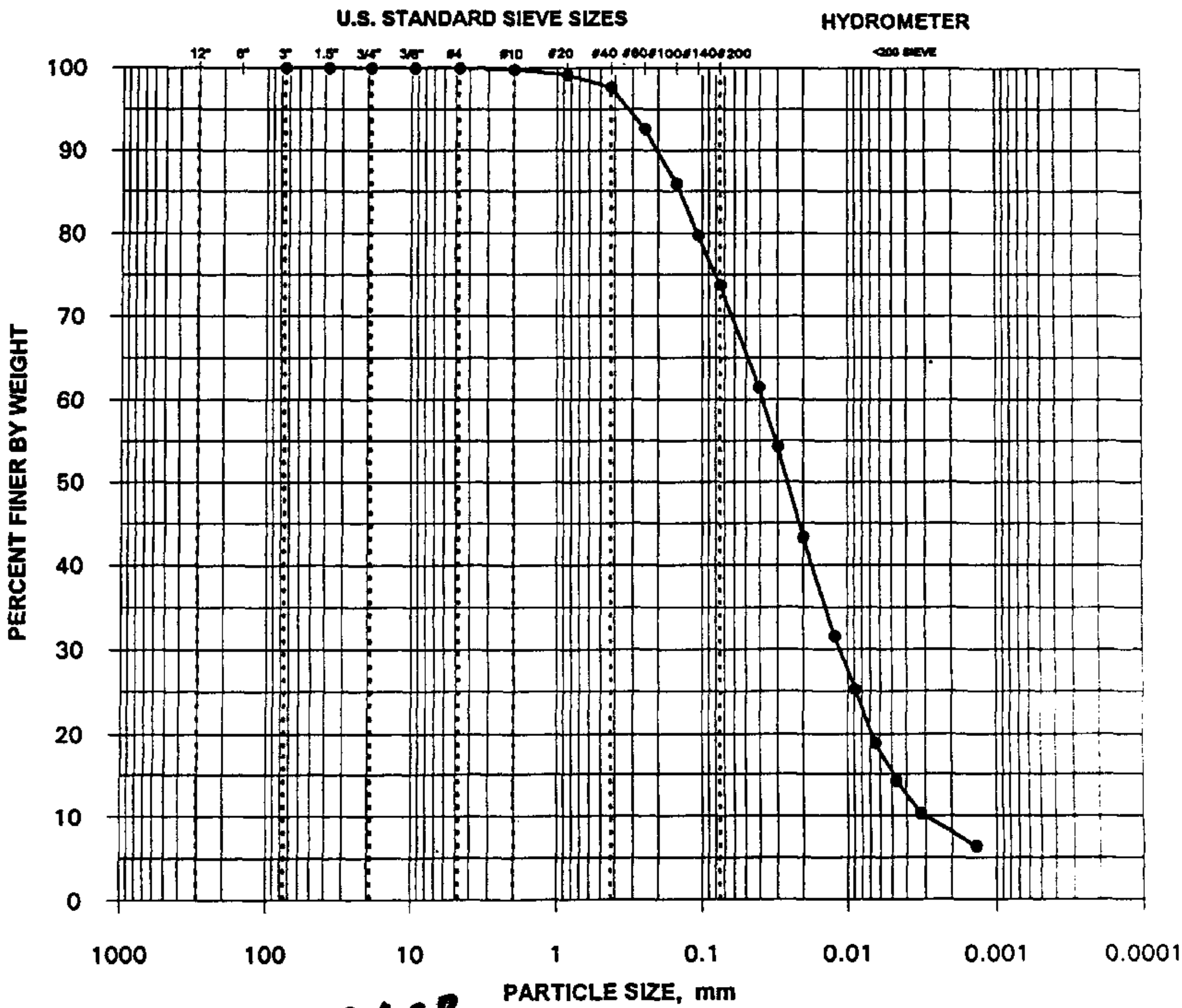
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD~~1603~~ 6-3B

ETDC SAMPLE NO.: ETDC-6235

BOULDERS
COBBLES
GRAVEL: COARSE, FINE
SAND: COARSE, MEDIUM, FINE
SILT 2 - 75 microns
CLAY <2 microns

Ken Mueller
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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD1604~~ 6-3H

Project Number: 483565.03

ETDC Number: ETDC-6236

Specific Gravity = 2.6500 Assumed

* Moisture Content = 80.3%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.8%
	#4	4.750	99.6%
	#10	2.000	99.5%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.1%
	#40	0.425	98.3%
	#60	0.250	96.4%
	#100	0.149	81.0%
	#140	0.106	62.7%
	#200	0.075	46.7%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04568	33.0%
	0.03330	27.7%
	0.01824	22.5%
	0.01271	18.5%
	0.00909	15.8%
	0.00655	11.9%
	0.00468	9.9%
	0.00329	6.6%
	0.00138	4.0%

*DRY SAMPLE BASIS

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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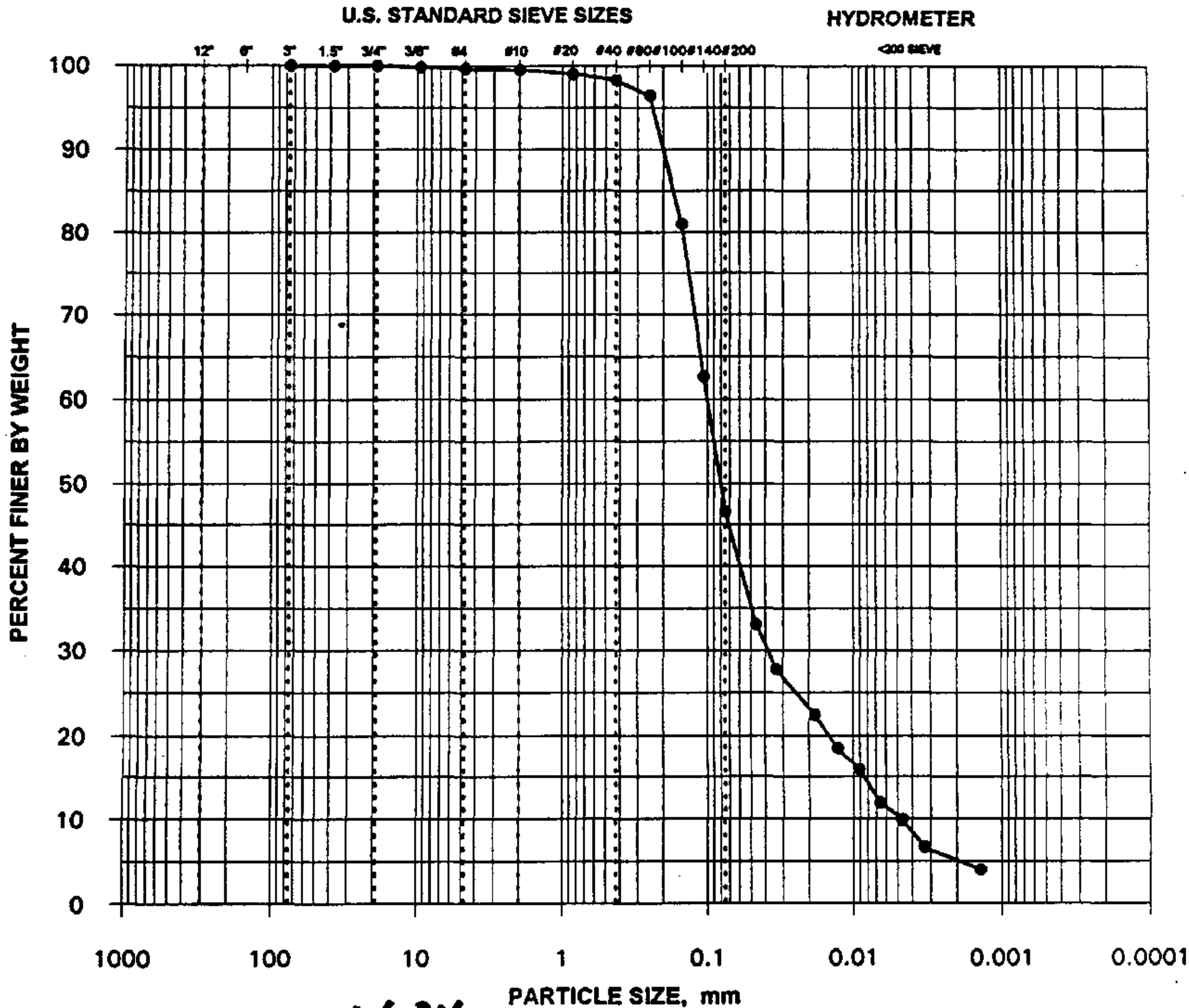
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD1~~004~~ 6-3H

ETDC SAMPLE NO.: ETDC-6236

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

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Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD1806 6-3 I

Project Number: 483565.03

ETDC Number: ETDC-6238

Specific Gravity = 2.6500 Assumed

* Moisture Content = 117.9%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	99.6%
	#4	4.750	99.5%
	#10	2.000	99.4%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.1%
	#40	0.425	98.4%
	#60	0.250	96.4%
	#100	0.149	84.4%
	#140	0.106	71.5%
	#200	0.075	58.6%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04229	41.1%
	0.03113	35.3%
	0.02043	29.4%
	0.01246	20.0%
	0.00902	15.9%
	0.00652	11.8%
	0.00470	8.2%
	0.00329	5.9%
	0.00138	3.5%

*DRY SAMPLE BASIS

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Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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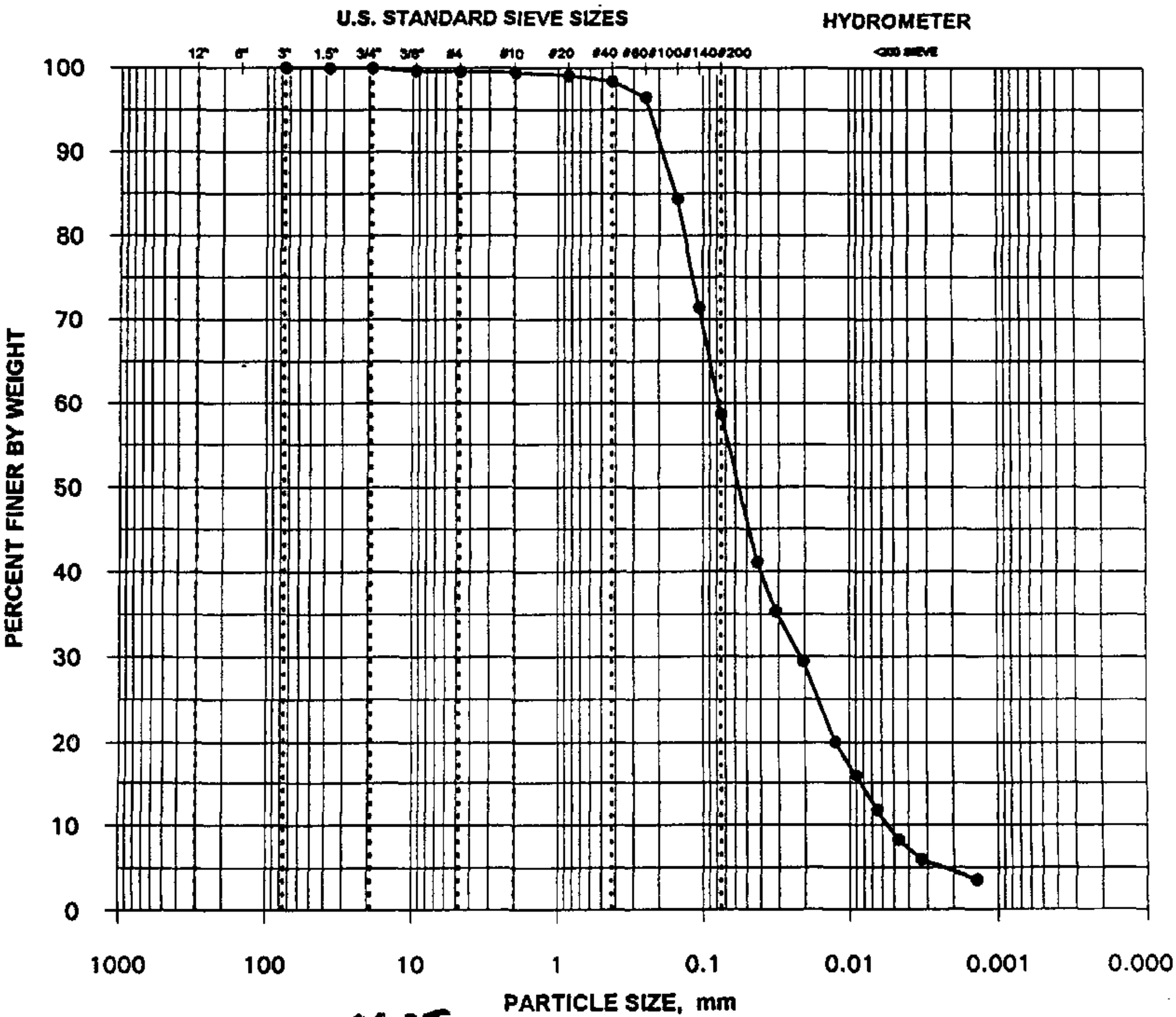
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD1606 6-3I

ETDC SAMPLE NO.: ETDC-6238

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

682A 6-93

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Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name:	HOUSATONIC RIVER	Client Number:	AD1805 6-3J
Project Number:	483565.03	ETDC Number:	ETDC-6237

Specific Gravity = 2.6927 Measured

* Moisture Content = 27.4%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	95.3%
	#4	4.750	91.1%
	#10	2.000	86.9%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	77.0%
	#40	0.425	54.4%
	#60	0.250	37.0%
	#100	0.149	24.4%
	#140	0.106	18.1%
	#200	0.075	13.4%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04978	10.9%
	0.03579	8.6%
	0.02292	6.8%
	0.01333	5.4%
	0.00946	5.0%
	0.00676	3.6%
	0.00479	3.2%
	0.00328	2.3%
	0.00141	2.3%

*DRY SAMPLE BASIS

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Quanterra
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Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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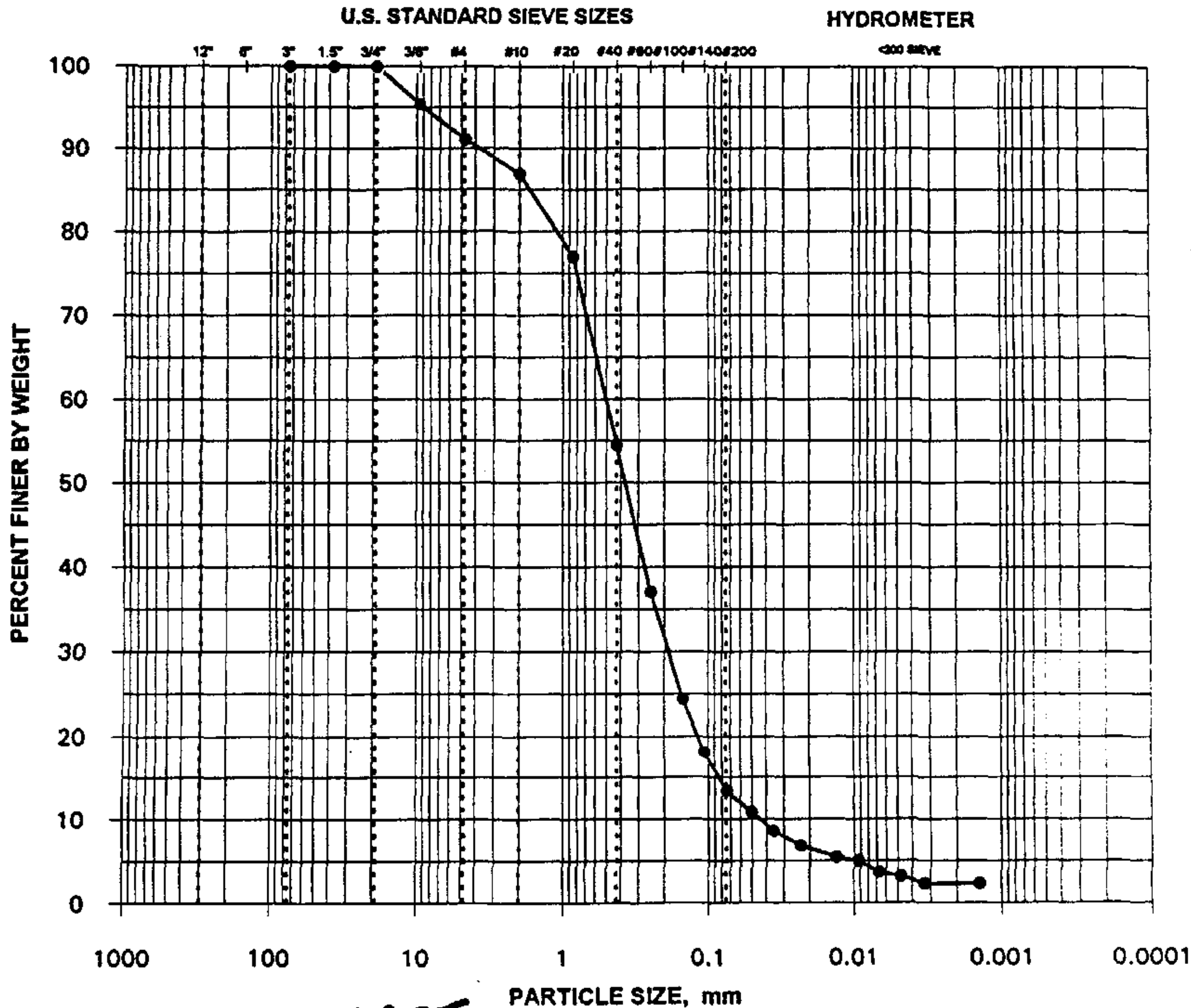
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD1005 6-35

ETDC SAMPLE NO.: ETDC-6237

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

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Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD1~~867~~ 7-1A

Project Number: 483565.03

ETDC Number: ETDC-6239

Specific Gravity = 2.6500 Assumed

* Moisture Content = 78.2%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.9%
	#10	2.000	99.8%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.6%
	#40	0.425	99.2%
	#60	0.250	98.4%
	#100	0.149	94.0%
	#140	0.106	88.0%
	#200	0.075	78.2%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04185	56.3%
	0.03083	48.5%
	0.02043	39.1%
	0.01241	28.2%
	0.00897	22.7%
	0.00647	17.2%
	0.00463	14.1%
	0.00324	10.2%
	0.00138	6.3%

*DRY SAMPLE BASIS

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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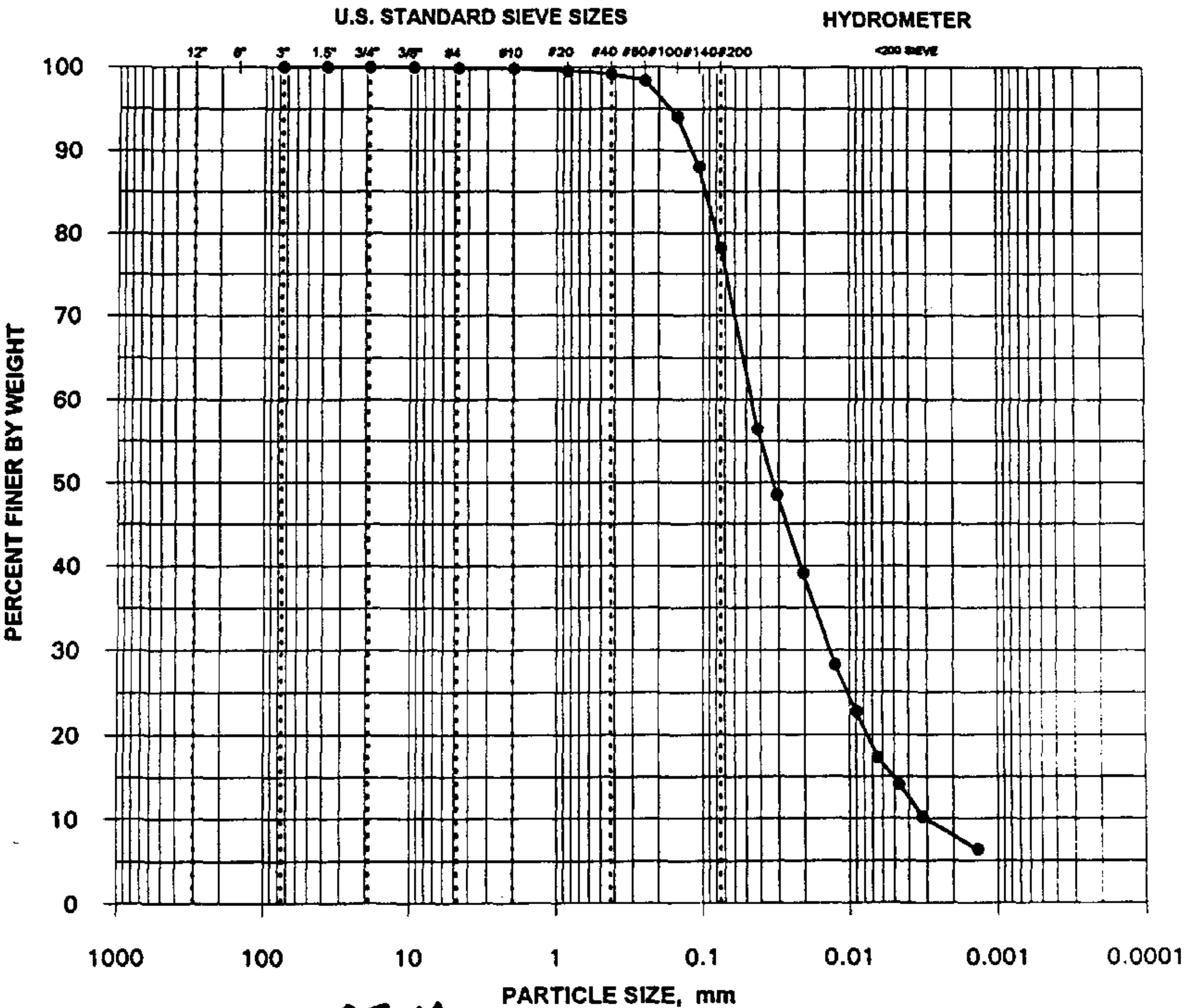
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD1607~~ 7-1A

ETDC SAMPLE NO.: ETDC-6239

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD~~1908~~ 7-1B

Project Number: 483565.03

ETDC Number: ETDC-6240

Specific Gravity = 2.6500 Assumed

* Moisture Content = 120.3%

SIEVE ANALYSIS

COARSE Sieve No.	Diameter mm	Percent Finer
3"	75.000	100.0%
1.5"	37.500	100.0%
0.75"	19.000	100.0%
0.375"	9.500	100.0%
#4	4.750	100.0%
#10	2.000	100.0%

FINE Sieve No.	Diameter mm	Percent Finer
#20	0.850	99.9%
#40	0.425	99.4%
#60	0.250	98.7%
#100	0.149	93.9%
#140	0.106	86.3%
#200	0.075	76.4%

HYDROMETER ANALYSIS

HYDROMETER Diameter mm	Percent Finer
0.04003	59.7%
0.02991	51.0%
0.01987	42.2%
0.01218	29.9%
0.00888	23.3%
0.00643	17.5%
0.00463	13.1%
0.00324	9.5%
0.00138	5.1%

*DRY SAMPLE BASIS

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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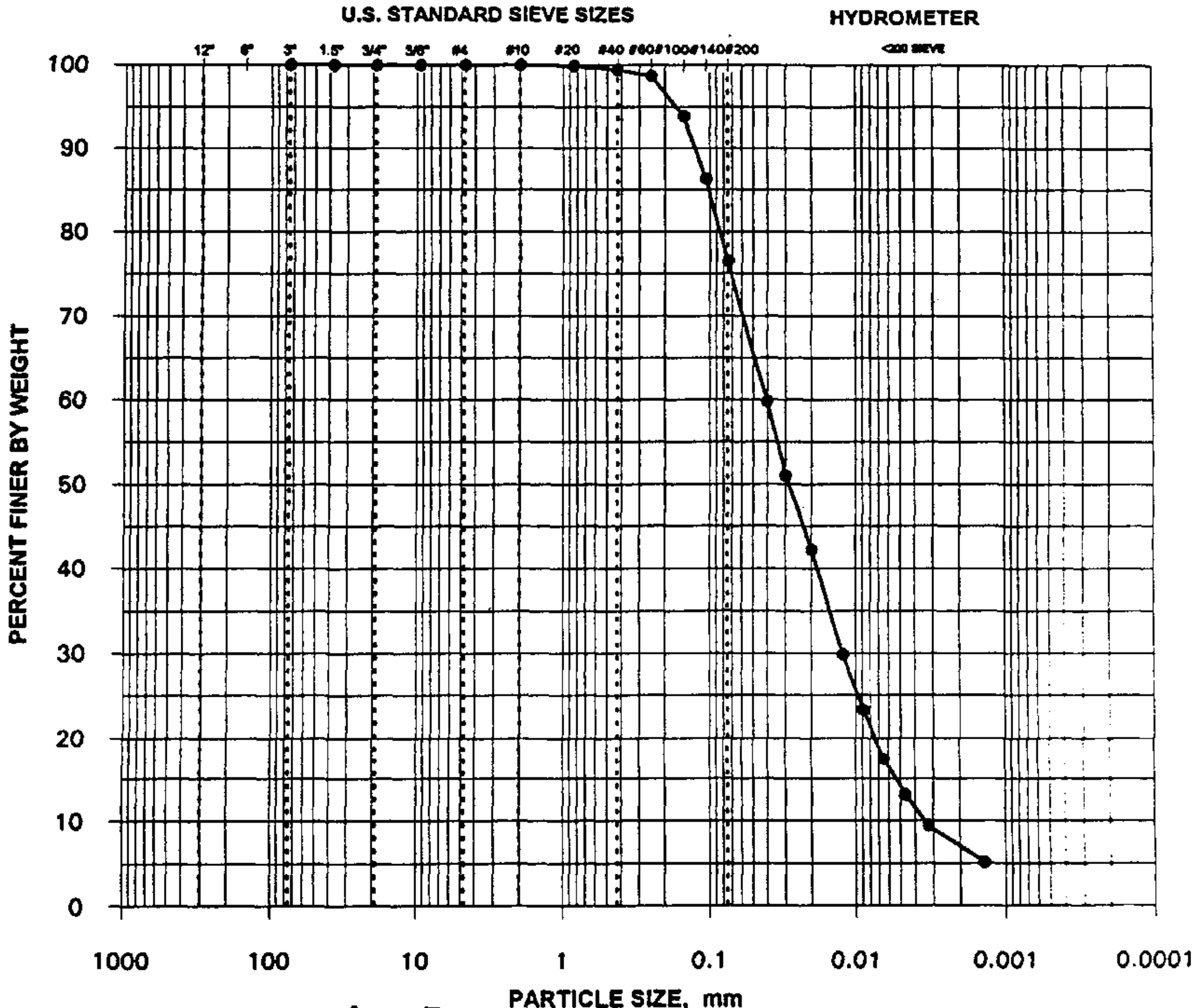
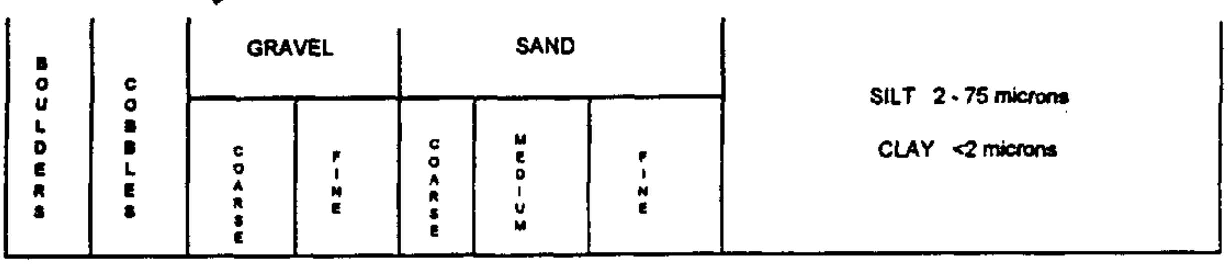
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD1608~~ 7-1B

ETDC SAMPLE NO.: ETDC-6240



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Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD1609~~ 7-1F

Project Number: 483565.03

ETDC Number: ETDC-6241

Specific Gravity = 2.6500 Assumed

* Moisture Content = 191.1%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	100.0%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	99.9%
	#40	0.425	99.6%
	#60	0.250	99.1%
	#100	0.149	97.7%
	#140	0.106	95.5%
	#200	0.075	91.0%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.03763	74.9%
	0.02831	65.4%
	0.01921	52.6%
	0.01193	37.5%
	0.00874	29.5%
	0.00638	21.5%
	0.00461	15.9%
	0.00325	11.2%
	0.00138	6.4%

*DRY SAMPLE BASIS

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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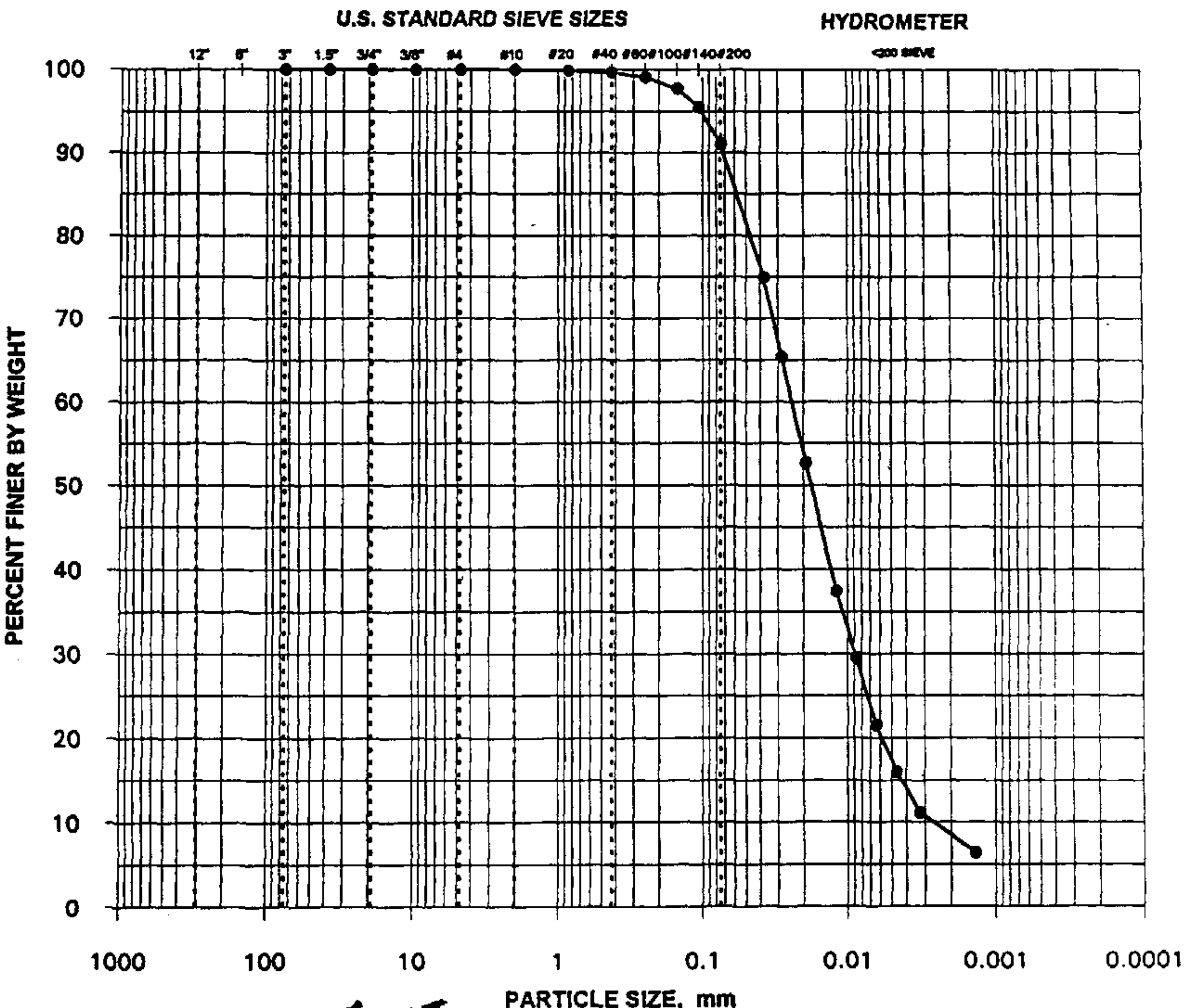

CLIENT SAMPLE NO.: AD~~1609~~ 71F

ETDC SAMPLE NO.: ETDC-6241

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD2050~~ 7-1H

Project Number: 483565.03

ETDC Number: ETDC-6223

Specific Gravity = 2.6500 Assumed

* Moisture Content = 430.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.8%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	80.6%
	#40	0.425	68.9%
	#60	0.250	62.0%
	#100	0.149	55.2%
	#140	0.106	51.6%
	#200	0.075	48.5%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04308	43.4%
	0.03144	37.5%
	0.02040	31.5%
	0.01206	24.0%
	0.00869	18.7%
	0.00628	13.5%
	0.00446	11.2%
	0.00315	7.5%
	0.00132	5.2%

*DRY SAMPLE BASIS

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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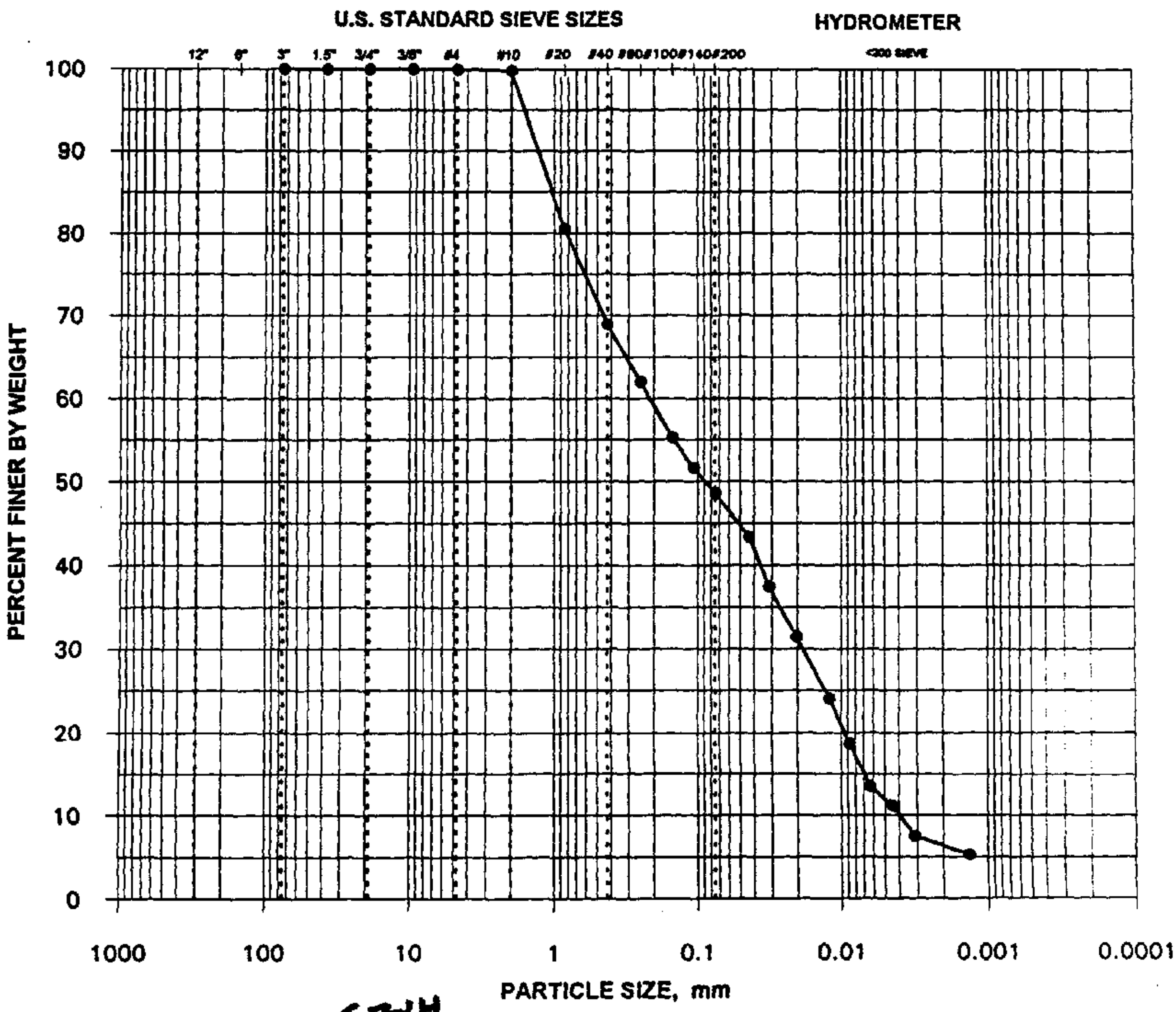
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2950~~ 7-1H

ETDC SAMPLE NO.: ETDC-6223

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CLAY <2 microns</td></tr>
<tr><td>COARSE</td><td>FINE</td><td>COARSE</td><td>MEDIUM</td><td>FINE</td></tr>
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Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD~~2048~~ 7-1J

Project Number: 483565.03

ETDC Number: ETDC-6222

Specific Gravity = 2.6500 Assumed

* Moisture Content = 196.5%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	100.0%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.9%
	#40	0.425	99.5%
	#60	0.250	98.6%
	#100	0.149	96.6%
	#140	0.106	94.5%
	#200	0.075	91.3%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.03725	78.3%
	0.02778	68.8%
	0.01872	56.8%
	0.01154	38.7%
	0.00846	29.2%
	0.00615	21.5%
	0.00443	16.3%
	0.00312	11.2%
	0.00132	6.9%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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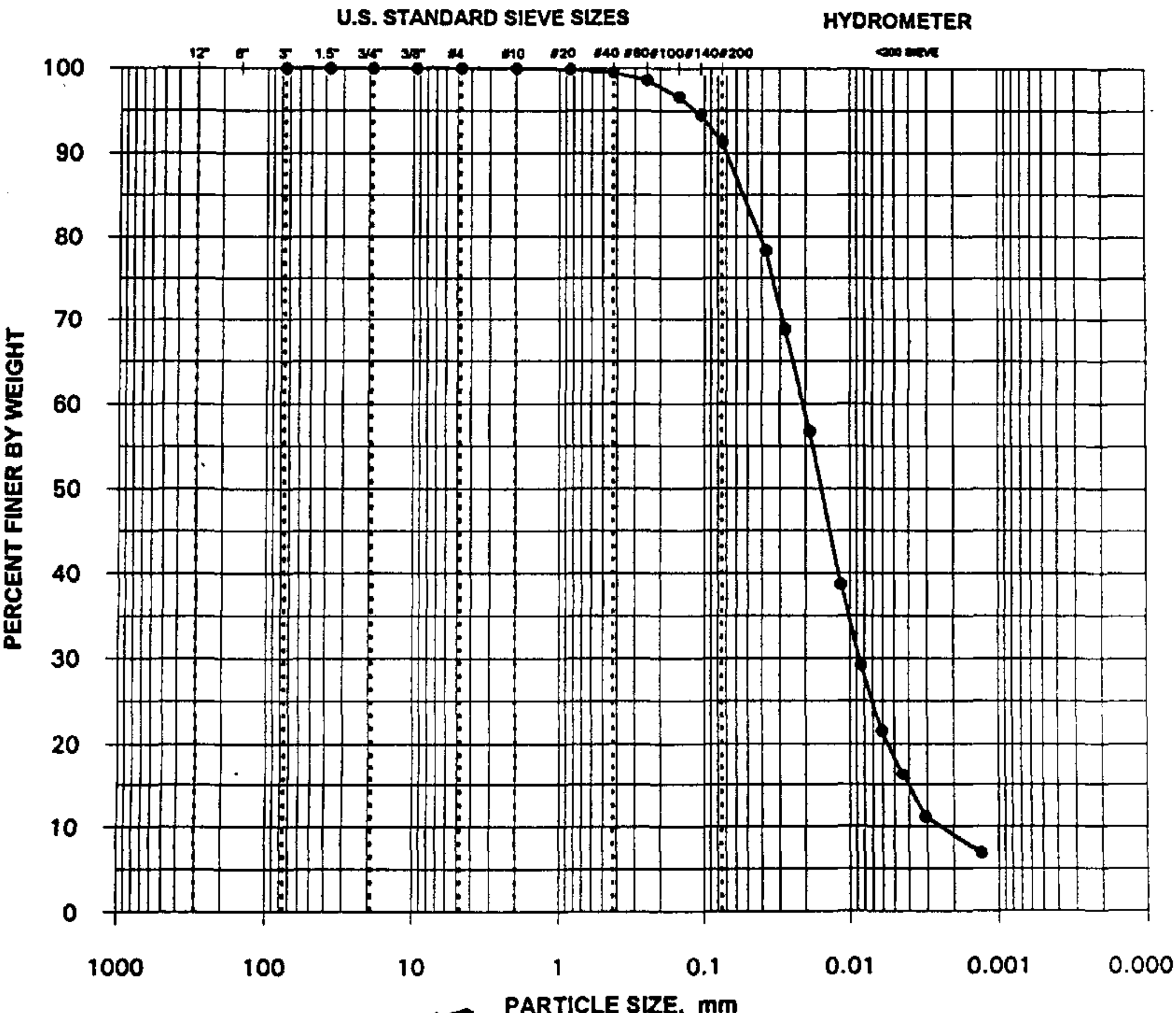
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2048~~ 7-15

ETDC SAMPLE NO.: ETDC-6222

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD2043~~ 7-1K

Project Number: 483565.03

ETDC Number: ETDC-6220

Specific Gravity = 2.6500 Assumed

* Moisture Content = 49.2%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.7%
	#10	2.000	99.4%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	98.1%
	#40	0.425	88.7%
	#60	0.250	64.1%
	#100	0.149	37.6%
	#140	0.106	27.1%
	#200	0.075	19.8%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04839	14.5%
	0.03484	10.9%
	0.02219	9.7%
	0.01279	7.3%
	0.00911	6.0%
	0.00646	4.8%
	0.00458	4.2%
	0.00320	3.0%
	0.00134	2.4%

*DRY SAMPLE BASIS

Ken Mueller
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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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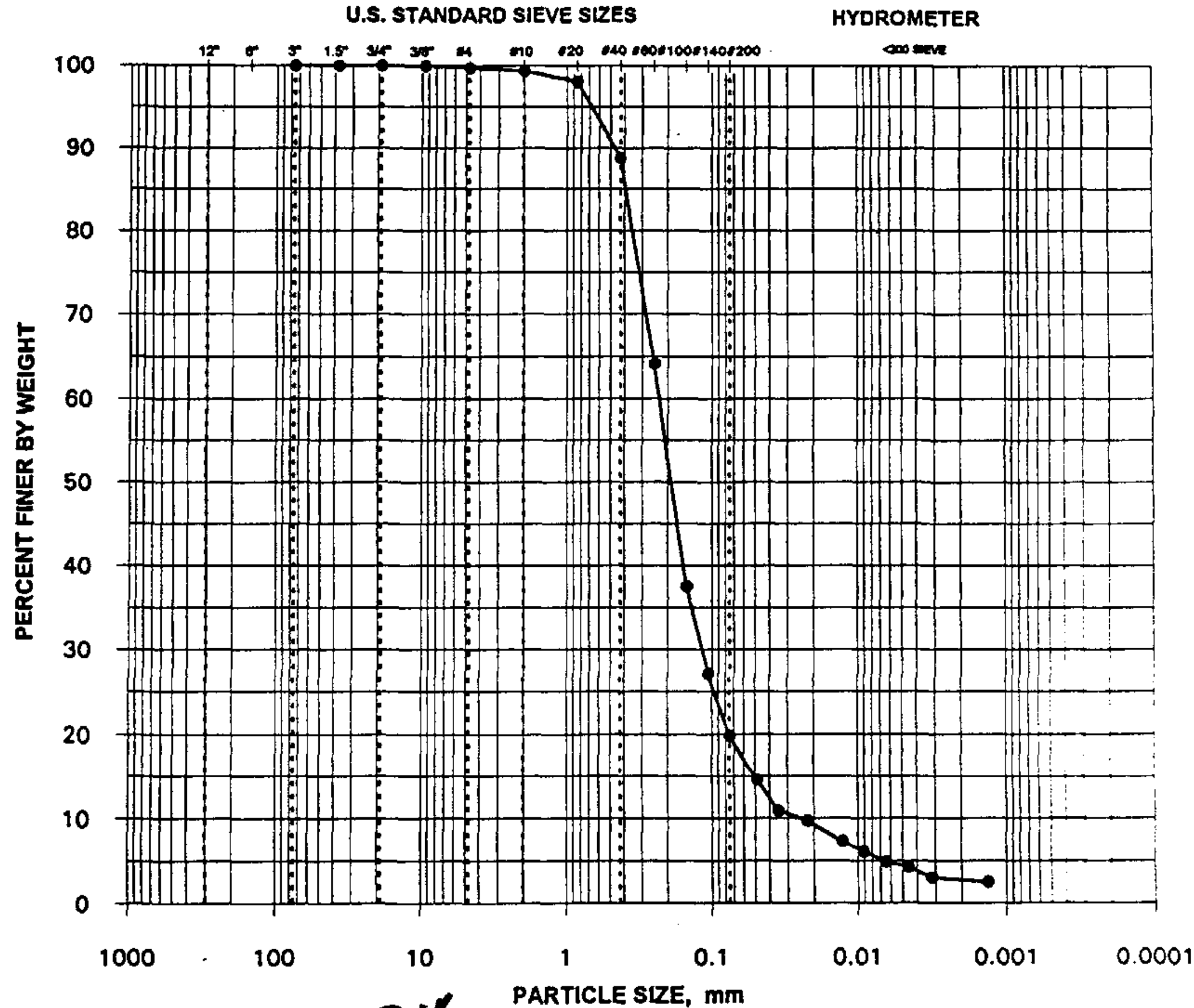
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2043~~ 7-1K

ETDC SAMPLE NO.: ETDC-6220

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD2046~~ 7-1M

Project Number: 483565.03

ETDC Number: ETDC-6221

Specific Gravity = 2.6500 Assumed

* Moisture Content = 23.8%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	97.3%
	#4	4.750	95.0%
	#10	2.000	92.5%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	76.1%
	#40	0.425	42.0%
	#60	0.250	17.1%
	#100	0.149	9.8%
	#140	0.106	7.8%
	#200	0.075	6.7%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04980	5.8%
	0.03546	5.0%
	0.02250	4.6%
	0.01290	3.7%
	0.00917	2.9%
	0.00651	2.5%
	0.00462	2.1%
	0.00321	1.7%
	0.00134	1.2%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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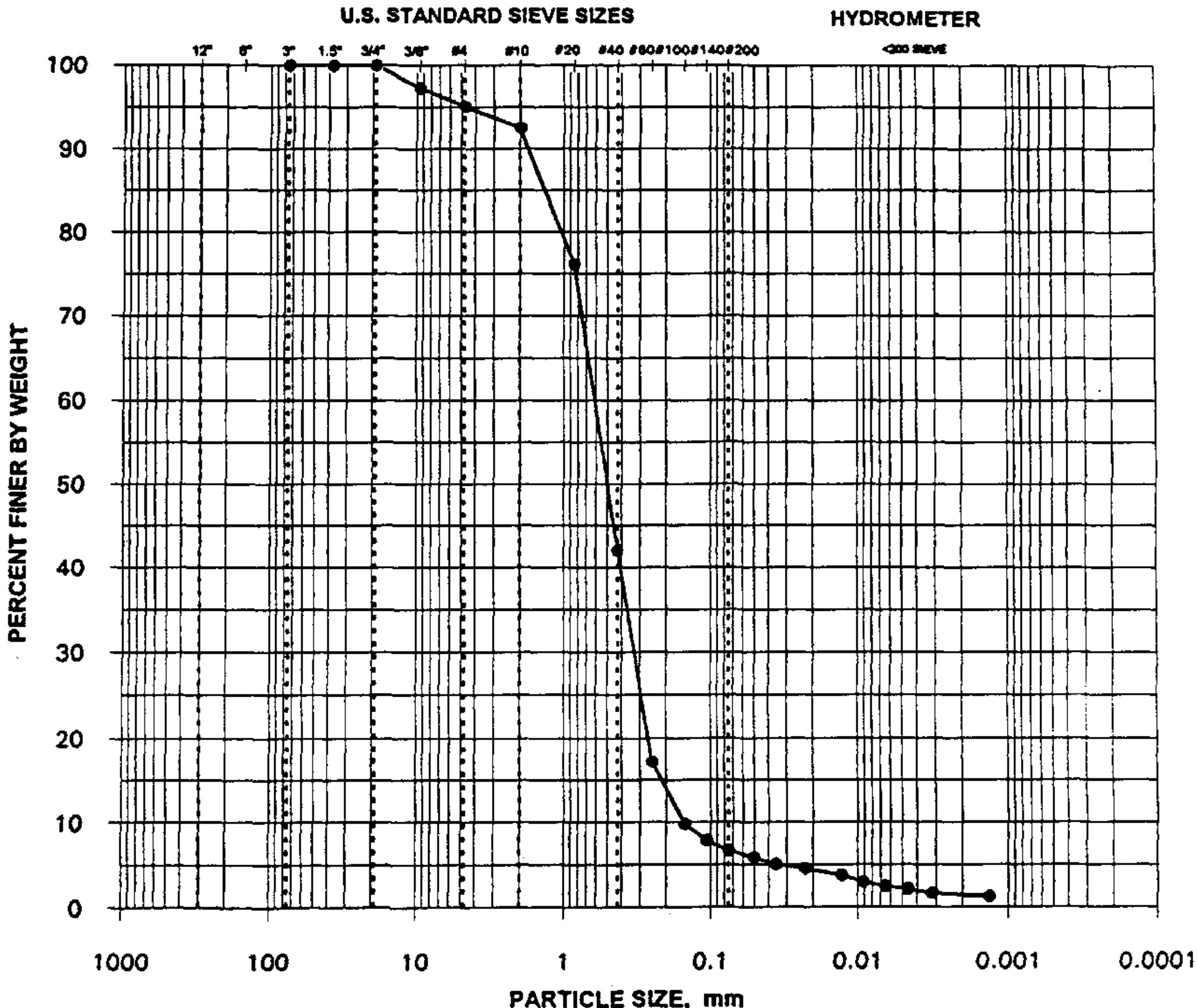
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2016~~ 7-1M

ETDC SAMPLE NO.: ETDC-6221

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD2962~~ 7-1N

Project Number: 483565.04

ETDC Number: ETDC-6248

Specific Gravity = 2.0947
Measured

* Moisture Content = 555.7%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	93.9%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	80.6%
	#40	0.425	62.2%
	#60	0.250	53.4%
	#100	0.149	43.8%
	#140	0.106	37.6%
	#200	0.075	32.0%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.03946	28.3%
	0.02536	24.9%
	0.01491	16.6%
	0.01077	10.0%
	0.00772	6.6%
	0.00548	5.0%
	0.00382	3.3%
	0.00161	3.3%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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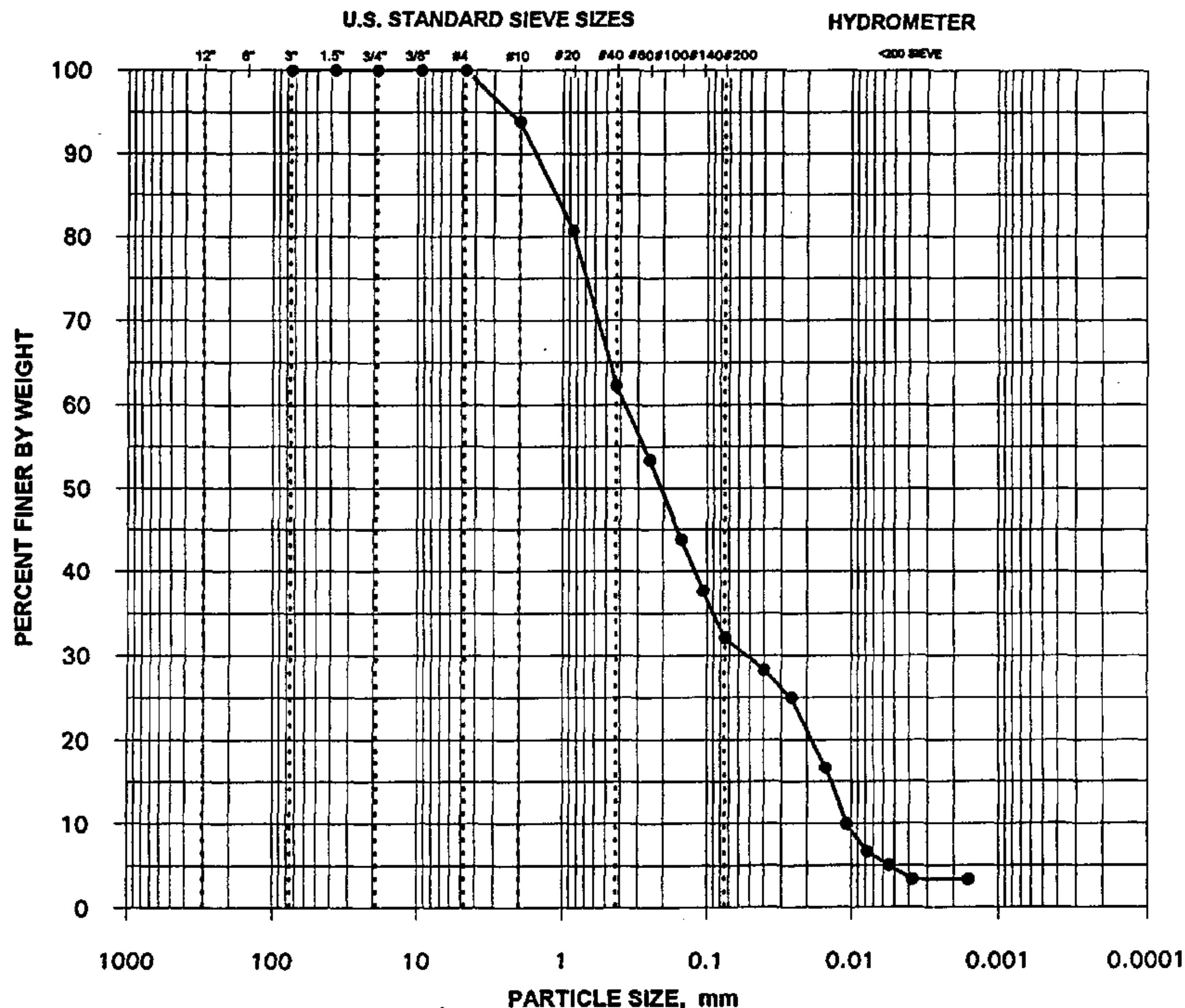
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD~~2962~~ 7-IN

ETDC SAMPLE NO.: ETDC-6248

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

IT ENVIRONMENTAL TECHNOLOGY
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(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: AD~~2969~~ 7-15

Project Number: 483565.04

ETDC Number: ETDC-6253

Specific Gravity = 2.5328
Measured

* Moisture Content = 122.9%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.9%
	#10	2.000	99.1%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	97.7%
	#40	0.425	95.2%
	#60	0.250	92.3%
	#100	0.149	87.4%
	#140	0.106	83.0%
	#200	0.075	77.3%

HYDROMETER ANALYSIS

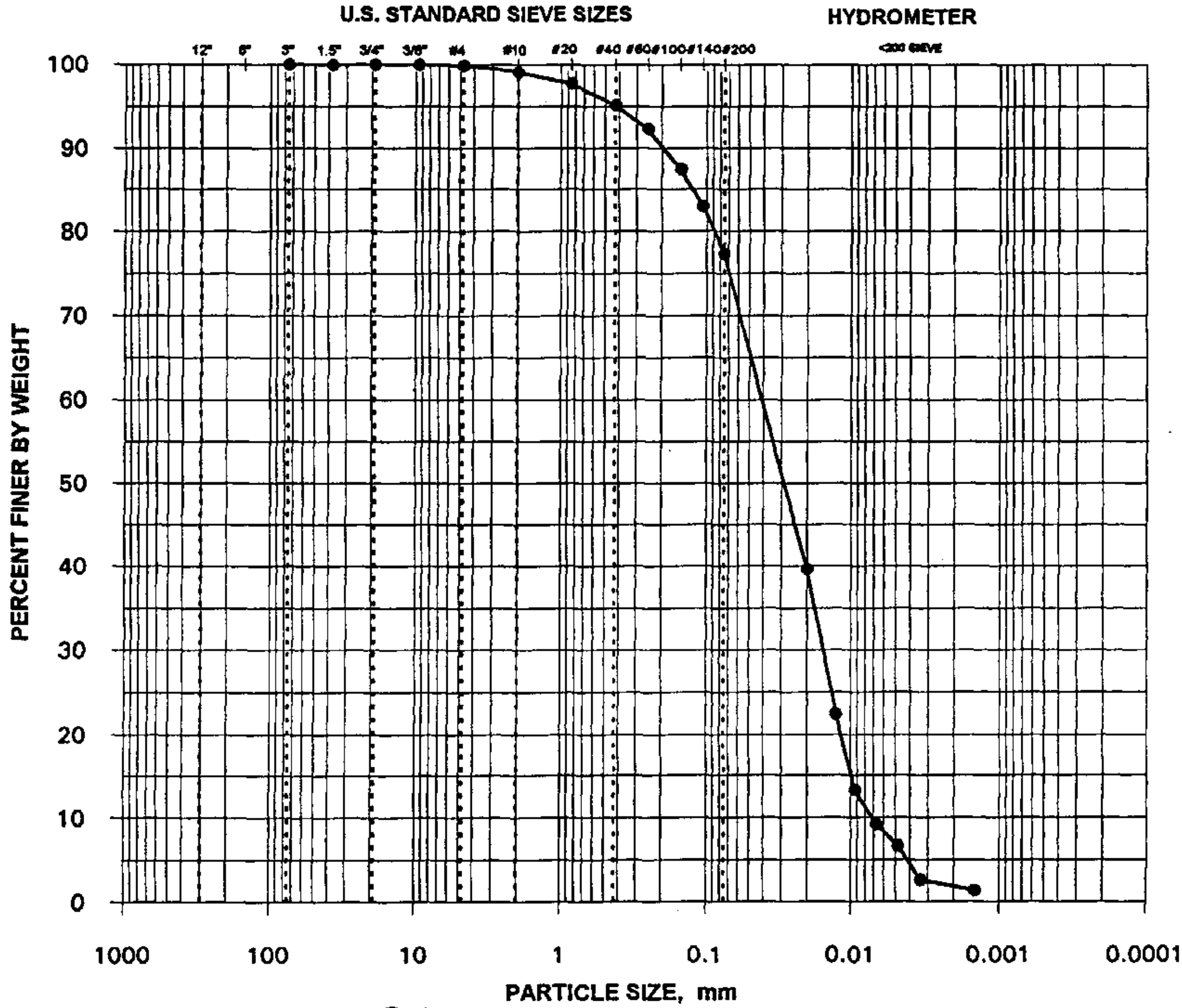
HYDROMETER	Diameter mm	Percent Finer
	0.01992	39.6%
	0.01261	22.4%
	0.00933	13.2%
	0.00672	9.2%
	0.00480	6.6%
	0.00338	2.6%
	0.00145	1.3%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

IT ENVIRONMENTAL TECHNOLOGY
DEVELOPMENT CENTER
OAK RIDGE, TN
(615) 482-6497

HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2069~~ 7-15

ETDC SAMPLE NO.: ETDC-6253

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

IT ENVIRONMENTAL TECHNOLOGY DEVELOPMENT CENTER
OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name:	HOUSATONIC RIVER	Client Number:	~~AD2961~~ 7-1X
Project Number:	483565.04	ETDC Number:	ETDC-6247

Specific Gravity = 2.6500 Assumed

* Moisture Content = 203.4%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	100.0%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	98.9%
	#40	0.425	94.2%
	#60	0.250	91.6%
	#100	0.149	87.2%
	#140	0.106	83.7%
	#200	0.075	79.8%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.01902	48.5%
	0.01186	32.8%
	0.00857	25.0%
	0.00625	17.2%
	0.00450	12.5%
	0.00319	6.3%
	0.00135	4.7%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

IT ENVIRONMENTAL TECHNOLOGY
DEVELOPMENT CENTER
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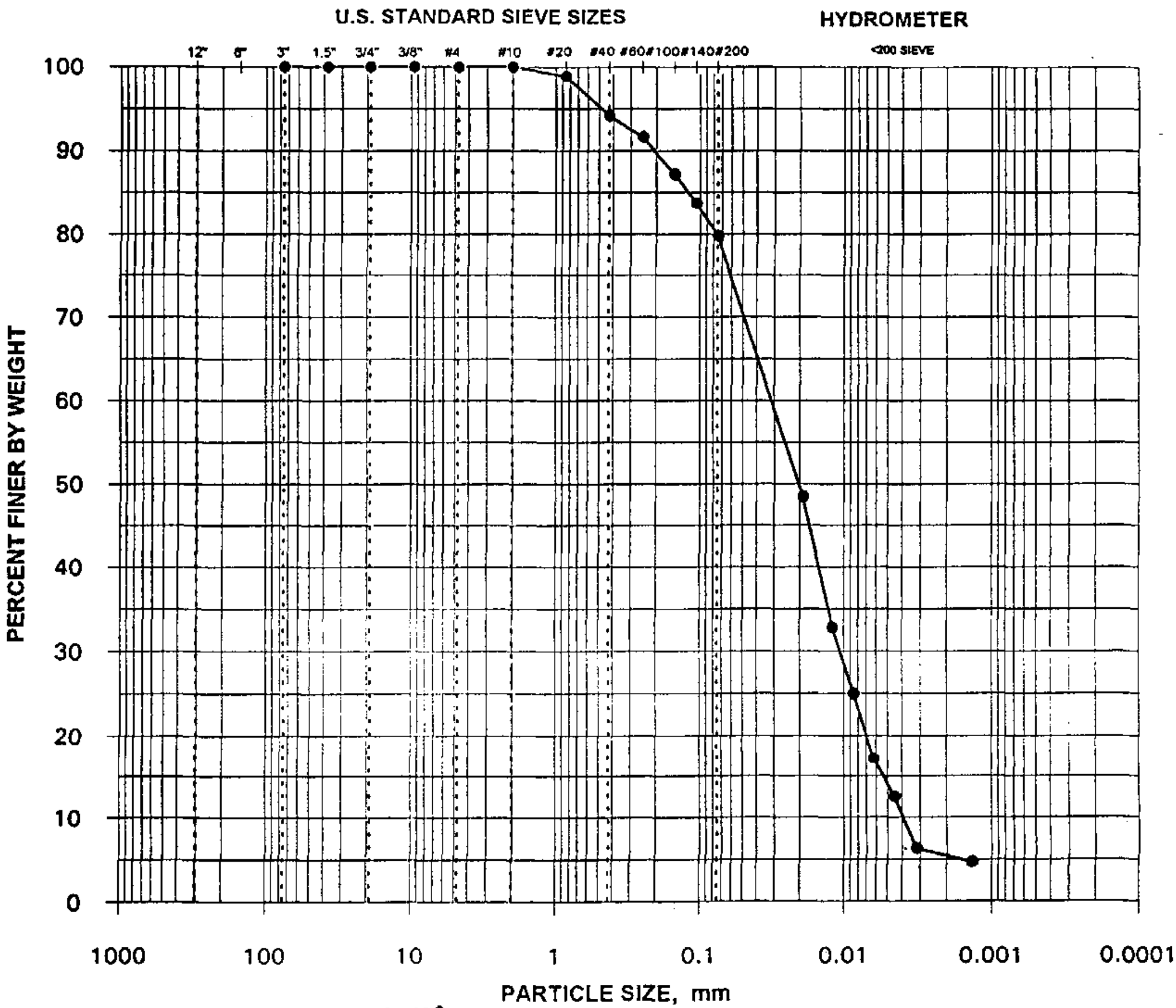
(615) 482-6497

HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2001~~ 7-1X

ETDC SAMPLE NO.: ETDC-6247

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name:	HOUSATONIC RIVER	Client Number:	~~AD2070~~ 7-1W
Project Number:	483565.04	ETDC Number:	ETDC-6254

Specific Gravity = 2.6500 Assumed

* Moisture Content = 175.6%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.9%
	#10	2.000	95.3%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	94.5%
	#40	0.425	83.2%
	#60	0.250	77.5%
	#100	0.149	73.1%
	#140	0.106	69.1%
	#200	0.075	63.2%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.02032	30.7%
	0.01226	20.5%
	0.00890	14.6%
	0.00643	8.8%
	0.00458	7.3%
	0.00323	2.9%
	0.00138	1.5%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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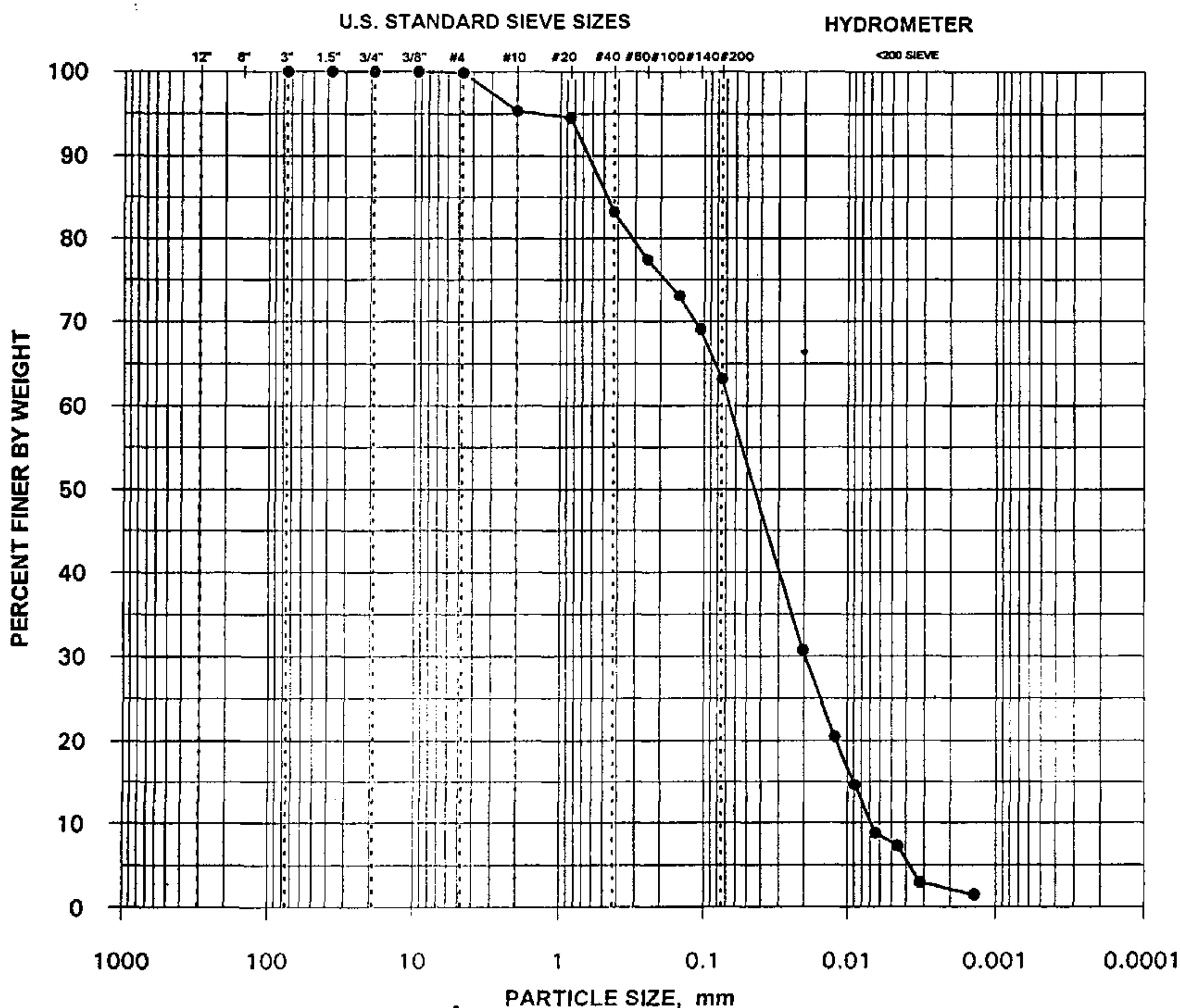
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2070~~ 7-1W

ETDC SAMPLE NO.: ETDC-6254

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD2663~~ WA-3

Project Number: 483565.04

ETDC Number: ETDC-6249

Specific Gravity = 2.4233 Measured

* Moisture Content = 224.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	99.9%
	#10	2.000	96.8%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	91.9%
	#40	0.425	84.6%
	#60	0.250	80.7%
	#100	0.149	75.7%
	#140	0.106	71.8%
	#200	0.075	67.1%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.03244	49.5%
	0.02144	38.3%
	0.01306	25.5%
	0.00945	19.1%
	0.00691	11.2%
	0.00494	8.0%
	0.00344	6.4%
	0.00149	1.6%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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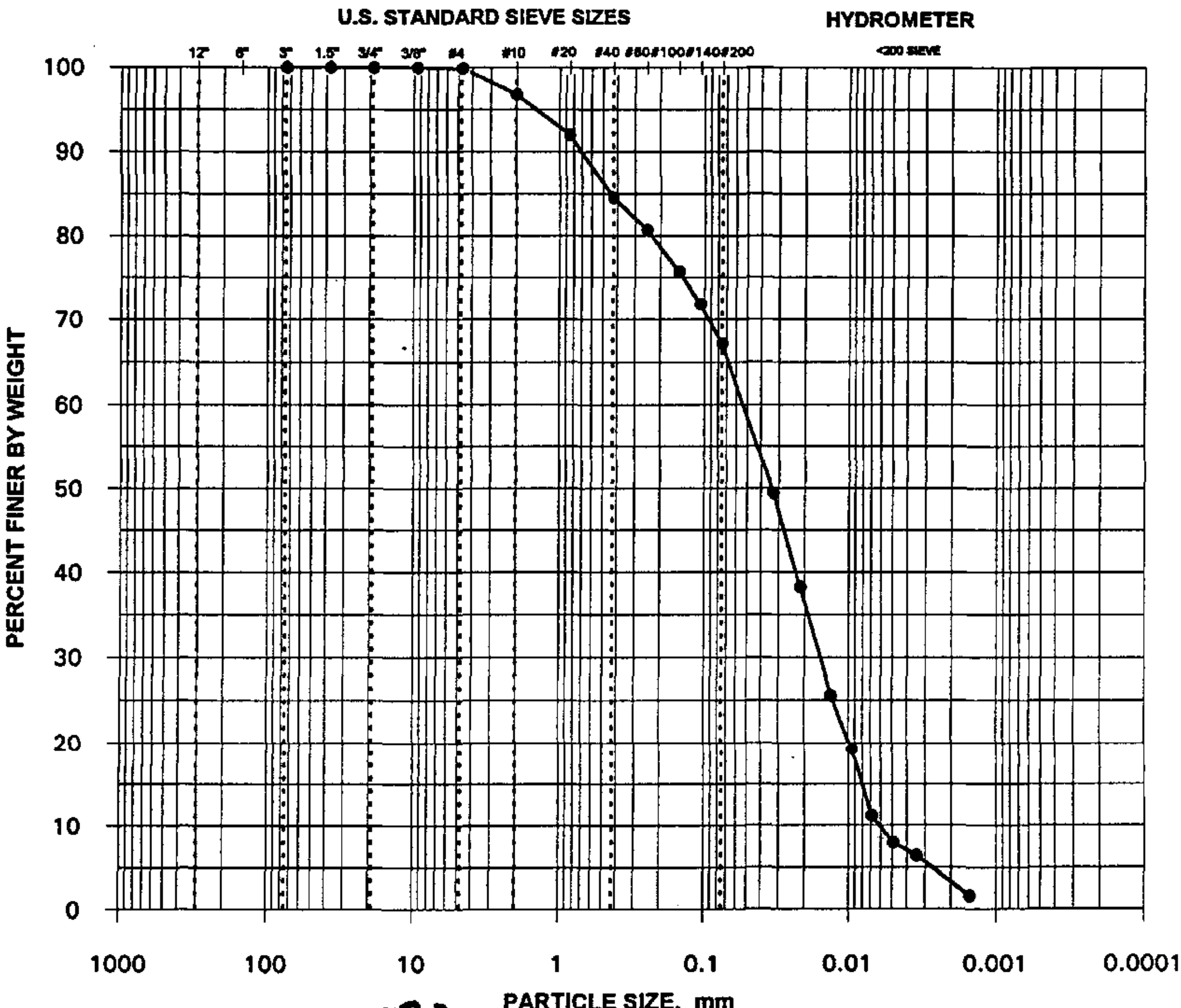
HOUSATONIC RIVER



CLIENT SAMPLE NO.: AD2963 WP-3

ETDC SAMPLE NO.: ETDC-6249

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

WP-4

Project Name: HOUSATONIC RIVER

Client Number: ~~AD2966~~

Project Number: 483565.04

ETDC Number: ETDC-6250

Specific Gravity = 2.6500 Assumed

* Moisture Content = 167.7%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.1%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	99.0%
	#40	0.425	97.7%
	#60	0.250	96.3%
	#100	0.149	93.2%
	#140	0.106	89.3%
	#200	0.075	82.6%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.02809	52.7%
	0.01962	36.1%
	0.01188	26.3%
	0.00874	18.0%
	0.00636	11.1%
	0.00458	6.9%
	0.00319	5.5%
	0.00138	1.4%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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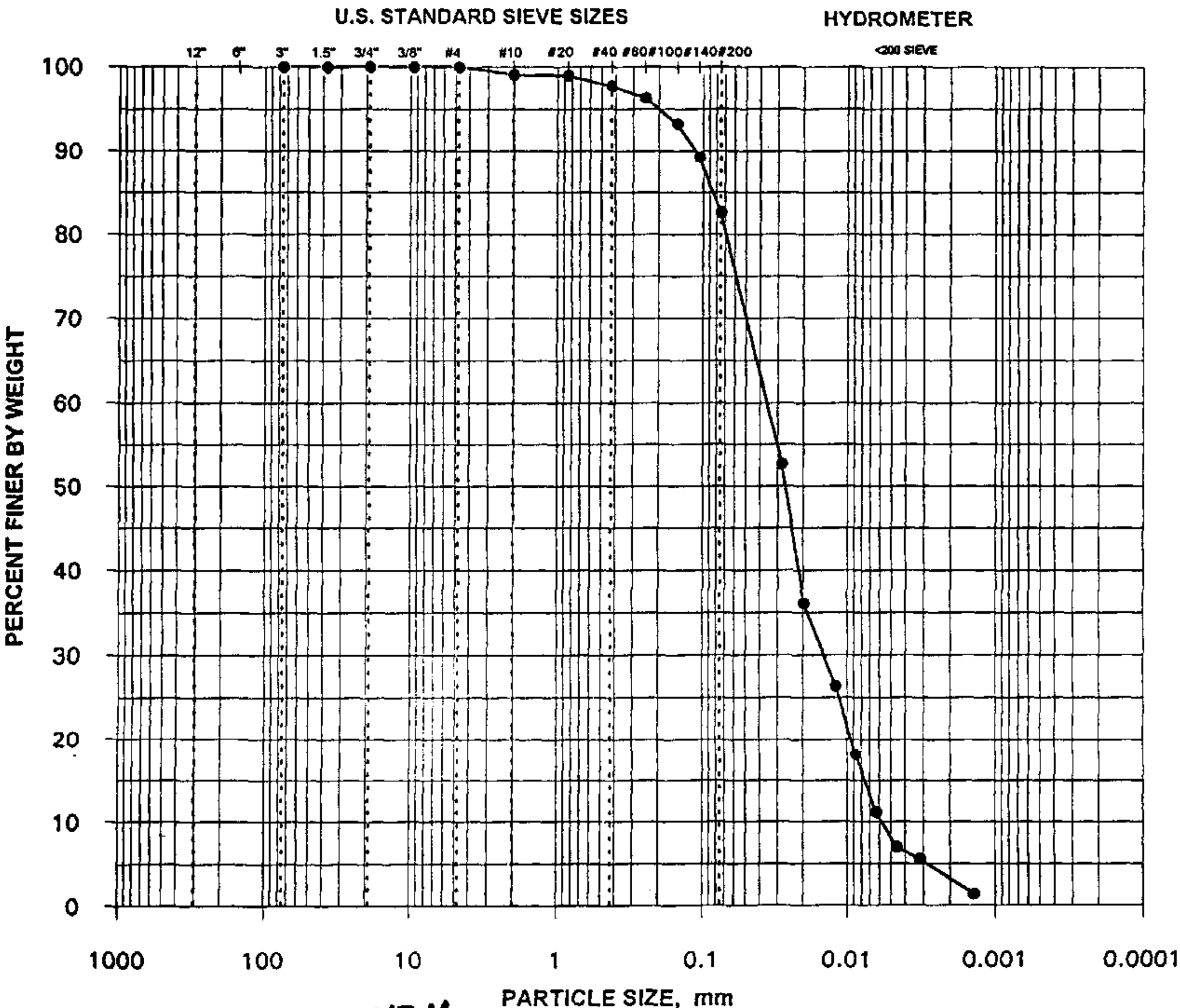
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2966~~ WR-4

ETDC SAMPLE NO.: ETDC-6250

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

IT ENVIRONMENTAL TECHNOLOGY DEVELOPMENT CENTER
OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD2667~~ WP-5

Project Number: 483565.04

ETDC Number: ETDC-6251

Specific Gravity = 2.0997 Measured

* Moisture Content = 649.0%

SIEVE ANALYSIS

COARSE Sieve No.	Diameter mm	Percent Finer
3"	75.000	100.0%
1.5"	37.500	100.0%
0.75"	19.000	100.0%
0.375"	9.500	100.0%
#4	4.750	100.0%
#10	2.000	98.6%

FINE Sieve No.	Diameter mm	Percent Finer
#20	0.850	96.1%
#40	0.425	84.2%
#60	0.250	76.4%
#100	0.149	67.1%
#140	0.106	60.4%
#200	0.075	53.7%

HYDROMETER ANALYSIS

HYDROMETER Diameter mm	Percent Finer
0.02417	35.9%
0.01452	25.2%
0.01054	18.0%
0.00762	10.8%
0.00548	5.4%
0.00380	5.4%
0.00164	1.8%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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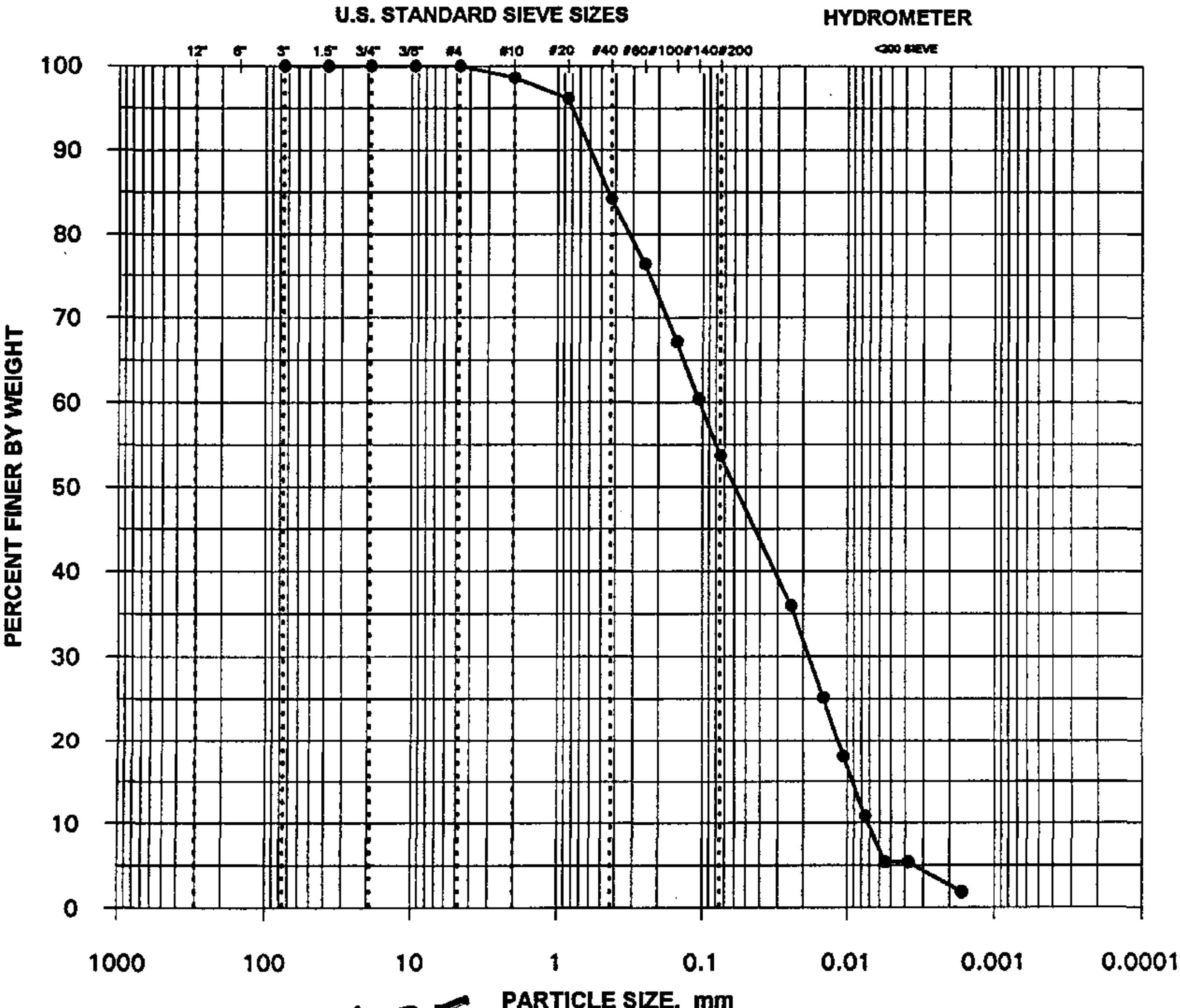
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2667~~ WR5

ETDC SAMPLE NO.: ETDC-6251

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: HOUSATONIC RIVER

Client Number: ~~AD2868~~ WR-7

Project Number: 483565.04

ETDC Number: ETDC-6252

Specific Gravity = 2.1777 Measured

* Moisture Content = 661.1%

SIEVE ANALYSIS

COARSE Sieve No.	Diameter mm	Percent Finer
3"	75.000	100.0%
1.5"	37.500	100.0%
0.75"	19.000	100.0%
0.375"	9.500	100.0%
#4	4.750	100.0%
#10	2.000	94.3%

FINE Sieve No.	Diameter mm	Percent Finer
#20	0.850	90.2%
#40	0.425	76.7%
#60	0.250	70.4%
#100	0.149	64.4%
#140	0.106	59.8%
#200	0.075	54.6%

HYDROMETER ANALYSIS

HYDROMETER Diameter mm	Percent Finer
0.03499	46.6%
0.02305	36.9%
0.01382	28.9%
0.01012	19.3%
0.00729	14.5%
0.00528	8.0%
0.00369	5.6%
0.00159	2.4%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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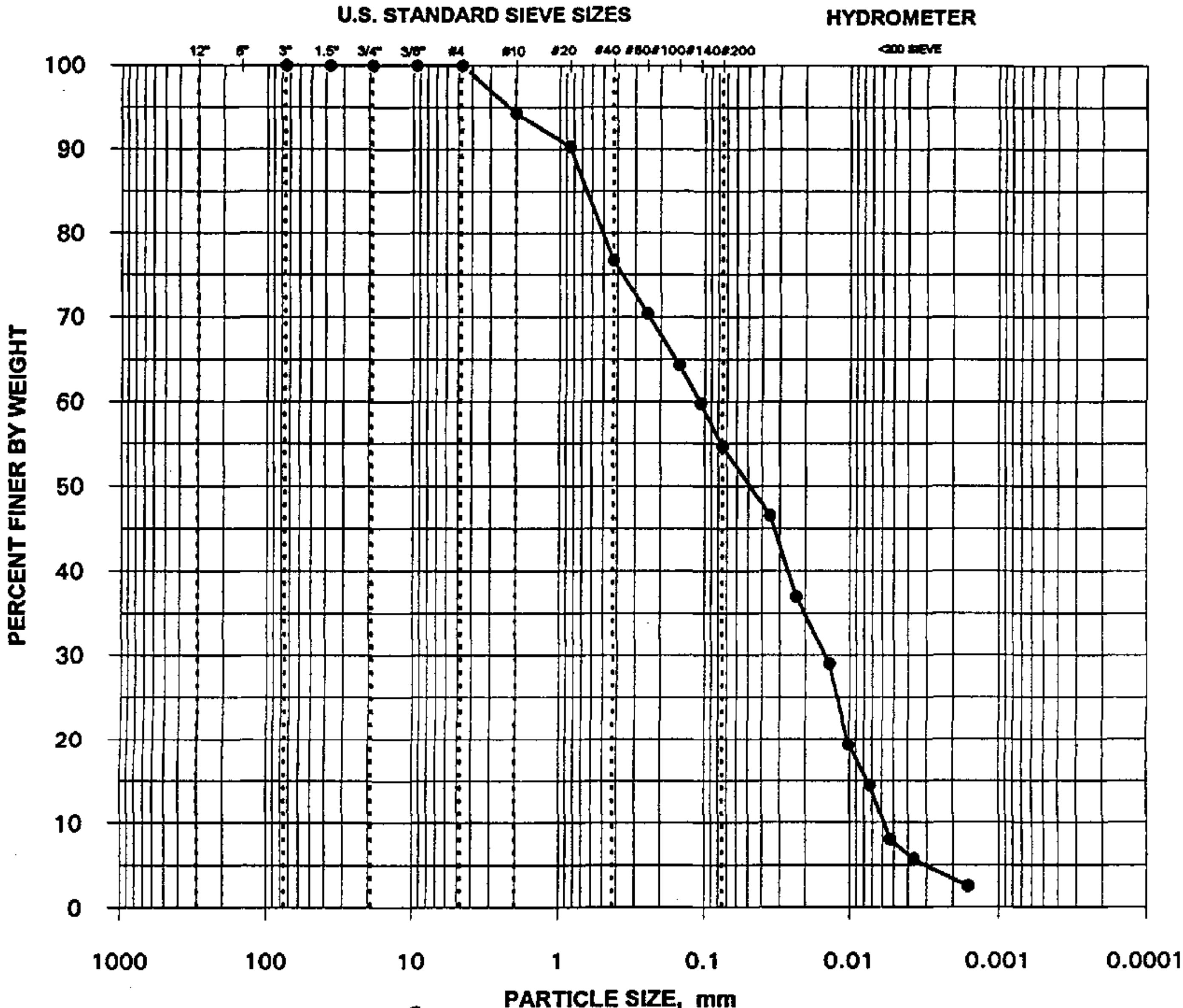
HOUSATONIC RIVER



CLIENT SAMPLE NO.: ~~AD2868~~ WR7

ETDC SAMPLE NO.: ETDC-6252

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

John Reynolds
Quanterra-Middlebrook
August 23, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.00700000

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OAK RIDGE, TN
(615) 482-6497

PARTICLE SIZE ANALYSIS
ASTM D 422

Woods Pond Sediment Trap #3

Project Name: HOUSATONIC RIVER
Client Number: WPT-3
Project Number: 483565.00700000
ETDC Number: ETDC-6831

Specific Gravity = 2.6500 Assumed

* Moisture Content = 528.8%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.9%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	97.7%
	#40	0.425	92.8%
	#60	0.250	90.7%
	#100	0.149	88.7%
	#140	0.106	87.2%
	#200	0.075	85.2%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04418	60.0%
	0.03208	51.0%
	0.02123	36.2%
	0.01268	23.8%
	0.00916	15.9%
	0.00655	11.3%
	0.00468	6.8%
	0.00326	4.5%
	0.00138	3.4%

*BASED ON DRY WEIGHT BASIS

John Reynolds
Quanterra-Middlebrook
August 23, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.00700000

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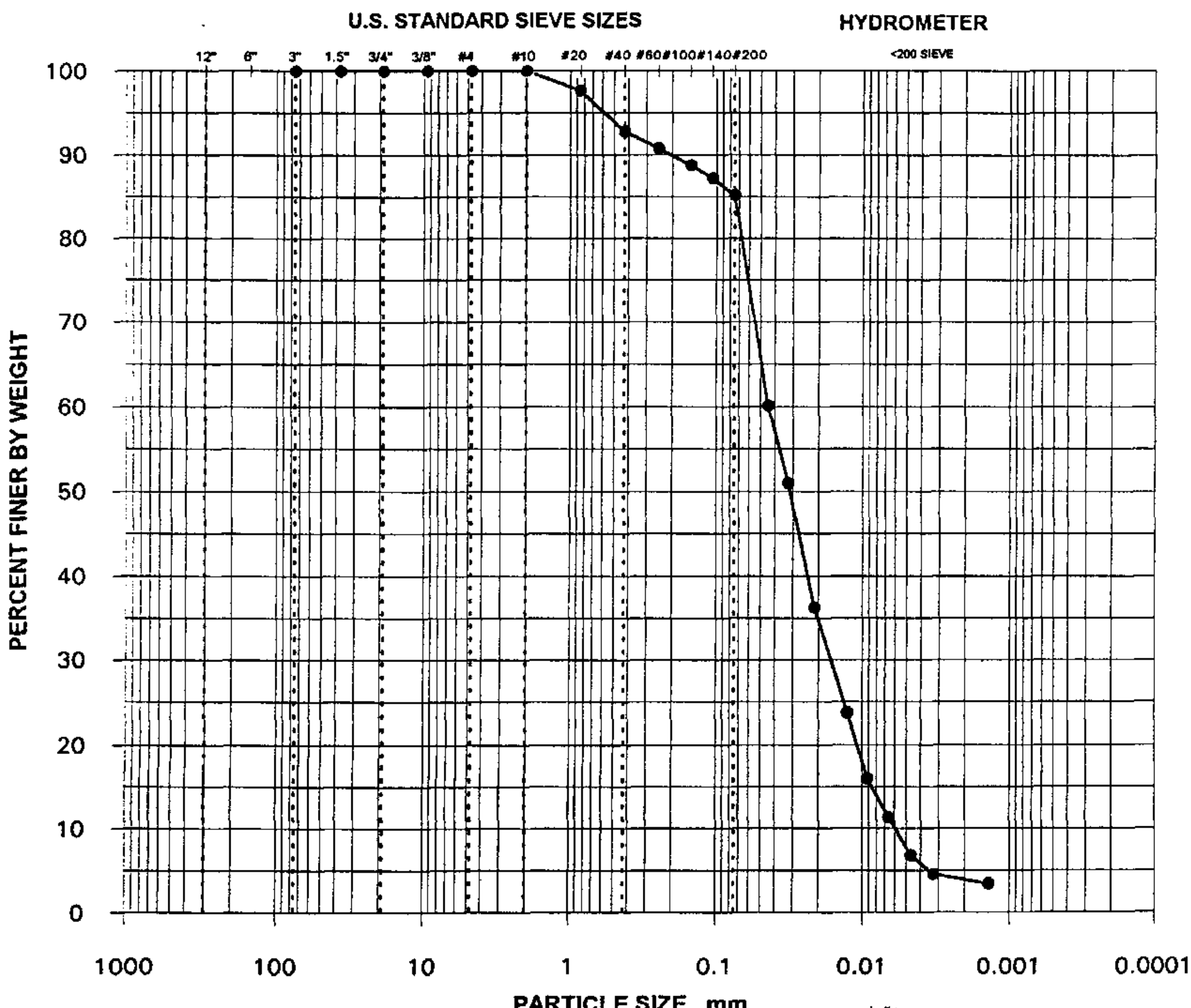
HOUSATONIC RIVER



CLIENT SAMPLE NO.: WPT-3 WOODS POND SEDIMEN TRAP #3 ETDC SAMPLE NO.: ETDC-6831

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

HOUSATONIC RIVER SEDIMENT MOISTURE CONTENT DATA

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

IT ENVIRONMENTAL TECHNOLOGY
DEVELOPMENT CENTER
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(615) 482-6497

MOISTURE CONTENT
ASTM D 2216

PROJECT NAME: HOUSATONIC RIVER **PROJECT NUMBER:** 483565.02

ETDC SAMPLE NO.	CLIENT SAMPLE NO.	% MOISTURE	% SOLIDS
ETDC-6136	~~AC9954~~ 3-7A	16.4	85.9
ETDC-6138	~~AC9956~~ 3-10C	22.9	81.4
ETDC-6156	~~AD0471~~ 5-1E	26.1	79.3
ETDC-6157	~~AD0472~~ 5-2L	57.7	63.4
ETDC-6158	~~AD0473~~ 5-3F	23.7	80.8

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

IT ENVIRONMENTAL TECHNOLOGY
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(615) 482-6497

MOISTURE CONTENT
ASTM D 2216

PROJECT NAME: HOUSATONIC RIVER **PROJECT NUMBER:** 483565.03

ETDC SAMPLE NO.	CLIENT SAMPLE NO.	% MOISTURE	% SOLIDS
ETDC-6224	~~AD1772~~ 4-9D	15.1	86.9
ETDC-6226	~~AD1779~~ 4-10B	25.2	79.9
ETDC-6231	~~AD1785~~ 6-1C	39.8	71.6
ETDC-6233	~~AD1801~~ 6-2G	24.0	80.7
ETDC-6237	~~AD1805~~ 6-3J	27.4	78.5

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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MOISTURE CONTENT
ASTM D 2216

PROJECT NAME: HOUSATONIC RIVER **PROJECT NUMBER:** 483565.04

ETDC SAMPLE NO.	CLIENT SAMPLE NO.	% MOISTURE	% SOLIDS
ETDC-6248	~~AD2562~~ 7-1N	555.7	15.3
ETDC-6249	~~AD2563~~ WP-3	224.7	30.8
ETDC-6251	~~AD2567~~ WP-5	649.0	13.4
ETDC-6252	~~AD2568~~ WP-7	661.1	13.1
ETDC-6253	~~AD2569~~ 7-15	122.9	44.9

HOUSATONIC RIVER SEDIMENT SPECIFIC GRAVITY DATA

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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SPECIFIC GRAVITY
ASTM D 854

PROJECT NAME: HOUSATONIC RIVER **PROJECT NUMBER:** 483565.02

ETDC SAMPLE NO.	CLIENT SAMPLE NO.	SPECIFIC GRAVITY
ETDC-6136	AC9954 3-7A	2.6860
ETDC-6138	AC9956 3-10C	2.6959
ETDC-6156	AD0471 5-1F	2.6704
ETDC-6157	AD0472 5-2L	2.6887
ETDC-6158	AD0473 5-3F	2.6749

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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SPECIFIC GRAVITY
ASTM D 854

PROJECT NAME: HOUSATONIC RIVER **PROJECT NUMBER:** 483565.03

ETDC SAMPLE NO.	CLIENT SAMPLE NO.	SPECIFIC GRAVITY
ETDC-6224	~~AD1772~~ 4-9D	2.6119
ETDC-6226	~~AD1779~~ 4-10B	2.6676
ETDC-6231	~~AD1785~~ 6-1C	2.6768
ETDC-6233	~~AD1801~~ 6-2G	2.6866
ETDC-6237	~~AD1805~~ 6-3J	2.6927

Ken Mueller
Quanterra
March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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SPECIFIC GRAVITY
ASTM D 854

PROJECT NAME: HOUSATONIC RIVER **PROJECT NUMBER:** 483565.04

ETDC SAMPLE NO.	CLIENT SAMPLE NO.	SPECIFIC GRAVITY
ETDC-6248	7-1N ~~AD2962~~	2.0947
ETDC-6249	~~AD2963~~ WP-3	2.4233
ETDC-6251	~~AD2967~~ WP-5	2.0997
ETDC-6252	~~AD2968~~ WP-7	2.1777
ETDC-6253	~~AD2969~~ 7-1S	2.5328

HOUSATONIC RIVER SEDIMENT BULK DENSITY DATA

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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BULK DENSITY/ DRY DENSITY EM-1110-2-1906, APPENDIX II

PROJECT NAME: HOUSATONIC RIVER PROJECT NUMBER: 483565.02

ETDC SAMPLE NUMBER:	CLIENT SAMPLE NUMBER:	AVERAGE LENGTH, INCHES:	AVERAGE DIAMETER, INCHES:	WET WEIGHT, GRAMS:	MOISTURE CONTENT, %:	BULK DENSITY, PCF:	DRY DENSITY, PCF:
ETDC-6131	AC9922	0.7492	2.4995	103.97	4.1	107.8	103.6
ETDC-6132	AC9850	0.7563	2.4960	95.3	7.9	98.1	91.0
ETDC-6153	AD0465	0.7498	2.4988	117.3	17.5	121.5	103.4
ETDC-6154	AD0466	0.7503	2.5007	92.15	81.6	95.3	52.5
ETDC-6155	AD0467	0.7465	2.4990	95.93	33.9	99.8	74.5

Ken Mueller
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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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BULK DENSITY/ DRY DENSITY EM-1110-2-1906, APPENDIX II

PROJECT NAME: HOUSATONIC RIVER PROJECT NUMBER: 483565.03

ETDC SAMPLE NUMBER:	CLIENT SAMPLE NUMBER:	AVERAGE LENGTH, INCHES:	AVERAGE DIAMETER, INCHES:	WET WEIGHT, GRAMS:	MOISTURE CONTENT, %:	BULK DENSITY, PCF:	DRY DENSITY, PCF:
THESE VALUES REPRESENT REMOLDED DENSITIES:							
ETDC-6242	44D AD1810	0.7545	2.4952	130.56	16.20	134.84	116.04
ETDC-6243	44B AD1811	0.7487	2.4987	77.24	139.95	80.17	33.41
ETDC-6244	63G AD1812	0.7495	2.4995	110.83	24.71	114.83	92.08
ETDC-6245	61C AD1813	0.7453	2.5003	105.27	42.45	109.60	76.94
ETDC-6246	63J AD1814	0.7495	2.4987	94.33	41.70	97.80	69.02
THESE VALUES REPRESENT AS RECEIVED DENSITIES:							
ETDC-6242	44D AD1810	12.0000	1.8500	1202.77	10.67	142.08	128.37
ETDC-6243	44B AD1811	4.8500	1.8500	272.26	156.52	79.57	31.02
ETDC-6244	63G AD1812	5.7000	1.8500	503.1	26.15	125.11	99.18
ETDC-6245	61C AD1813	12.4000	1.8500	1031.01	35.73	117.86	86.84
ETDC-6246	63J AD1814	12.2500	1.8500	834.8	36.81	96.60	70.61

Ken Mueller
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March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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BULK DENSITY/ DRY DENSITY EM-1110-2-1906, APPENDIX II

PROJECT NAME: HOUSATONIC RIVER PROJECT NUMBER: 483565.04

ETDC SAMPLE NUMBER:	CLIENT SAMPLE NUMBER:	AVERAGE LENGTH, INCHES:	AVERAGE DIAMETER, INCHES:	WET WEIGHT, GRAMS:	MOISTURE CONTENT, %:	BULK DENSITY, PCF:	DRY DENSITY, PCF:
THESE VALUES REPRESENT REMOLDED DENSITIES:							
ETDC-6256	~~AD2972~~ 7-W	0.7457	2.5012	95.32	69.70	99.13	58.42
ETDC-6257	~~AD2973~~ WP-3	0.7550	2.4965	71.53	220.19	73.75	23.03
ETDC-6258	WP-5 ~~AD2974~~	0.7492	2.5000	75.47	536.34	78.20	12.29
ETDC-6259	WP-7 ~~AD2975~~	0.7495	2.4997	68.56	580.83	71.02	10.43
ETDC-6260	7-15 ~~AD2976~~	0.7500	2.4995	86.11	102.90	89.16	43.94
THESE VALUES REPRESENT AS RECEIVED DENSITIES:							
ETDC-6256	7-W ~~AD2972~~	6.3000	1.8500	450.99	53.56	101.47	66.08
ETDC-6257	WP-3 ~~AD2973~~	6.5000	1.8500	344.66	205.20	75.16	24.63
ETDC-6258	WP-5 ~~AD2974~~	11.4000	1.8500	552.07	540.44	68.65	10.72
ETDC-6259	WP-7 ~~AD2975~~	11.6000	1.8500	529.91	584.85	64.75	9.46
ETDC-6260	7-15 ~~AD2976~~	7.1000	1.8500	453.56	105.97	90.55	43.96

HOUSATONIC RIVER SEDIMENT TIME RATE OF CONSOLIDATION DATA

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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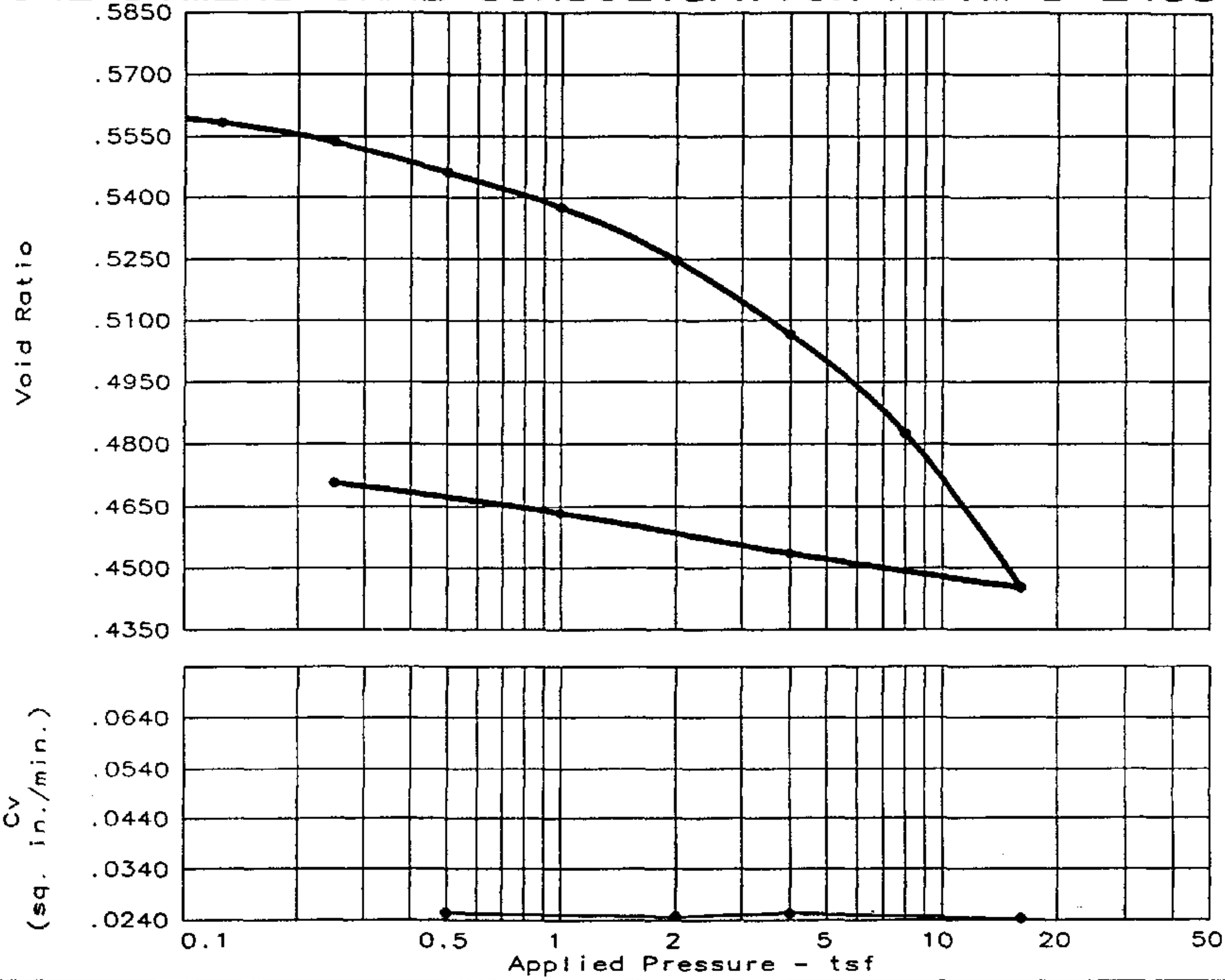
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
19.3 %	4.1	107.3	N/A	N/A	2.69	4.76	0.12	0.5653

TEST RESULTS	MATERIAL DESCRIPTION
Compression Index = 0.12	QUARTZ SAND, tan and white w/ trace gravel Class: SP
ETDC Project Name: G.E./Housatonic River ETDC Project No.: 483565.02 ETDC Sample No.: 6131 Client Sample No.: AC9922 3-7A	Remarks: Sample received in 1.9 sample tube at 108.1pcf Remolded specimen to approximate natural density.
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435 IT Corp. - GEOTECHNICAL LABORATORY	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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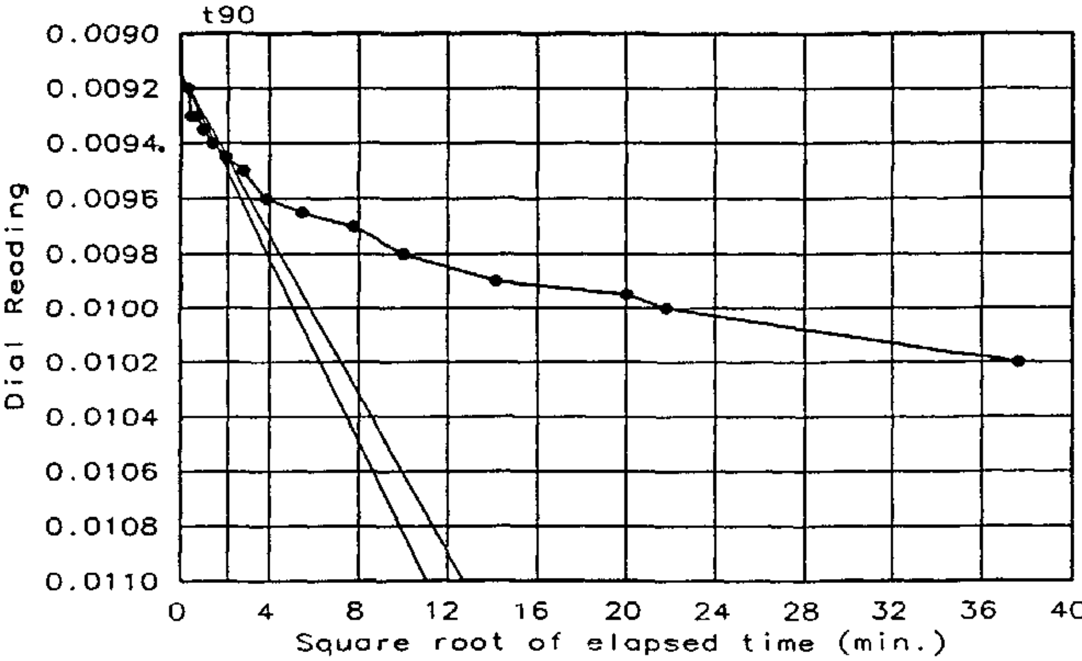
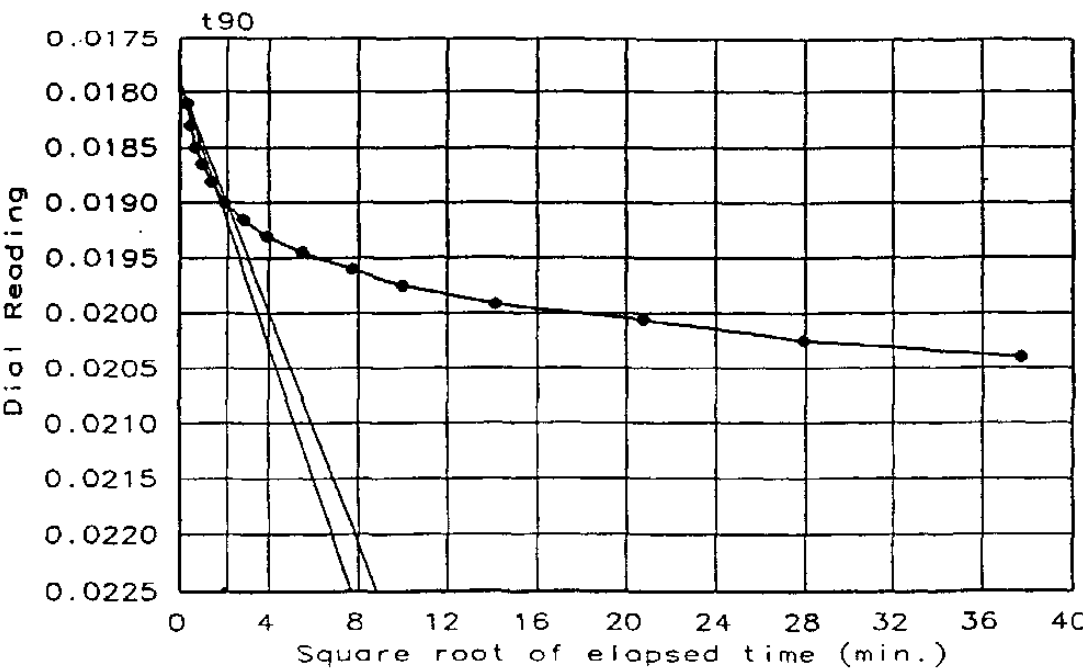
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6131
Client Sample No.: AC~~9022~~ 3-7A



Load No.= 4
Load= 0.50 tsf
D_0 = 0.0091
D_{90} = 0.0095
D_{100}= 0.0095
T_{90}= 4.57 min.

C_v @ T_{90} =
.025 in.²/min.



Load No.= 6
Load= 2.00 tsf
D_0 = 0.0179
D_{90} = 0.0190
D_{100}= 0.0191
T_{90}= 4.58 min.

C_v @ T_{90} =
.025 in.²/min.

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Ken Mueller
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January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

IT ENVIRONMENTAL TECHNOLOGY
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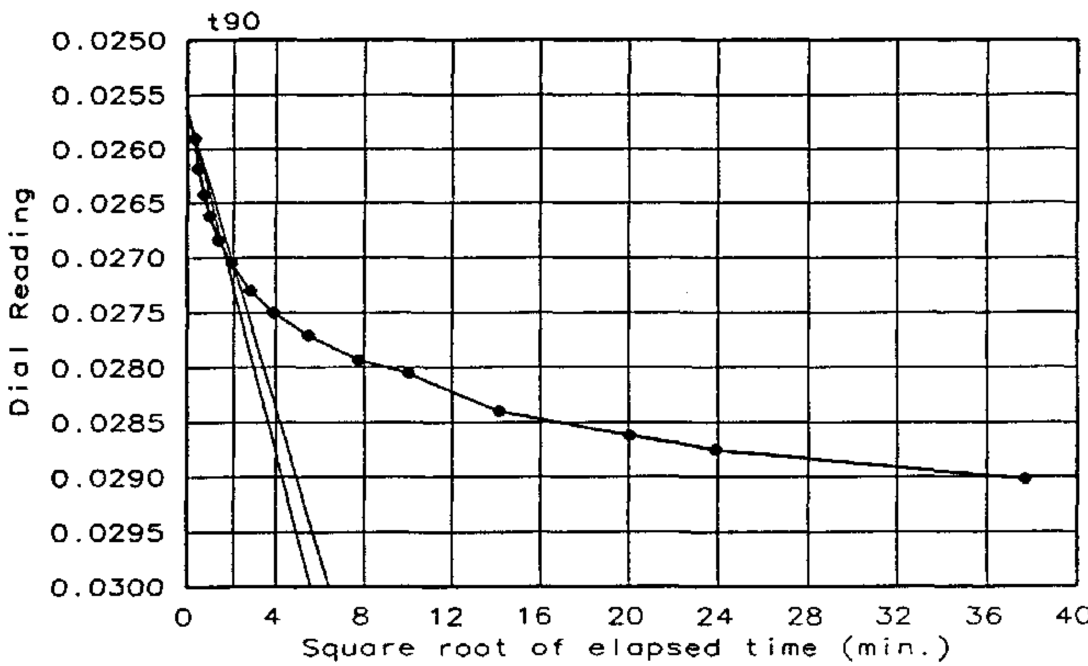
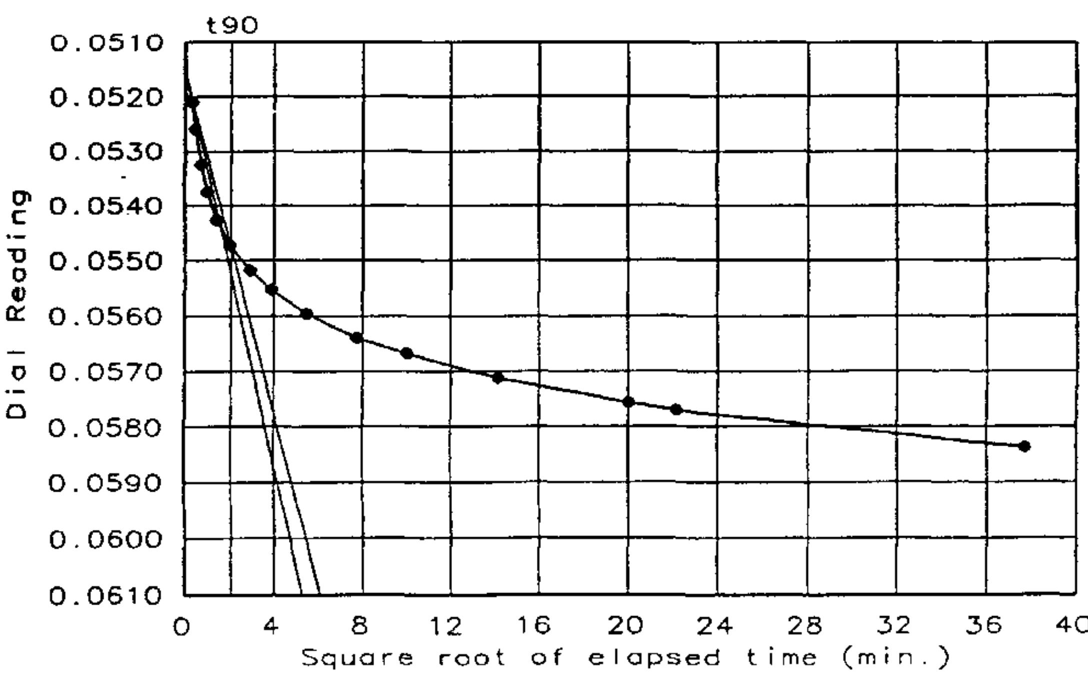
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6131
Client Sample No.: AC~~9922~~ 3-7A



Load No.= 7
Load= 4.00 tsf
D_0 = 0.0257
D_{90} = 0.0271
D_{100}= 0.0272
T_{90}= 4.39 min.

C_v @ T_{90} =
.025 in.^{2}/min.



Load No.= 9
Load= 16.00 tsf
D_0 = 0.0515
D_{90} = 0.0548
D_{100}= 0.0551
T_{90}= 4.27 min.

C_v @ T_{90} =
.024 in.^{2}/min.

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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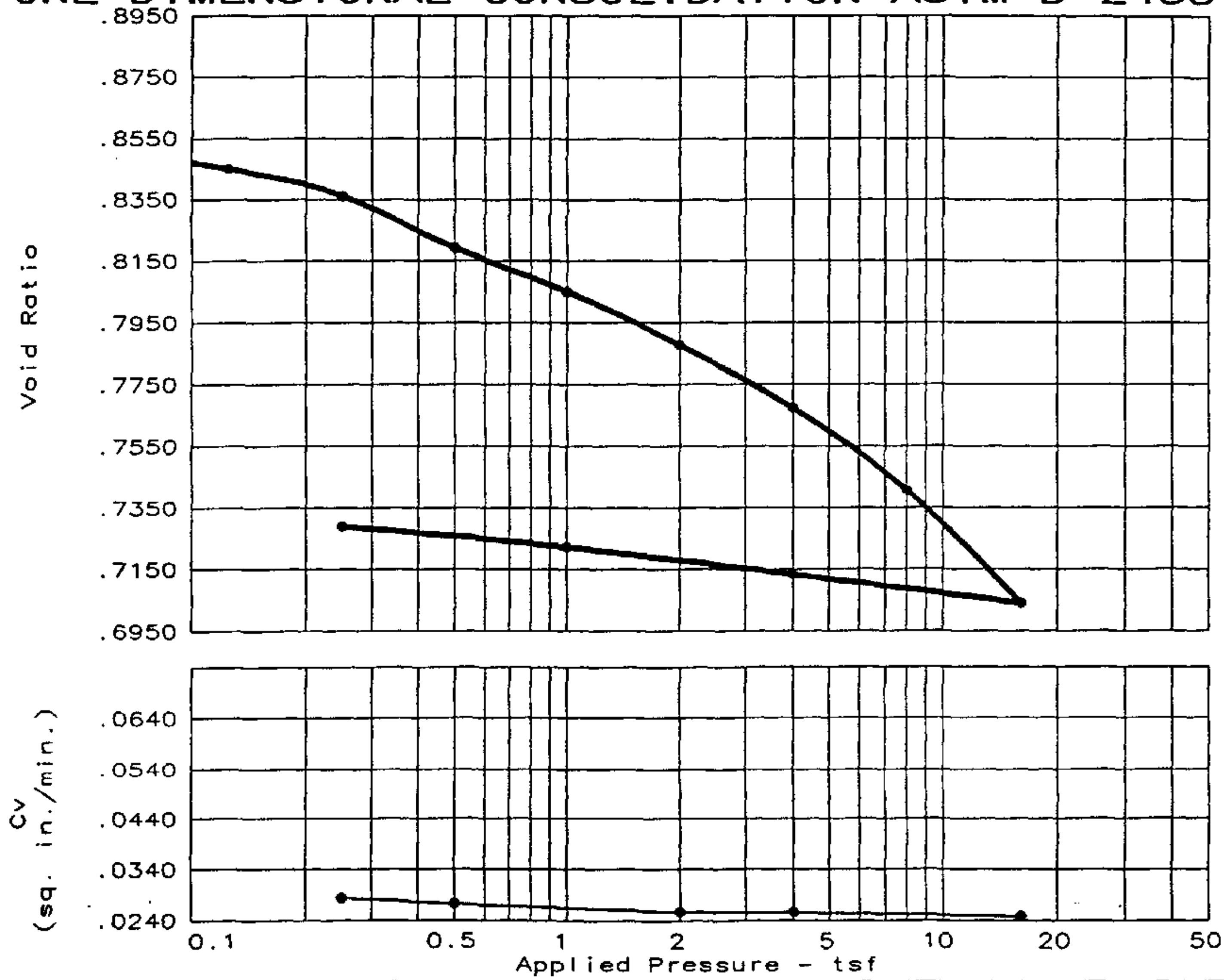
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
24.8 %	7.9	91.0	N/A	N/A	2.71	3.97	0.12	0.8578

TEST RESULTS

Compression Index = 0.12

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6132
Client Sample No.: ~~AC9950~~ 3-10C

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

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MATERIAL DESCRIPTION

QUARTZ SAND, tan and white w/ trace gravel
Class: SP

Remarks:

Sample received in 1.9 sample tube at 103.3pcf Remolded specimen to approximate natural density.

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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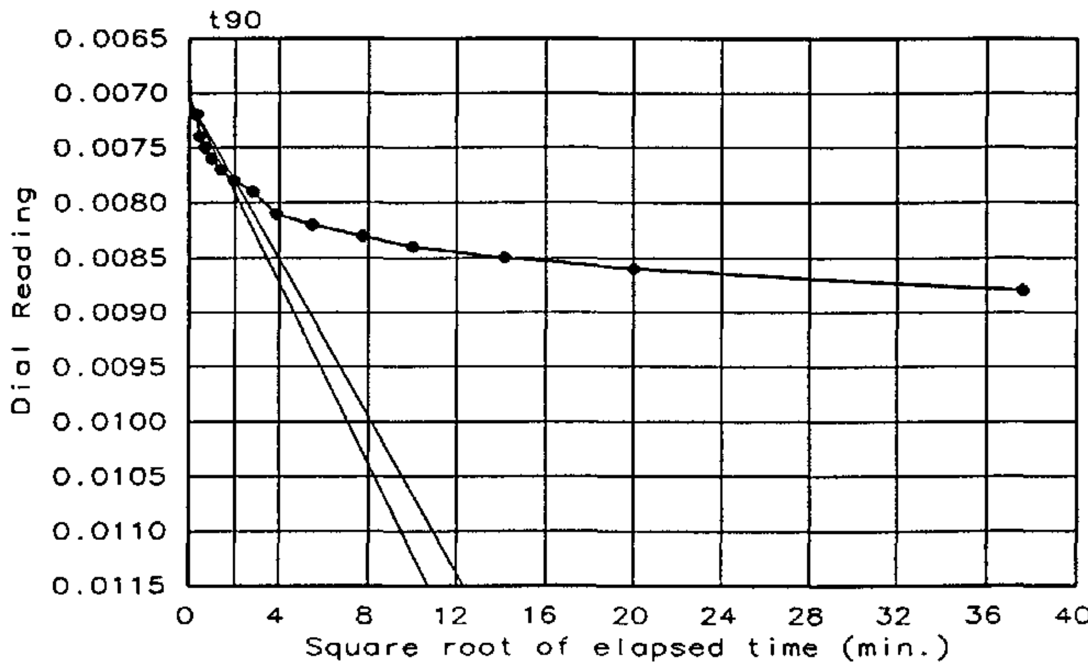
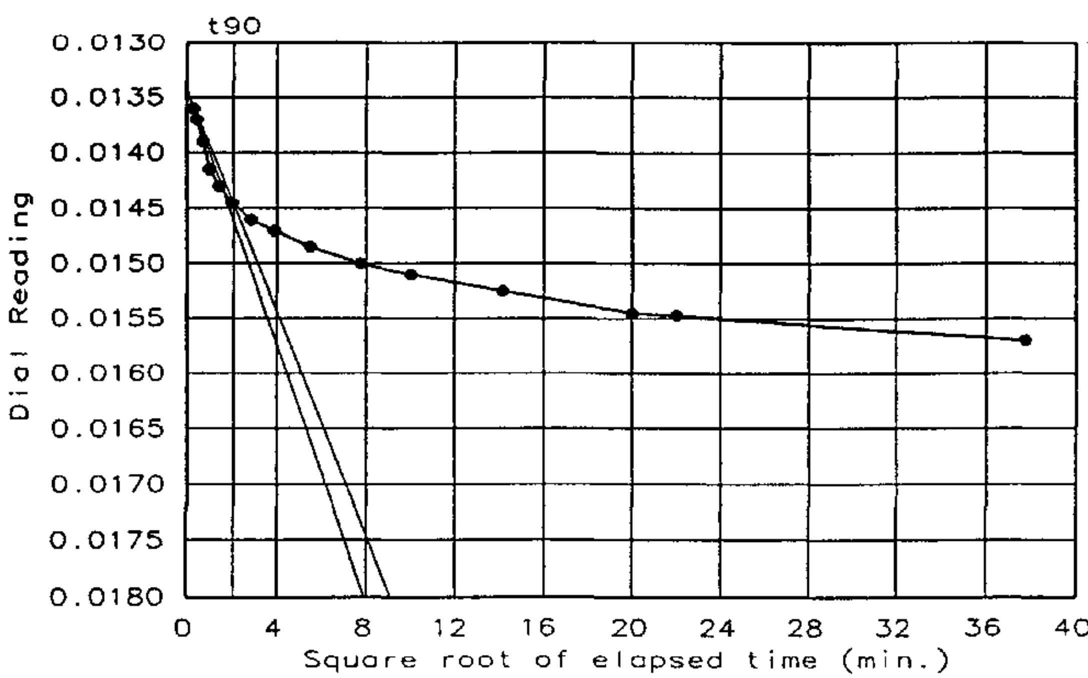
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6132
Client Sample No.: AC9~~960~~ 3-10C



Load No.= 3
Load= 0.25 tsf
D_0 = 0.0071
D_{90} = 0.0078
D_{100}= 0.0079
T_{90}= 4.19 min.

C_v @ T_{90} = .028 in.²/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.0134
D_{90} = 0.0145
D_{100}= 0.0146
T_{90}= 4.29 min.

C_v @ T_{90} = .027 in.²/min.

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Ken Mueller
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Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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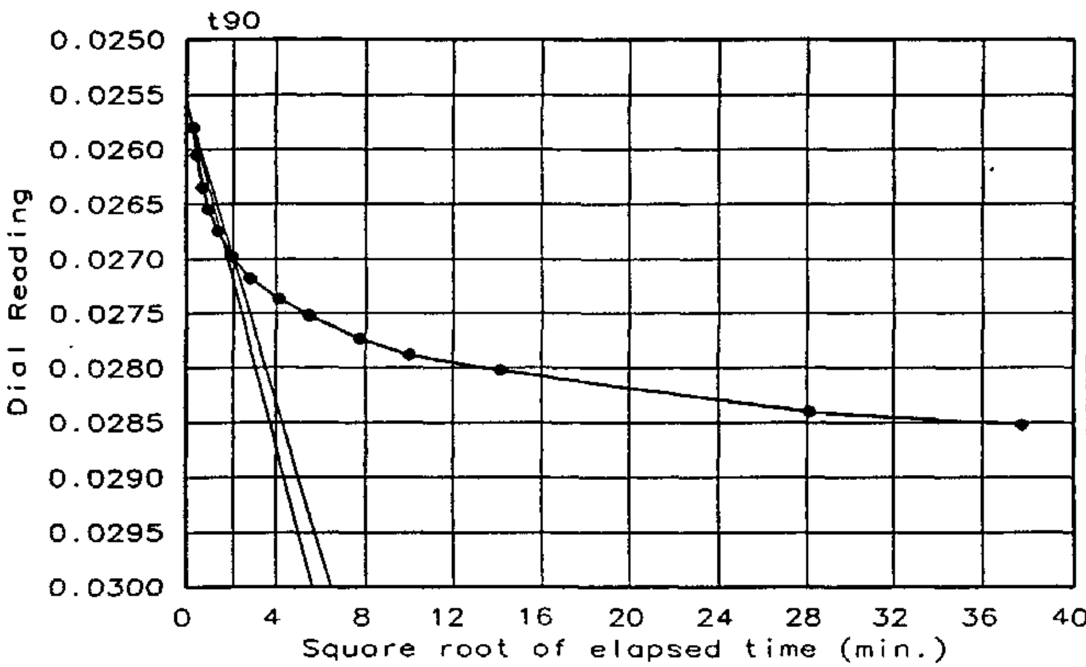
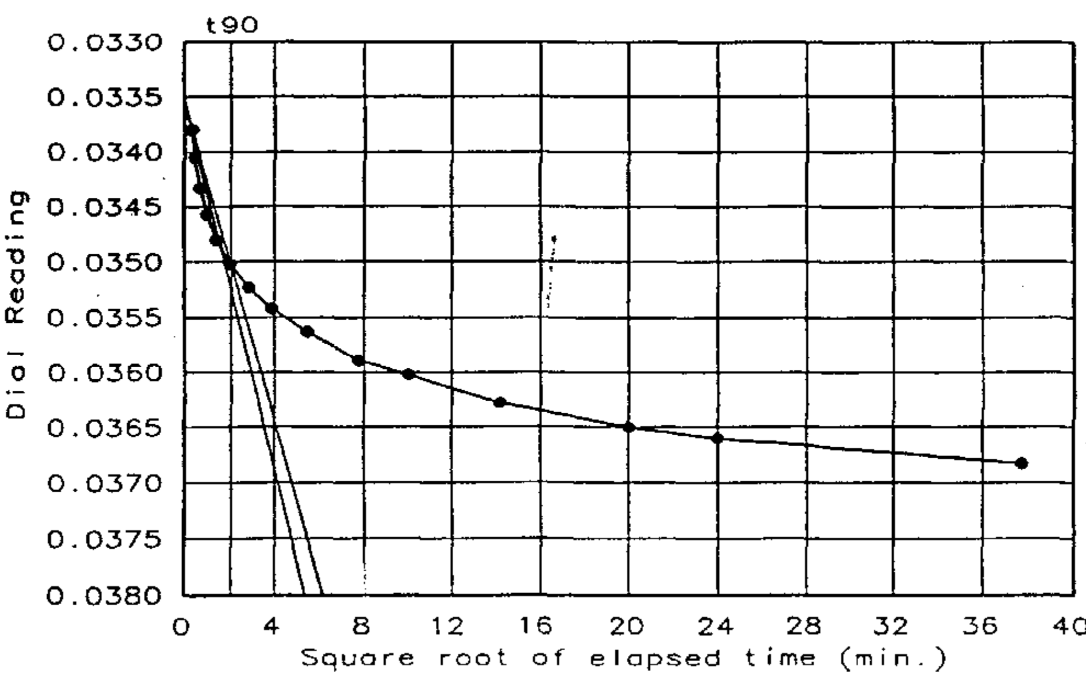
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6132
Client Sample No.: ~~AC9950~~ 3-10C



Load No.= 6
Load= 2.00 tsf
D_0 = 0.0255
D_{90} = 0.0270
D_{100}= 0.0272
T_{90}= 4.40 min.

C_v @ T_{90} =
.026 in.^{2}/min.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.0335
D_{90} = 0.0350
D_{100}= 0.0352
T_{90}= 4.33 min.

C_v @ T_{90} =
.026 in.^{2}/min.

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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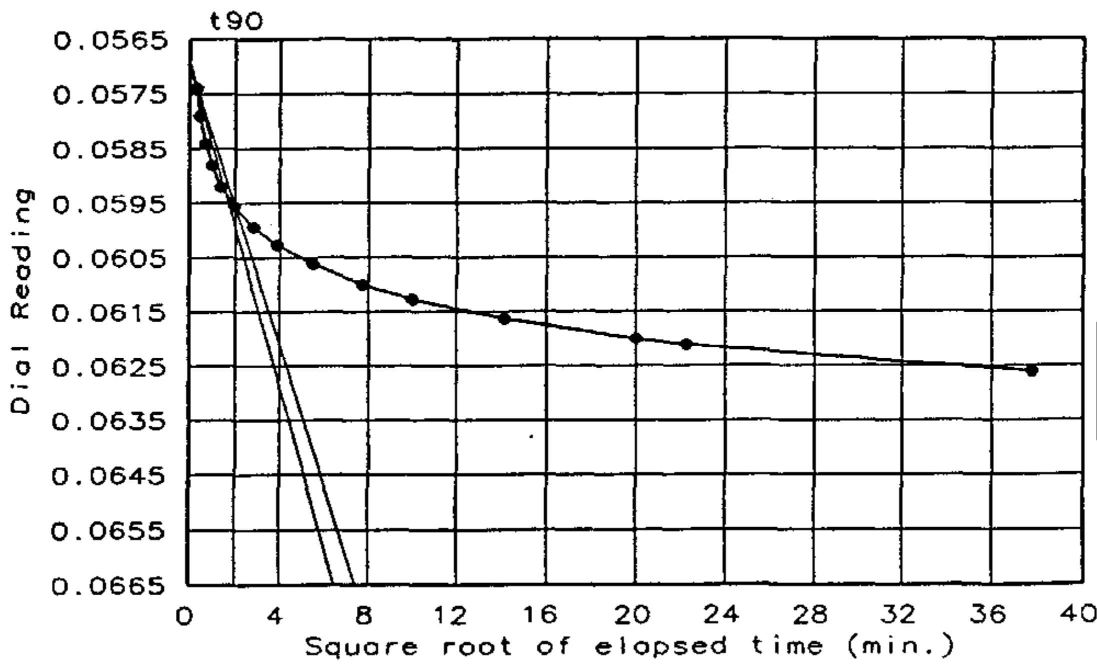
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6132
Client Sample No.: AC9950 3-10 C



Load No.= 9
Load= 16.00 tsf
D_0 = 0.0569
D_{90} = 0.0596
D_{100} = 0.0599
T_{90} = 4.19 min.

C_v @ T_{90} = .025 in.^{2}/min.

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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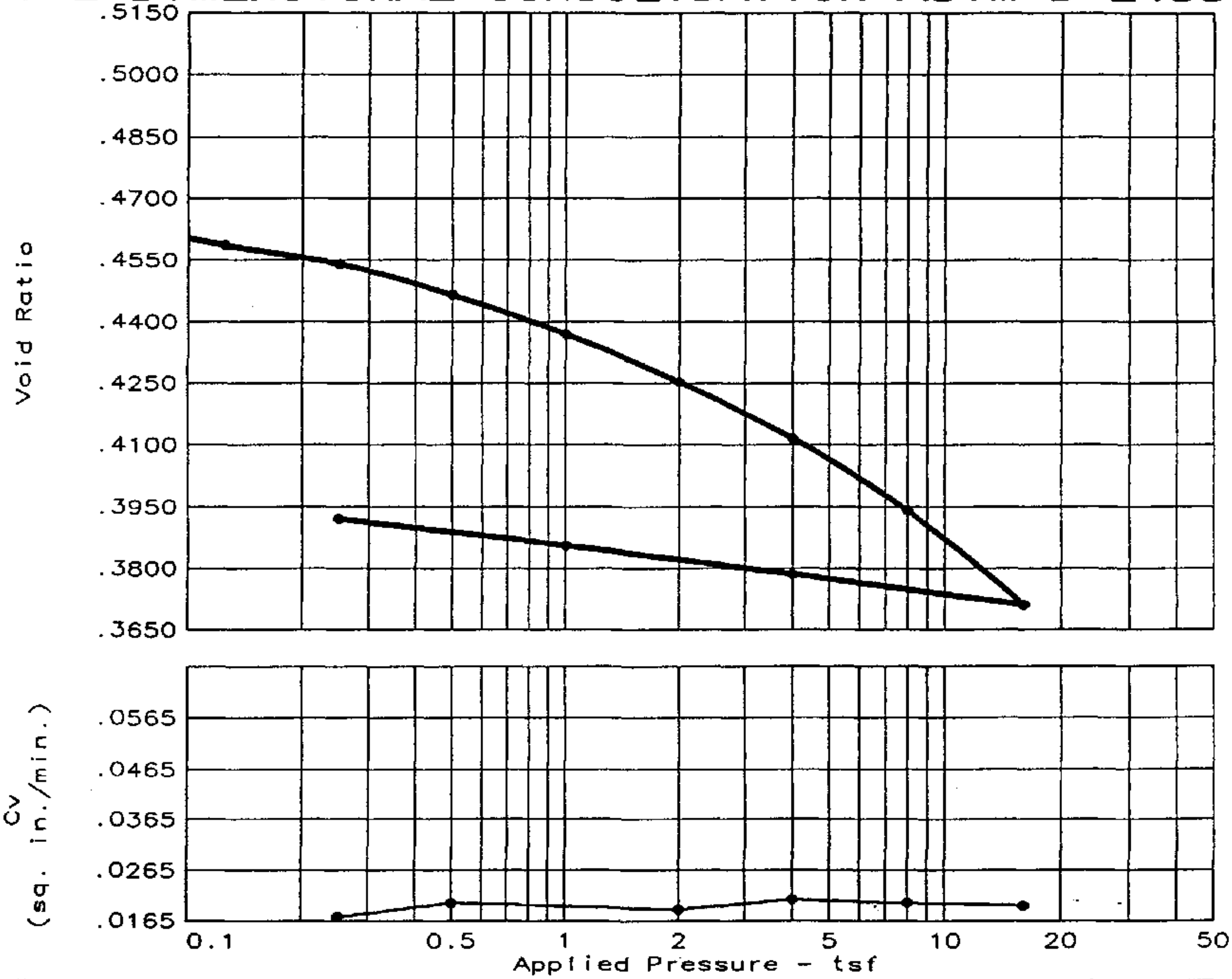
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
94.1 %	16.2	116.0	ND	ND	2.73	0.08	0.4697

TEST RESULTS

C_v at 0.50 tsf applied = 0.020 sq. in./min.
C_v at 16.00 tsf applied = 0.019 sq. in./min.

MATERIAL DESCRIPTION

GRAVELLY SAND, grey with silt
Class: SP

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6242
Client Sample No.: AD1810 490

Remarks:
Sample received in 1.9" sample tube at 142.1pcf wet density. Reformed sample to approximate nat'l density:134.8 pcf

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

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Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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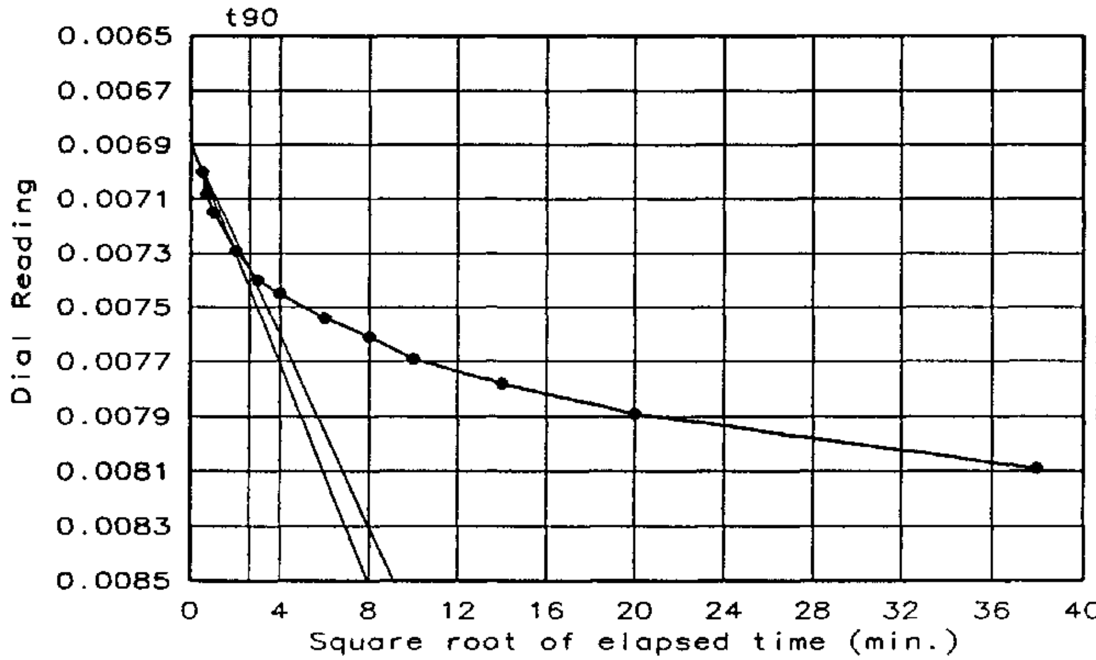
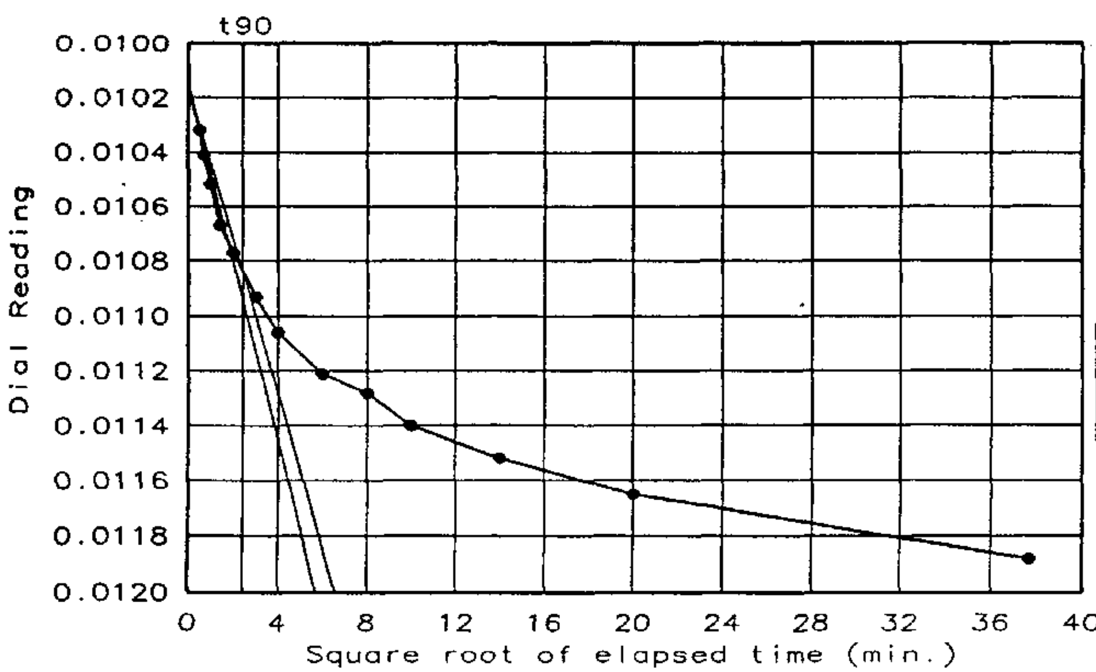
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6242
Client Sample No.: AD1810 4-9D



Load No.= 3
Load= 0.25 tsf
D_0 = 0.0069
D_{90} = 0.0074
D_{100}= 0.0074
T_{90}= 6.87 min.

C_v @ T_{90} =
.017 in.^{2}/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.0102
D_{90} = 0.0108
D_{100}= 0.0109
T_{90}= 5.88 min.

C_v @ T_{90} =
.020 in.^{2}/min.

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Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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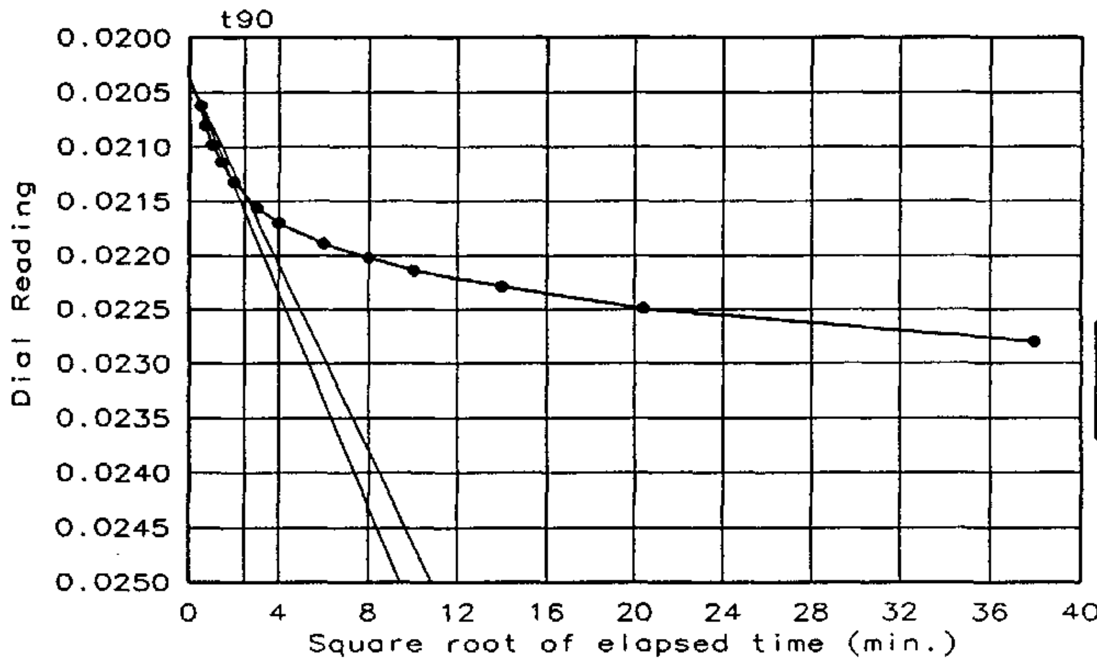
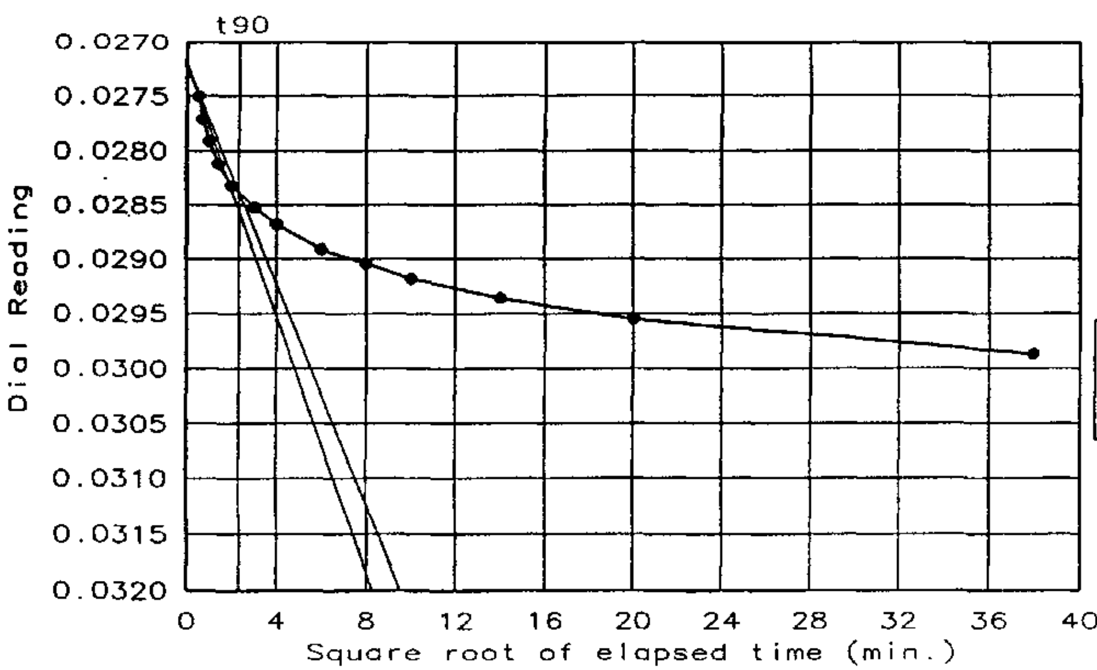
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6242
Client Sample No.: AD~~1610~~ 4-9D



Load No.= 6
Load= 2.00 tsf
D_0 = 0.0204
D_{90} = 0.0214
D_{100}= 0.0216
T_{90}= 6.12 min.

C_v @ T_{90} =
.019 in.²/min.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.0272
D_{90} = 0.0284
D_{100}= 0.0285
T_{90}= 5.44 min.

C_v @ T_{90} =
.021 in.²/min.

Ken Mueller
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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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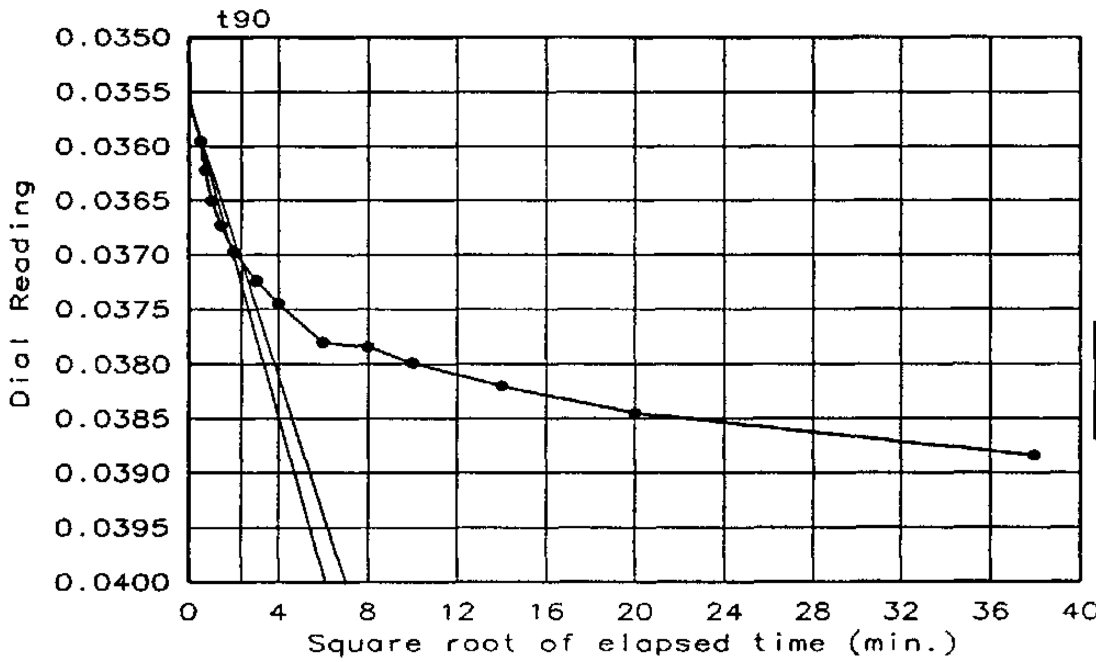
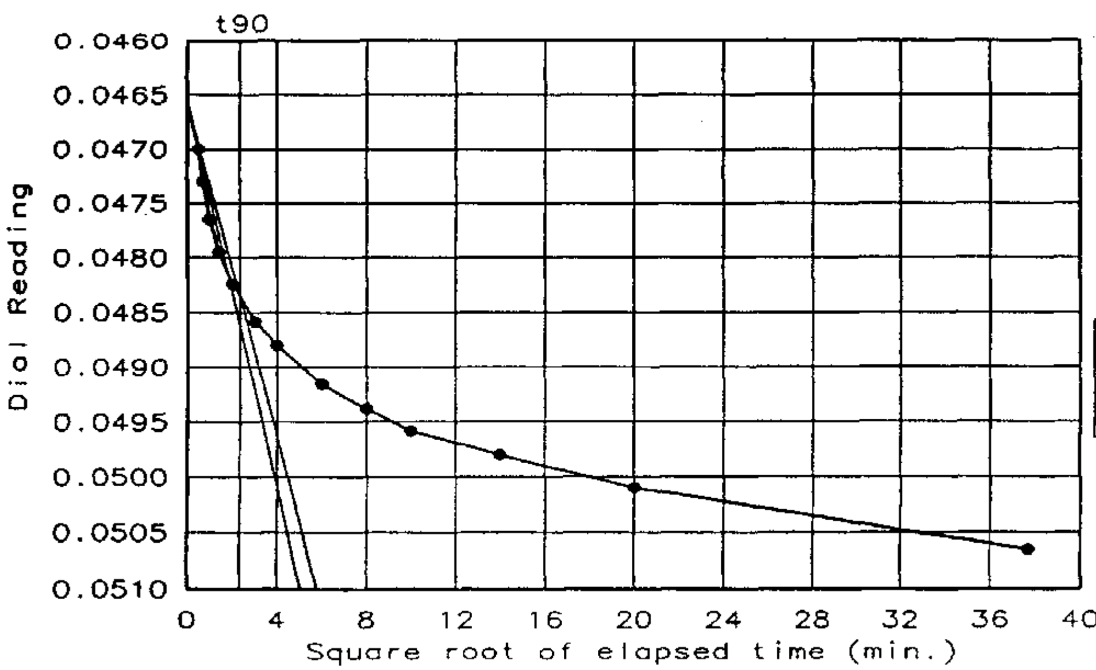
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6242
Client Sample No.: AD1810 4-9D



Load No.= 8
Load= 8.00 tsf
D_0 = 0.0356
D_{90} = 0.0371
D_{100}= 0.0372
T_{90}= 5.49 min.

C_v @ T_{90} =
.020 in.^{2}/min.



Load No.= 9
Load= 16.00 tsf
D_0 = 0.0466
D_{90} = 0.0484
D_{100}= 0.0486
T_{90}= 5.49 min.

C_v @ T_{90} =
.019 in.^{2}/min.

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552A-6-93

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

IT ENVIRONMENTAL TECHNOLOGY
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OAK RIDGE, TN
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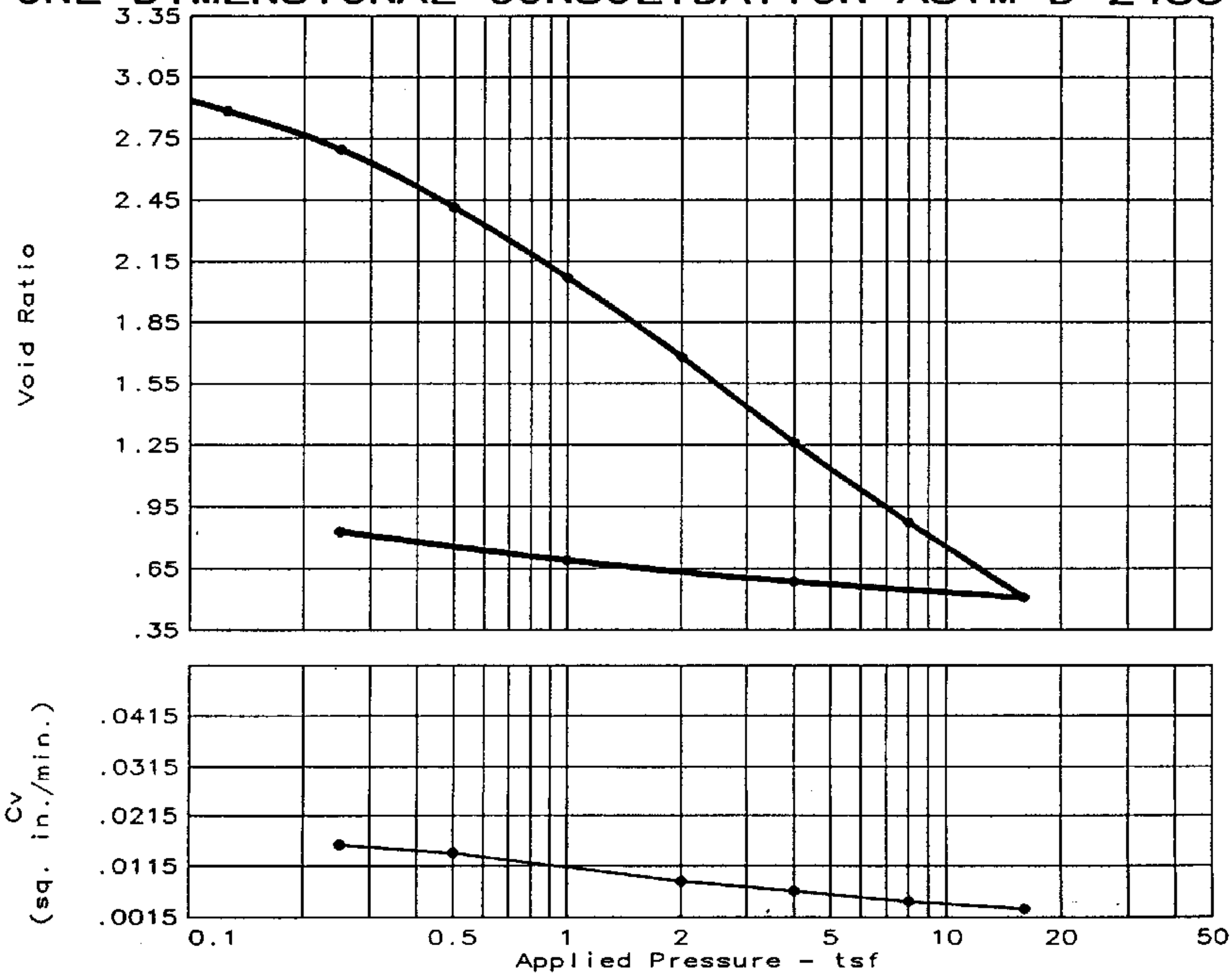
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
98.0 %	140.0	33.4	ND	ND	2.26	1.21	3.2266

TEST RESULTS

C_v at 0.50 tsf applied = 0.014 sq. in./min.
C_v at 16.00 tsf applied = 0.003 sq. in./min.

MATERIAL DESCRIPTION

ORGANIC SILT/DETRITUS, dark brn.and grey,sat'd
Class: ML/OL

Remarks:
Sample received in 1.9" sample tube at 79.6pcf wet density. Reformed sample to approximate nat'l density:80.2 pcf

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6243
Client Sample No.: AD~~1811~~ 410B

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

IT Corp. - GEOTECHNICAL LABORATORY

6824-6-93

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

IT ENVIRONMENTAL TECHNOLOGY DEVELOPMENT CENTER
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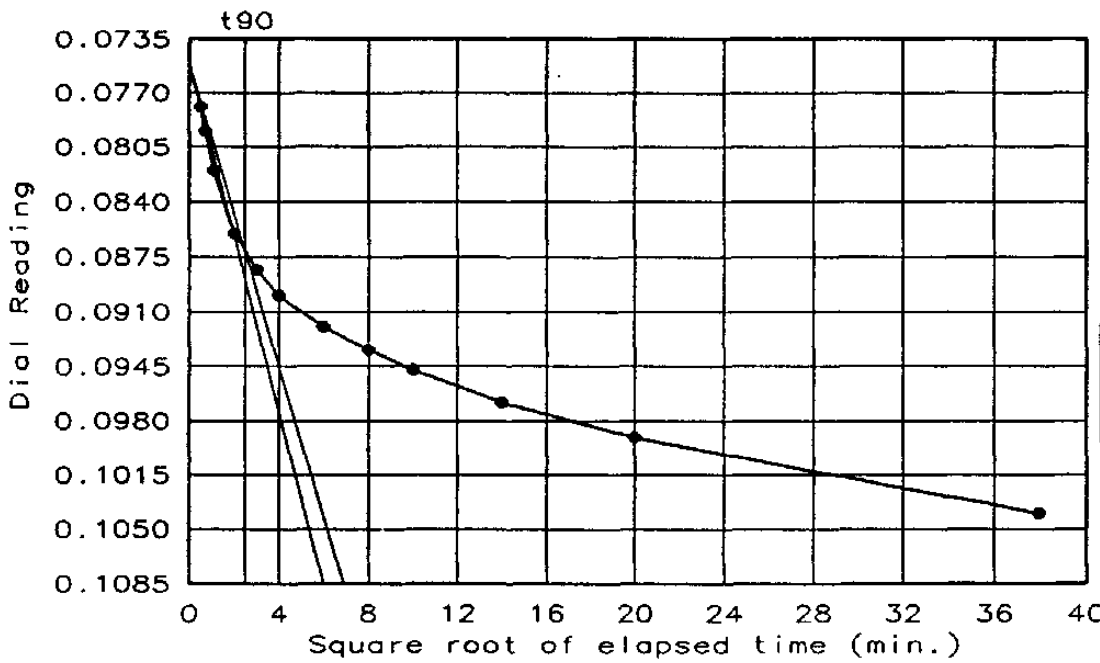
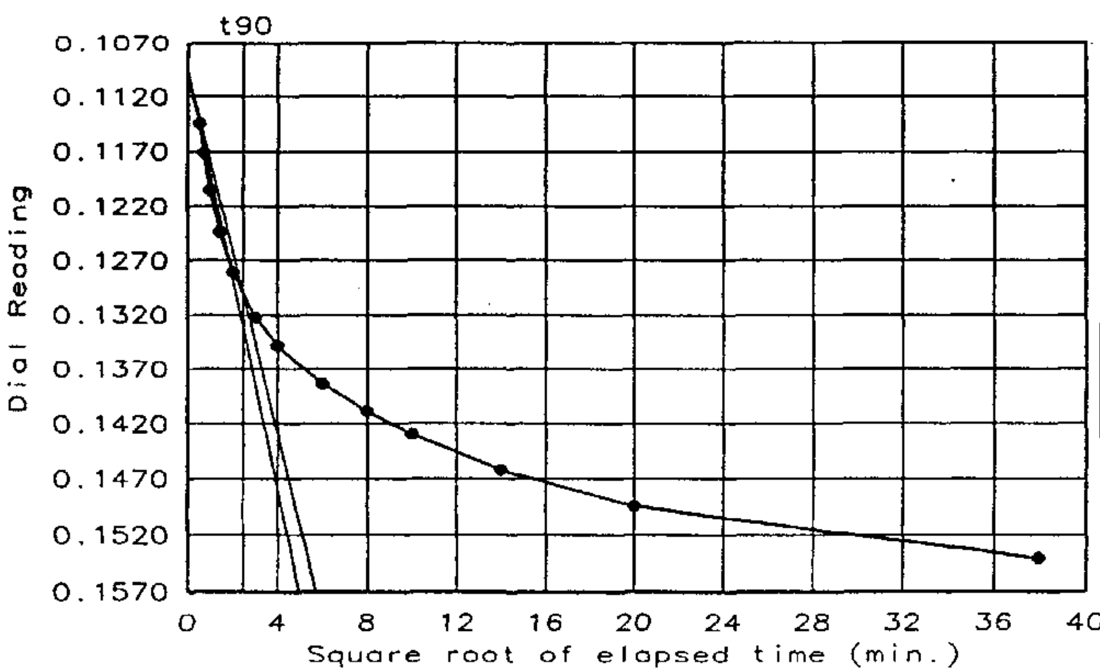
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6243
Client Sample No.: ~~AD1611~~ 4-10B



Load No.= 3
Load= 0.25 tsf
D_0 = 0.0751
D_{90} = 0.0871
D_{100}= 0.0884
T_{90}= 6.09 min.

C_v @ T_{90} =
.016 in.^{2}/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.1096
D_{90} = 0.1299
D_{100}= 0.1321
T_{90}= 5.97 min.

C_v @ T_{90} =
.014 in.^{2}/min.

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Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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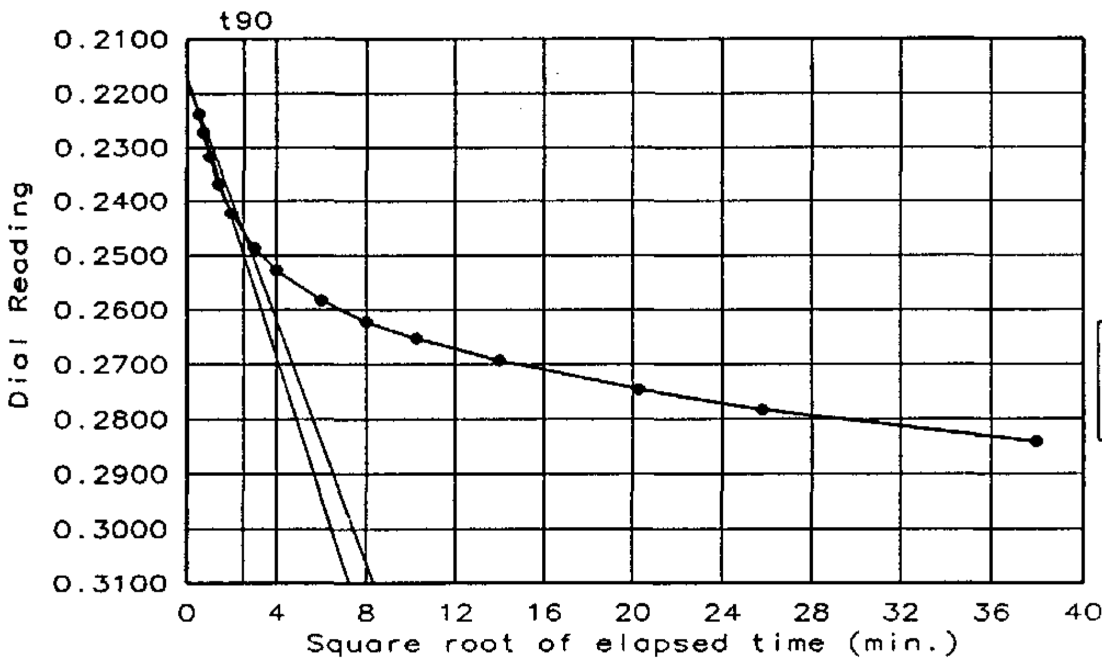
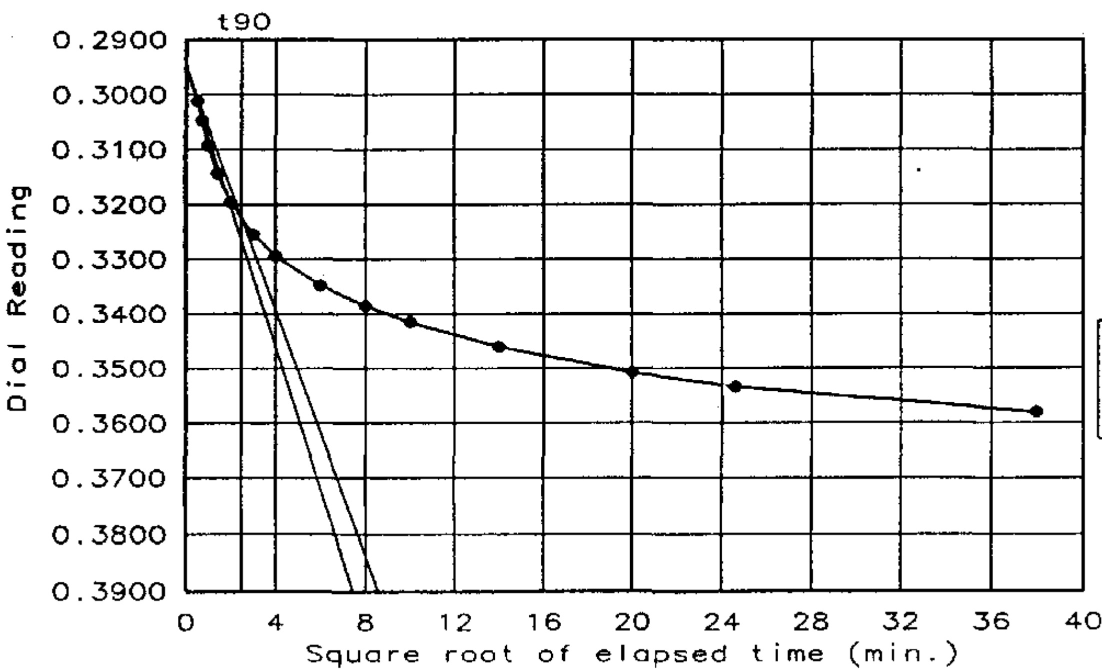
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6243
Client Sample No.: AD~~1811~~ 4-10B



Load No.= 6
Load= 2.00 tsf
D_0 = 0.2174
D_{90} = 0.2457
D_{100}= 0.2489
T_{90}= 6.47 min.

C_v @ T_{90} =
.009 in.^{2}/min.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.2948
D_{90} = 0.3224
D_{100}= 0.3255
T_{90}= 6.19 min.

C_v @ T_{90} =
.007 in.^{2}/min.

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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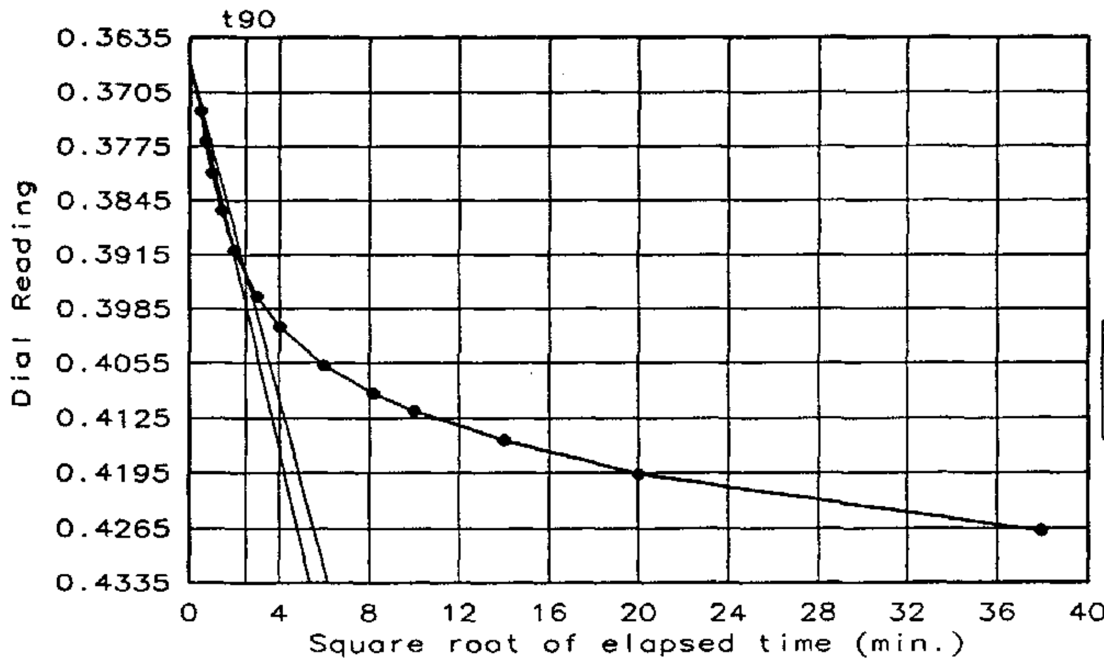
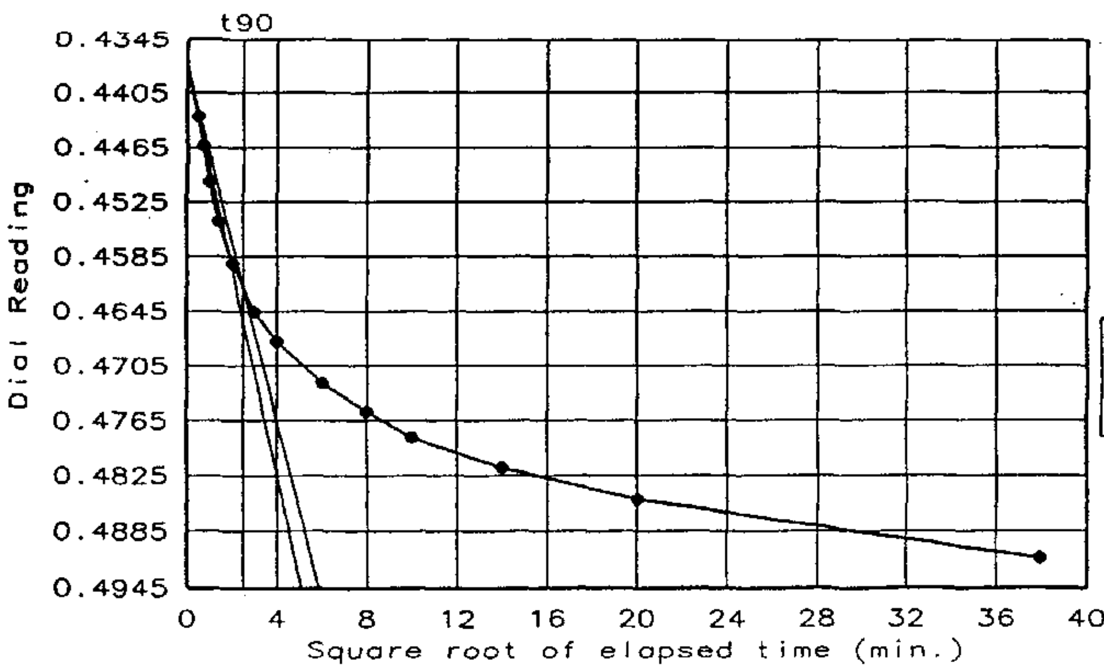
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6243
Client Sample No.: AD~~18~~11 4-10B



Load No.= 8
Load= 8.00 tsf
D_0 = 0.3668
D_{90} = 0.3940
D_{100}= 0.3970
T_{90}= 6.30 min.

C_v @ T_{90} =
.005 in.²/min.



Load No.= 9
Load= 16.00 tsf
D_0 = 0.4375
D_{90} = 0.4619
D_{100}= 0.4646
T_{90}= 6.26 min.

C_v @ T_{90} =
.003 in.²/min.

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Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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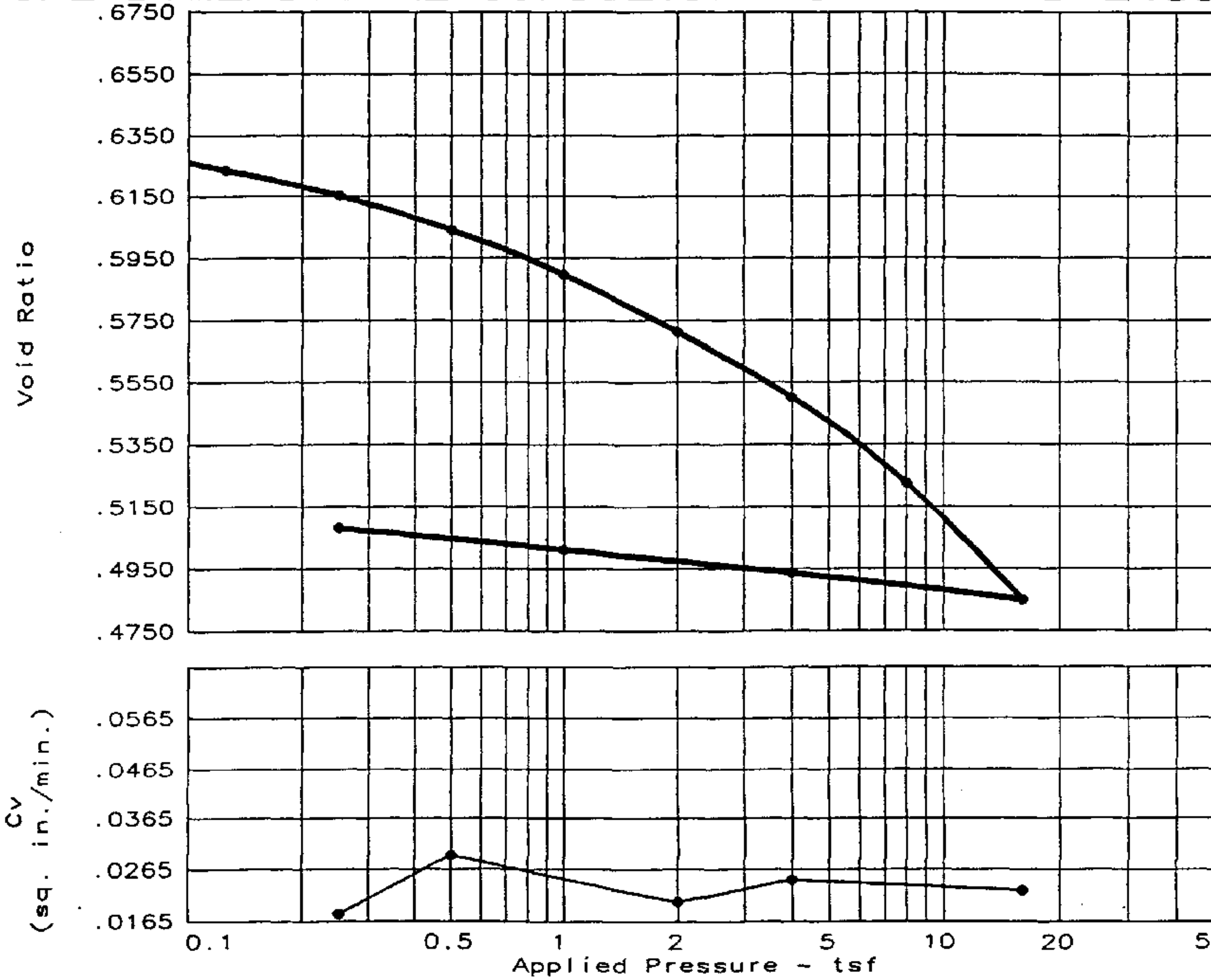
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
74.1 %	17.5	103.4	N/A	N/A	2.72	3.89	0.12	0.6423

TEST RESULTS

Compression Index = 0.12

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6153
Client Sample No.: AD0465 54E

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

IT Corp. - GEOTECHNICAL LABORATORY

MATERIAL DESCRIPTION

SAND, tan and brown w/ organic silt - sat'd

Class: SP

Remarks:

Sample received in 1.9 sample tube at 123.2pcf Remolded specimen to approximate natural density.

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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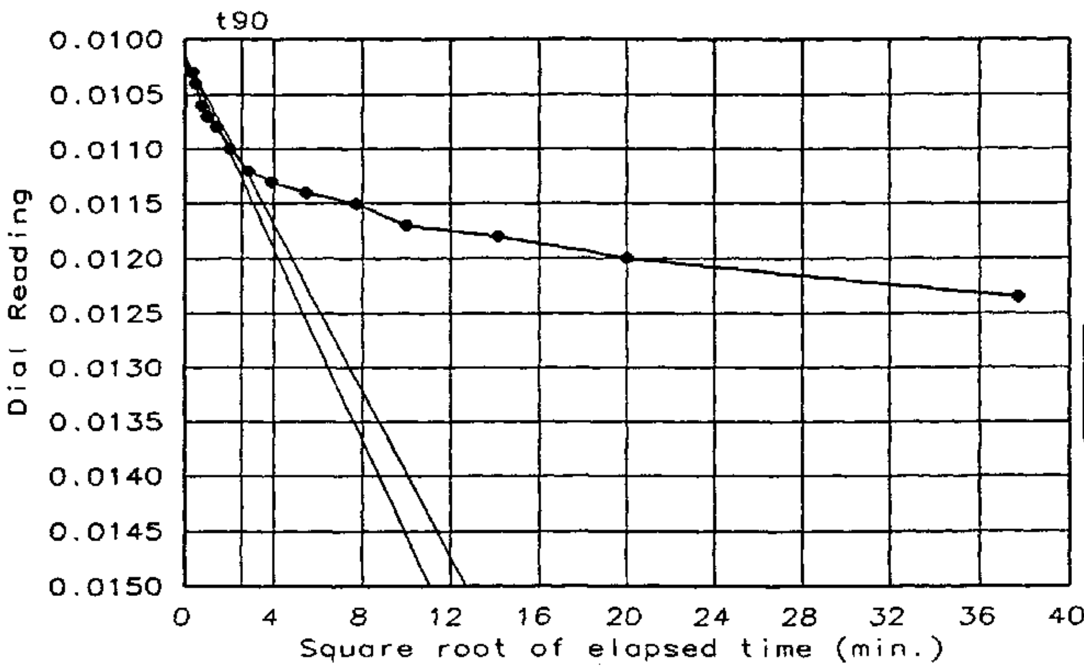
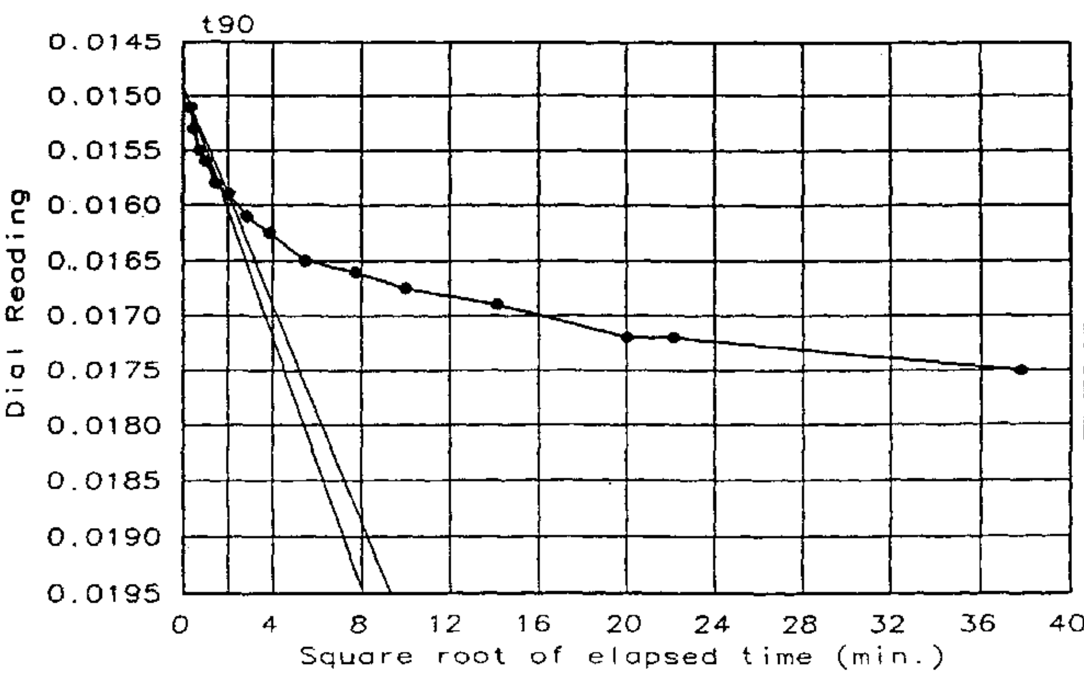
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6153
Client Sample No.: ~~AD0465~~ 54E



Load No.= 3
Load= 0.25 tsf
D_0 = 0.0102
D_{90} = 0.0111
D_{100}= 0.0112
T_{90}= 6.48 min.

C_v @ T_{90} =
.018 in.²/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.0149
D_{90} = 0.0159
D_{100}= 0.0160
T_{90}= 3.91 min.

C_v @ T_{90} =
.029 in.²/min.

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Ken Mueller
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January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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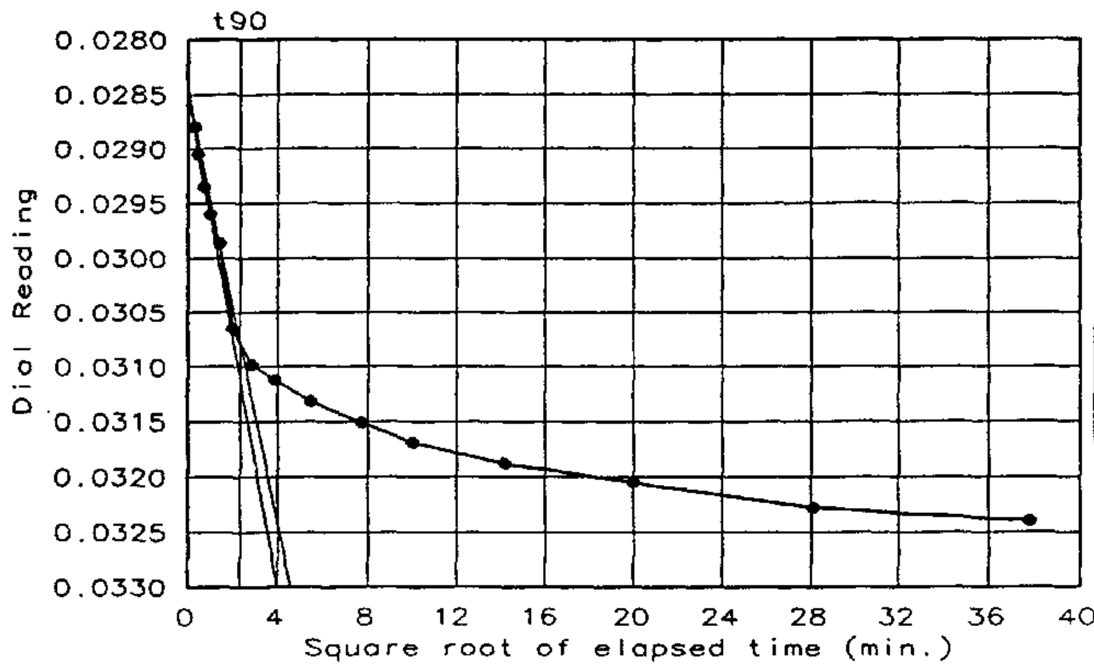
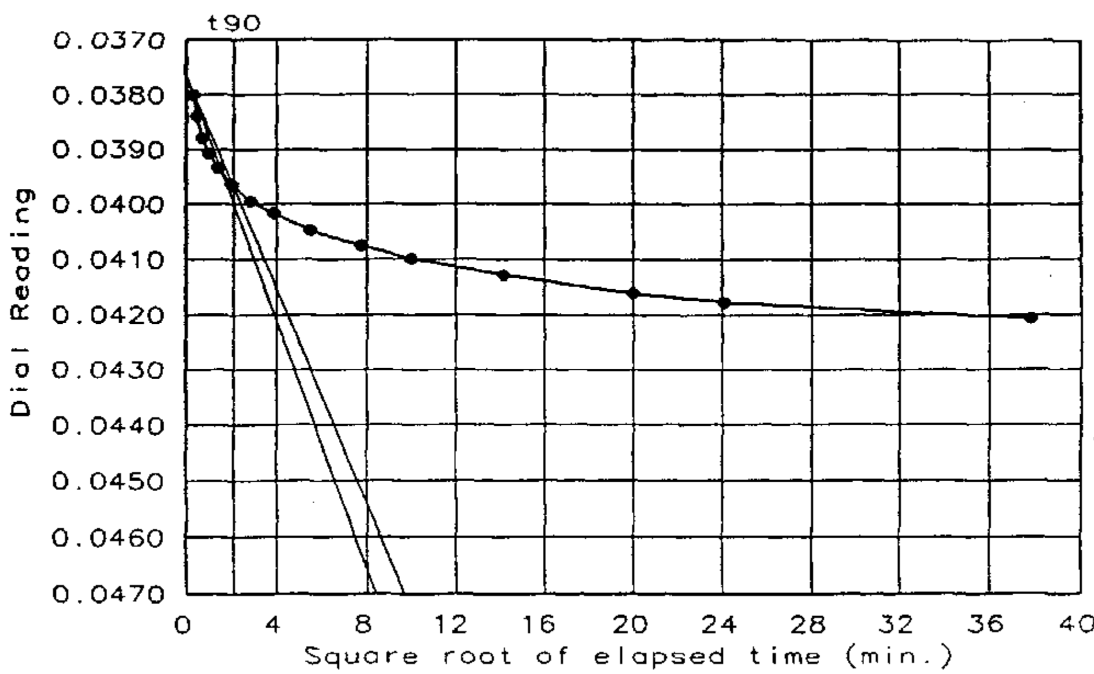
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6153
Client Sample No.: ~~AD0465~~ 54E



Load No.= 6
Load= 2.00 tsf
D_0 = 0.0285
D_{90} = 0.0308
D_{100}= 0.0310
T_{90}= 5.44 min.

C_v @ T_{90} =
.020 in.^{2}/min.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.0376
D_{90} = 0.0397
D_{100}= 0.0399
T_{90}= 4.38 min.

C_v @ T_{90} =
.025 in.^{2}/min.

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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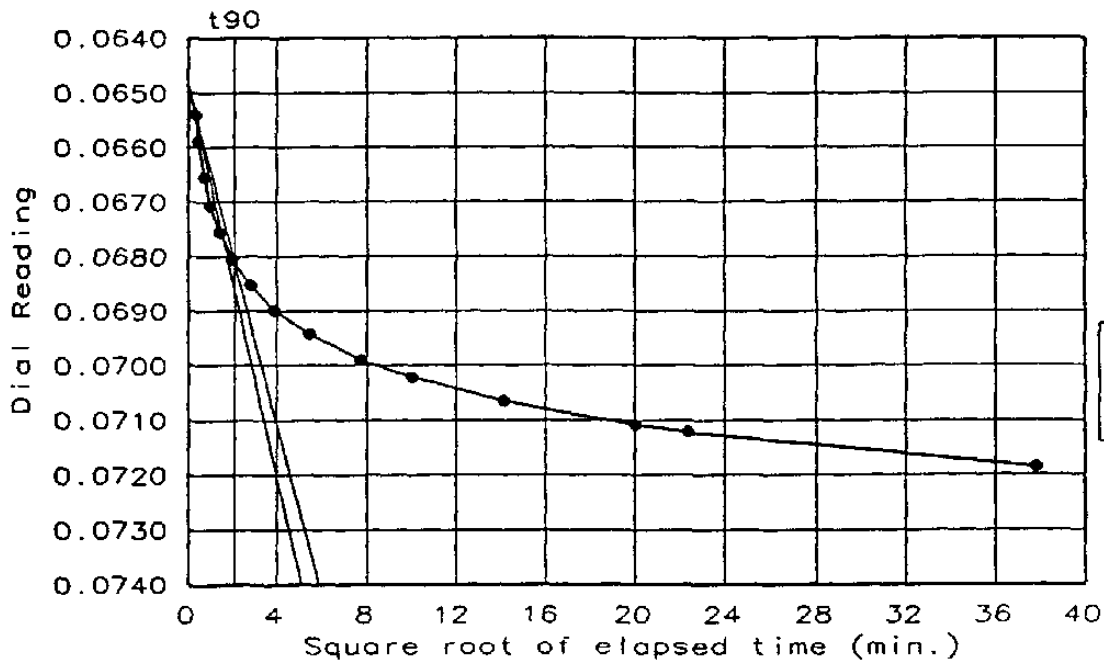
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6153
Client Sample No.: ~~AD0465~~ 5-1E



Load No.= 9
Load= 16.00 tsf
D_0 = 0.0648
D_{90} = 0.0681
D_{100}= 0.0685
T_{90}= 4.44 min.

C_v @ T_{90} = .023 in.²/min.

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Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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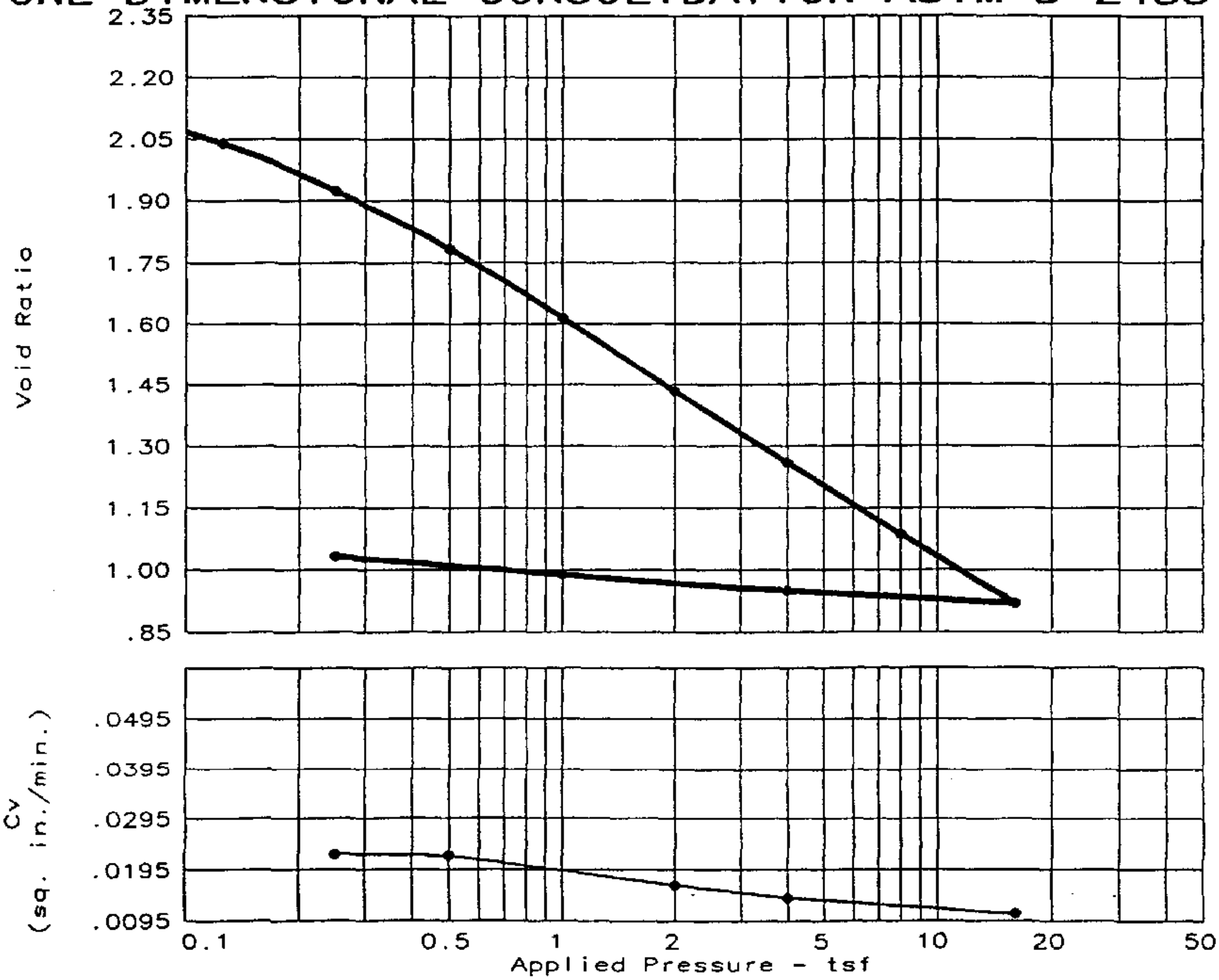
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
100.2 %	81.6	52.5	ND	ND	2.66	0.16	0.55	2.1646

TEST RESULTS	MATERIAL DESCRIPTION
Compression Index = 0.55	ORGANIC SILT, dark brown with clay - sat'd Class: OL
ETDC Project Name: G.E./Housatonic River ETDC Project No.: 483565.02 ETDC Sample No.: 6154 Client Sample No.: AD0~~46~~66 5-22	Remarks: Sample received in 1.9" sample tube at 100.7pcf Remolded specimen to approximate natural density.
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435 IT Corp. - GEOTECHNICAL LABORATORY	

Ken Mueller
Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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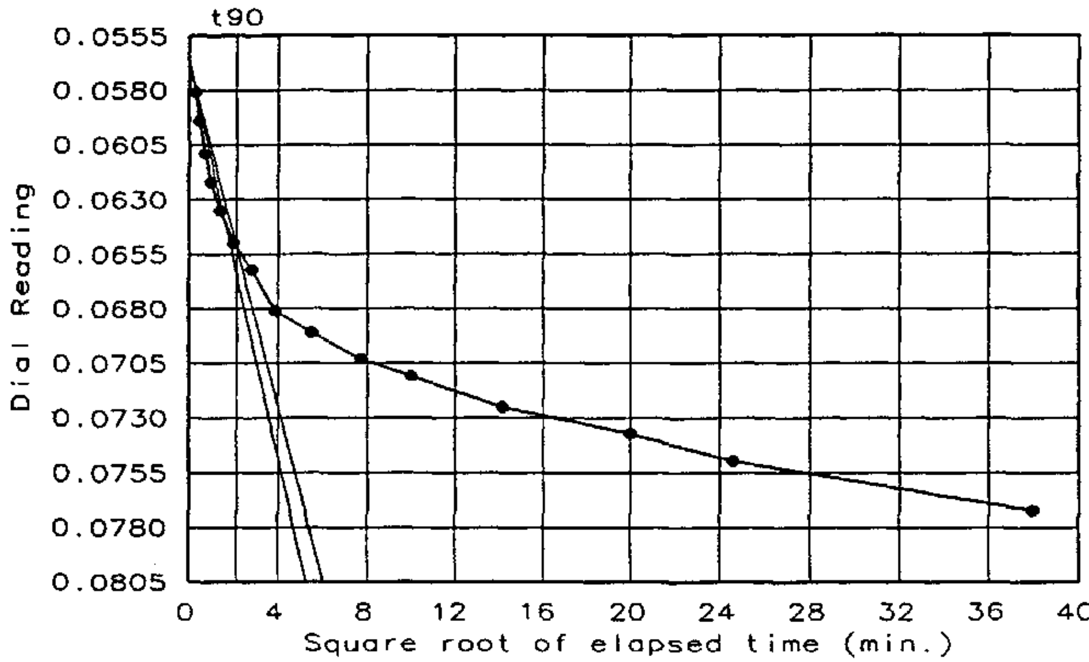
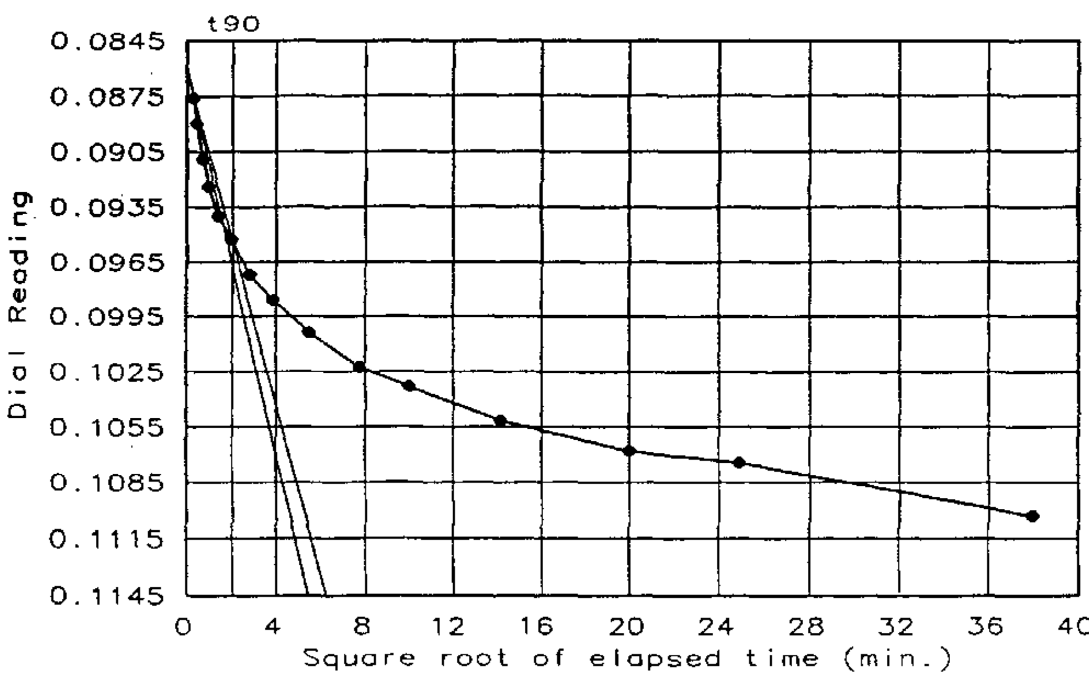
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6154
Client Sample No.: ~~AD0466~~ 5-26



Load No.= 3
Load= 0.25 tsf
D_0 = 0.0567
D_{90} = 0.0652
D_{100}= 0.0662
T_{90}= 4.69 min.

C_v @ T_{90} =
.023 in.^{2}/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.0859
D_{90} = 0.0955
D_{100}= 0.0966
T_{90}= 4.35 min.

C_v @ T_{90} =
.022 in.^{2}/min.

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Quanterra
January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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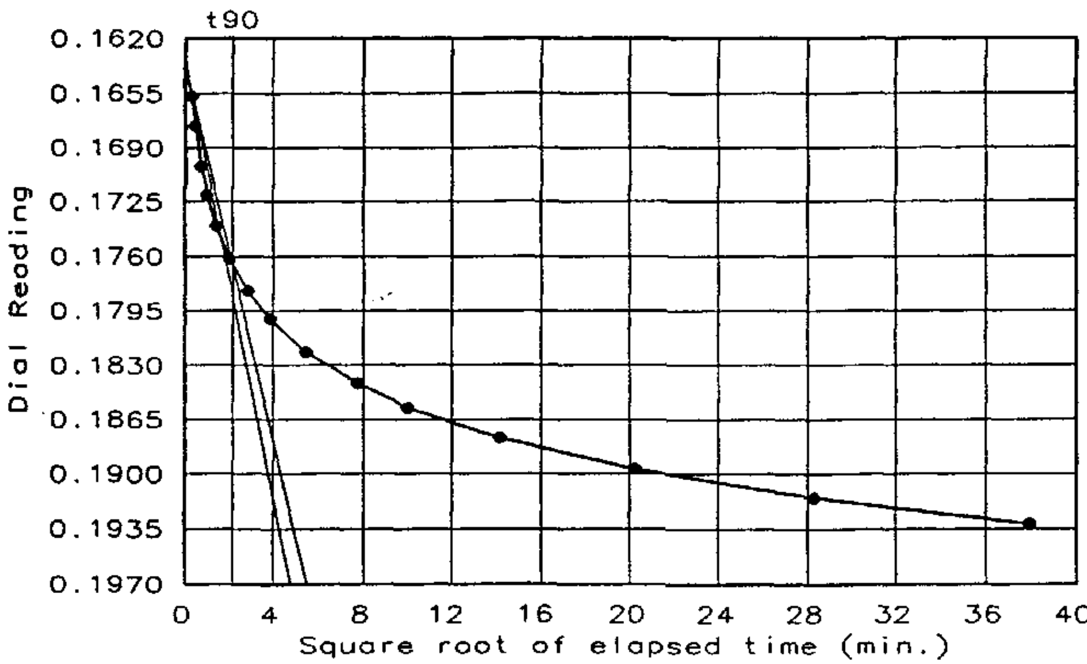
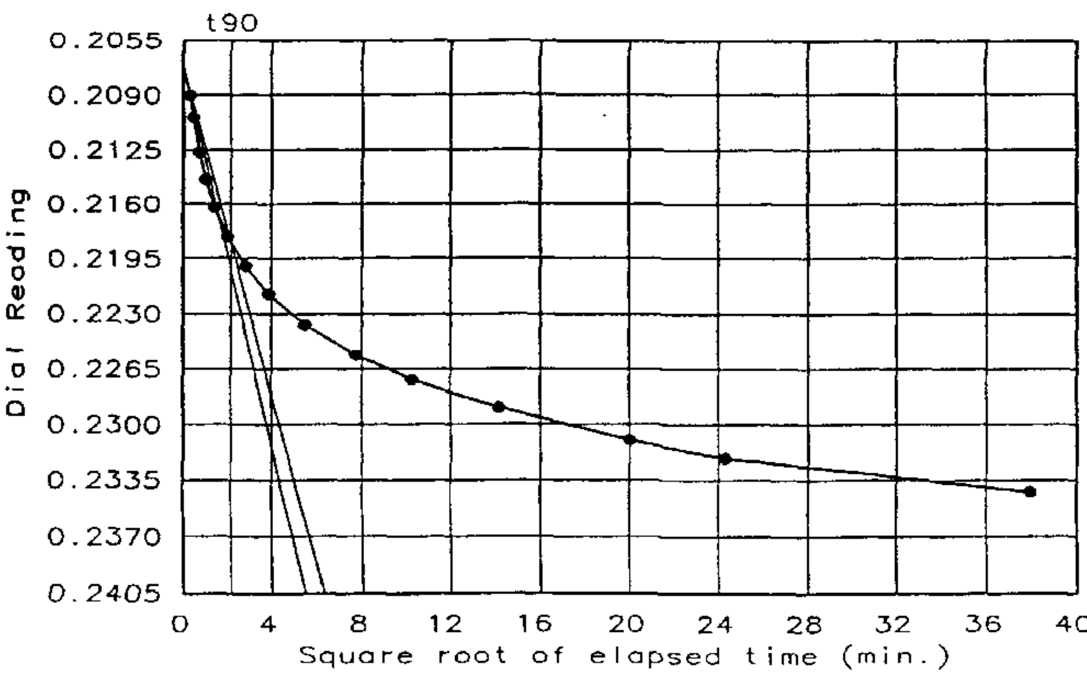
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6154
Client Sample No.: ~~AD0466~~ F-2L



Load No.= 6
Load= 2.00 tsf
D_0 = 0.1635
D_{90} = 0.1765
D_{100}= 0.1780
T_{90}= 4.60 min.

C_v @ T_{90} =
.016 in.²/min.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.2071
D_{90} = 0.2185
D_{100}= 0.2198
T_{90}= 4.68 min.

C_v @ T_{90} =
.014 in.²/min.

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ETDC Project No.: 483565.02

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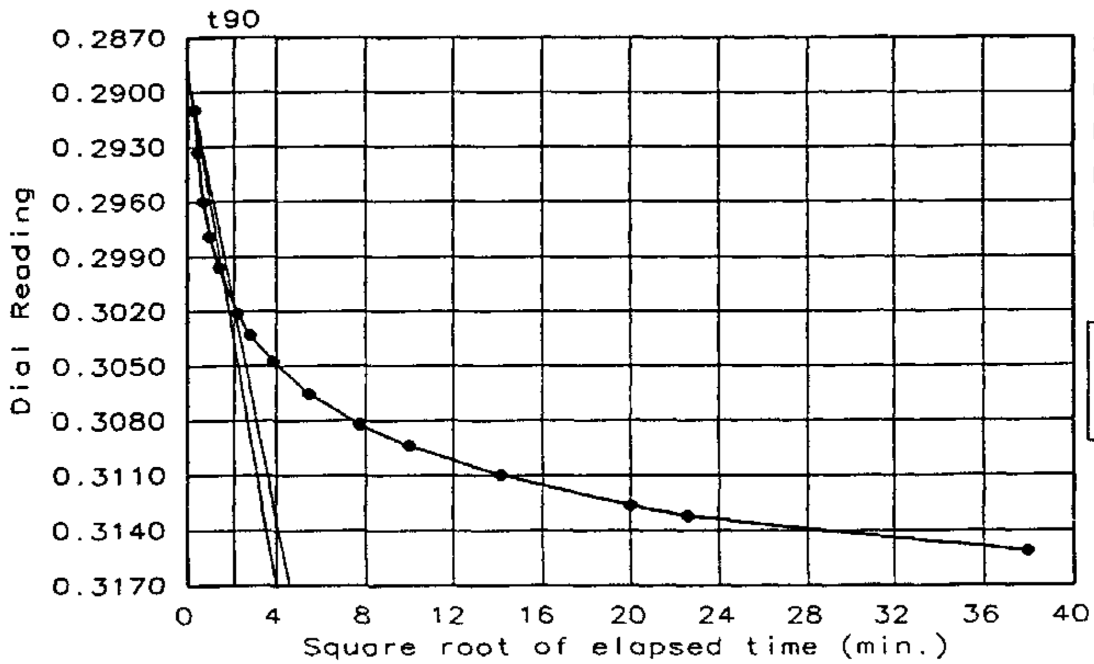
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6154
Client Sample No.: AD0466 5-26



Load No.= 9
Load= 16.00 tsf
D_0 = 0.2888
D_{90} = 0.3017
D_{100} = 0.3031
T_{90} = 4.37 min.

C_v @ T_{90} = .011 in.²/min.

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January 5, 1995
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ETDC Project No.: 483565.02

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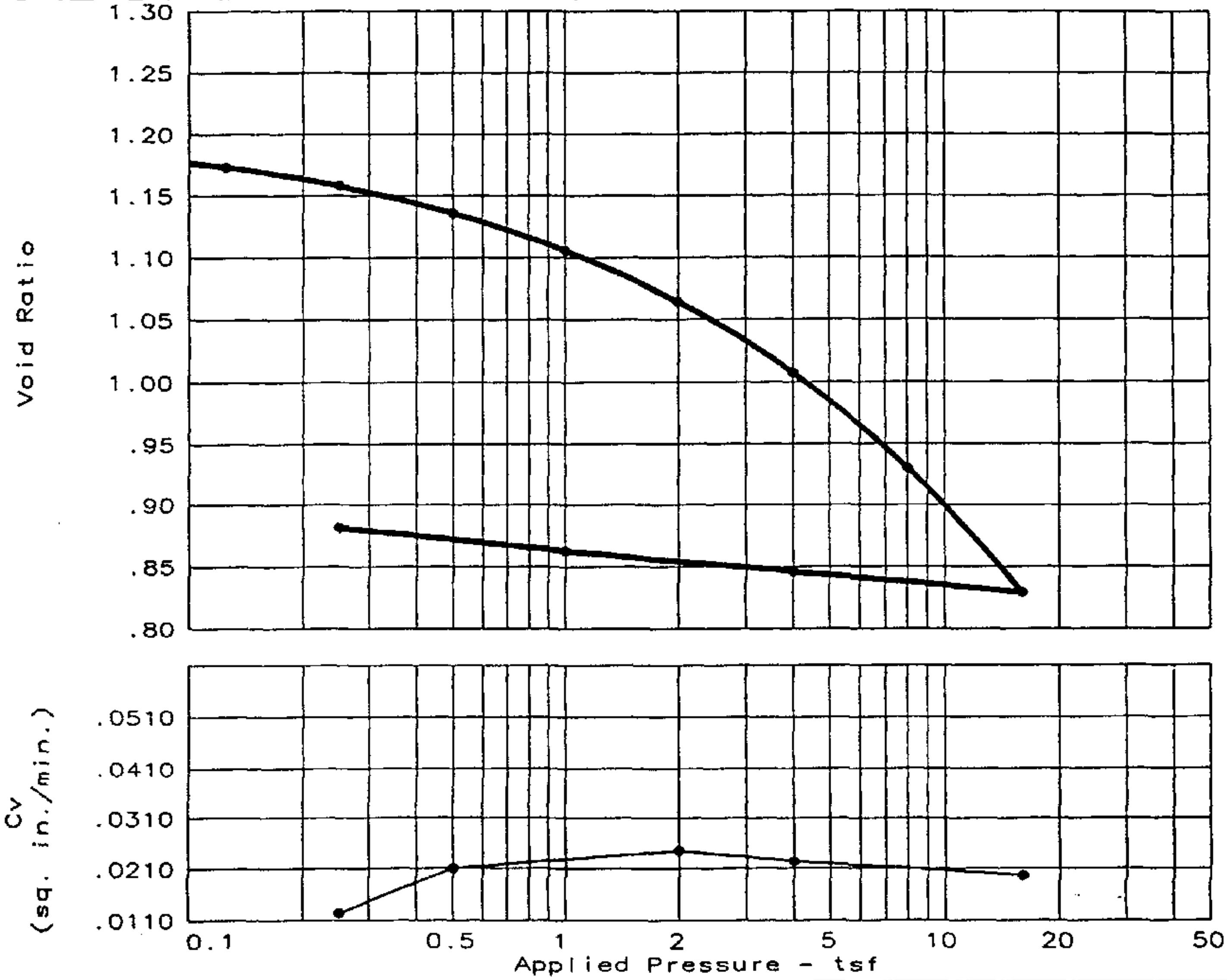
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
74.1 %	33.9	74.5	N/A	N/A	2.63	3.79	0.33	1.2048

TEST RESULTS	MATERIAL DESCRIPTION
Compression Index = 0.33	SAND, tan and brown w/ organic silt - sat'd Class: SP

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6155
Client Sample No.: ~~AD0467~~ 5-3F

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

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Remarks:
Sample received in 1.9 sample tube at 108.5pcf
Remolded specimen to approximate natural density.

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January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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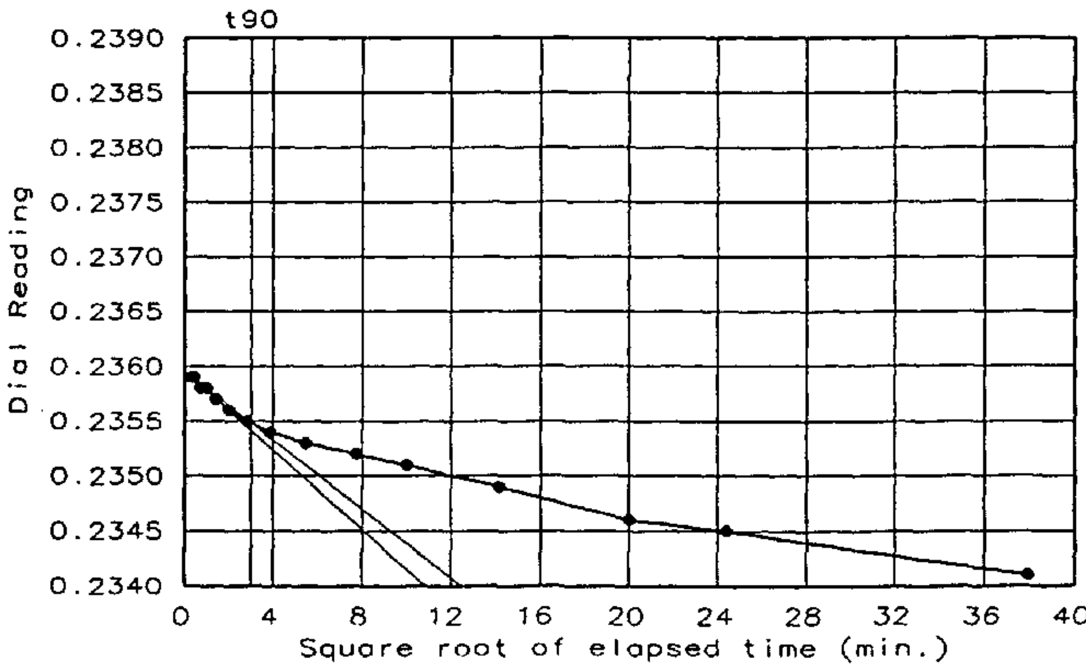
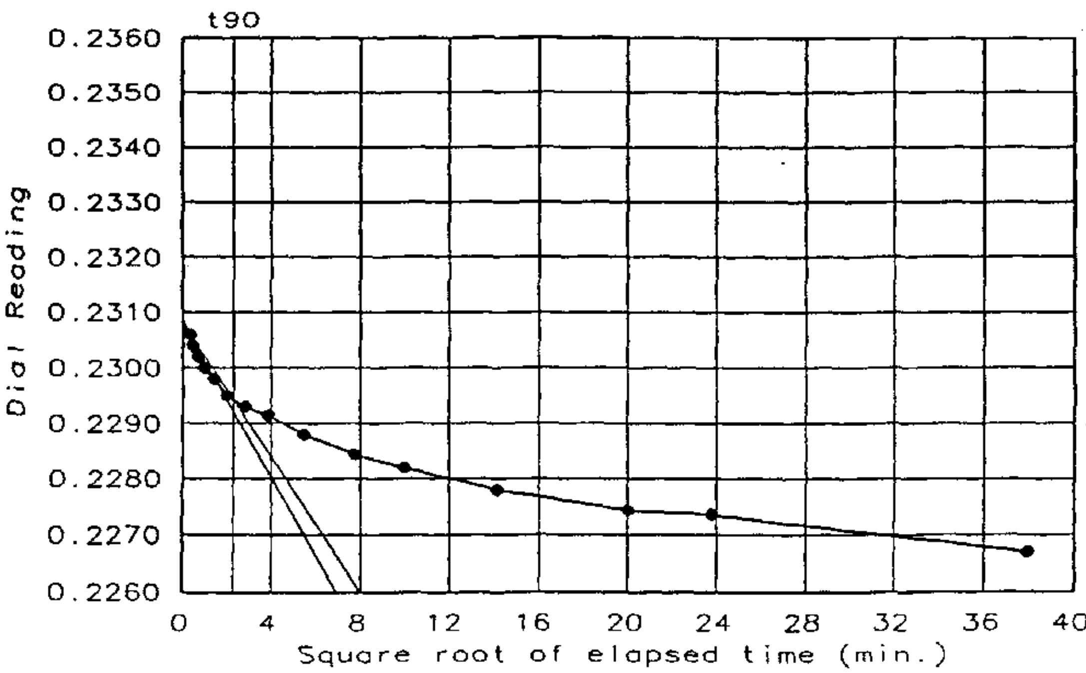
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6155
Client Sample No.: AD0467 5-3F



Load No.= 3
Load= 0.25 tsf
D_0 = 0.2360
D_{90} = 0.2355
D_{100} = 0.2354
T_{90} = 9.22 min.

C_v @ T_{90} =
.012 in.²/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.2308
D_{90} = 0.2294
D_{100} = 0.2293
T_{90} = 5.31 min.

C_v @ T_{90} =
.021 in.²/min.

Ken Mueller
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January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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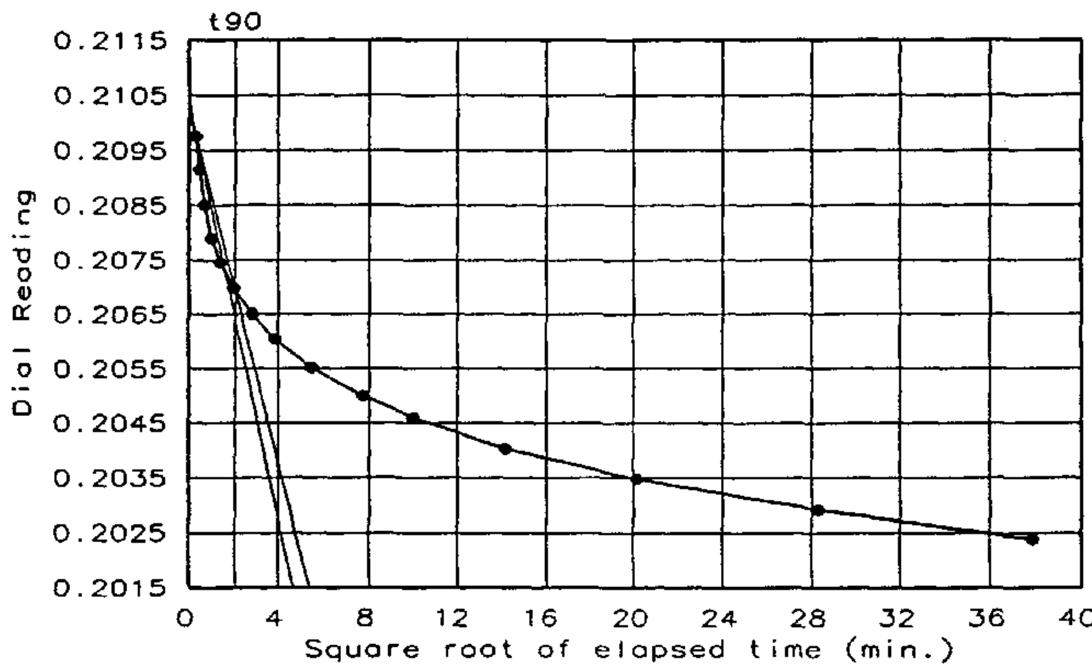
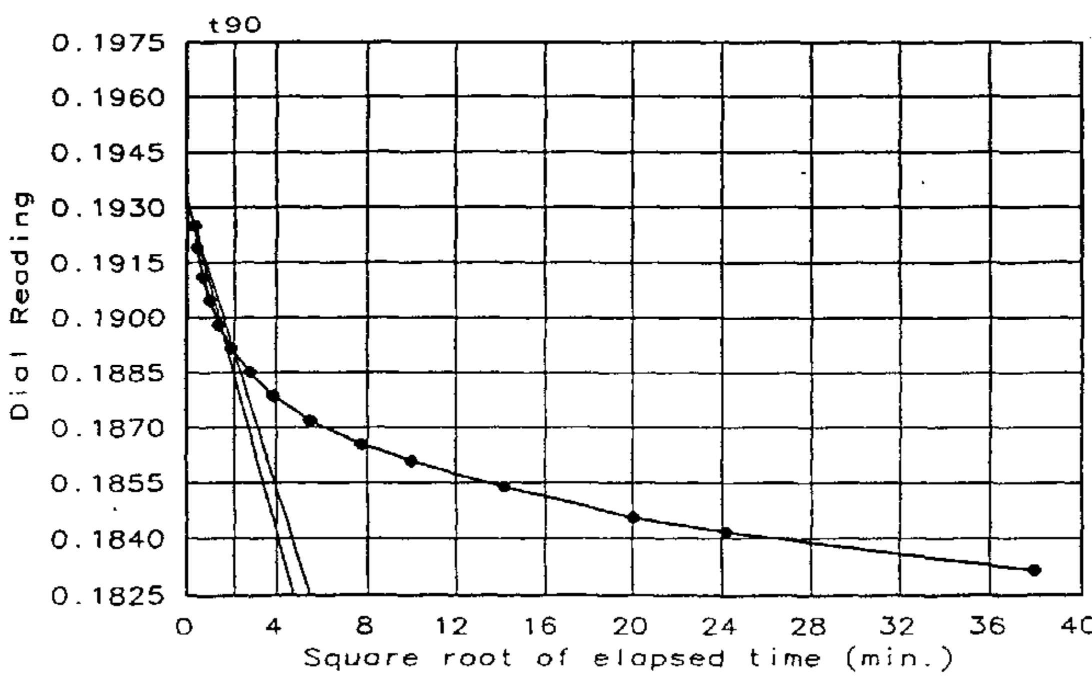
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6155
Client Sample No.: AD~~0467~~ 5-3F



Load No.= 6
Load= 2.00 tsf
D_0 = 0.2103
D_{90} = 0.2069
D_{100}= 0.2066
T_{90}= 4.30 min.

C_v @ T_{90} =
.025 in.²/min.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.1932
D_{90} = 0.1891
D_{100}= 0.1886
T_{90}= 4.49 min.

C_v @ T_{90} =
.022 in.²/min.

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January 5, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.02

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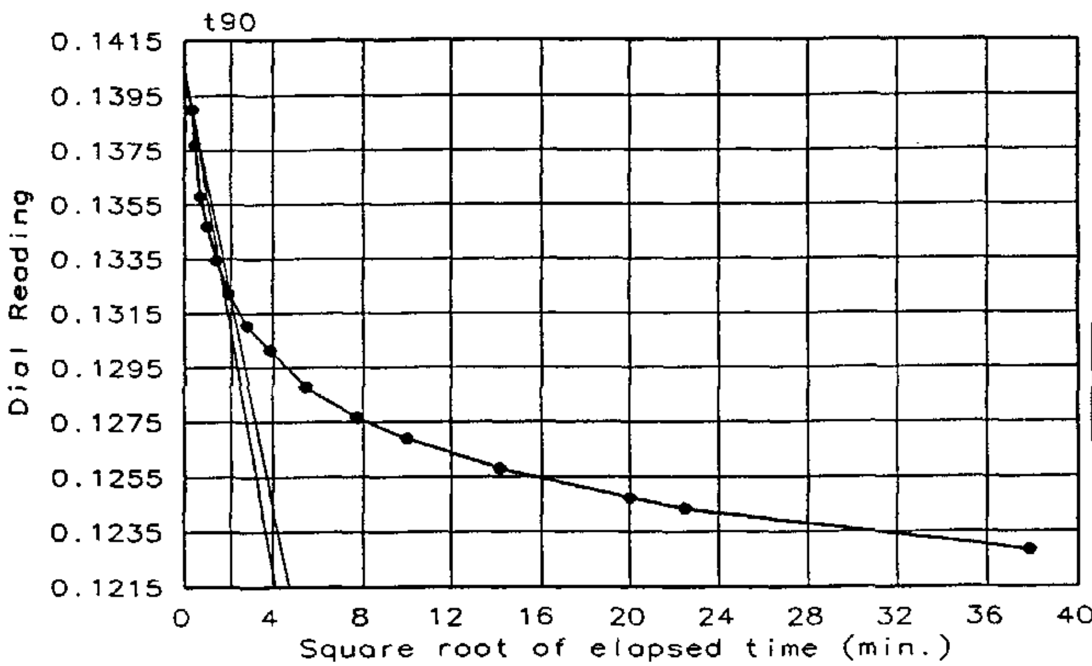
Dial Reading vs. Time

ETDC Project Name: G.E./Housatonic River
ETDC Project No.: 483565.02
ETDC Sample No.: 6155
Client Sample No.: ~~AD0467~~ 5-3F



Load No.= 9
Load= 16.00 tsf
D_0 = 0.1405
D_{90} = 0.1321
D_{100}= 0.1312
T_{90}= 4.36 min.

C_v @ T_{90} =
.020 in.^{2}/min.

682A-6-93

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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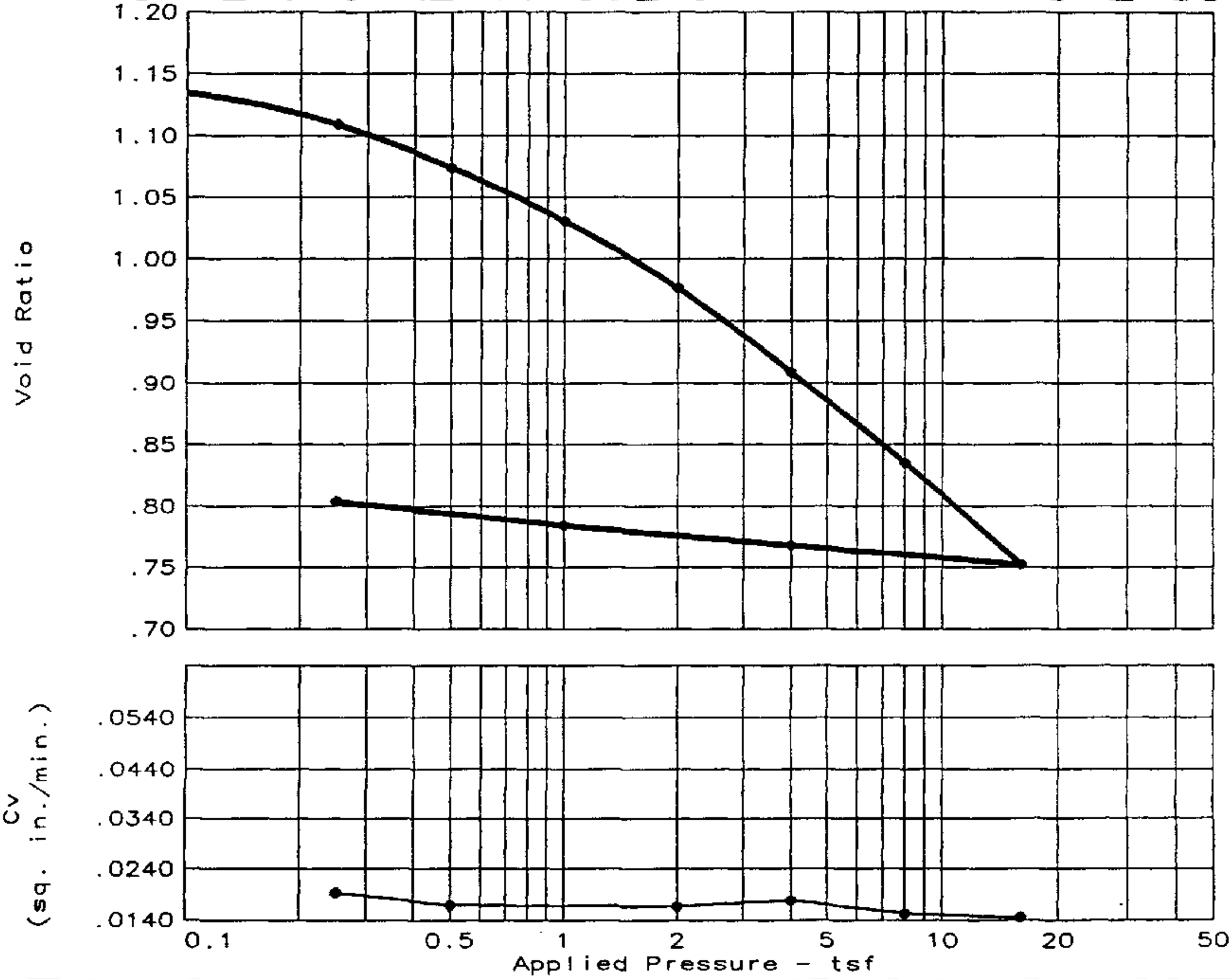
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
97.0 %	42.4	77.0	ND	ND	2.68	0.27	1.1733

TEST RESULTS

C_v at 0.50 tsf applied = 0.017 sq. in./min.
C_v at 16.00 tsf applied = 0.015 sq. in./min.

MATERIAL DESCRIPTION

SILTY SAND, dark brown with organic muck
Class: SP-SM

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6245
Client Sample No.: ~~AD1813~~ 6-1C

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

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Remarks:

Sample received in 1.9" sample tube at 117.8pcf wet density. Reformed sample to approximate nat'l density:109.6 pcf

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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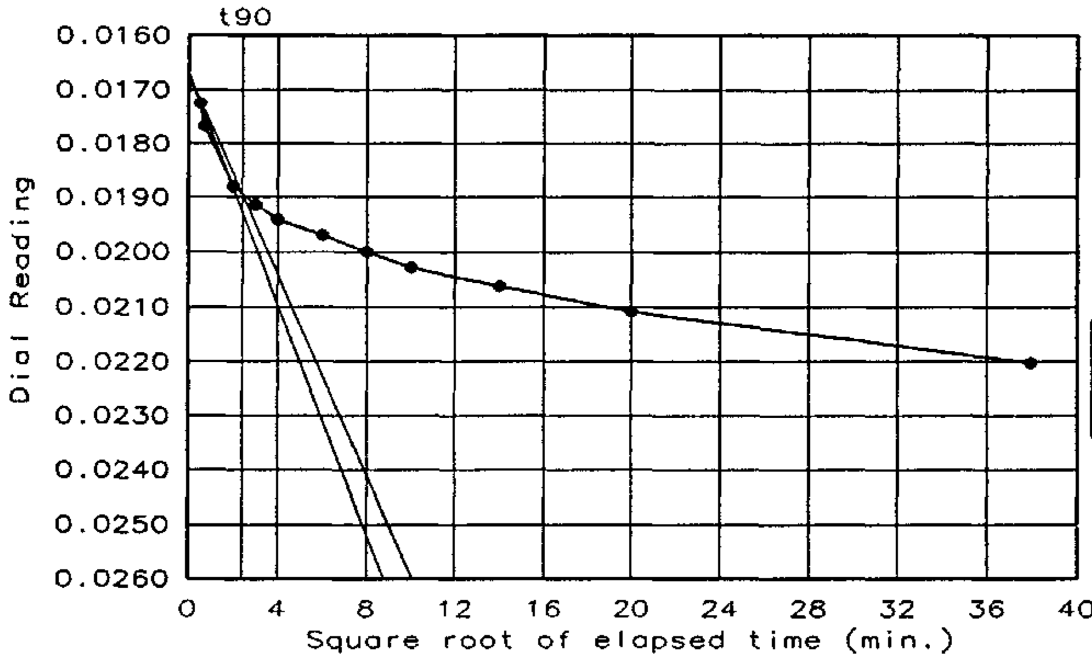
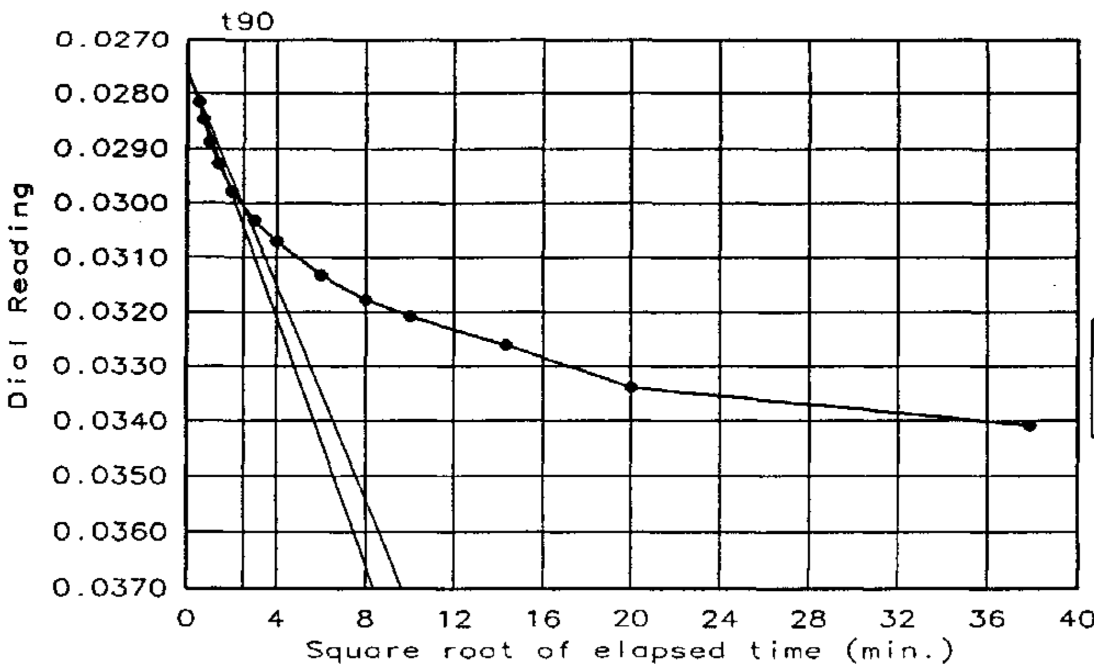
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6245
Client Sample No.: AD~~1813~~ 6-1C



Load No.= 3
Load= 0.25 tsf
D_0 = 0.0167
D_{90} = 0.0189
D_{100}= 0.0192
T_{90}= 5.79 min.

C_v @ T_{90} =
.019 in.^{2}/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.0276
D_{90} = 0.0301
D_{100}= 0.0303
T_{90}= 6.45 min.

C_v @ T_{90} =
.017 in.^{2}/min.

Ken Mueller
Quanterra
February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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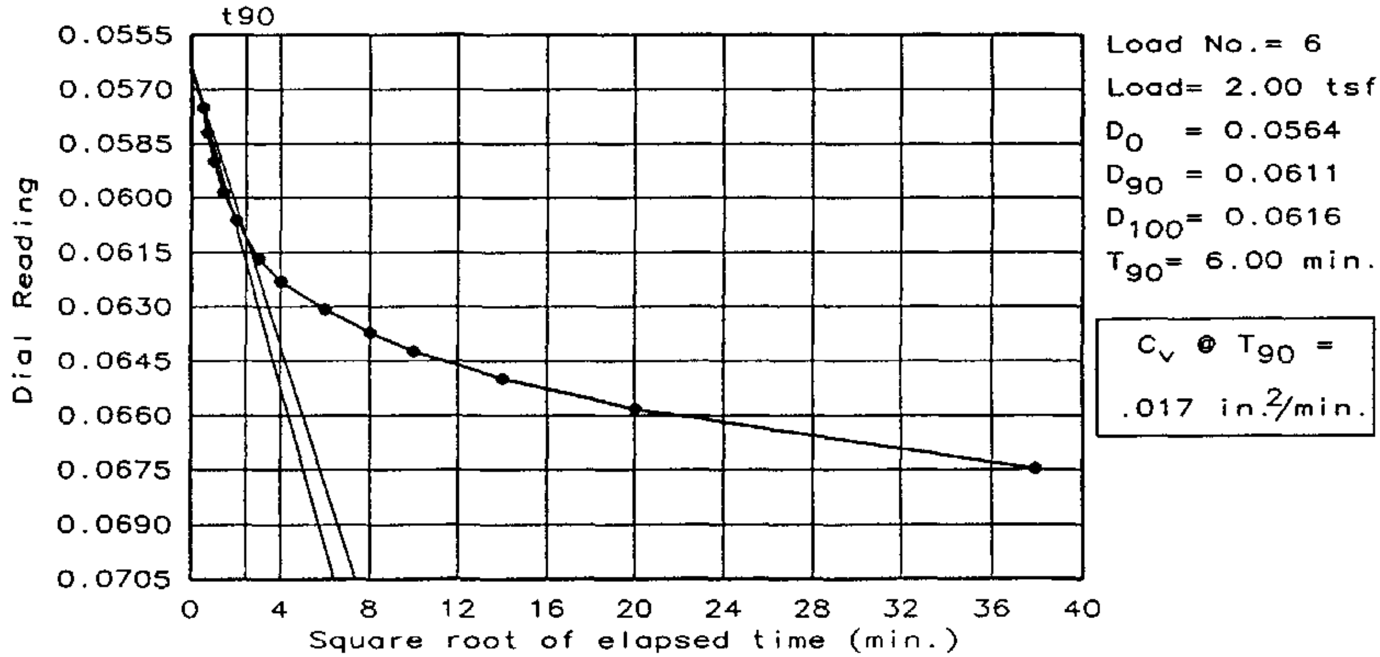
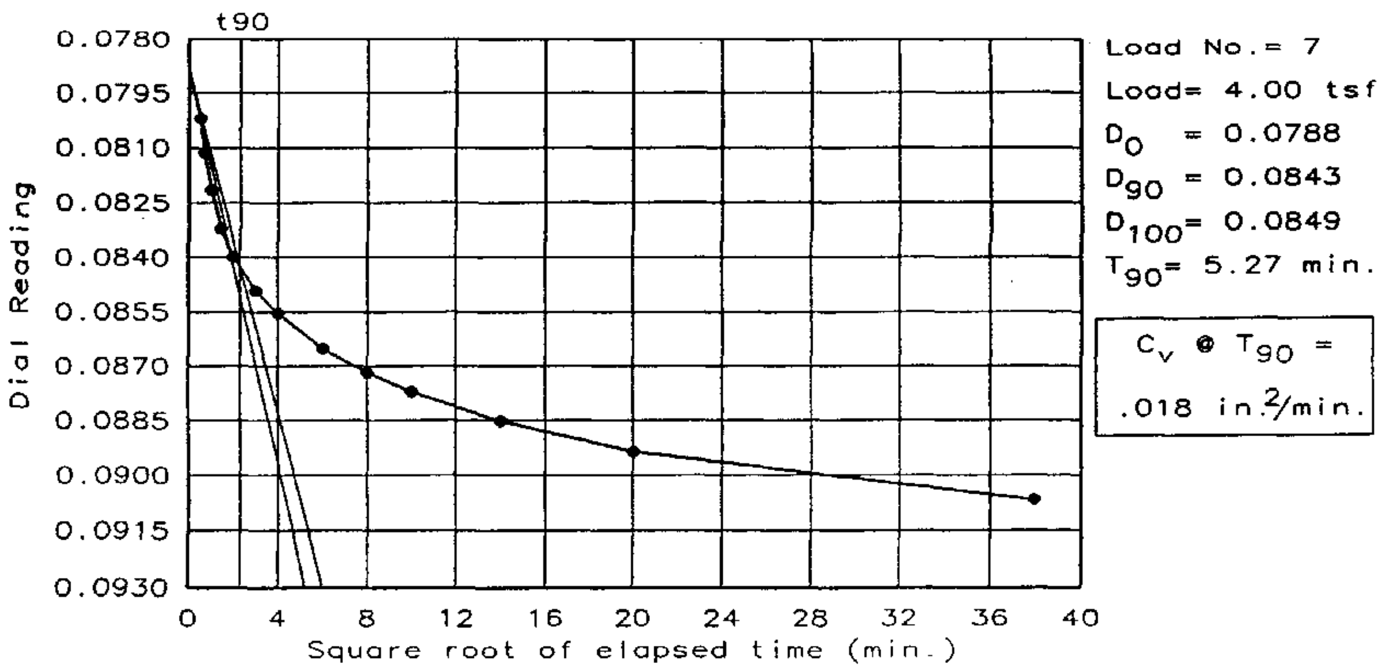
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6245
Client Sample No.: AD1~~813~~ 6-1C





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Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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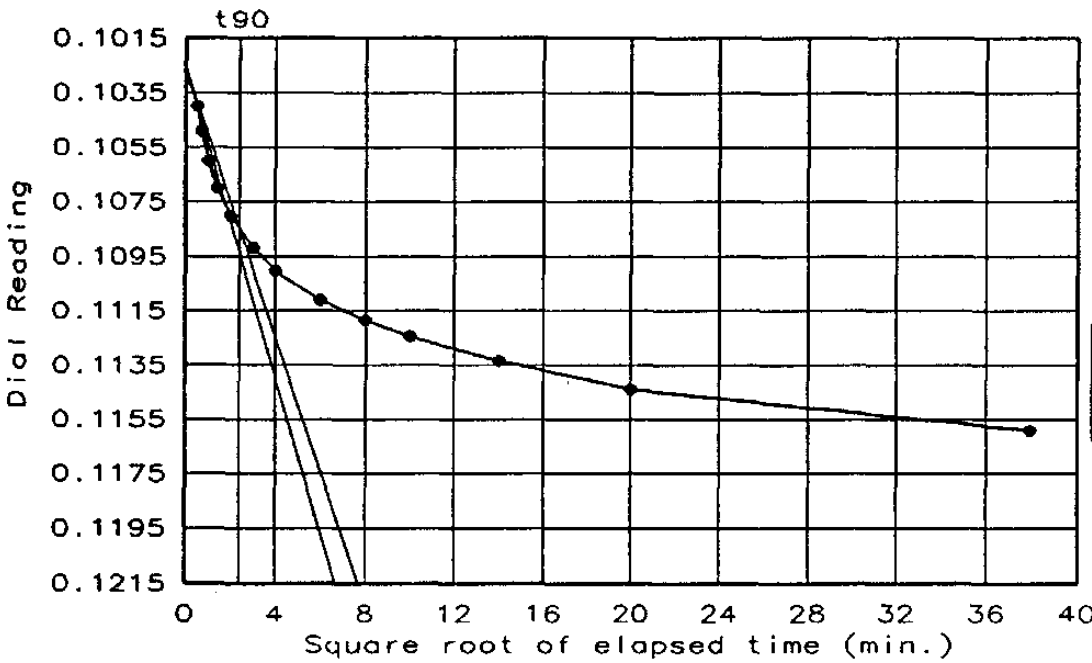
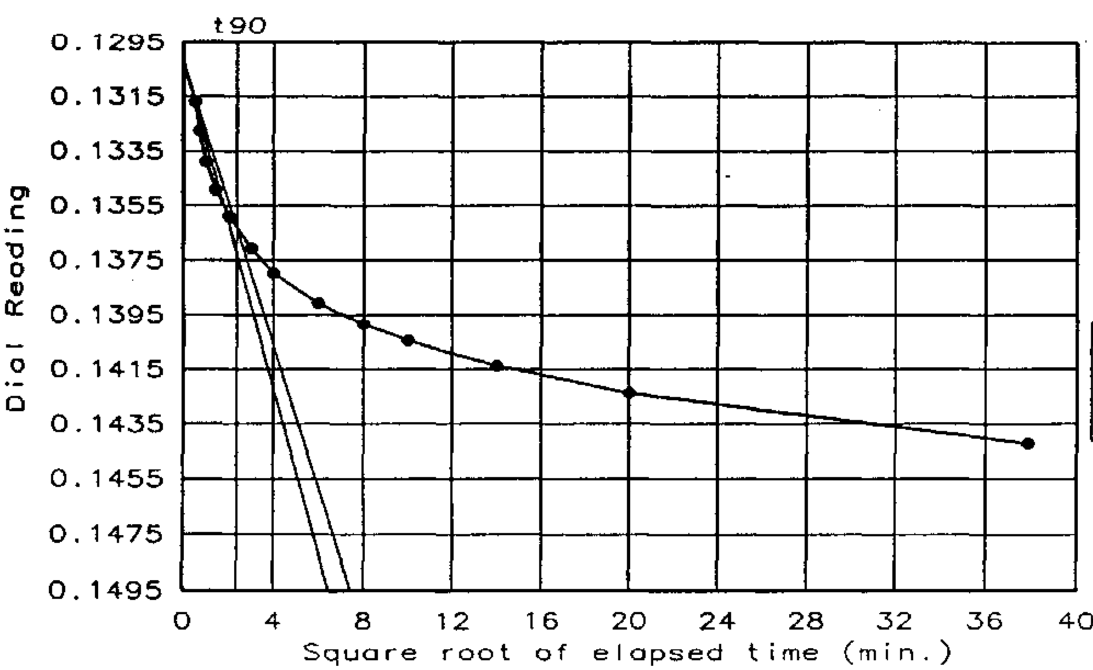
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6245
Client Sample No.: AD1813 6-1C



Load No.= 8
Load= 8.00 tsf
D_0 = 0.1026
D_{90} = 0.1085
D_{100}= 0.1091
T_{90}= 5.72 min.

C_v @ T_{90} =
.015 in.²/min.



Load No.= 9
Load= 16.00 tsf
D_0 = 0.1302
D_{90} = 0.1363
D_{100}= 0.1370
T_{90}= 5.52 min.

C_v @ T_{90} =
.015 in.²/min.

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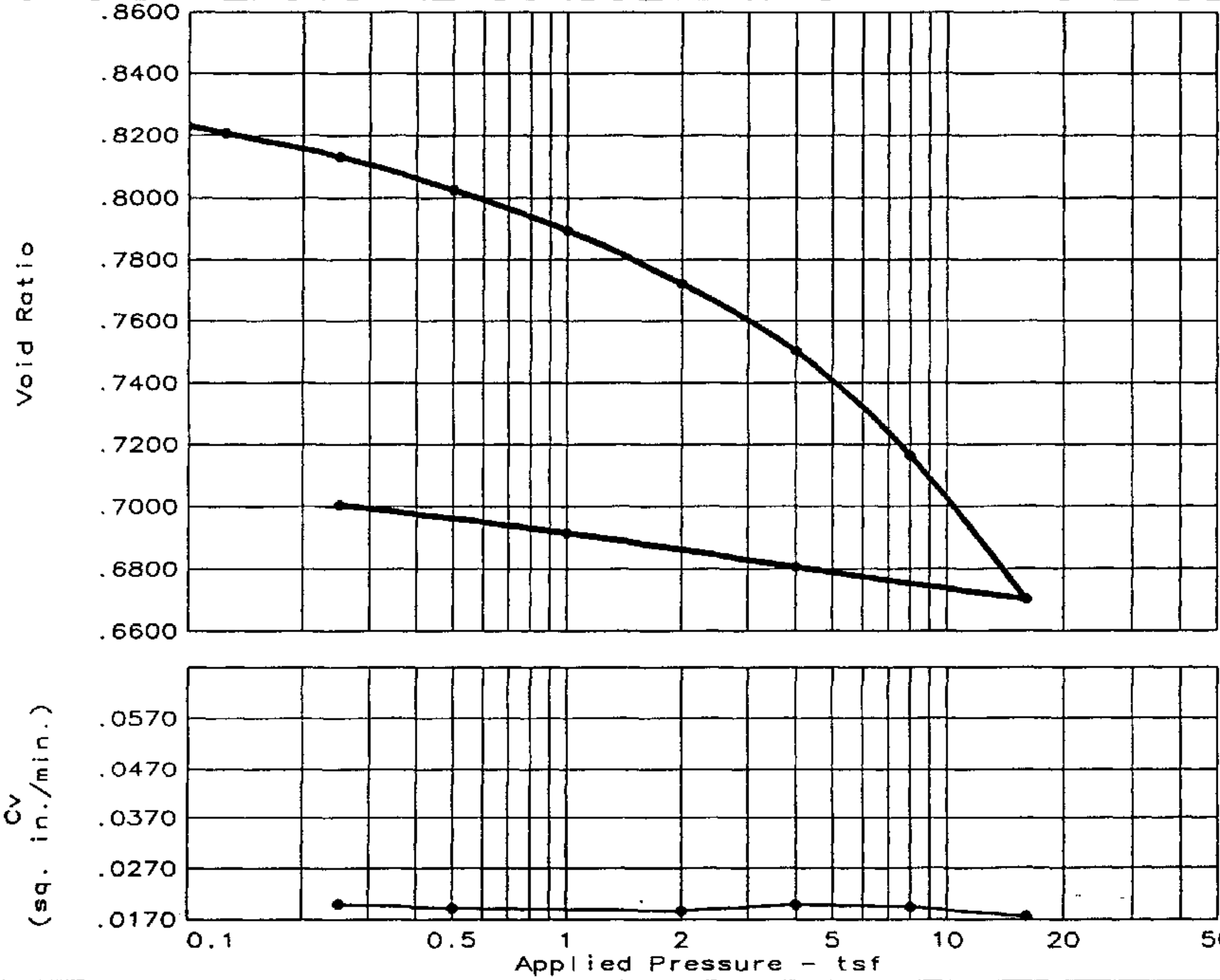
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
80.1 %	24.7	92.0	ND	ND	2.70	0.15	0.8329

TEST RESULTS

C_v at 0.50 tsf applied = 0.019 sq. in./min.
C_v at 16.00 tsf applied = 0.018 sq. in./min.

MATERIAL DESCRIPTION

QUARTZ SAND, tan, little silt
Class: SP

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6244
Client Sample No.: AD~~1812~~ 626

Remarks:
Sample received in 1.9" sample tube at 125.1pcf wet density. Reformed sample to approximate nat'l density:114.8 pcf

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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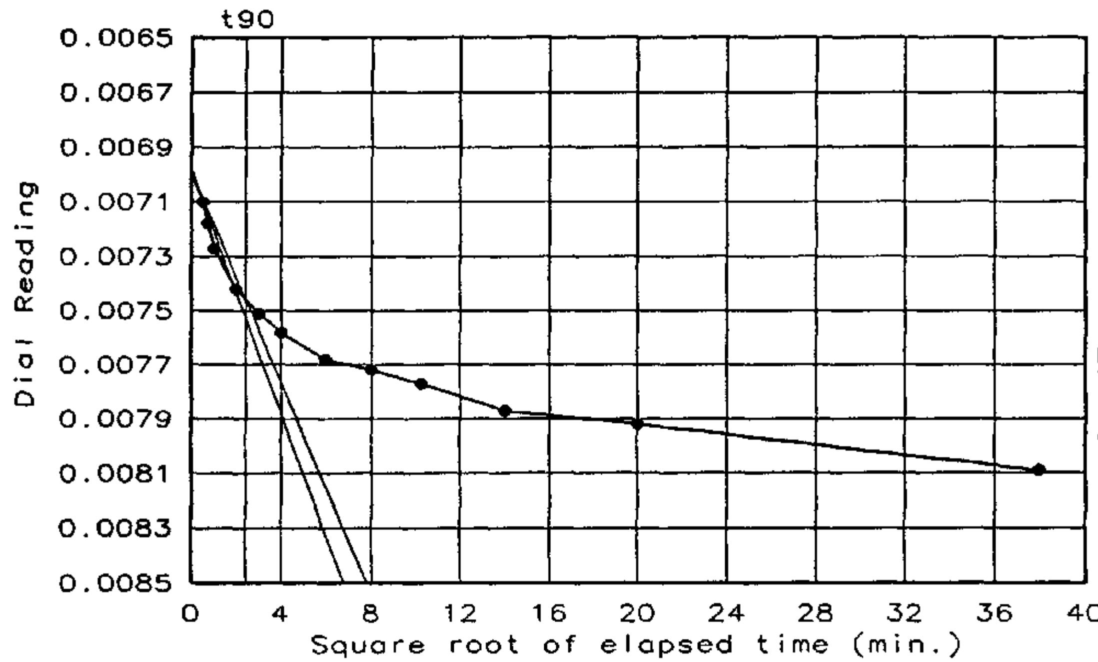
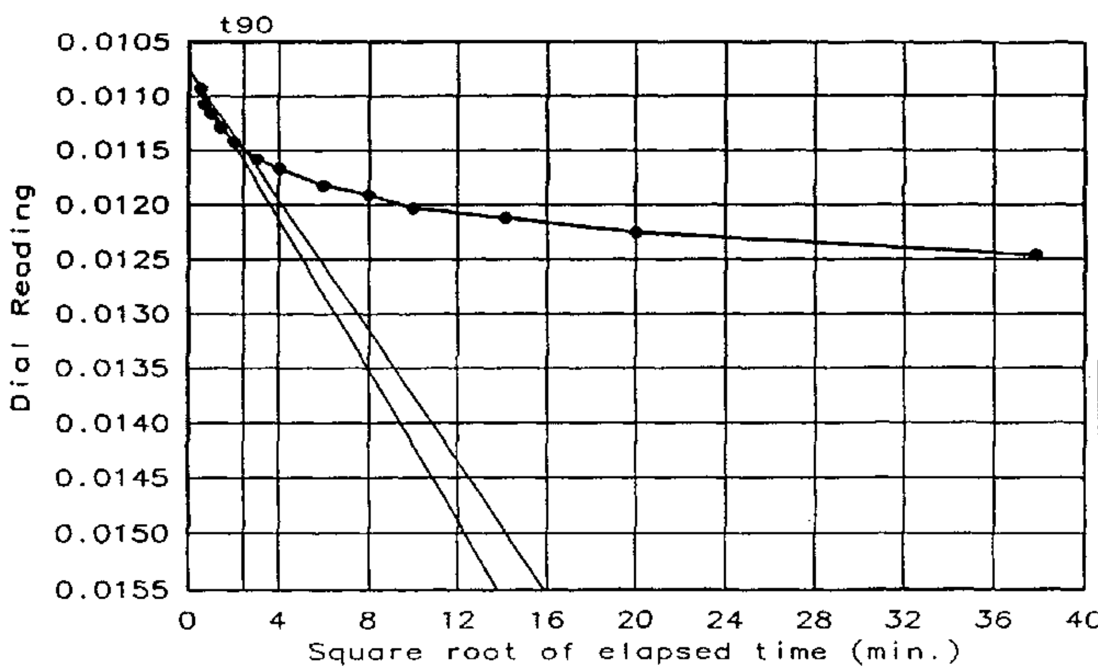
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6244
Client Sample No.: AD1512 6-29



Load No.= 3
Load= 0.25 tsf
D_0 = 0.0070
D_{90} = 0.0075
D_{100}= 0.0075
T_{90}= 5.86 min.

C_v @ T_{90} = .020 in.²/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.0108
D_{90} = 0.0115
D_{100}= 0.0116
T_{90}= 6.05 min.

C_v @ T_{90} = .019 in.²/min.

682A-6-93

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ETDC Project No.: 483565.03

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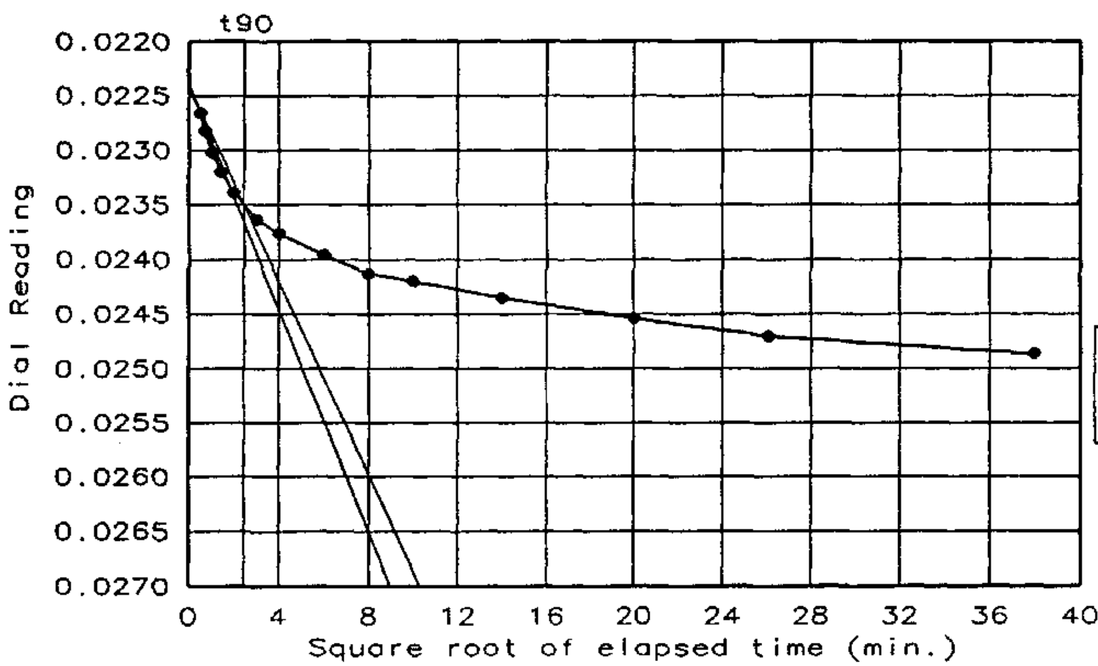
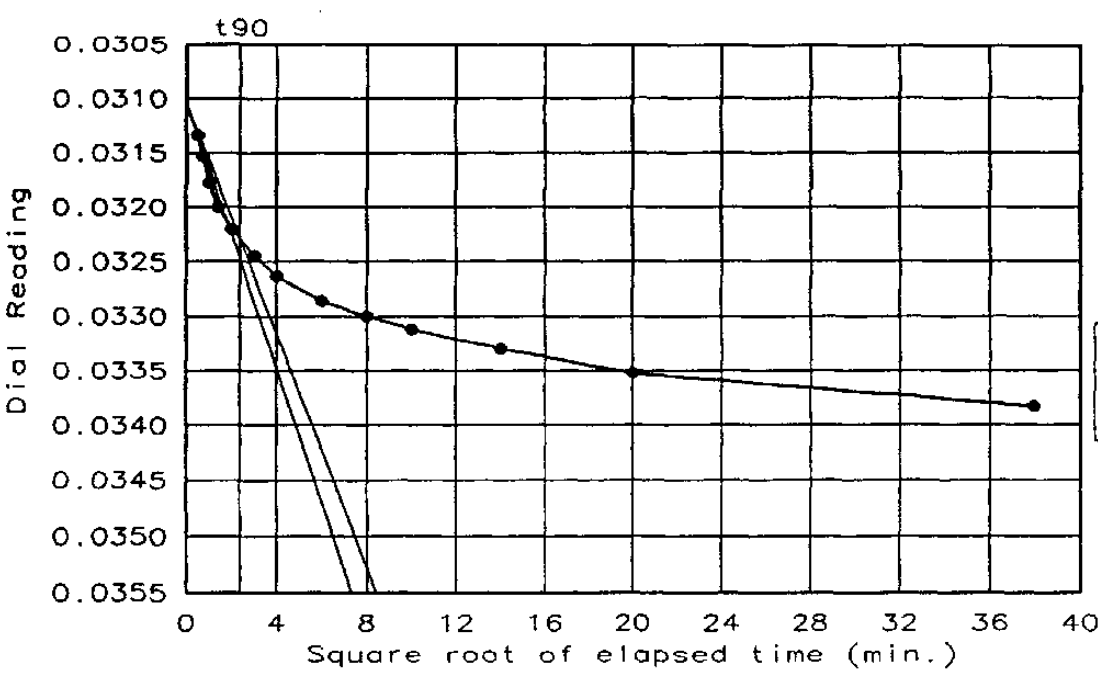
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6244
Client Sample No.: AD1~~8~~12 6-26



Load No.= 6
Load= 2.00 tsf
D_0 = 0.0224
D_{90} = 0.0235
D_{100}= 0.0236
T_{90}= 6.03 min.

C_v @ T_{90} =
.019 in.^{2}/min.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.0310
D_{90} = 0.0323
D_{100}= 0.0324
T_{90}= 5.55 min.

C_v @ T_{90} =
.020 in.^{2}/min.

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ETDC Project No.: 483565.03

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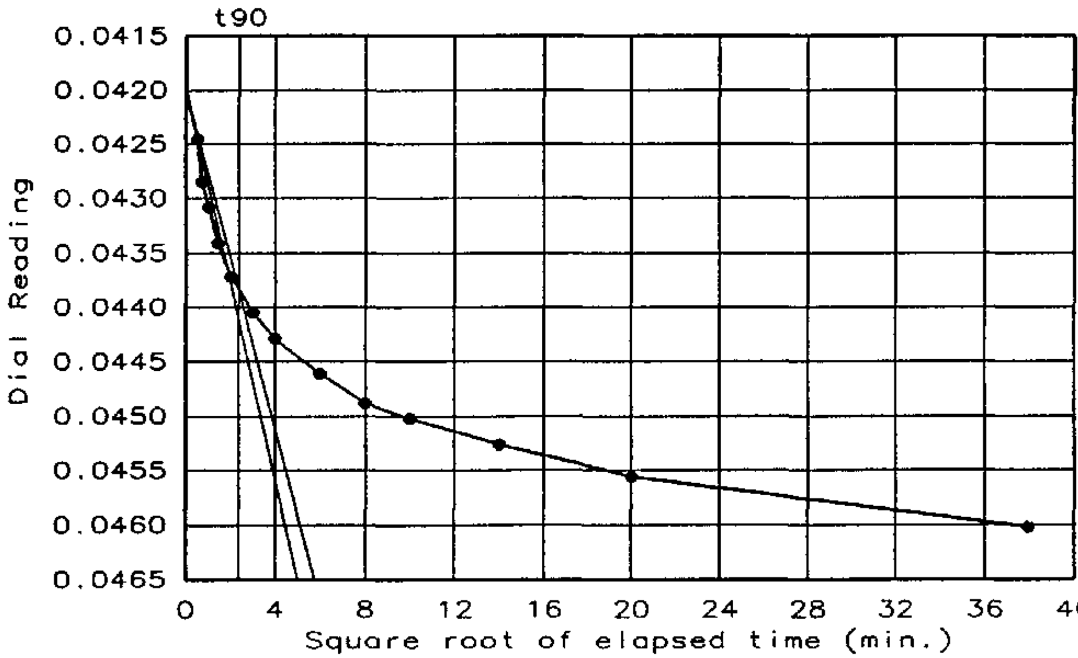
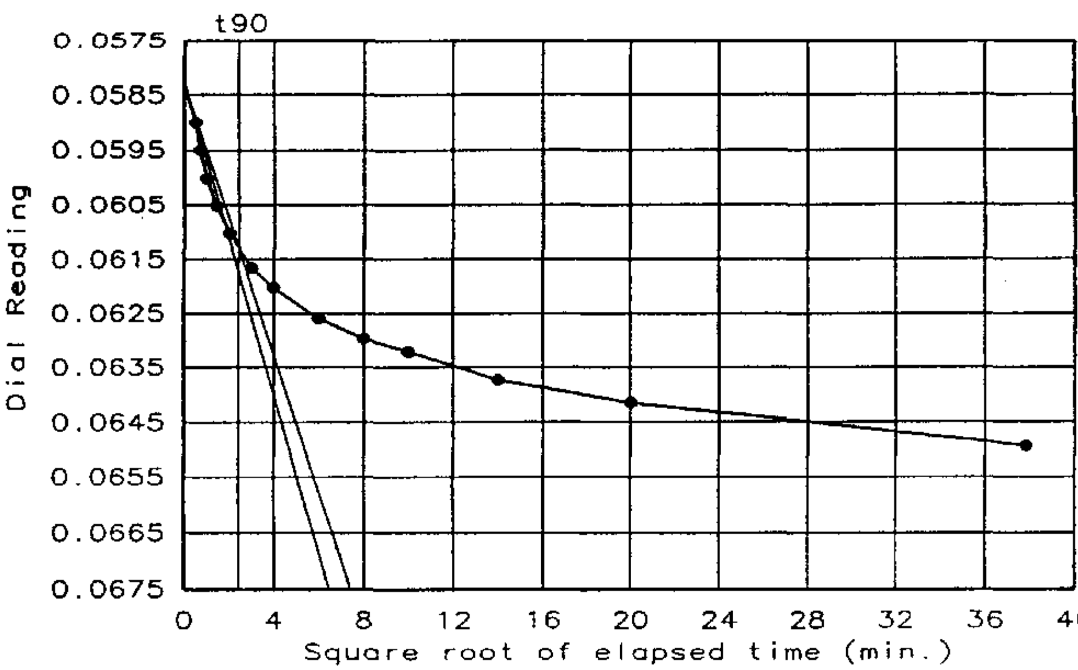
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6244
Client Sample No.: AD1512 6-26



Load No.= 8
Load= 8.00 tsf
D_0 = 0.0420
D_{90} = 0.0438
D_{100}= 0.0440
T_{90}= 5.51 min.

C_v @ T_{90} = .019 in.^{2}/min.



Load No.= 9
Load= 16.00 tsf
D_0 = 0.0583
D_{90} = 0.0613
D_{100}= 0.0616
T_{90}= 5.80 min.

C_v @ T_{90} = .018 in.^{2}/min.

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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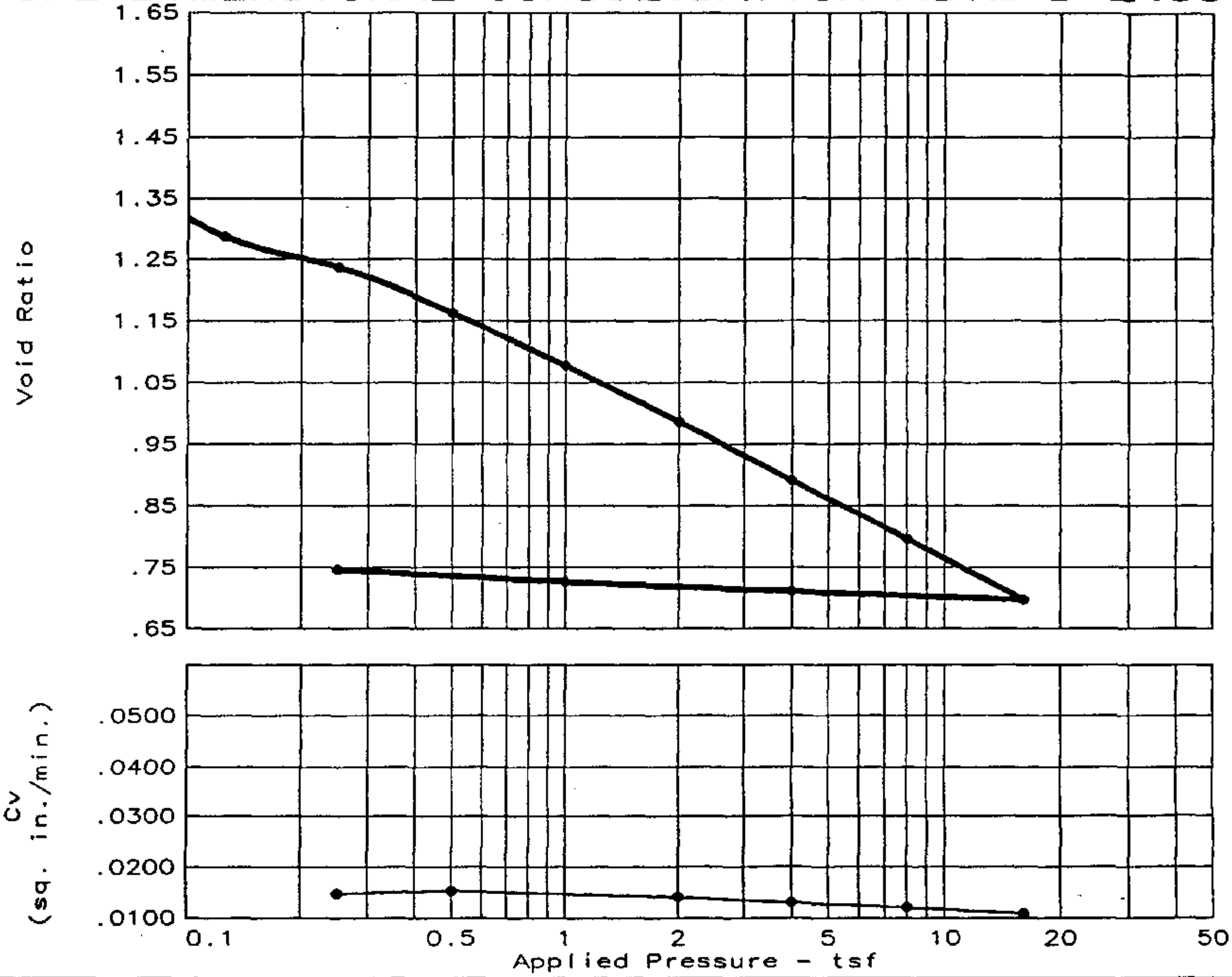
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
78.4 %	41.7	69.0	ND	ND	2.68	0.33	1.4256

TEST RESULTS

C_v at 0.50 tsf applied = 0.015 sq. in./min.
C_v at 16.00 tsf applied = 0.011 sq. in./min.

MATERIAL DESCRIPTION

QUARTZ SAND, grey, little silt, saturated

Class: SP

Remarks:

Sample received in 1.9" sample tube at 96.6pcf wet density. Reformed sample to approximate nat'l density:97.8 pcf

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6246
Client Sample No.: AD1~~814~~ 6-3J

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

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February 17, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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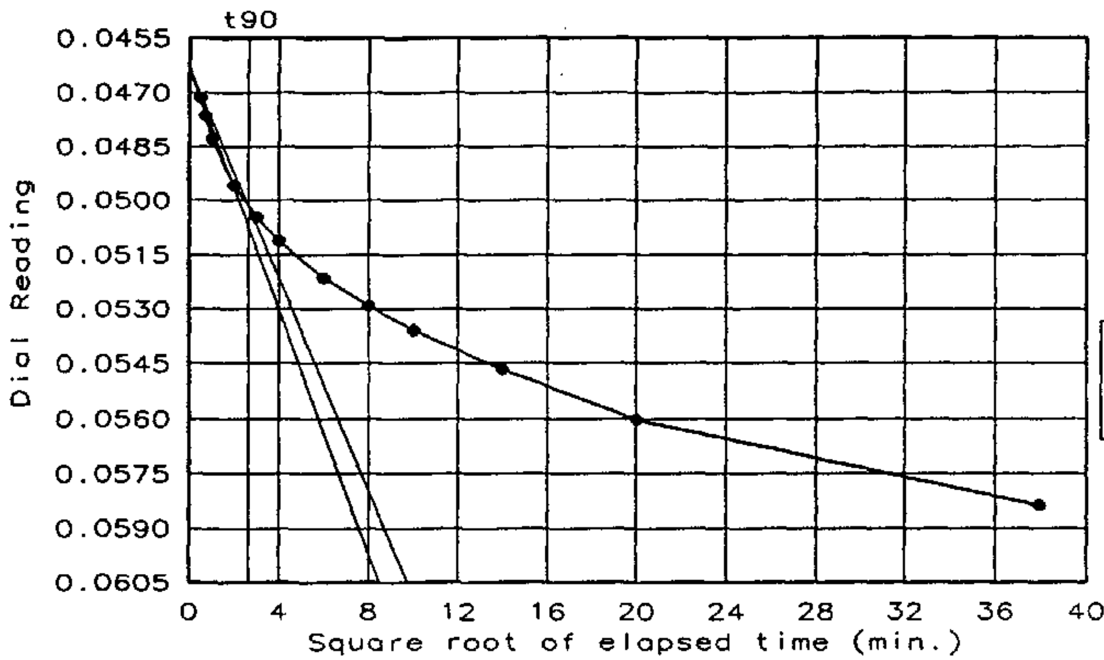
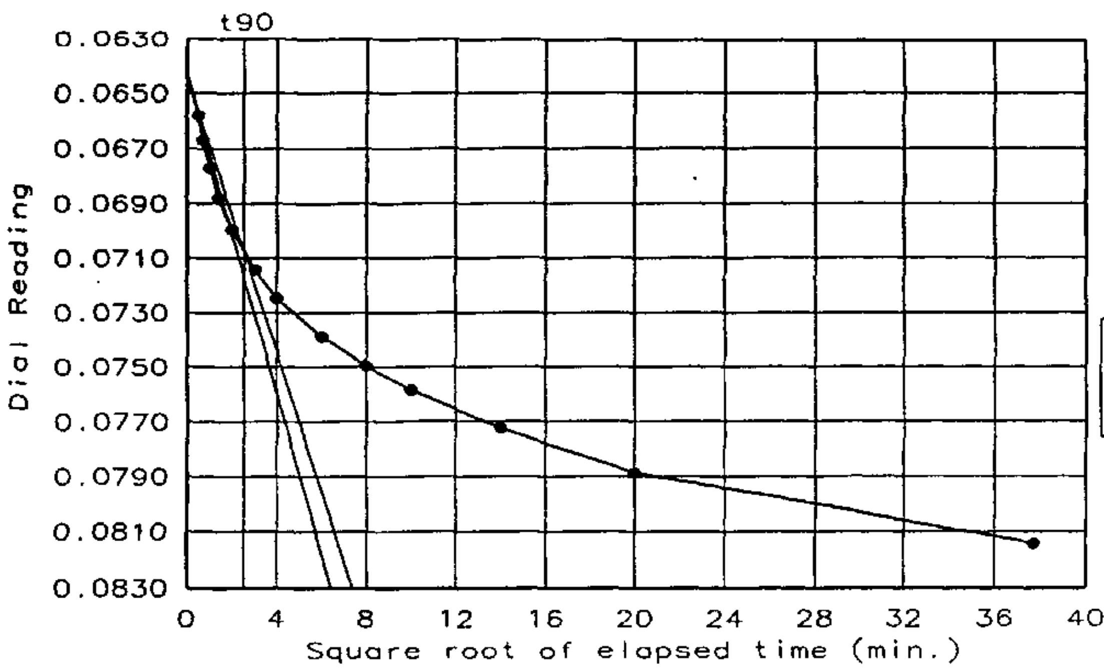
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6246
Client Sample No.: AD~~1814~~ 6-35



Load No.= 3
Load= 0.25 tsf
D_0 = 0.0463
D_{90} = 0.0502
D_{100}= 0.0506
T_{90}= 7.01 min.

C_v @ T_{90} =
.015 in.²/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.0643
D_{90} = 0.0707
D_{100}= 0.0714
T_{90}= 6.39 min.

C_v @ T_{90} =
.015 in.²/min.

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Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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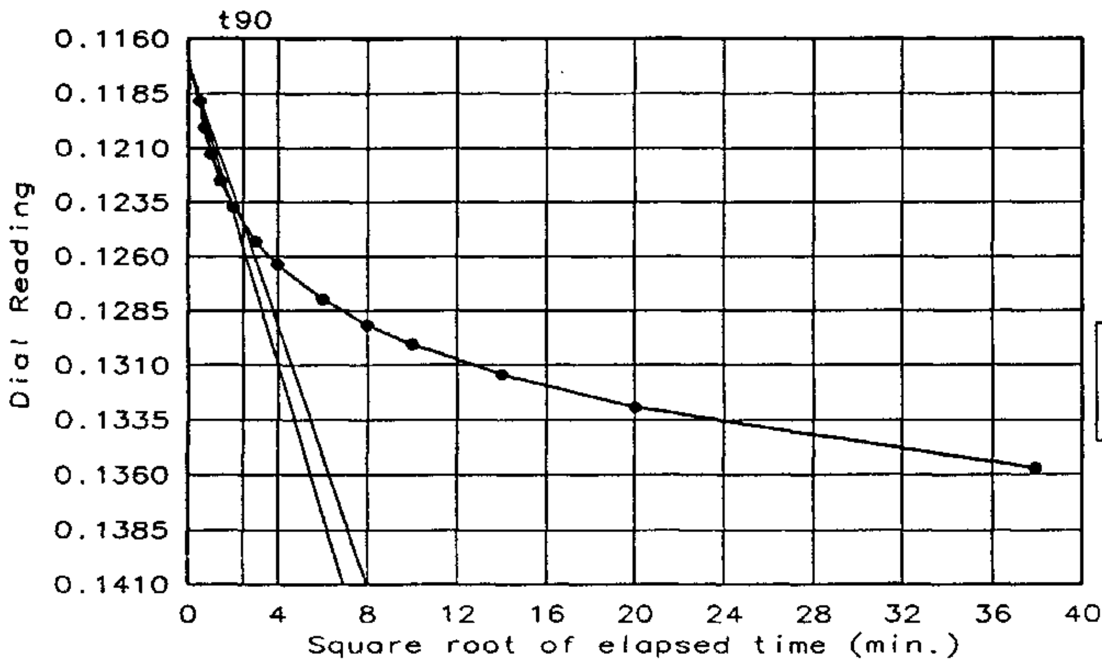
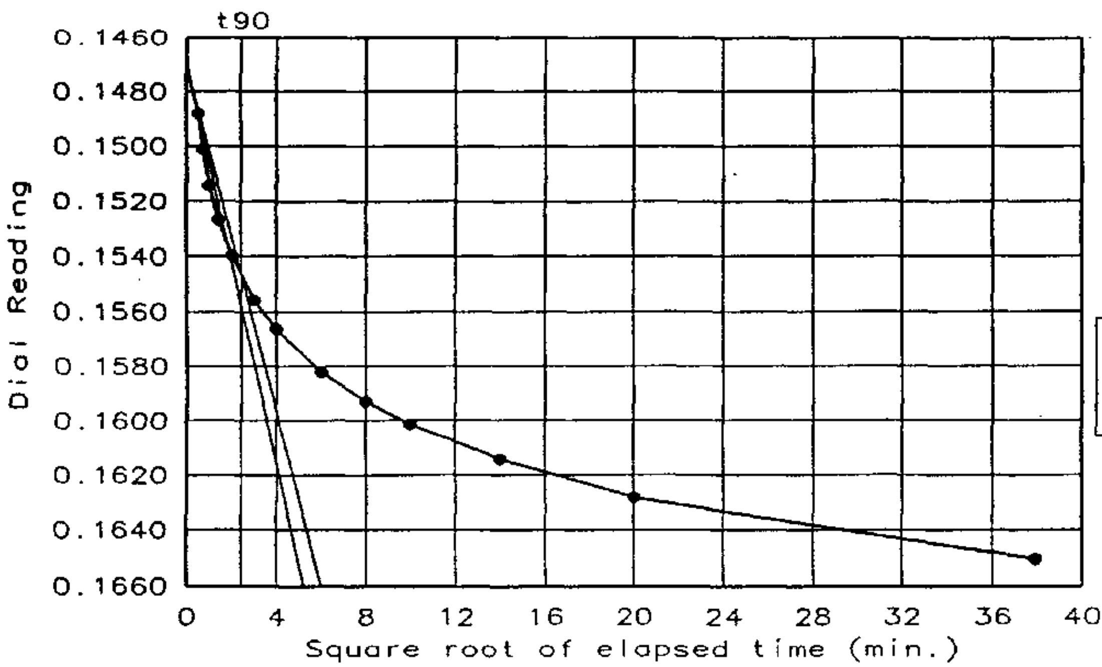
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6246
Client Sample No.: AD1~~814~~ 63J



Load No.= 6
Load= 2.00 tsf
D_0 = 0.1171
D_{90} = 0.1244
D_{100}= 0.1252
T_{90}= 5.93 min.

C_v @ T_{90} =
.014 in.²/min.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.1470
D_{90} = 0.1547
D_{100}= 0.1555
T_{90}= 5.84 min.

C_v @ T_{90} =
.013 in.²/min.

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Client Project ID: Housatonic River
ETDC Project No.: 483565.03

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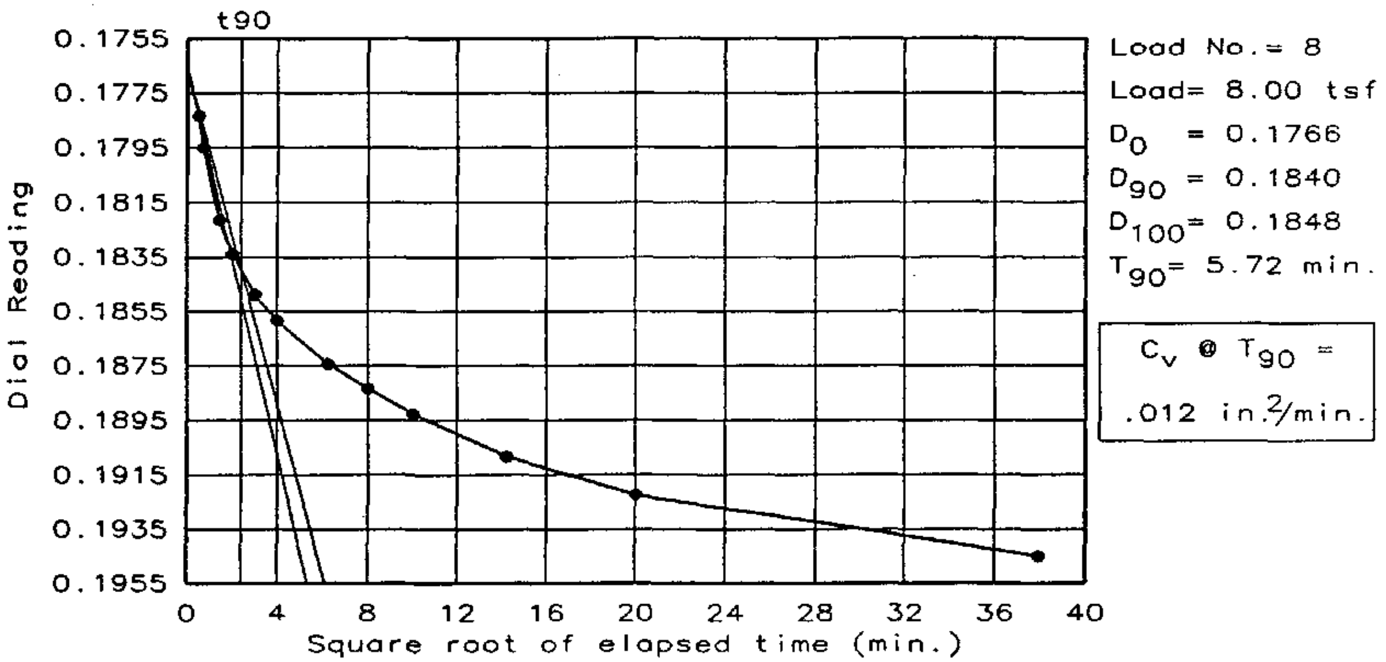
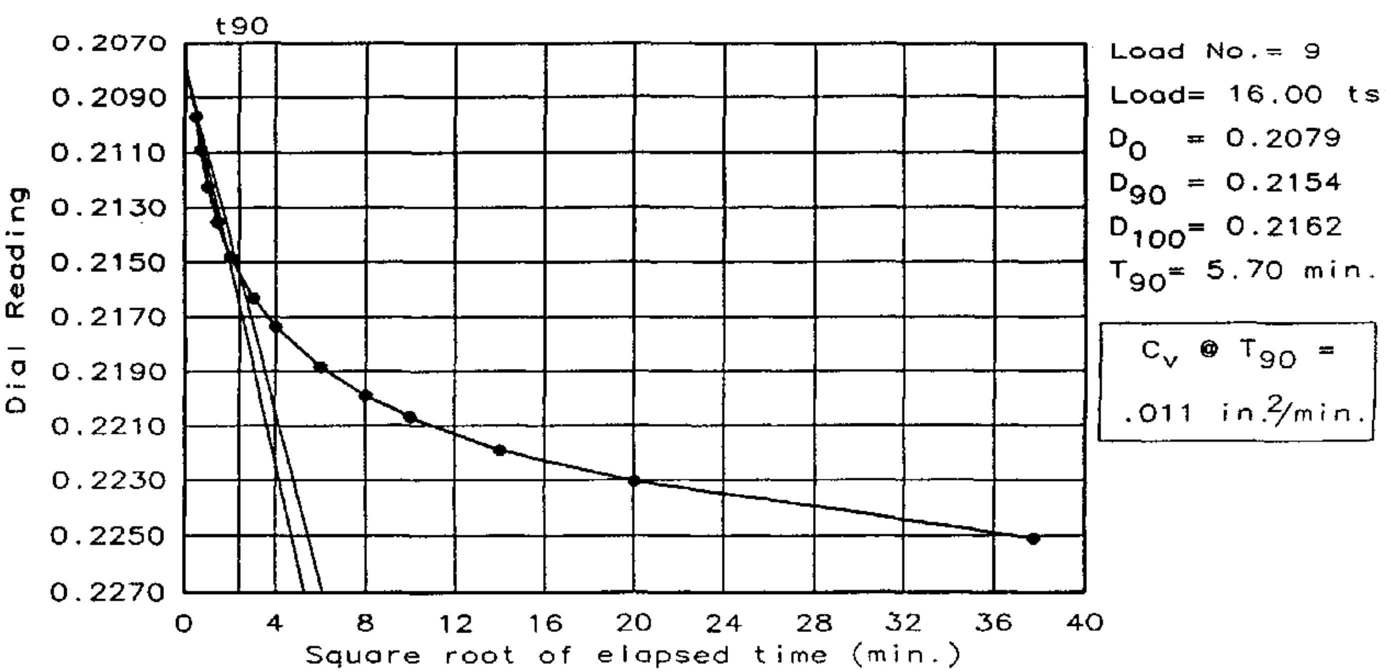
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.03
ETDC Sample No.: 6246
Client Sample No.: ~~AD1814~~ 6-3J





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March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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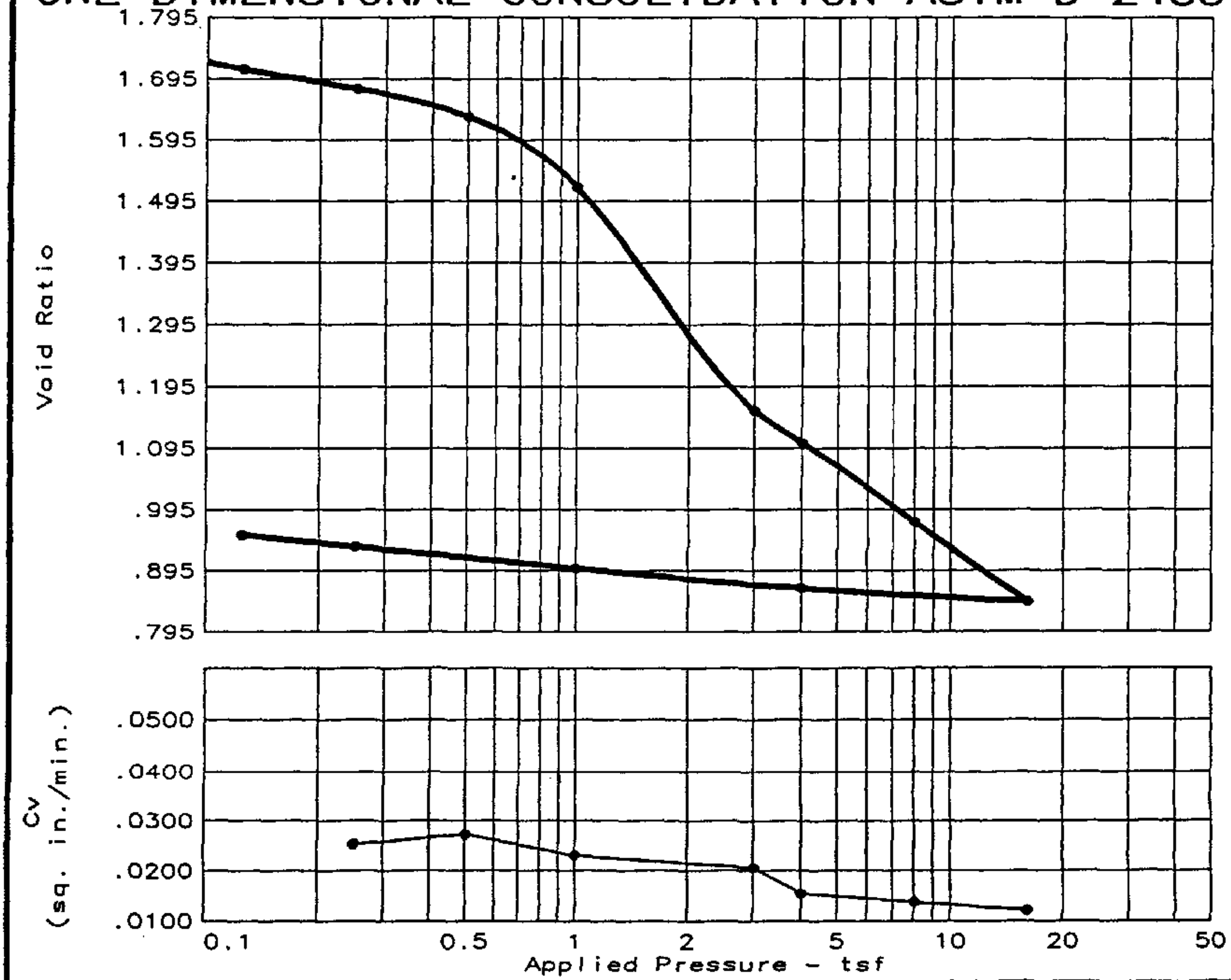
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
101.1 %	69.7	58.4	ND	ND	2.63	0.43	1.8157

TEST RESULTS

C_v at 0.50 tsf applied = 0.027 sq. in./min.
C_v at 16.00 tsf applied = 0.012 sq. in./min.

MATERIAL DESCRIPTION

SAND, white w/silt and few organics

Class: SP

Remarks:

Sample received in 1.9" sample tube at 101.5PCF wet density. Reformed sample to approximate nat'l density:99.1 PCF

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6256
Client Sample No.: AD~~2972~~ 7-1N

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

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Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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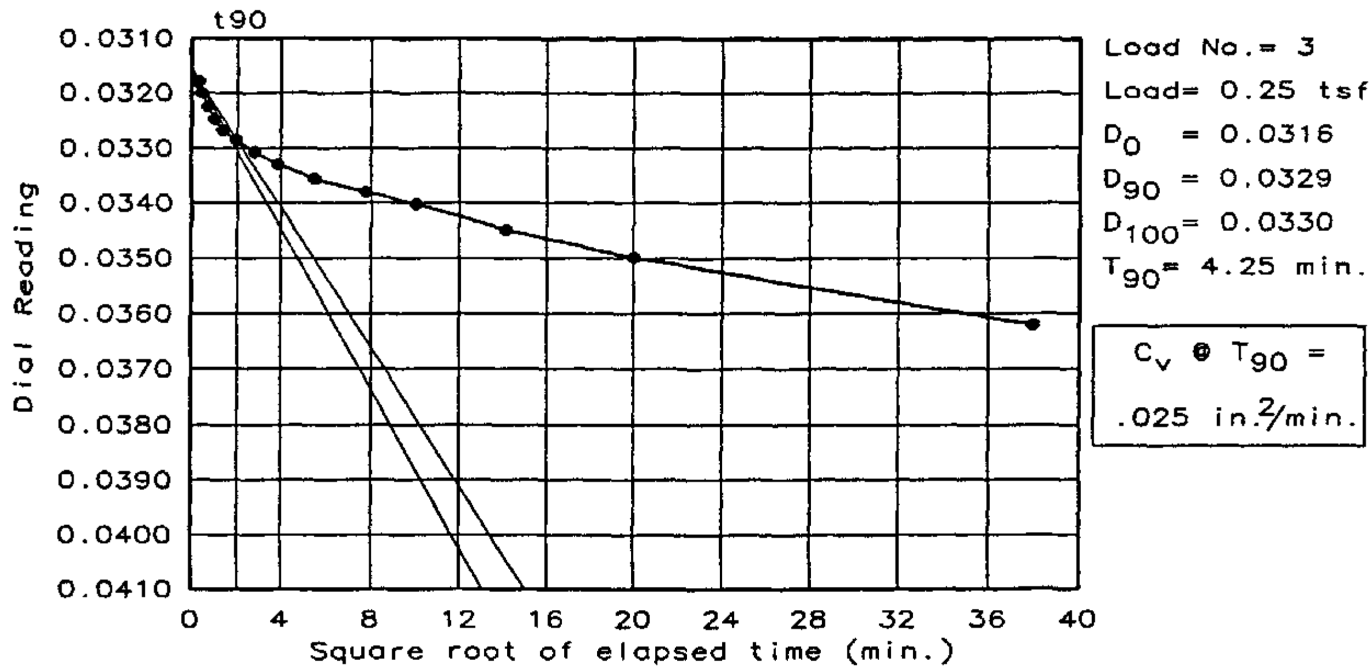
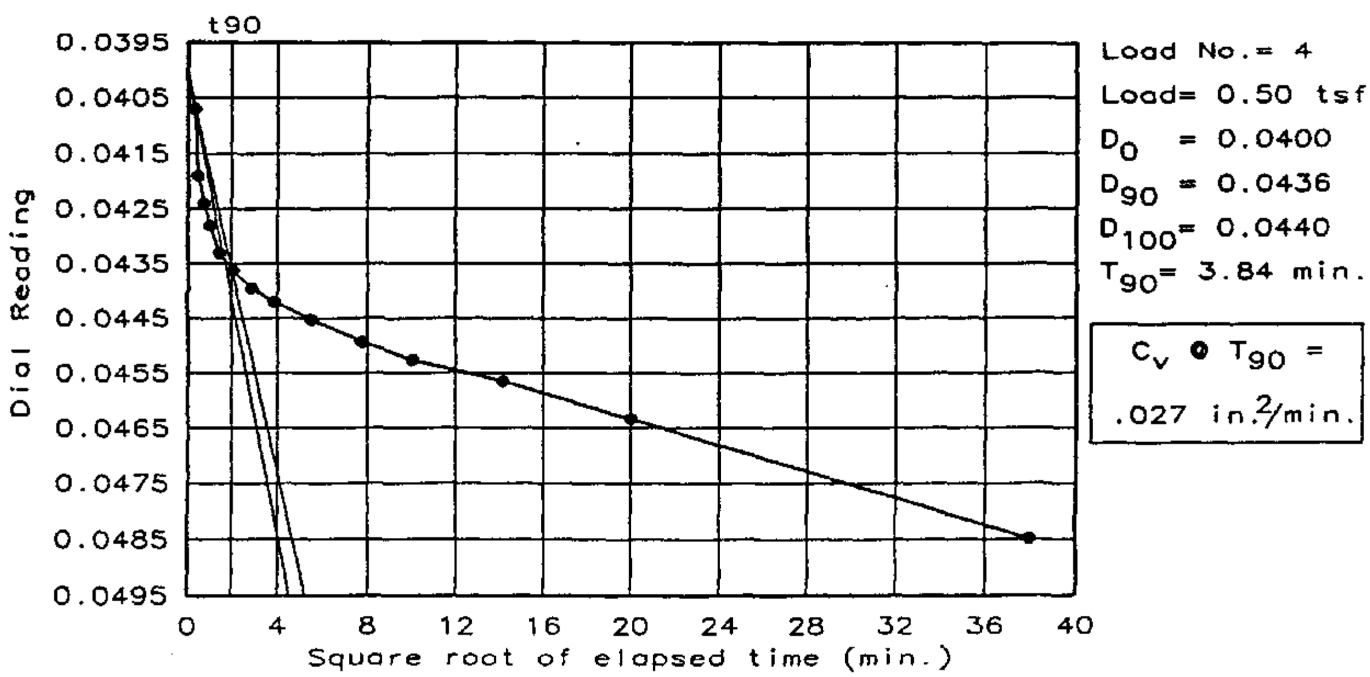
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6256
Client Sample No.: AD29~~7~~2 7/N





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Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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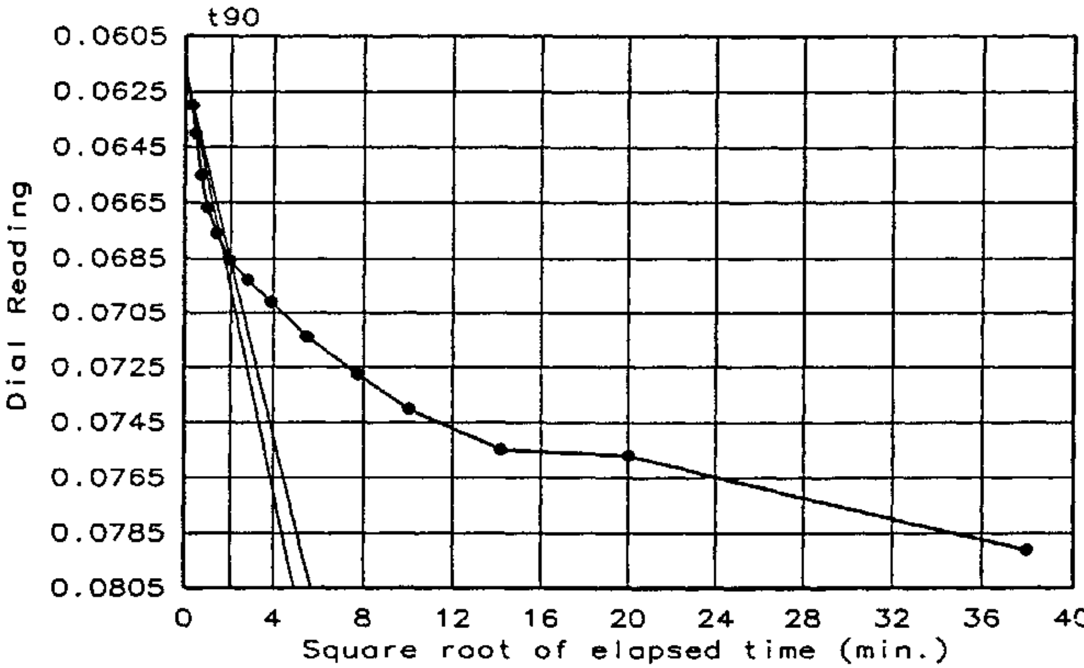
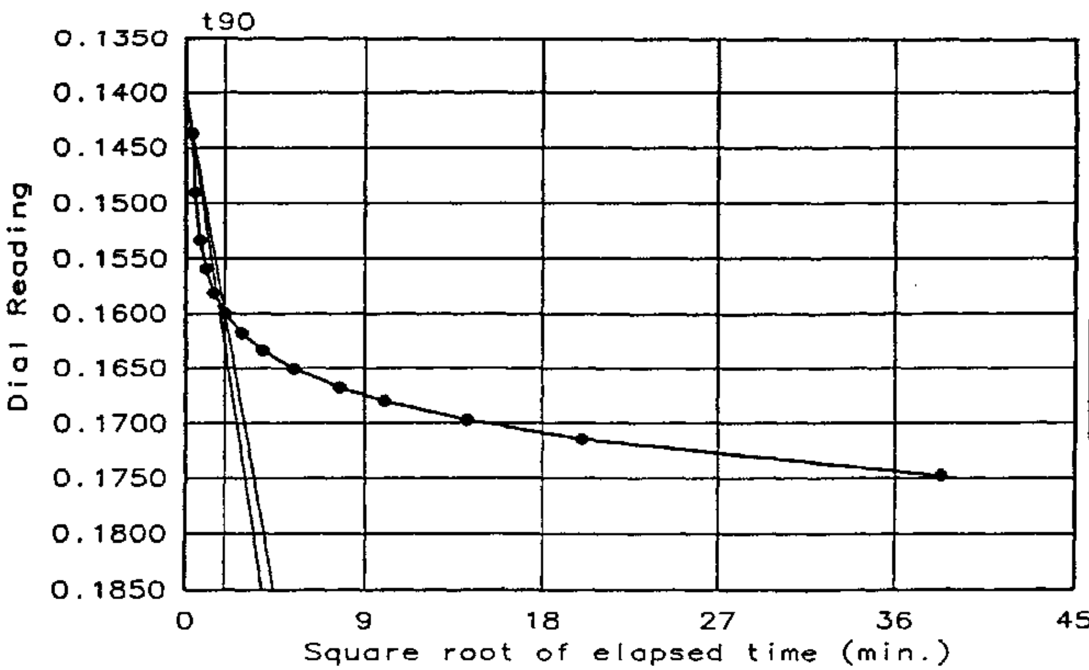
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6256
Client Sample No.: AD~~2872~~ 7-IN



Load No.= 5
Load= 1.00 tsf
D_0 = 0.0618
D_{90} = 0.0686
D_{100}= 0.0694
T_{90}= 4.26 min.

C_v @ T_{90} =
.023 in.²/min.



Load No.= 6
Load= 3.00 tsf
D_0 = 0.1401
D_{90} = 0.1600
D_{100}= 0.1622
T_{90}= 3.95 min.

C_v @ T_{90} =
.021 in.²/min.

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ETDC Project No.: 483565.04

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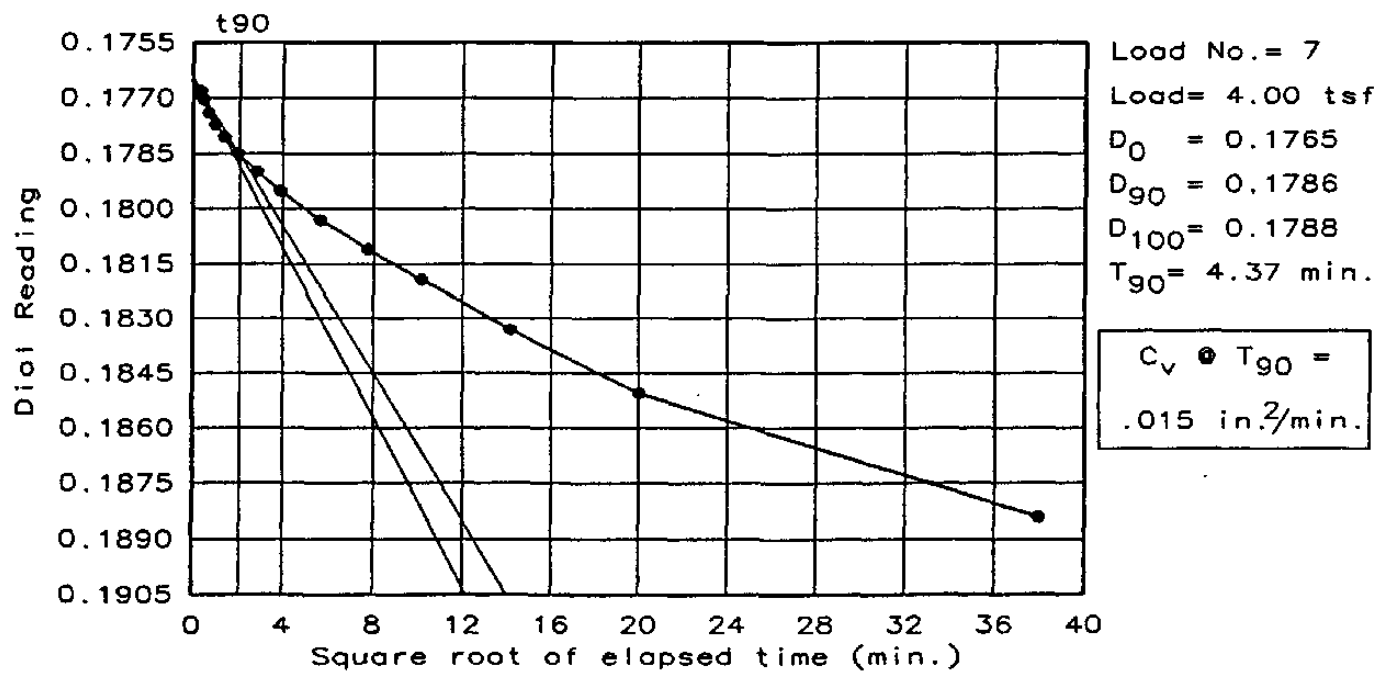
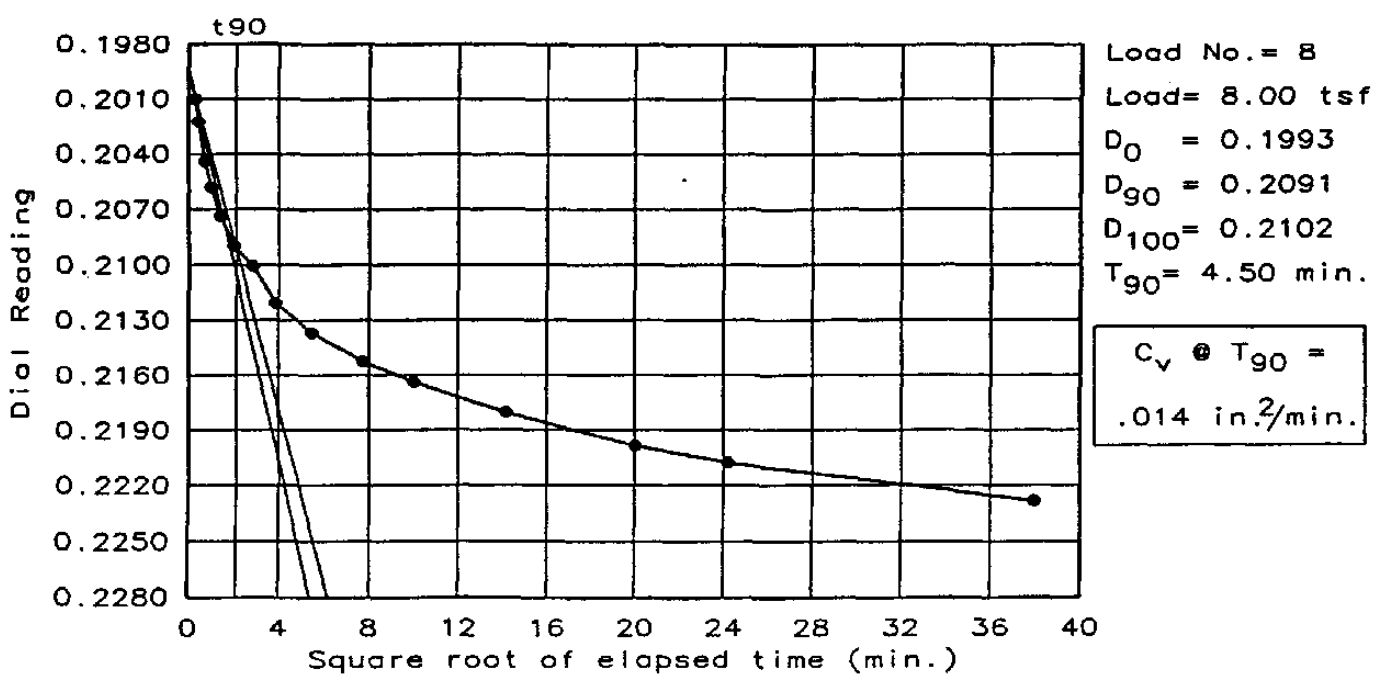
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6256
Client Sample No.: AD2~~8~~72 7-IN





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Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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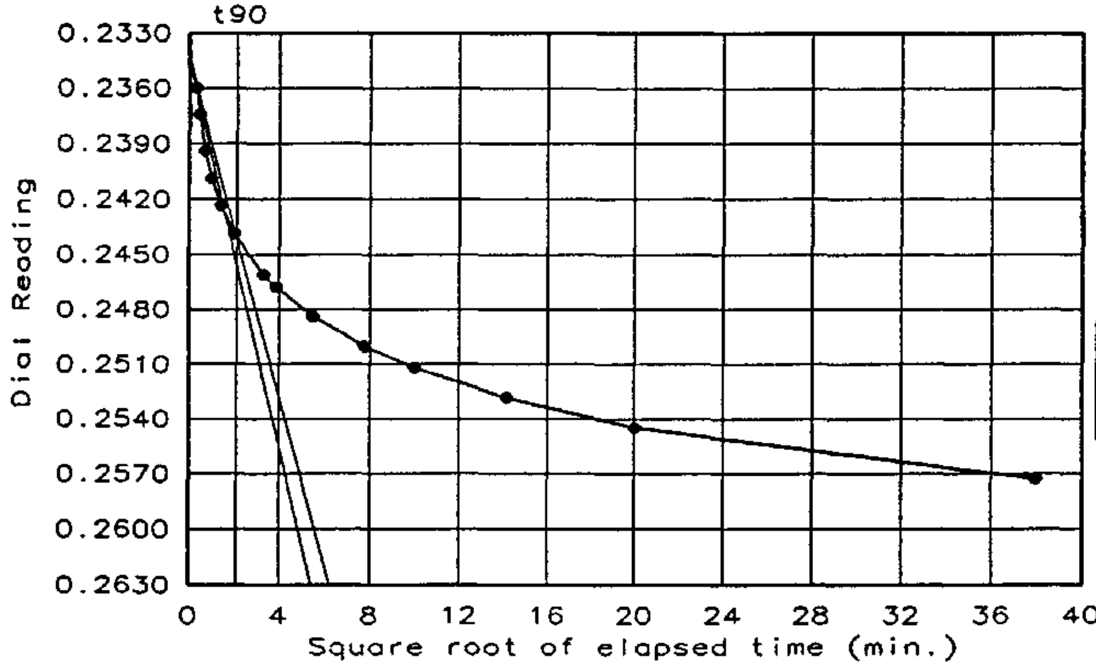
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6256
Client Sample No.: AD~~2~~872 7-1N



Load No.= 9
Load= 16.00 tsf
D_0 = 0.2343
D_{90} = 0.2441
D_{100}= 0.2451
T_{90}= 4.49 min.

C_v @ T_{90} =
.012 in.^{2}/min.

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Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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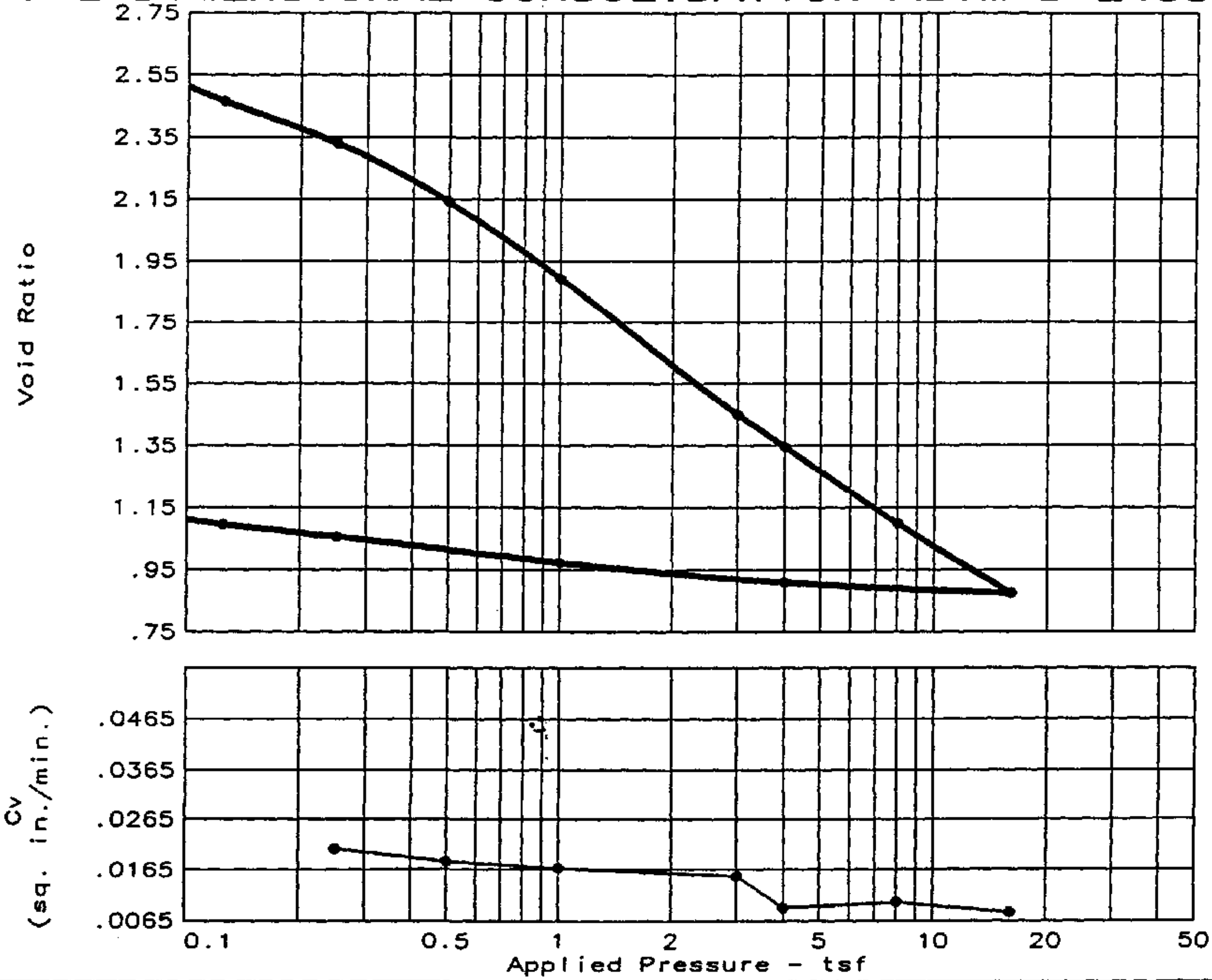
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
99.0 %	102.9	43.9	ND	ND	2.62	0.74	2.7244

TEST RESULTS	MATERIAL DESCRIPTION
C_v at 0.50 tsf applied = 0.018 sq. in./min. C_v at 16.00 tsf applied = 0.008 sq. in./min.	ORGANIC SILTY CLAY, brown, micaceous Class: CL/OL

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6260
Client Sample No.: ~~AD2976~~ 7-15

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

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Remarks:
Sample received in 1.9" sample tube at 90.5 PCF wet density. Reformed sample to approximate nat'l density: 89.1 PCF

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March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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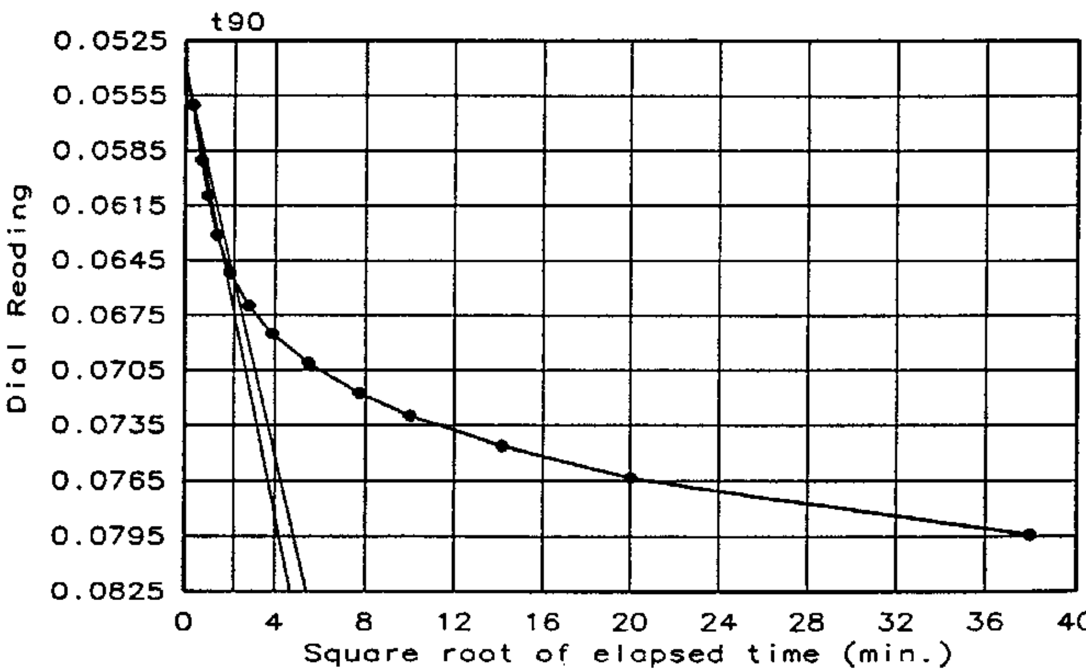
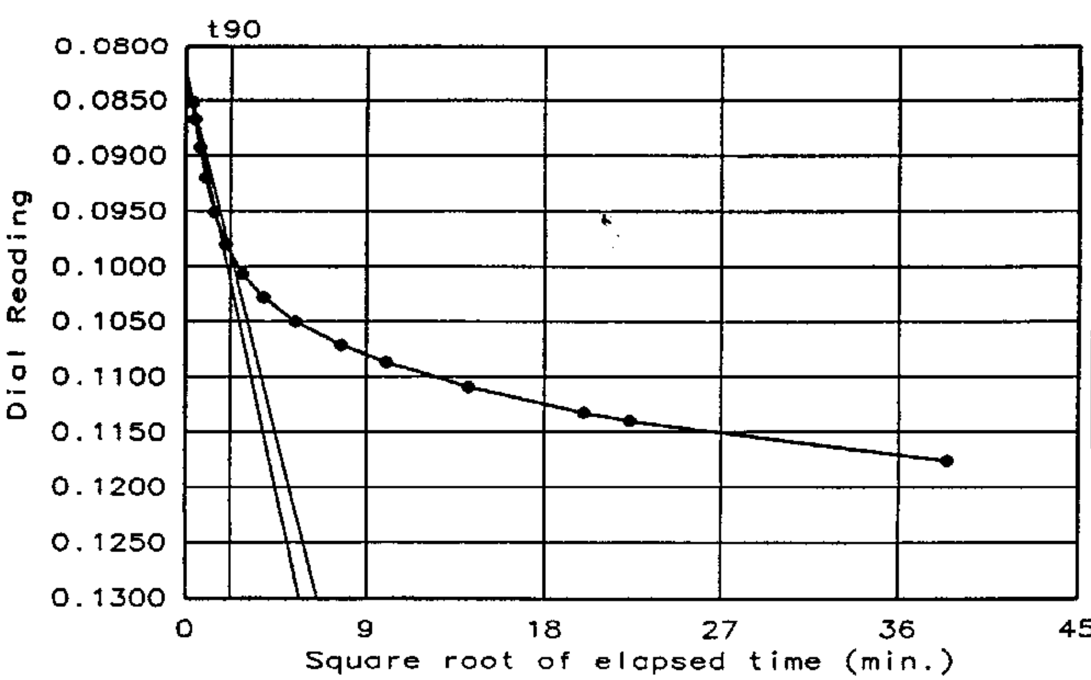
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6260
Client Sample No.: AD~~2976~~ 7-15



Load No.= 3
Load= 0.25 tsf
D_0 = 0.0541
D_{90} = 0.0656
D_{100}= 0.0669
T_{90}= 4.81 min.

C_v @ T_{90} =
.021 in.^{2}/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.0826
D_{90} = 0.0987
D_{100}= 0.1005
T_{90}= 4.96 min.

C_v @ T_{90} =
.018 in.^{2}/min.

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March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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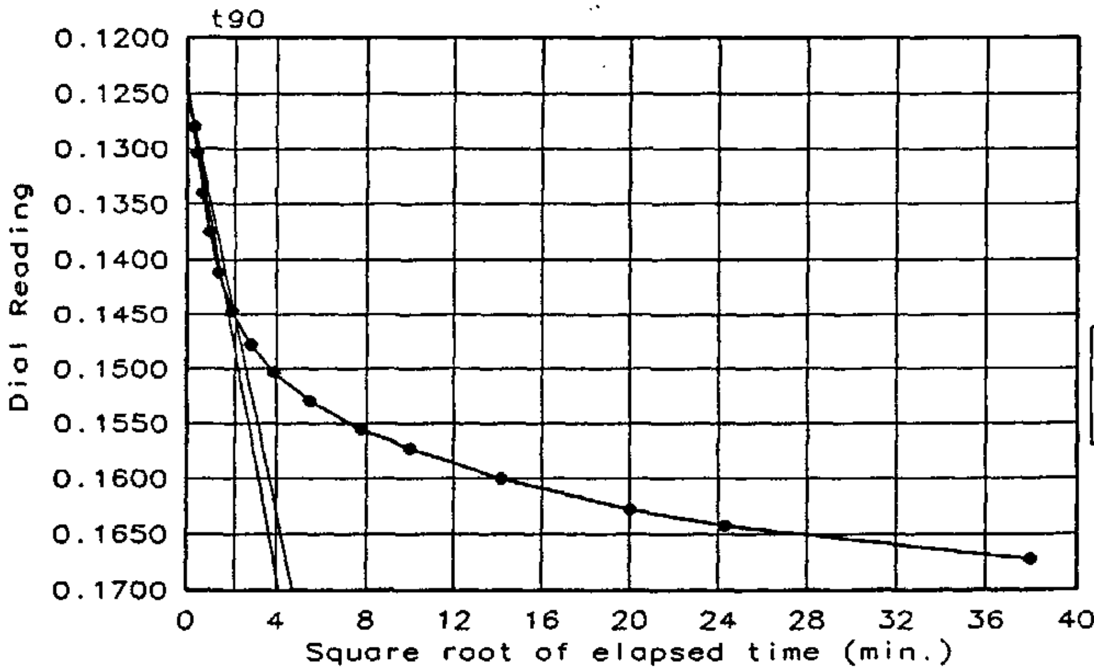
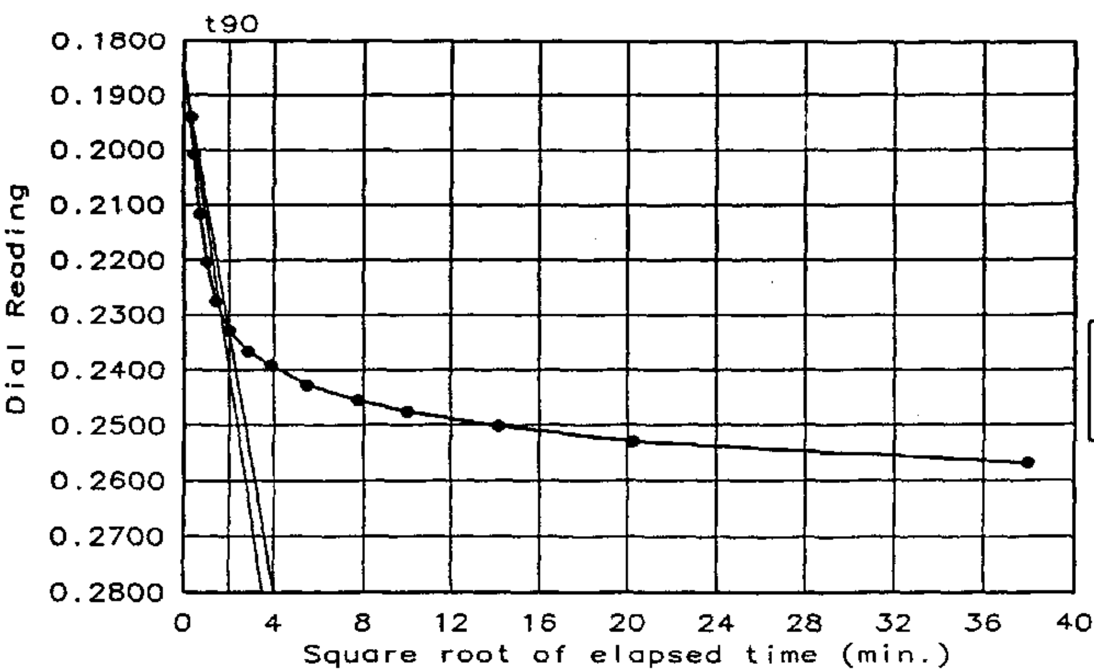
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6260
Client Sample No.: ~~AD2576~~ 7-15



Load No.= 5
Load= 1.00 tsf
D_0 = 0.1245
D_{90} = 0.1453
D_{100}= 0.1476
T_{90}= 4.66 min.

C_v @ T_{90} =
.017 in.²/min.



Load No.= 6
Load= 3.00 tsf
D_0 = 0.1854
D_{90} = 0.2328
D_{100}= 0.2381
T_{90}= 4.02 min.

C_v @ T_{90} =
.015 in.²/min.

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March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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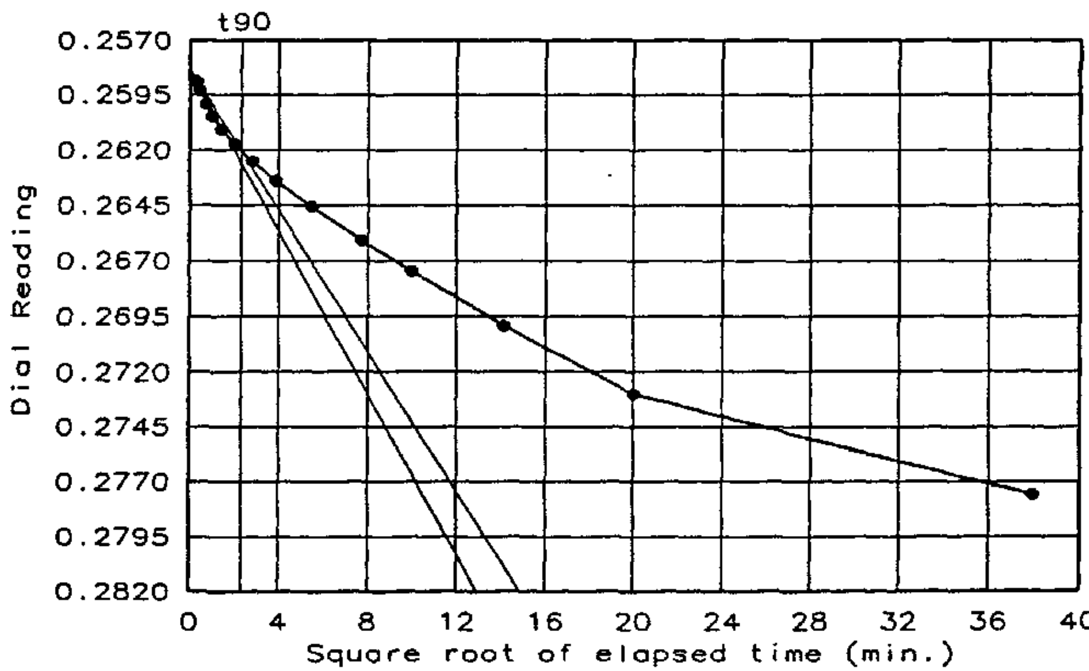
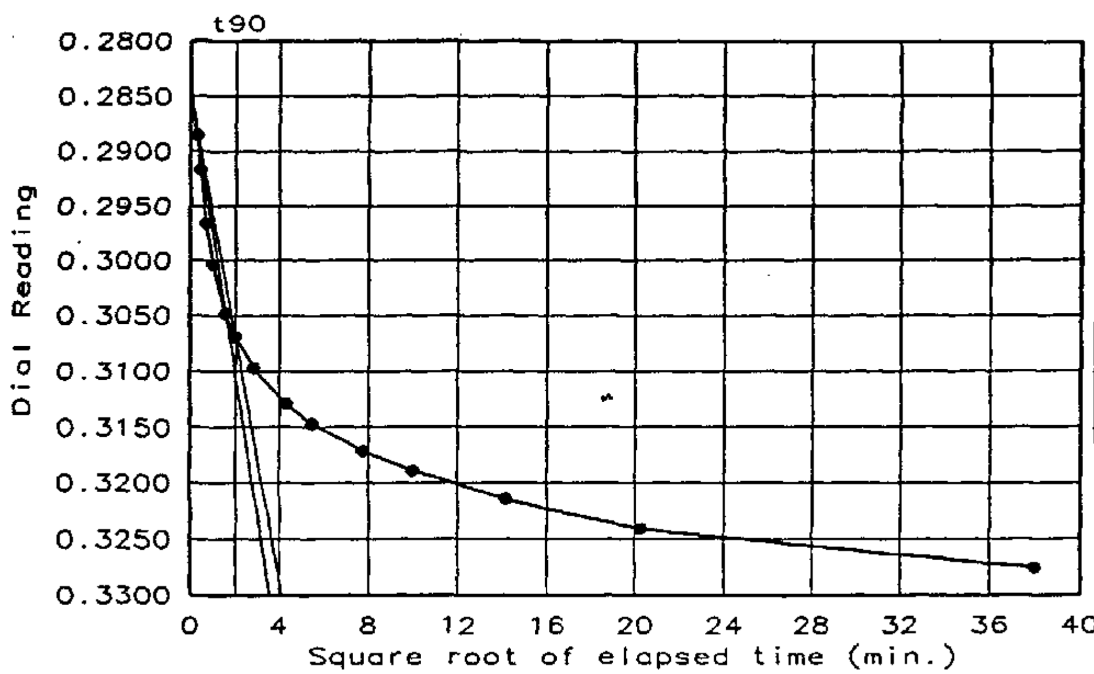
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6260
Client Sample No.: AD~~2076~~ 7-15



Load No.= 7
Load= 4.00 tsf
D_0 = 0.2583
D_{90} = 0.2620
D_{100}= 0.2625
T_{90}= 5.46 min.

C_v @ T_{90} =
.009 in.²/min.



Load No.= 8
Load= 8.00 tsf
D_0 = 0.2845
D_{90} = 0.3070
D_{100}= 0.3095
T_{90}= 4.16 min.

C_v @ T_{90} =
.010 in.²/min.

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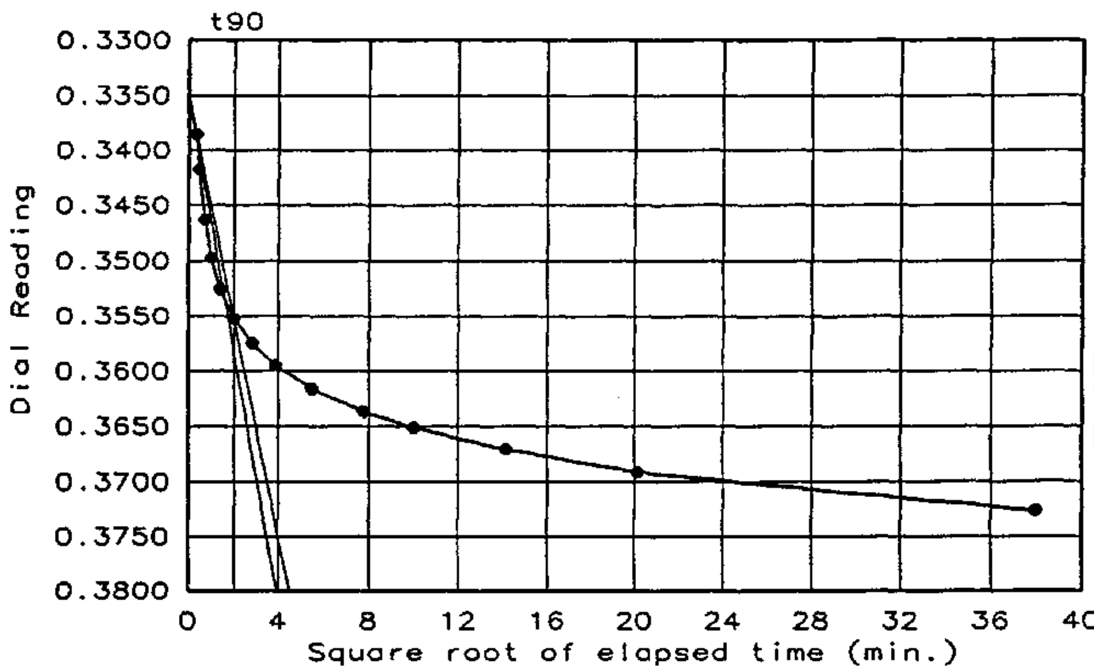
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6260
Client Sample No.: AD~~2576~~ 7-15



Load No.= 9
Load= 16.00 tsf
D_0 = 0.3349
D_{90} = 0.3553
D_{100}= 0.3576
T_{90}= 4.17 min.

C_v @ T_{90} =
.008 in.^{2}/min.

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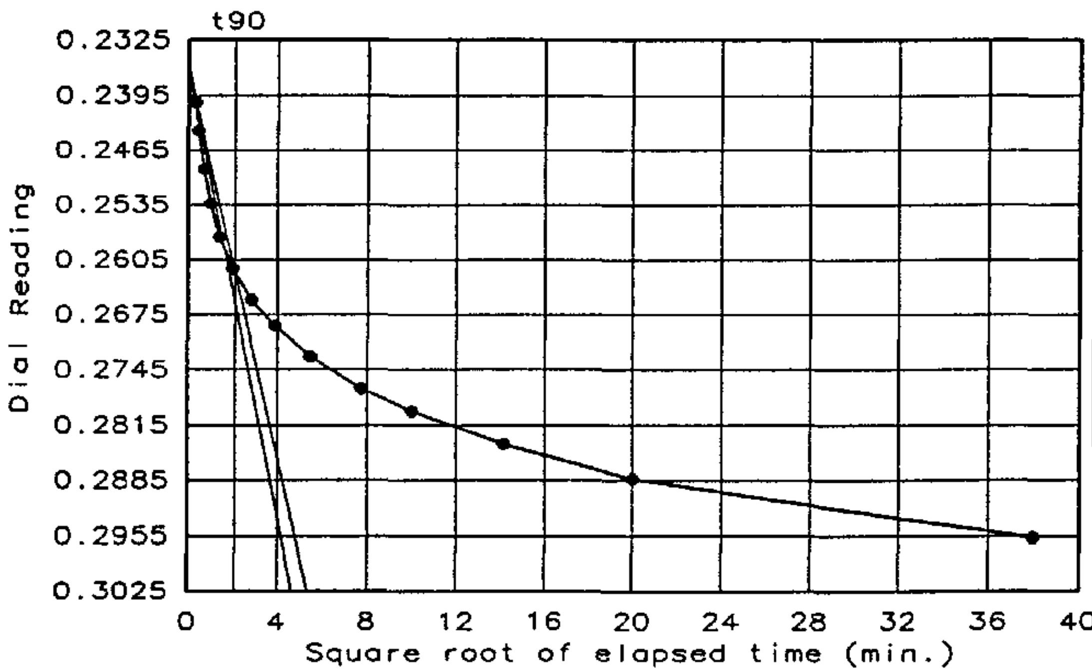
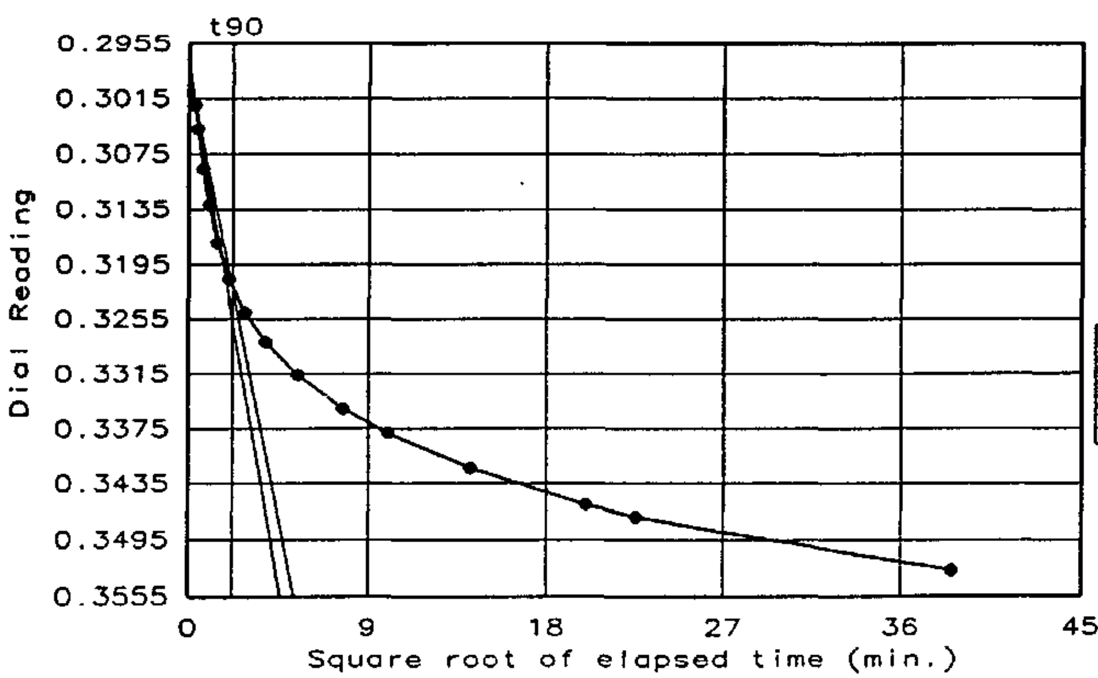
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6258
Client Sample No.: ~~AD2074~~ WP-5



Load No.= 3
Load= 0.25 tsf
D_0 = 0.2359
D_{90} = 0.2621
D_{100}= 0.2651
T_{90}= 4.46 min.

C_v @ T_{90} =
.011 in.^{2}/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.2983
D_{90} = 0.3219
D_{100}= 0.3246
T_{90}= 4.79 min.

C_v @ T_{90} =
.008 in.^{2}/min.

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ETDC Project No.: 483565.04

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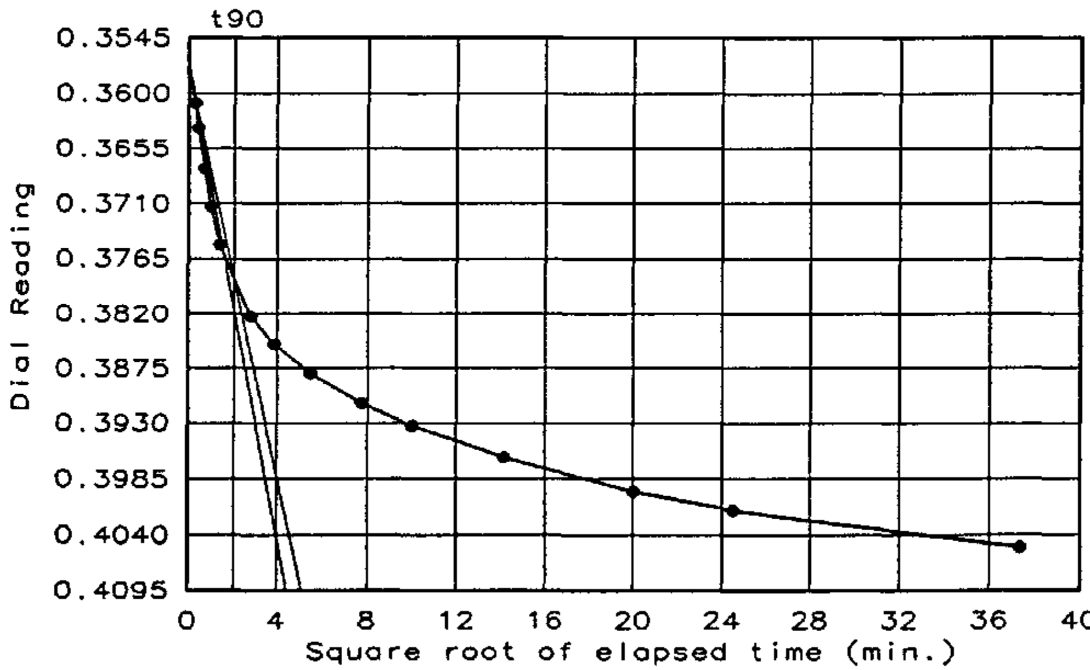
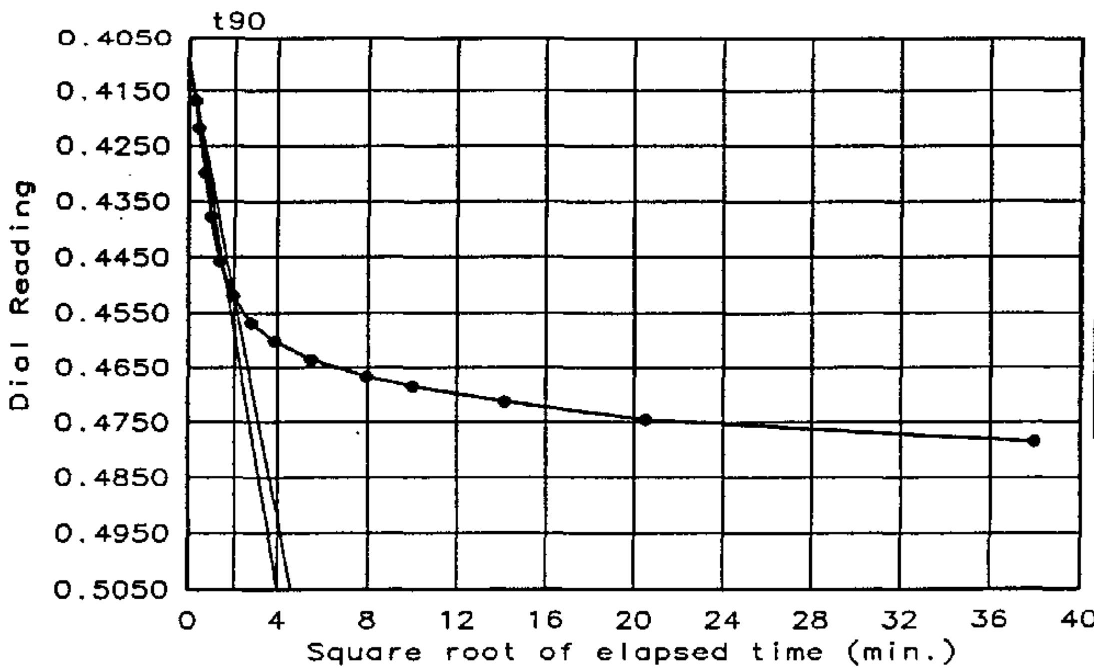
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6258
Client Sample No.: AD2974 WP-5



Load No.= 5
Load= 1.00 tsf
D_0 = 0.3573
D_{90} = 0.3784
D_{100}= 0.3808
T_{90}= 4.26 min.

C_v @ T_{90} =
.007 in.^{2}/min.



Load No.= 6
Load= 3.00 tsf
D_0 = 0.4092
D_{90} = 0.4524
D_{100}= 0.4573
T_{90}= 4.31 min.

C_v @ T_{90} =
.005 in.^{2}/min.

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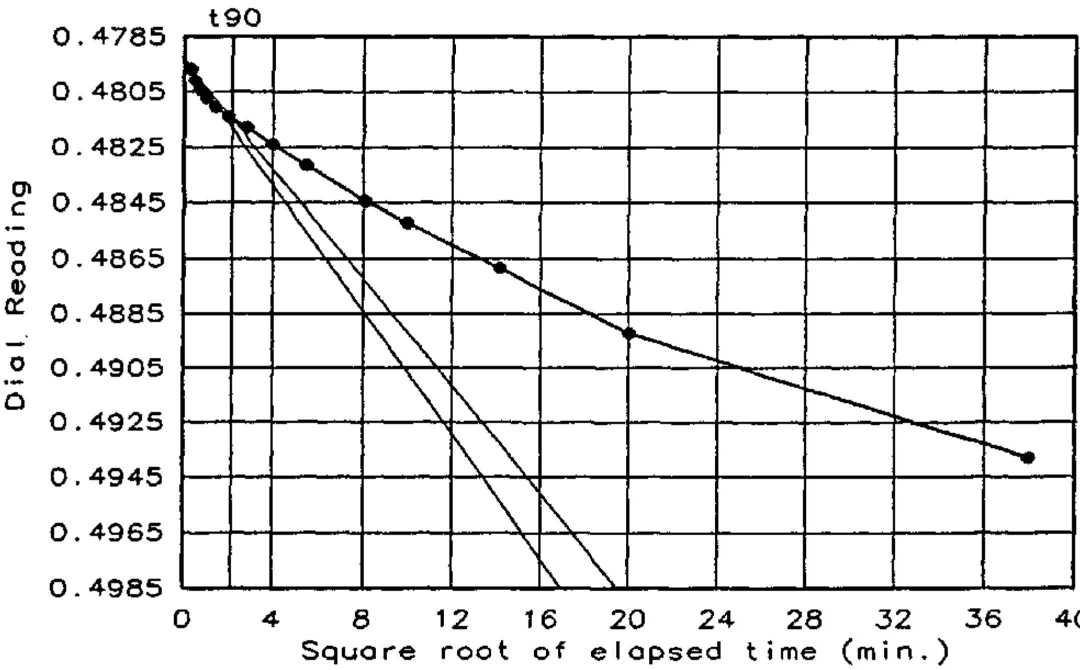
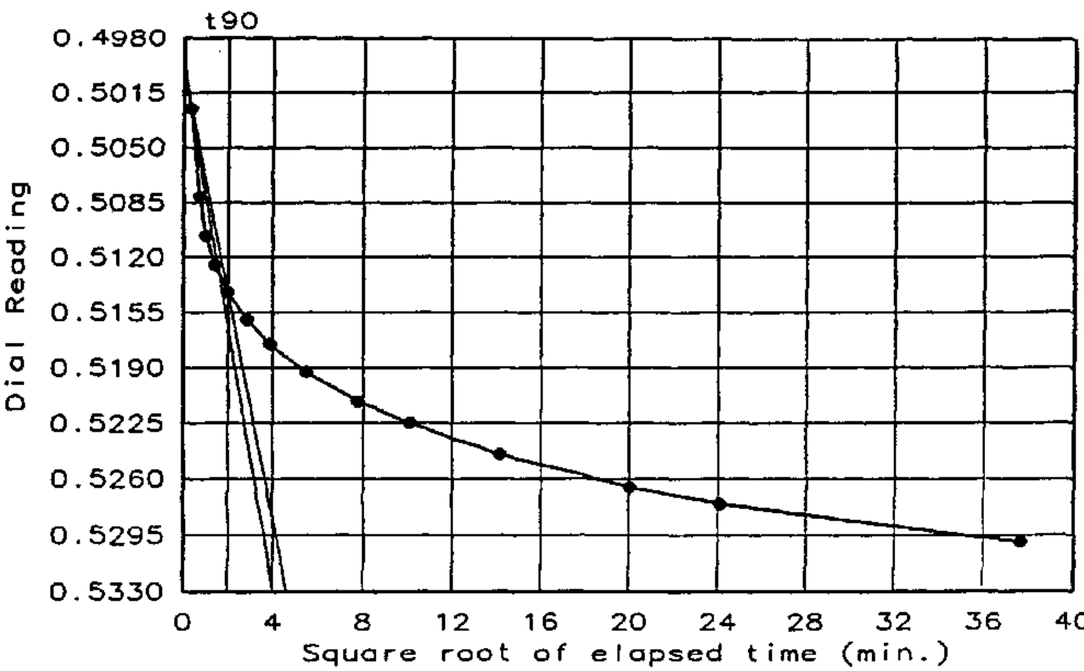
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6258
Client Sample No.: ~~AD2974~~ WP-5



Load No.= 7
Load= 4.00 tsf
D_0 = 0.4793
D_{90} = 0.4815
D_{100}= 0.4817
T_{90}= 4.74 min.

C_v @ T_{90} =
.003 in.²/min.



Load No.= 8
Load= 8.00 tsf
D_0 = 0.4999
D_{90} = 0.5142
D_{100}= 0.5158
T_{90}= 4.04 min.

C_v @ T_{90} =
.003 in.²/min.

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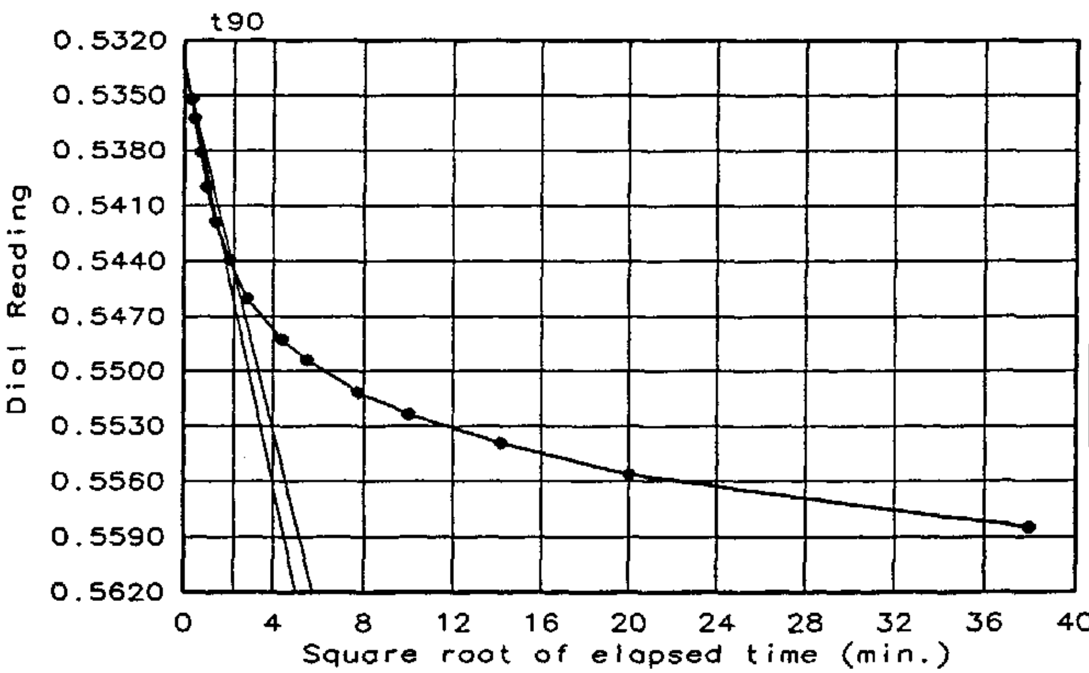
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6258
Client Sample No.: AD2~~974~~ WP-5



Load No.= 9
Load= 16.00 tsf
D_0 = 0.5334
D_{90} = 0.5446
D_{100}= 0.5458
T_{90}= 5.08 min.

C_v @ T_{90} =
.002 in.²/min.

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March 2, 1995
Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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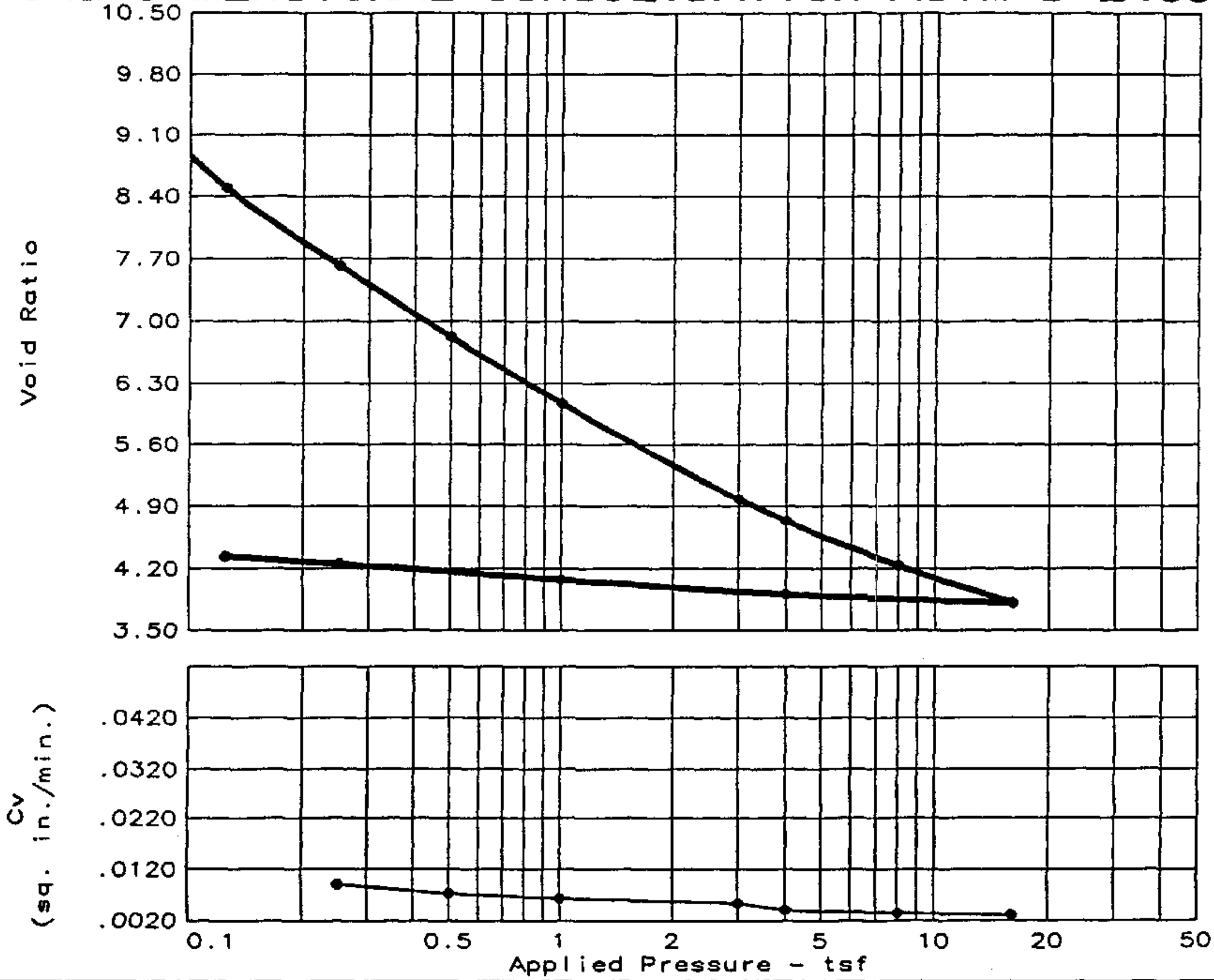
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
104.4 %	580.8	10.4	ND	ND	2.37	1.40	13.1805

TEST RESULTS	MATERIAL DESCRIPTION
C_v at 0.50 tsf applied = 0.007 sq. in./min. C_v at 16.00 tsf applied = 0.003 sq. in./min.	ORGANIC SILT, black Class: ML/OL

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6259
Client Sample No.: ~~AD2975~~ WP-7

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

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Remarks:
Sample received in 1.9" sample tube at 64.7 PCF wet density. Reformed sample to approximate nat'l density: 71.0 PCF

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Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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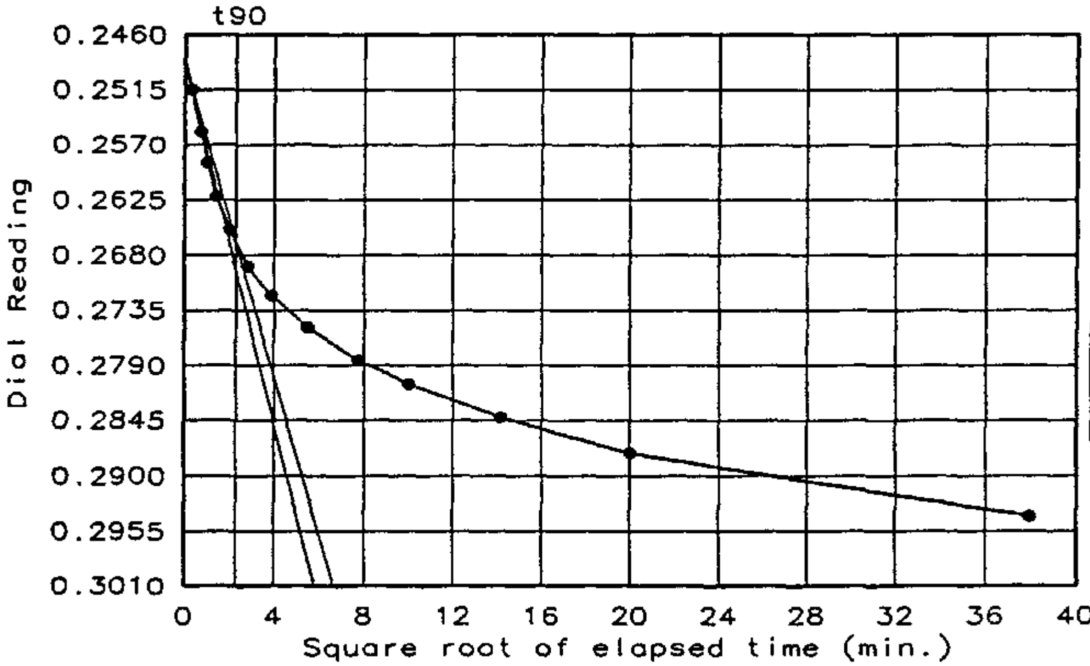
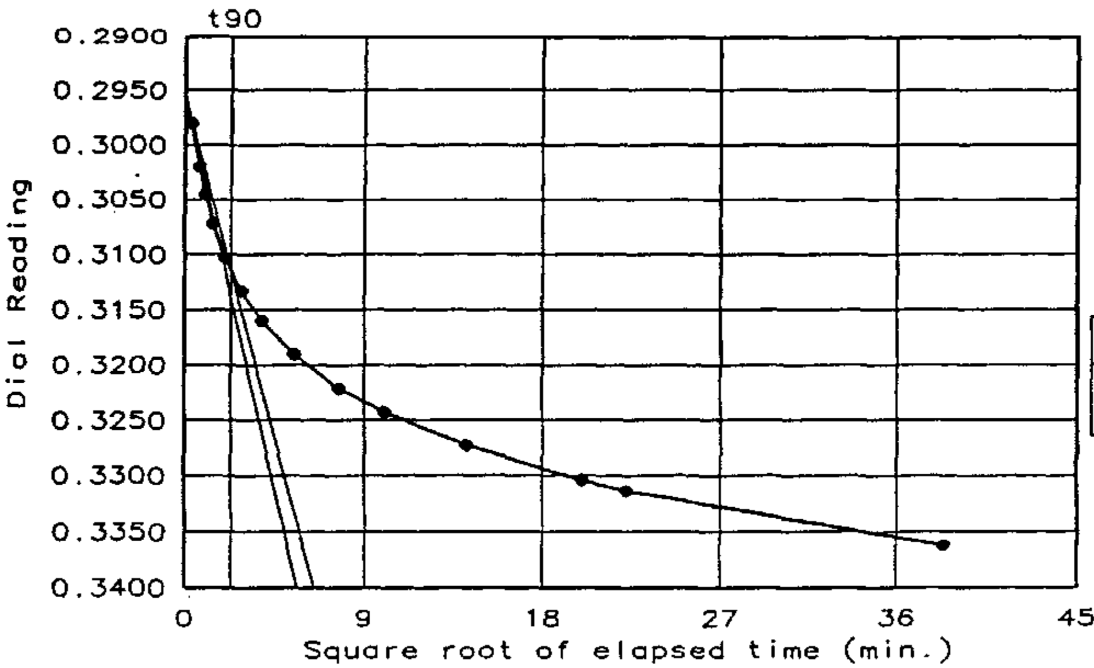
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6259
Client Sample No.: AD~~29~~75 WP-7



Load No.= 3
Load= 0.25 tsf
D_0 = 0.2486
D_{90} = 0.2669
D_{100}= 0.2689
T_{90}= 5.35 min.

C_v @ T_{90} =
.009 in.^{2}/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.2955
D_{90} = 0.3115
D_{100}= 0.3133
T_{90}= 5.47 min.

C_v @ T_{90} =
.007 in.^{2}/min.

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ETDC Project No.: 483565.04

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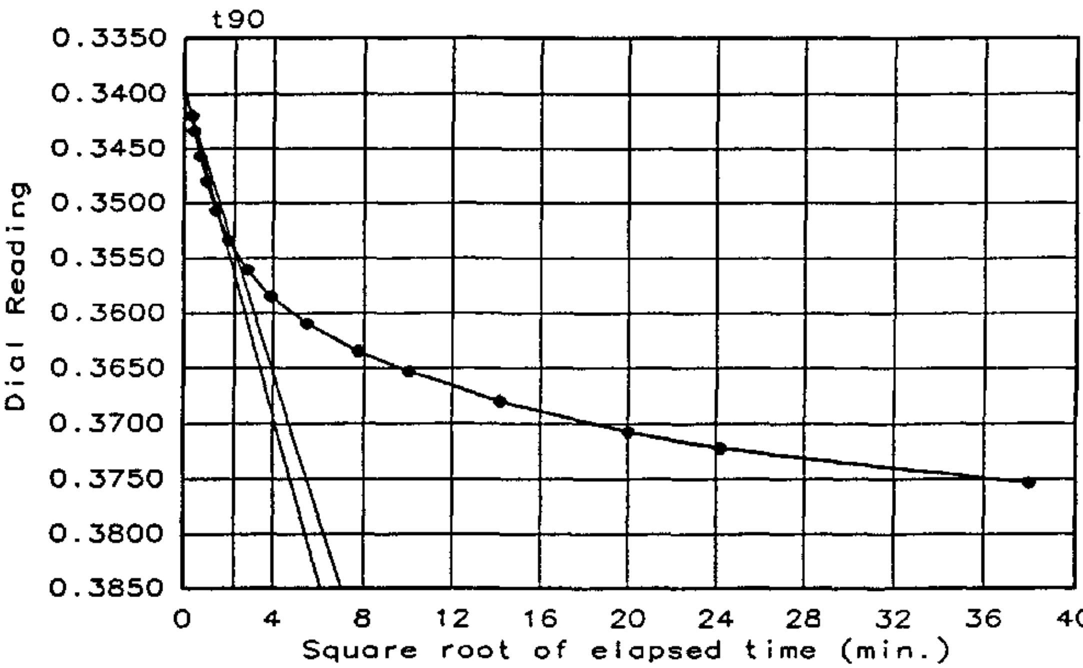
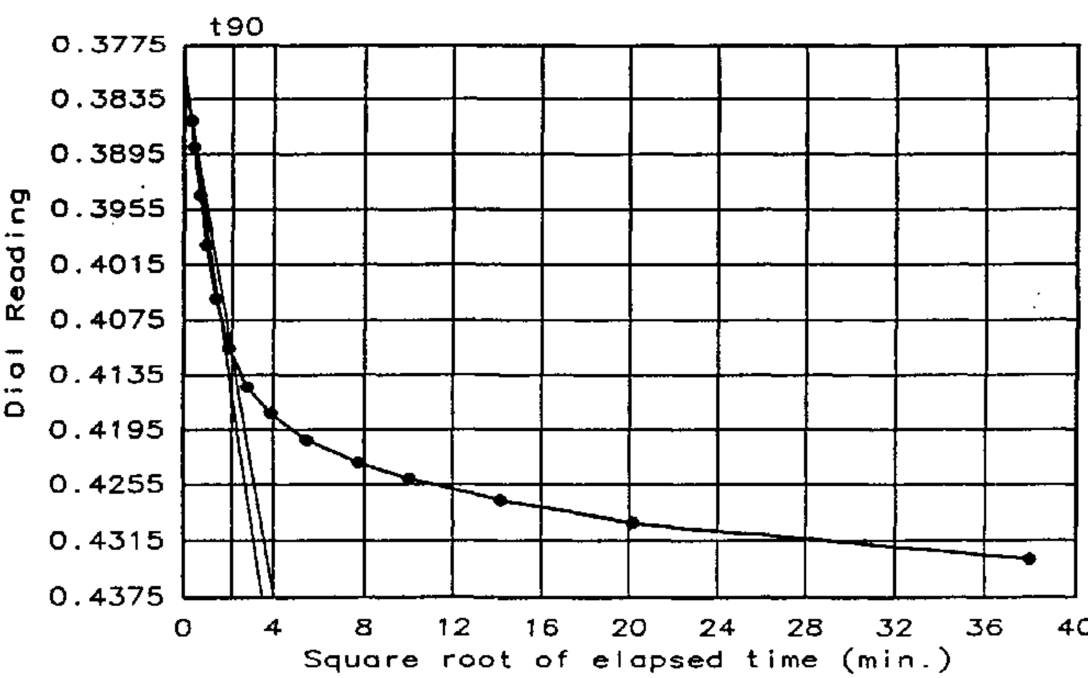
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6259
Client Sample No.: ~~AD2075~~ WP-7



Load No.= 5
Load= 1.00 tsf
D_0 = 0.3397
D_{90} = 0.3543
D_{100}= 0.3559
T_{90}= 5.15 min.

C_v @ T_{90} = .006 in.^{2}/min.



Load No.= 6
Load= 3.00 tsf
D_0 = 0.3806
D_{90} = 0.4114
D_{100}= 0.4149
T_{90}= 4.69 min.

C_v @ T_{90} = .005 in.^{2}/min.

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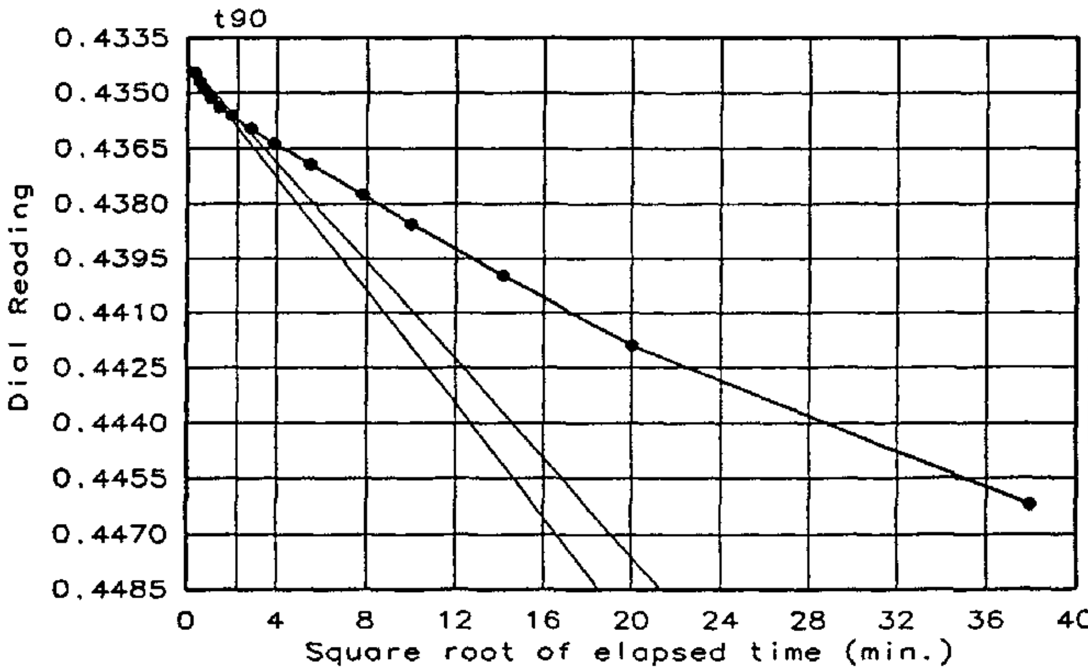
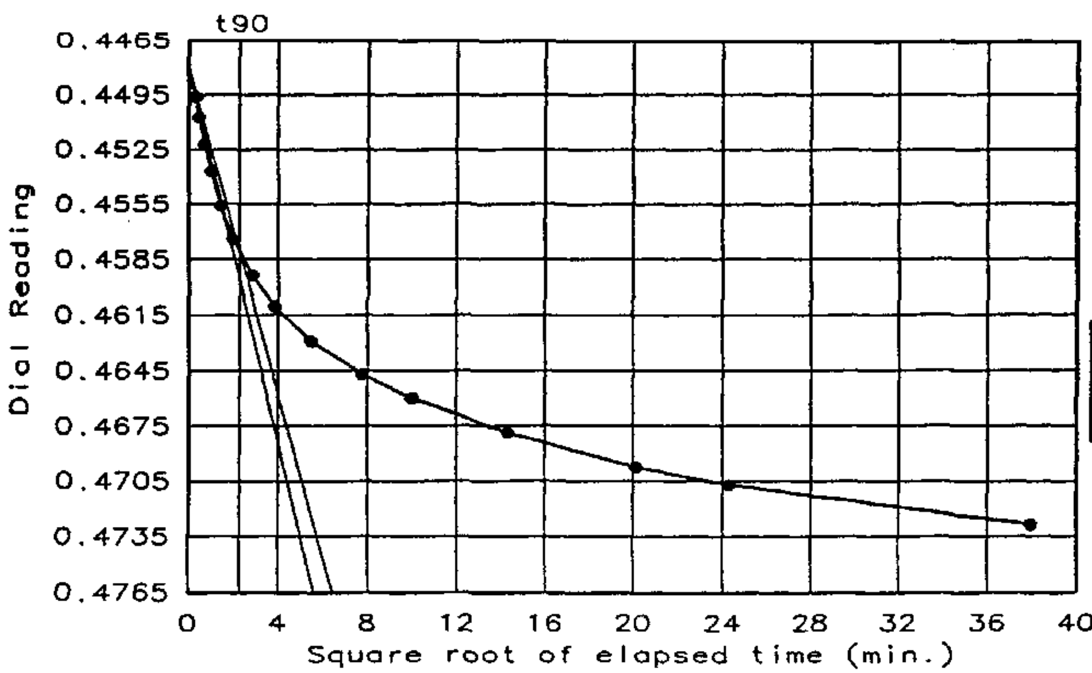
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6259
Client Sample No.: AD2075 WP7



Load No.= 7
Load= 4.00 tsf
D_0 = 0.4342
D_{90} = 0.4357
D_{100}= 0.4359
T_{90}= 5.04 min.

C_v @ T_{90} =
.004 in.²/min.



Load No.= 8
Load= 8.00 tsf
D_0 = 0.4480
D_{90} = 0.4581
D_{100}= 0.4592
T_{90}= 5.16 min.

C_v @ T_{90} =
.003 in.²/min.

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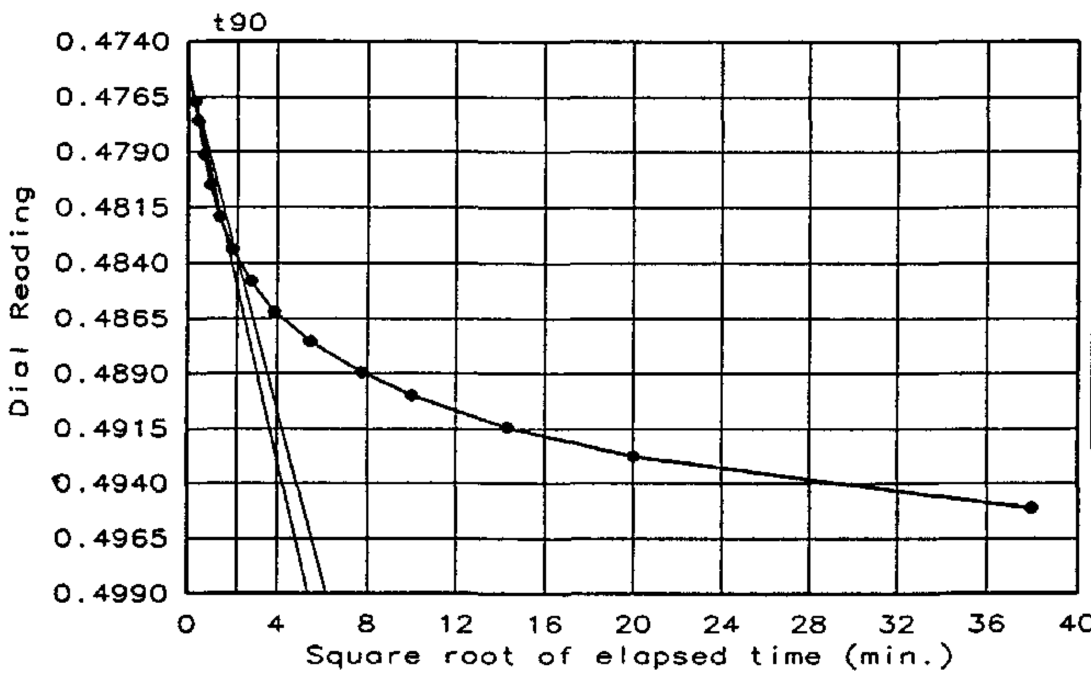
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6259
Client Sample No.: ~~AD2975~~ WP-7



Load No.= 9
Load= 16.00 tsf
D_0 = 0.4753
D_{90} = 0.4837
D_{100}= 0.4847
T_{90}= 4.85 min.

C_v @ T_{90} = .003 in.^{2}/min.

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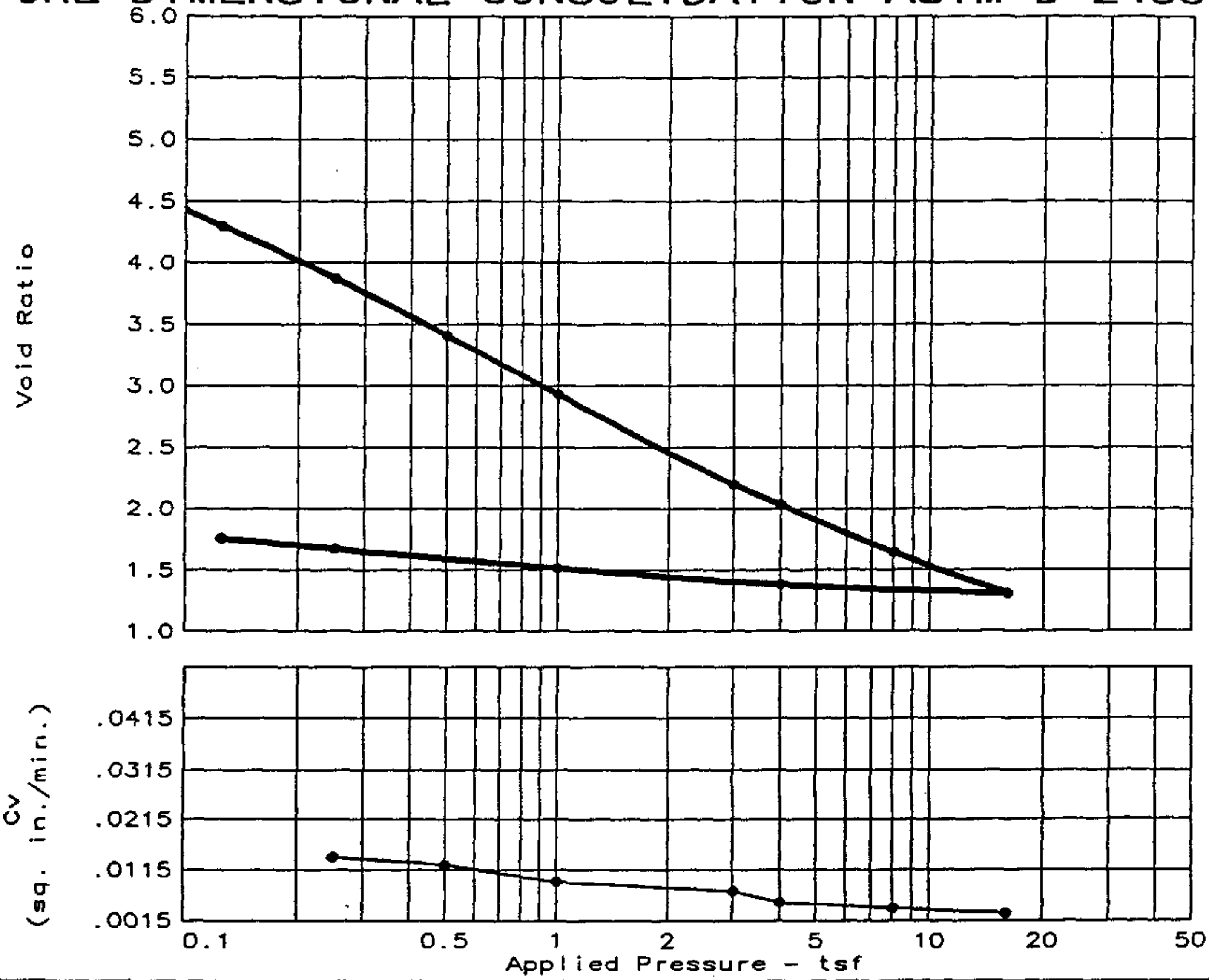
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
96.5 %	220.2	23.0	ND	ND	2.33	1.12	5.3190

TEST RESULTS	MATERIAL DESCRIPTION
C_v at 0.50 tsf applied = 0.012 sq. in./min. C_v at 16.00 tsf applied = 0.003 sq. in./min.	ORGANIC SILT, black Class: ML/OL

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6257
Client Sample No.: AD~~2~~973 WP-3

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

IT Corp. - GEOTECHNICAL LABORATORY

Remarks:
Sample received in 1.9" sample tube at 75.2 PCF wet density. Reformed sample to approximate nat'l density:73.7 PCF

682A-6-93

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Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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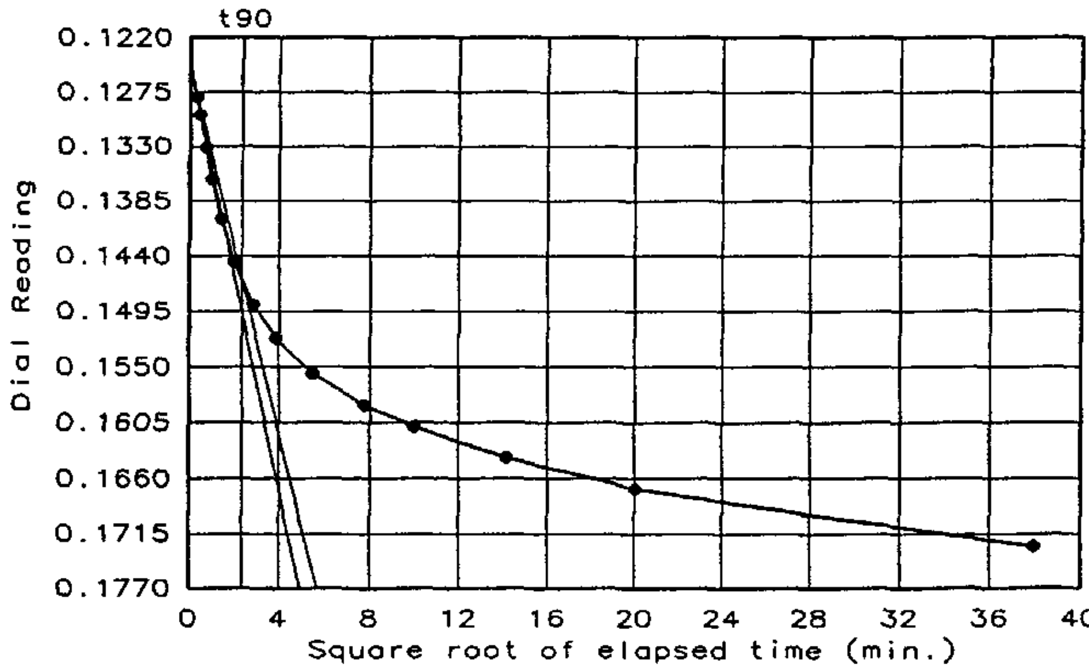
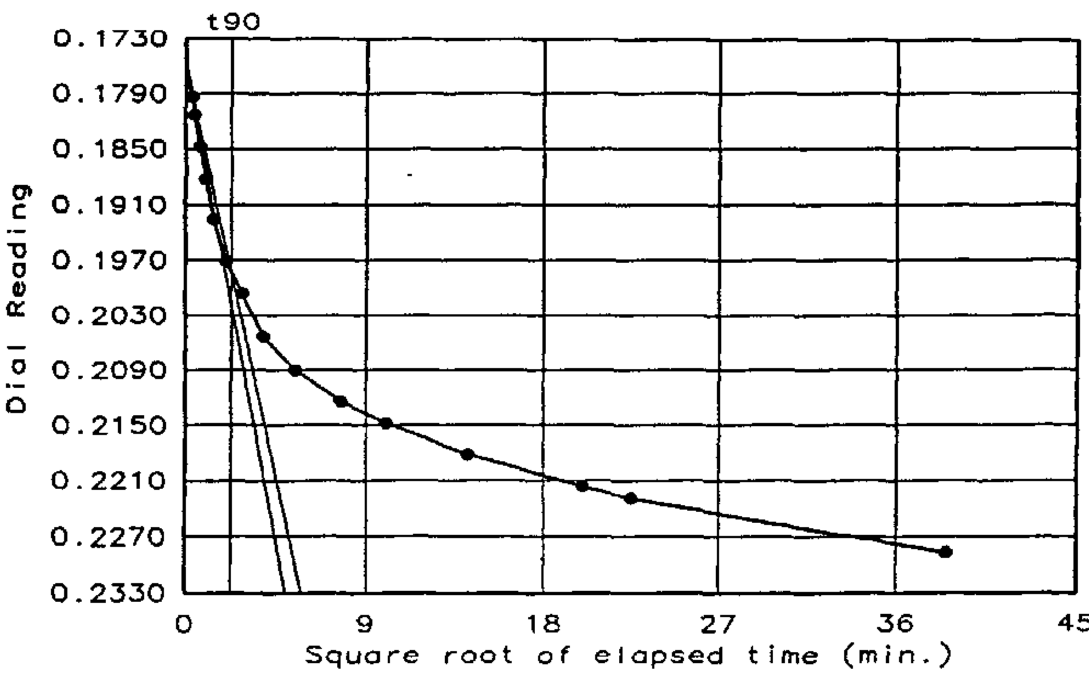
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6257
Client Sample No.: ~~AD2973~~ WP-3



Load No.= 3
Load= 0.25 tsf
D_0 = 0.1246
D_{90} = 0.1464
D_{100}= 0.1489
T_{90}= 5.58 min.

C_v @ T_{90} =
.014 in.²/min.



Load No.= 4
Load= 0.50 tsf
D_0 = 0.1757
D_{90} = 0.1983
D_{100}= 0.2008
T_{90}= 5.22 min.

C_v @ T_{90} =
.012 in.²/min.

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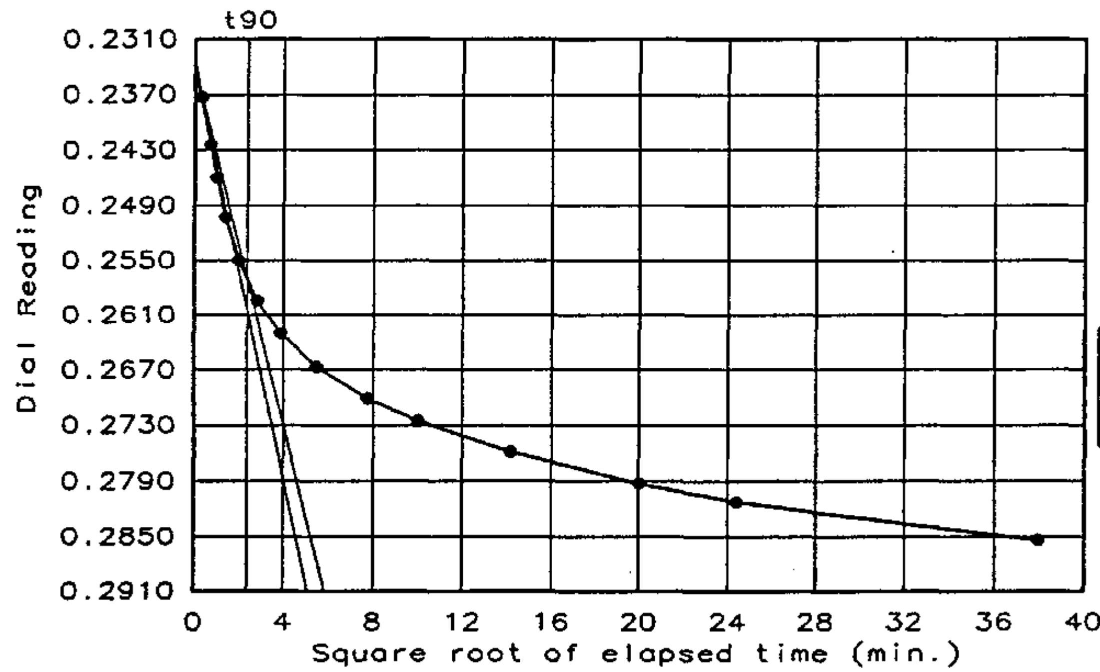
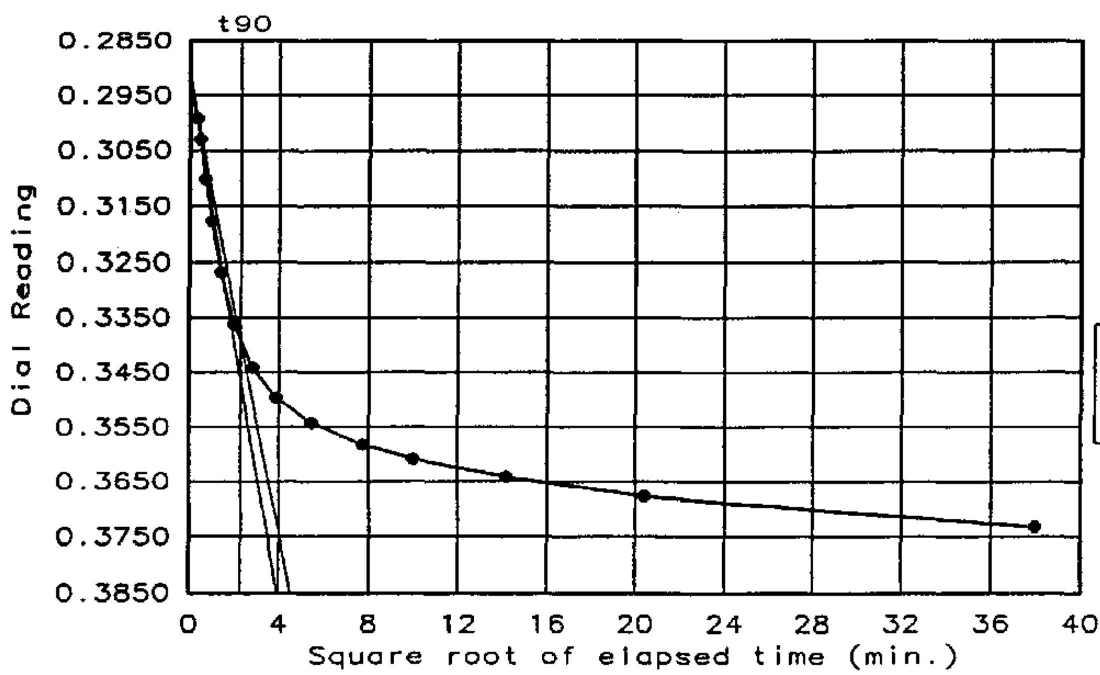
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6257
Client Sample No.: ~~AD2973~~ WP-3



Load No.= 5
Load= 1.00 tsf
D_0 = 0.2337
D_{90} = 0.2571
D_{100}= 0.2597
T_{90}= 5.70 min.

C_v @ T_{90} =
.009 in.²/min.



Load No.= 6
Load= 3.00 tsf
D_0 = 0.2917
D_{90} = 0.3390
D_{100}= 0.3442
T_{90}= 5.25 min.

C_v @ T_{90} =
.007 in.²/min.

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Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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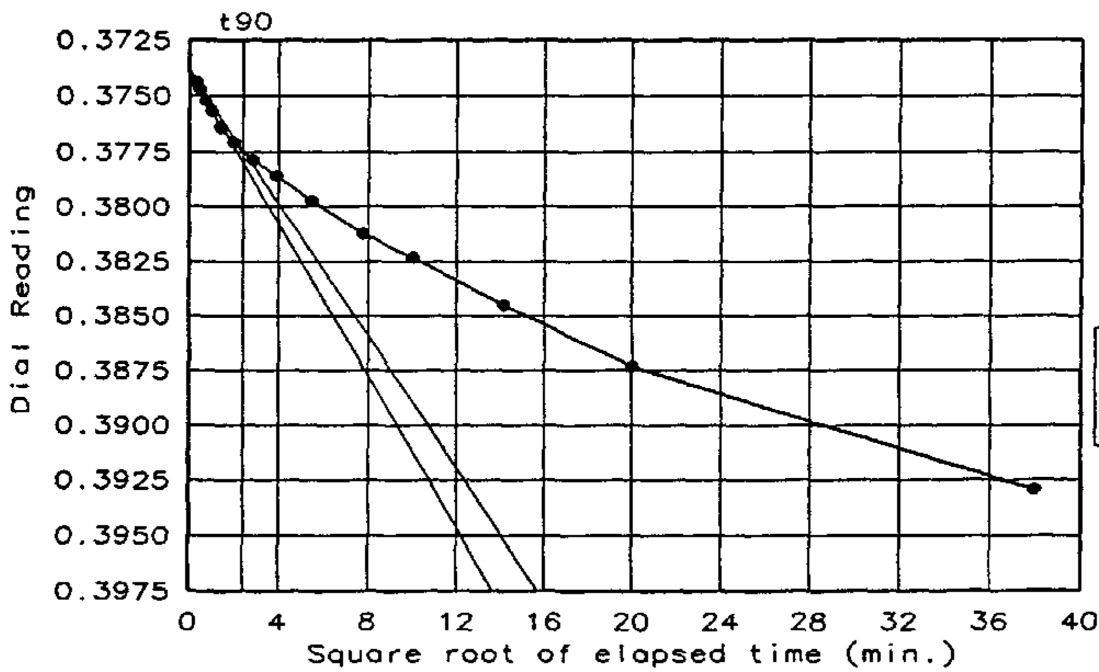
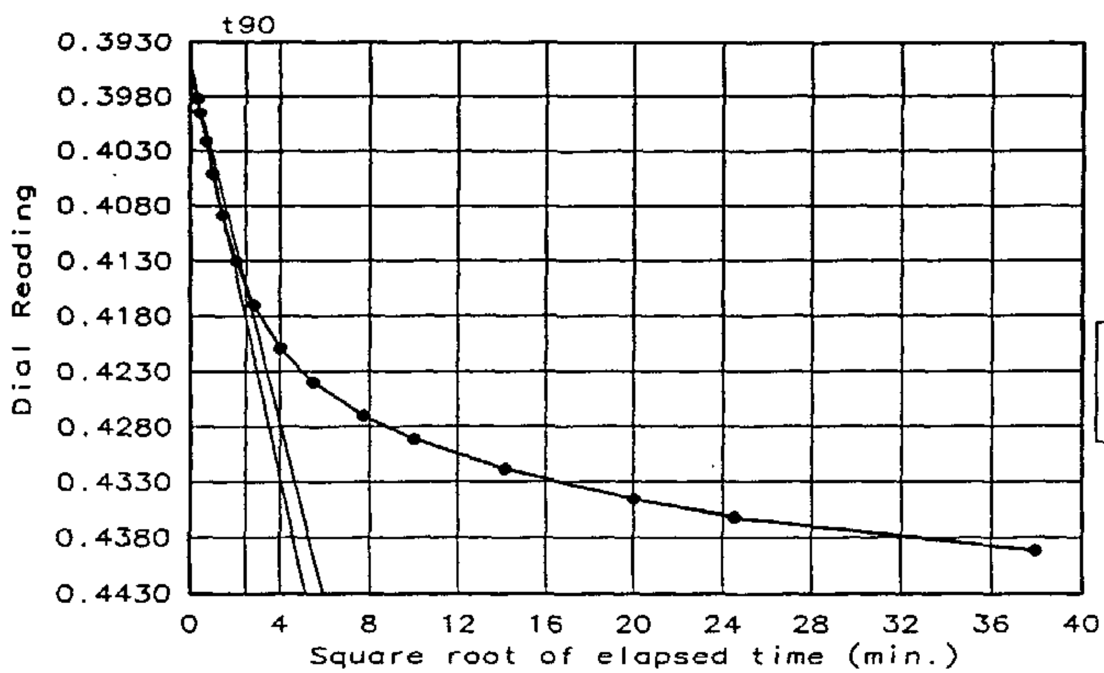
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6257
Client Sample No.: ~~AD2573~~ WP-3



Load No.= 7
Load= 4.00 tsf
D_0 = 0.3738
D_{90} = 0.3775
D_{100}= 0.3779
T_{90}= 5.79 min.

C_v @ T_{90} =
.005 in.²/min.



Load No.= 8
Load= 8.00 tsf
D_0 = 0.3953
D_{90} = 0.4153
D_{100}= 0.4176
T_{90}= 6.16 min.

C_v @ T_{90} =
.004 in.²/min.

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Client Project ID: Housatonic River
ETDC Project No.: 483565.04

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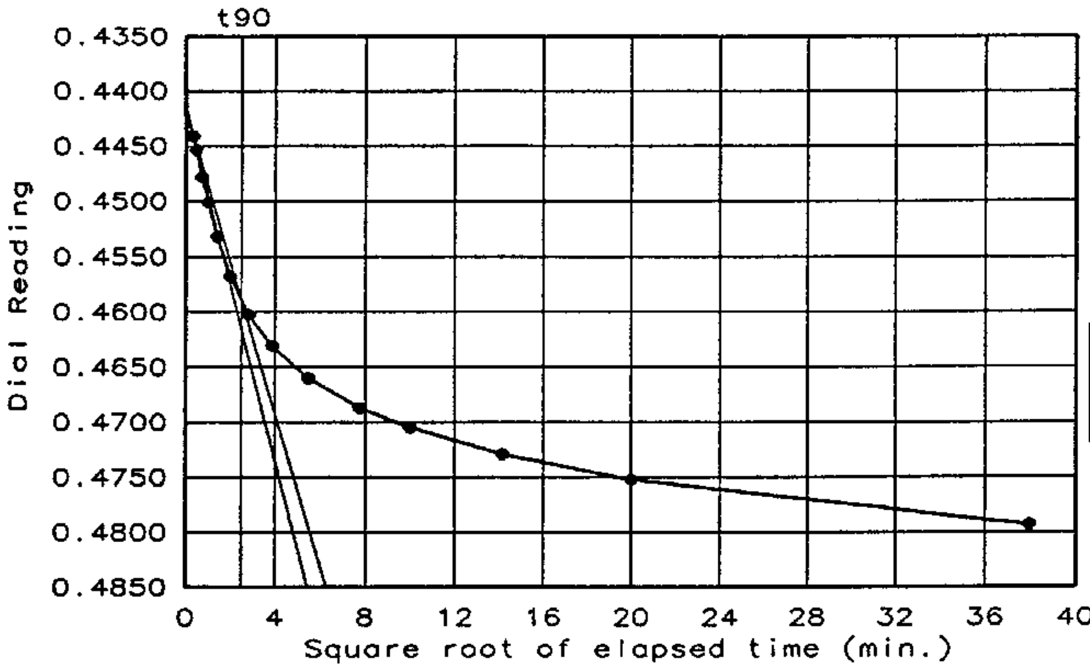
Dial Reading vs. Time

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6257
Client Sample No.: AD~~2873~~ WP-3



Load No.= 9
Load= 16.00 tsf
D_0 = 0.4416
D_{90} = 0.4589
D_{100}= 0.4608
T_{90}= 6.27 min.

C_v @ T_{90} = .003 in.^{2}/min.

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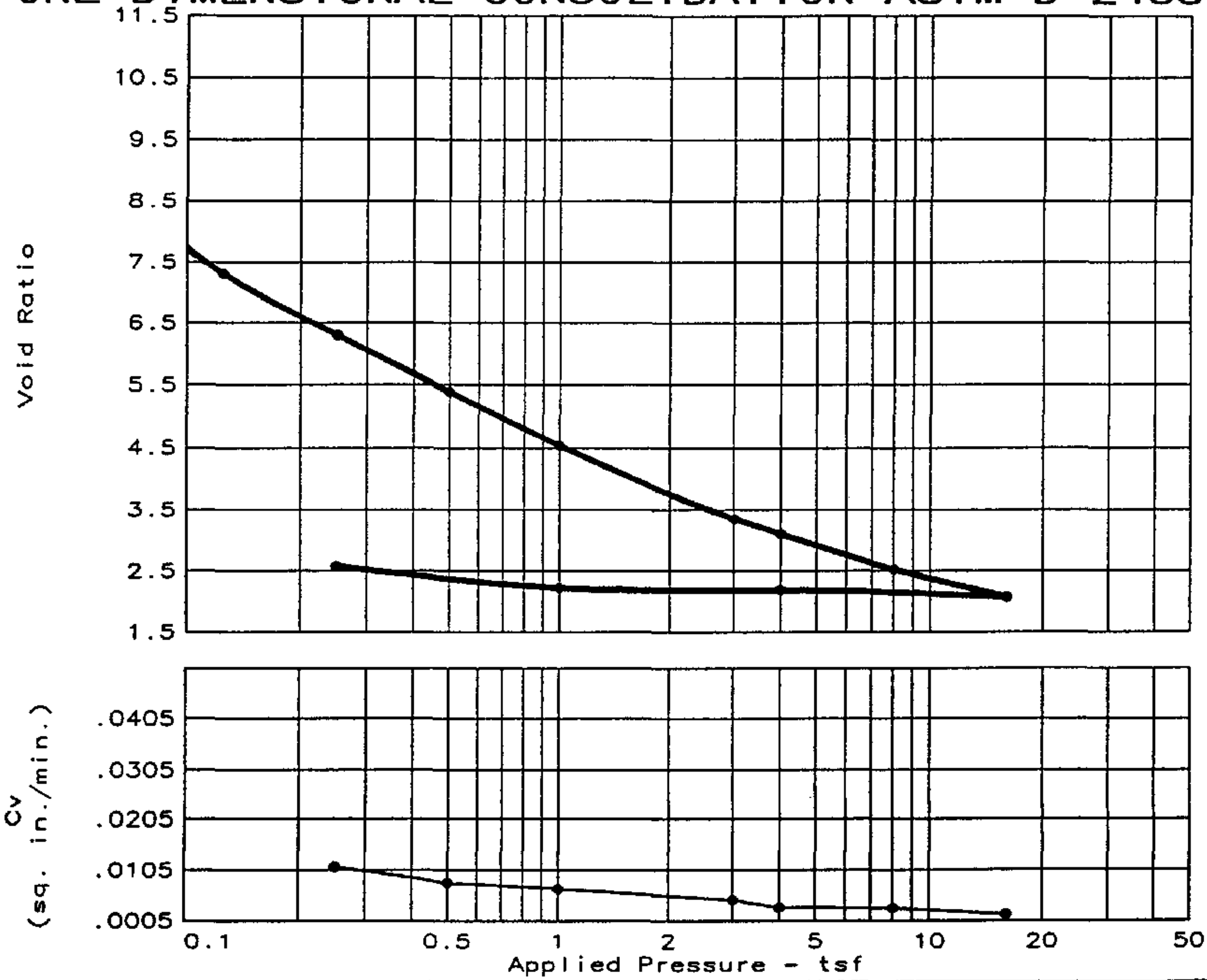
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	C_c	e_o
115.1 %	536.3	12.3	ND	ND	2.37	1.53	11.0636

TEST RESULTS	MATERIAL DESCRIPTION
C_v at 0.50 tsf applied = 0.008 sq. in./min. C_v at 16.00 tsf applied = 0.002 sq. in./min.	ORGANIC SILT, black w/ rootlets Class: ML/OL

ETDC Project Name: HOUSATONIC RIVER
ETDC Project No.: 483565.04
ETDC Sample No.: 6258
Client Sample No.: AD2874 WP-5

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

IT Corp. - GEOTECHNICAL LABORATORY

Remarks:
Sample received in 1.9" sample tube at 68.6 PCF wet density. Reformed sample to approximate nat'l density: 78.2 PCF

682A-6-93

SILVER LAKE SEDIMENT PARTICLE SIZE DATA

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: SILVER LAKE

Client Number: HCSE-11 (0-66")

Project Number: 483565.00500000

ETDC Number: ETDC-6471

Specific Gravity = 2.6500 Assumed

* Moisture Content = 371.6%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.9%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	91.5%
	#40	0.425	79.7%
	#60	0.250	73.5%
	#100	0.149	67.1%
	#140	0.106	63.3%
	#200	0.075	59.9%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04349	57.0%
	0.03142	52.4%
	0.01792	45.2%
	0.01221	36.2%
	0.00885	29.8%
	0.00643	21.7%
	0.00460	14.5%
	0.00322	10.8%
	0.00136	6.3%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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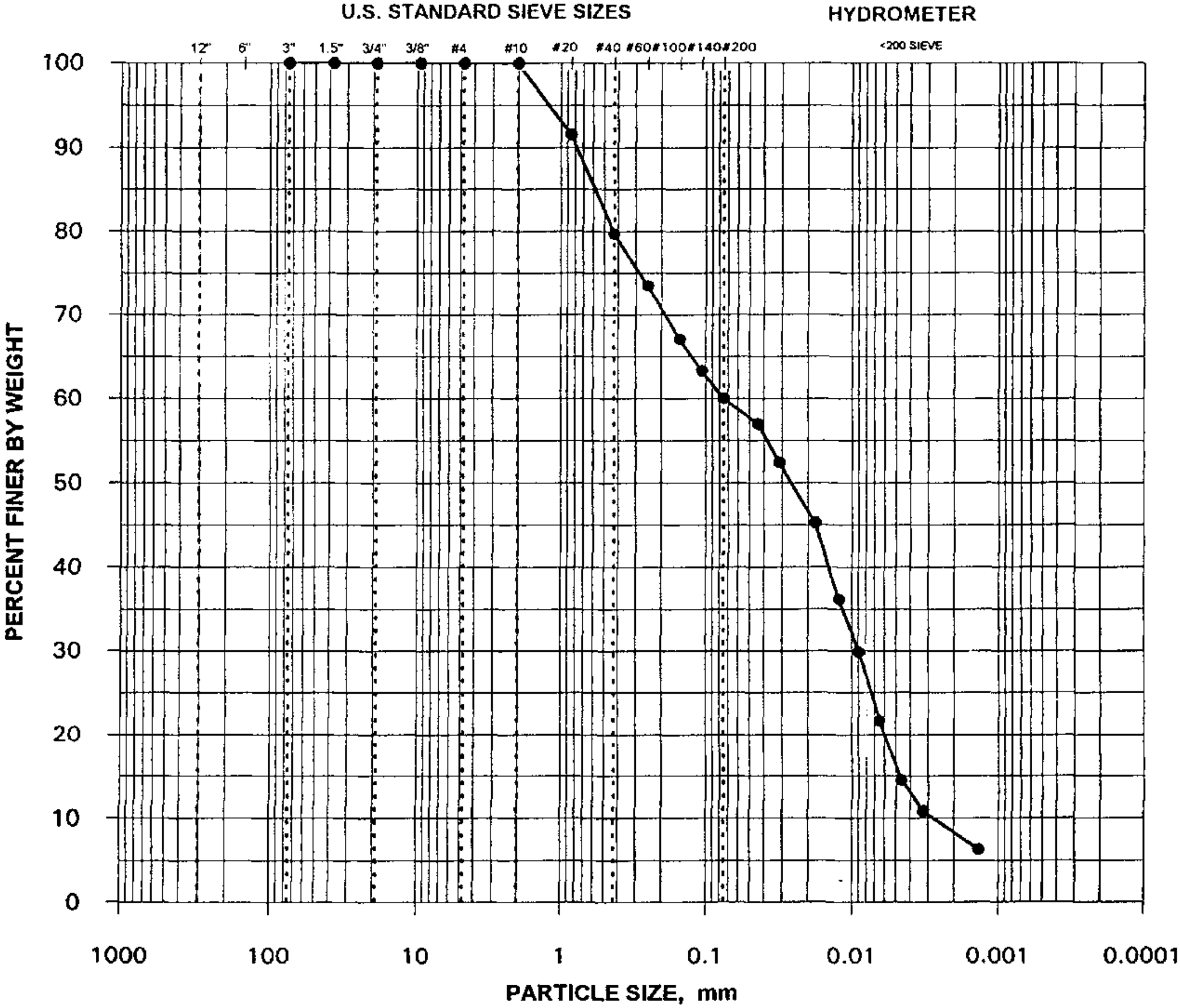
SILVER LAKE



CLIENT SAMPLE NO.: HCSE-11 (0-66")

ETDC SAMPLE NO.: ETDC-6471

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: SILVER LAKE

Client Number: HCSE-12 (0-66")

Project Number: 483565.00500000

ETDC Number: ETDC-6481

Specific Gravity = 2.3969 Measured

* Moisture Content = 239.6%

SIEVE ANALYSIS

COARSE Sieve No.	Diameter mm	Percent Finer
3"	75.000	100.0%
1.5"	37.500	100.0%
0.75"	19.000	100.0%
0.375"	9.500	100.0%
#4	4.750	100.0%
#10	2.000	99.9%

FINE Sieve No.	Diameter mm	Percent Finer
#20	0.850	99.4%
#40	0.425	98.6%
#60	0.250	97.4%
#100	0.149	93.7%
#140	0.106	89.8%
#200	0.075	84.9%

HYDROMETER ANALYSIS

HYDROMETER Diameter mm	Percent Finer
0.04021	60.6%
0.03020	52.7%
0.02026	43.6%
0.01255	31.9%
0.00926	24.1%
0.00678	16.3%
0.00492	11.1%
0.00347	7.2%
0.00143	3.9%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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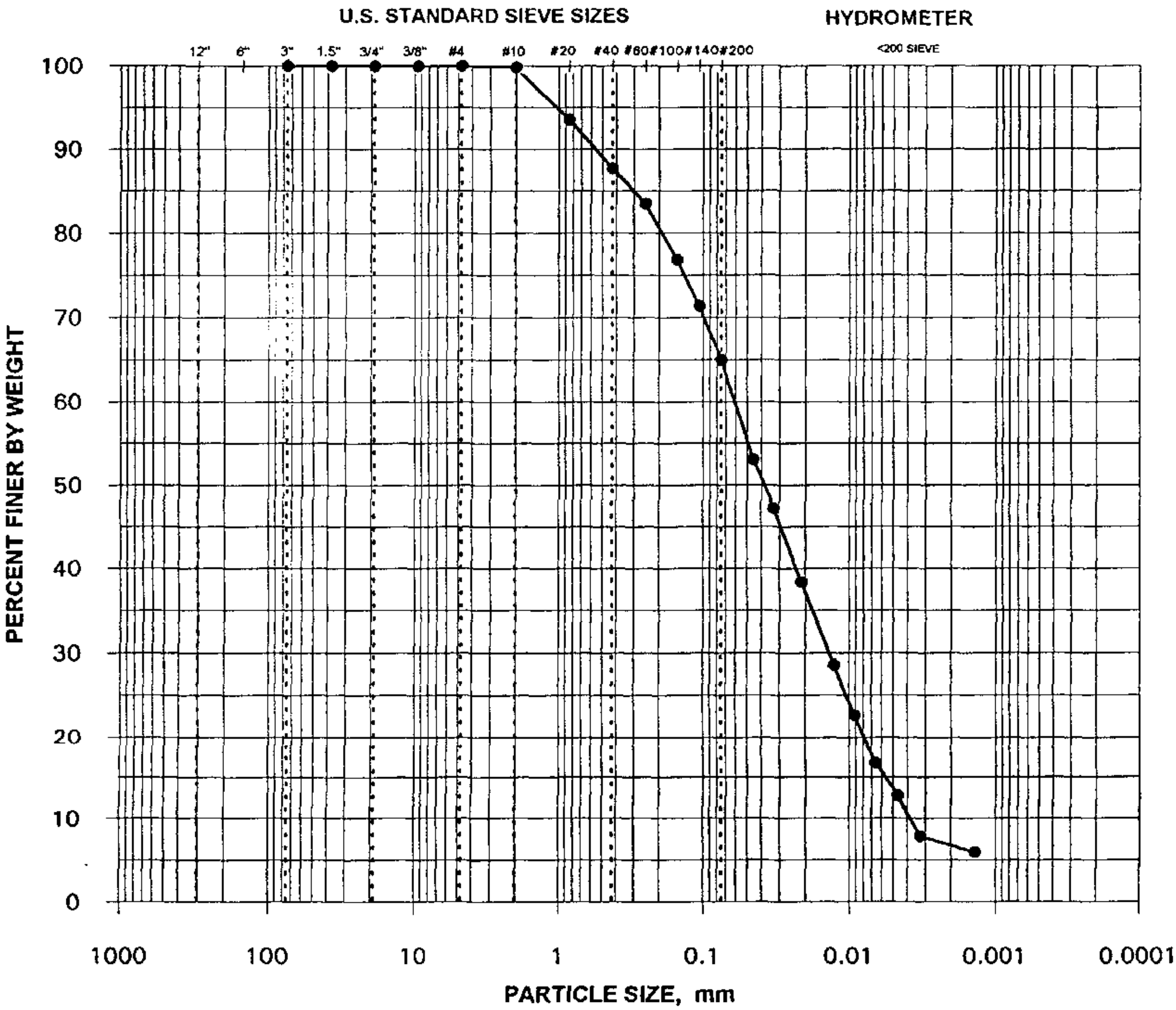
SILVER LAKE



CLIENT SAMPLE NO.: HCSE-12 (0-66")

ETDC SAMPLE NO.: ETDC-6472

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: SILVER LAKE

Client Number: HCSE-12 (0-66")

Project Number: 483565.00500000

ETDC Number: ETDC-6472

Specific Gravity = 2.6500 Assumed

* Moisture Content = 218.1%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.8%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	93.5%
	#40	0.425	87.6%
	#60	0.250	83.5%
	#100	0.149	76.8%
	#140	0.106	71.3%
	#200	0.075	65.0%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04507	53.0%
	0.03259	47.2%
	0.02123	38.3%
	0.01268	28.5%
	0.00912	22.6%
	0.00657	16.7%
	0.00468	12.8%
	0.00327	7.9%
	0.00137	5.9%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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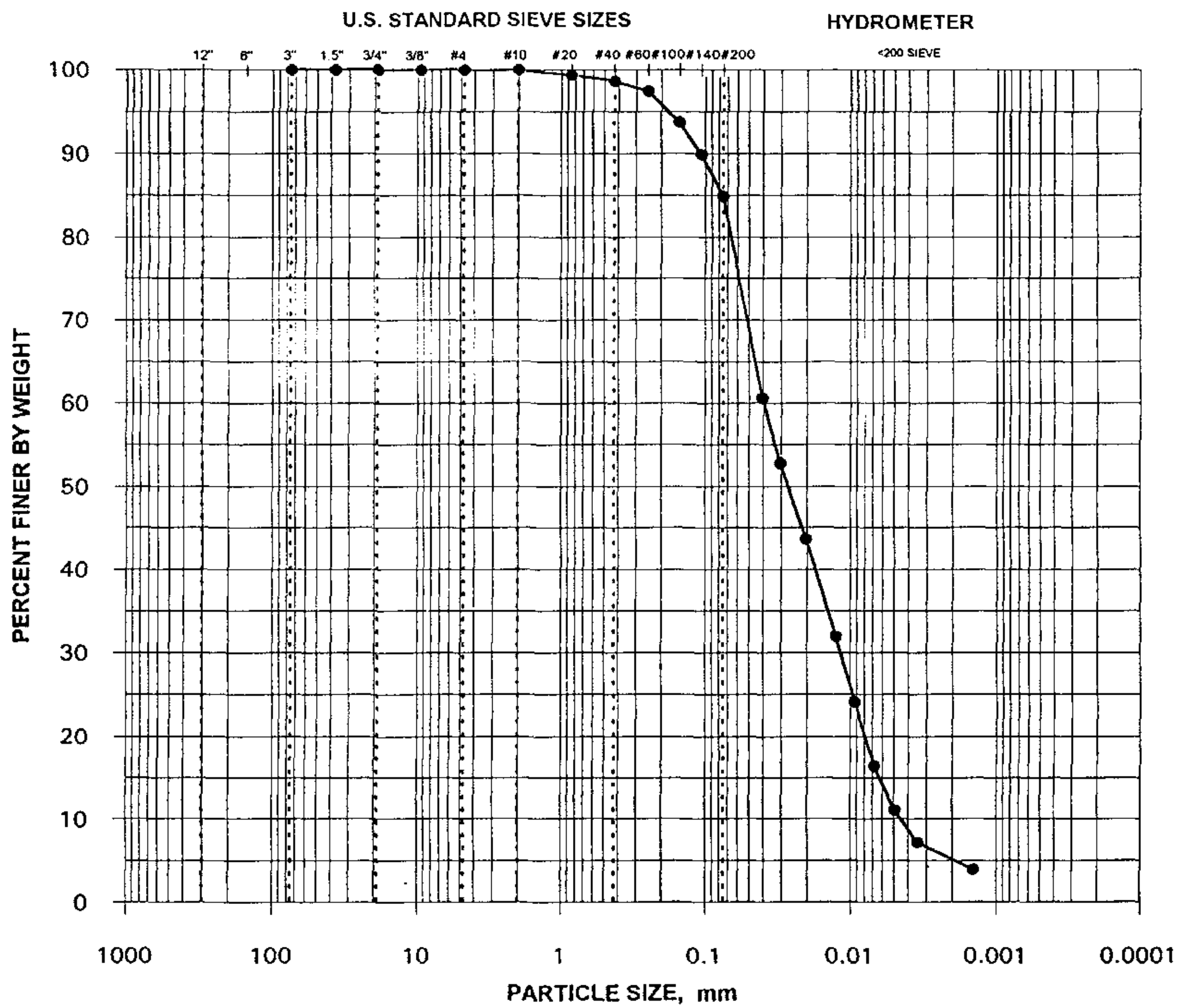
SILVER LAKE



CLIENT SAMPLE NO.: HCSE-12 (0-66")

ETDC SAMPLE NO.: ETDC-6481

BOULDERS	COBBLES	GRAVEL		SAND			
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT 2 - 75 microns CLAY <2 microns

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April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: SILVER LAKE

Client Number: SLS-1 (0-66")

Project Number: 483565.00500000

ETDC Number: ETDC-6478

Specific Gravity = 2.4269 Measured

* Moisture Content = 156.7%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	100.0%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	99.5%
	#40	0.425	97.5%
	#60	0.250	94.7%
	#100	0.149	90.7%
	#140	0.106	88.3%
	#200	0.075	85.5%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.03663	74.5%
	0.02707	69.0%
	0.01851	59.4%
	0.01173	45.1%
	0.00878	34.8%
	0.00656	23.9%
	0.00478	15.0%
	0.00338	10.2%
	0.00135	5.5%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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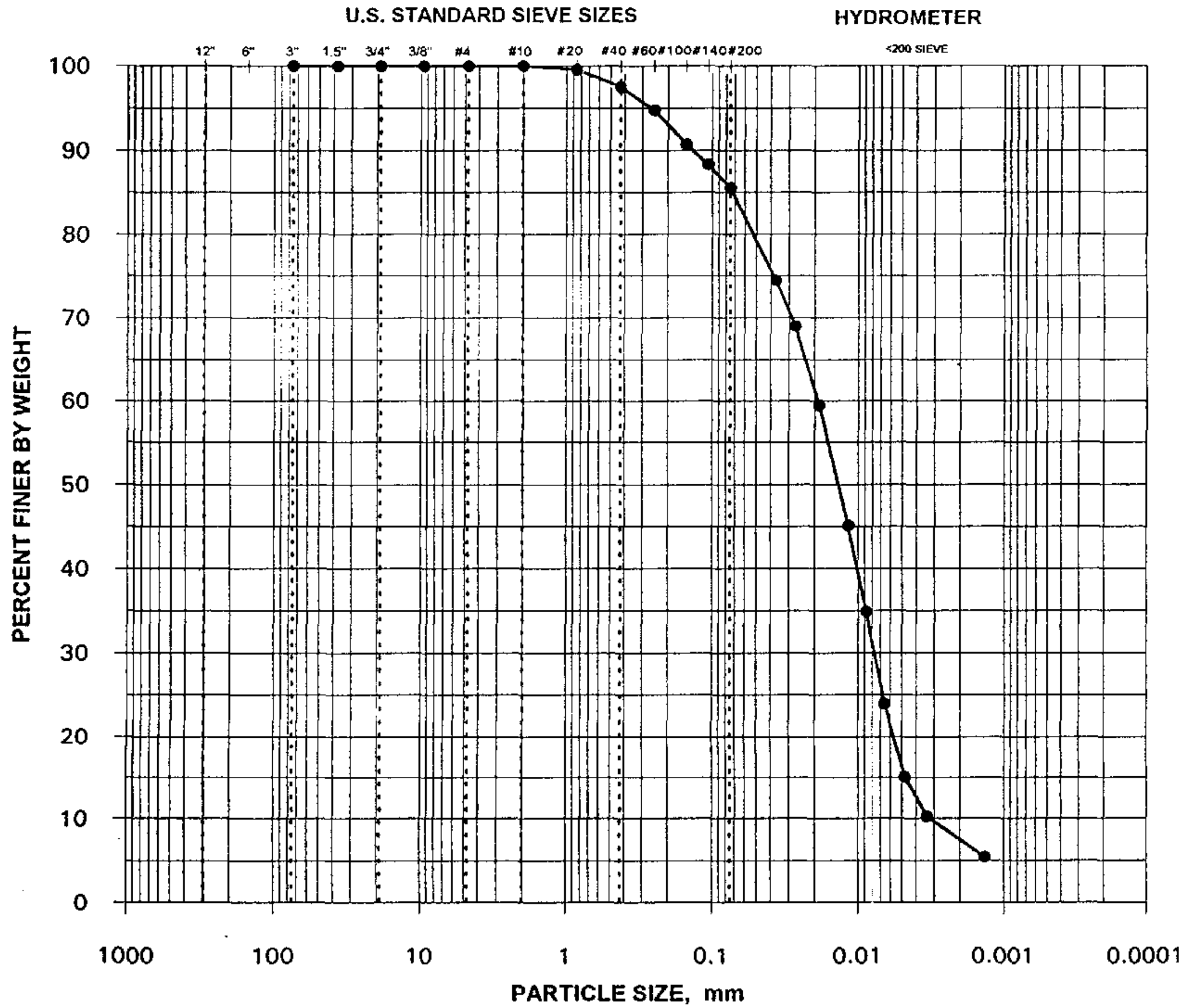
SILVER LAKE



CLIENT SAMPLE NO.: SLS-1 (0-66")

ETDC SAMPLE NO.: ETDC-6478

<table>
<tr><td rowspan="2">BOULDERS</td><td rowspan="2">COBBLES</td><td colspan="2">GRAVEL</td><td colspan="3">SAND</td><td rowspan="2">SILT 2 - 75 microns
CLAY <2 microns</td></tr>
<tr><td>COARSE</td><td>FINE</td><td>COARSE</td><td>MEDIUM</td><td>FINE</td></tr>
</table>

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Quanterra
April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: SILVER LAKE

Client Number: SLS-2 (0-54")

Project Number: 483565.00500000

ETDC Number: ETDC-6479

Specific Gravity = 2.4273 Measured

* Moisture Content = 167.3%

SIEVE ANALYSIS

	Sieve No.	Diameter mm	Percent Finer
COARSE	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.9%

	Sieve No.	Diameter mm	Percent Finer
FINE	#20	0.850	98.2%
	#40	0.425	93.8%
	#60	0.250	89.4%
	#100	0.149	82.9%
	#140	0.106	78.4%
	#200	0.075	73.8%

HYDROMETER ANALYSIS

	Diameter mm	Percent Finer
HYDROMETER		
	0.04381	60.3%
	0.03148	57.9%
	0.02062	50.5%
	0.01269	36.7%
	0.00912	28.5%
	0.00681	18.8%
	0.00490	10.6%
	0.00343	8.2%
	0.00137	4.9%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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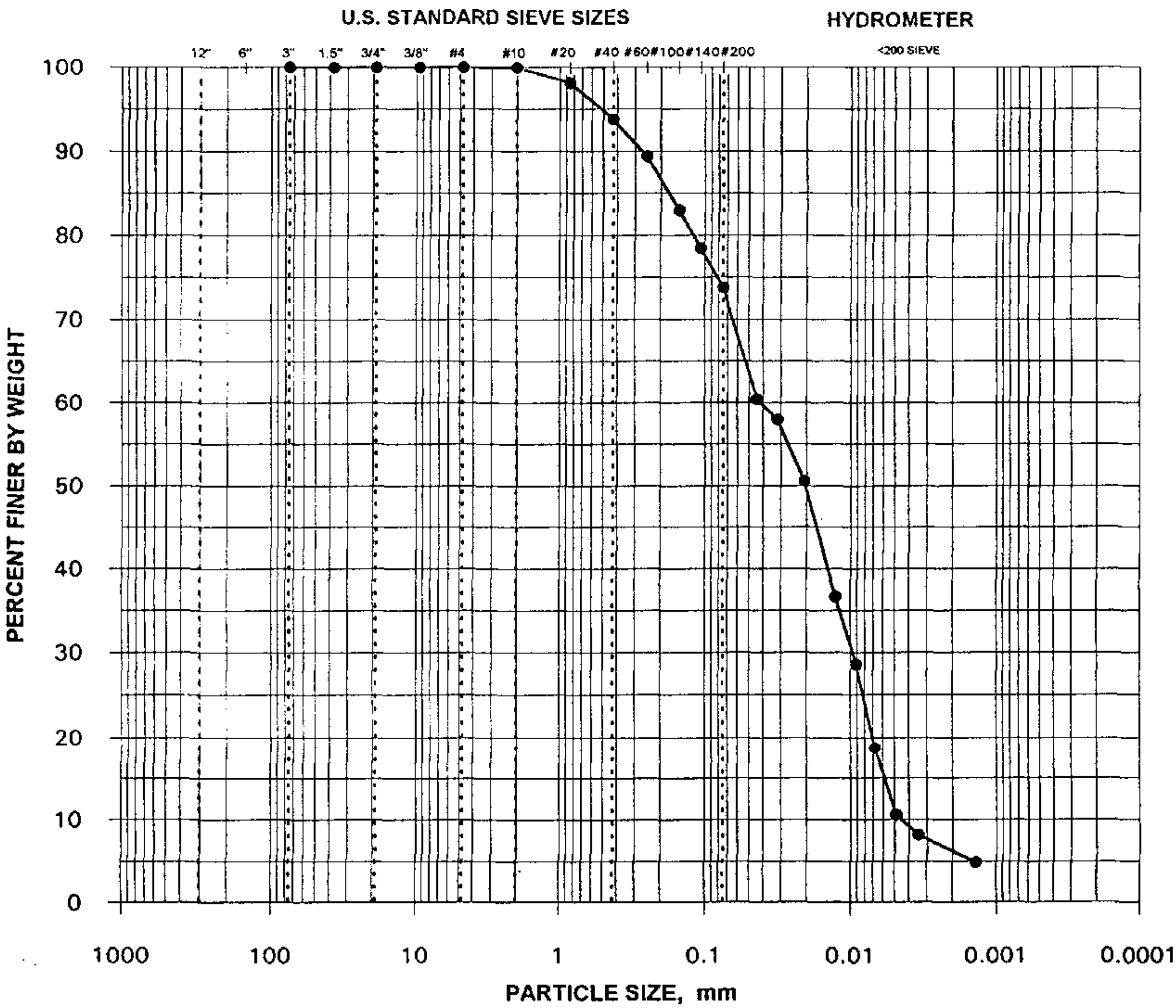
SILVER LAKE



CLIENT SAMPLE NO.: SLS-2 (0-54")

ETDC SAMPLE NO.: ETDC-6479

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

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Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: SILVER LAKE

Client Number: SLS-3 (0-60")

Project Number: 483565.00500000

ETDC Number: ETDC-6480

Specific Gravity = 2.2899 Measured

* Moisture Content = 441.9%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	99.9%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	99.2%
	#40	0.425	98.1%
	#60	0.250	96.6%
	#100	0.149	94.7%
	#140	0.106	93.6%
	#200	0.075	92.7%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04542	55.9%
	0.03298	51.4%
	0.02149	46.2%
	0.01291	38.7%
	0.00951	29.8%
	0.00702	20.1%
	0.00511	9.7%
	0.00356	8.2%
	0.00141	6.0%

*DRY SAMPLE BASIS

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April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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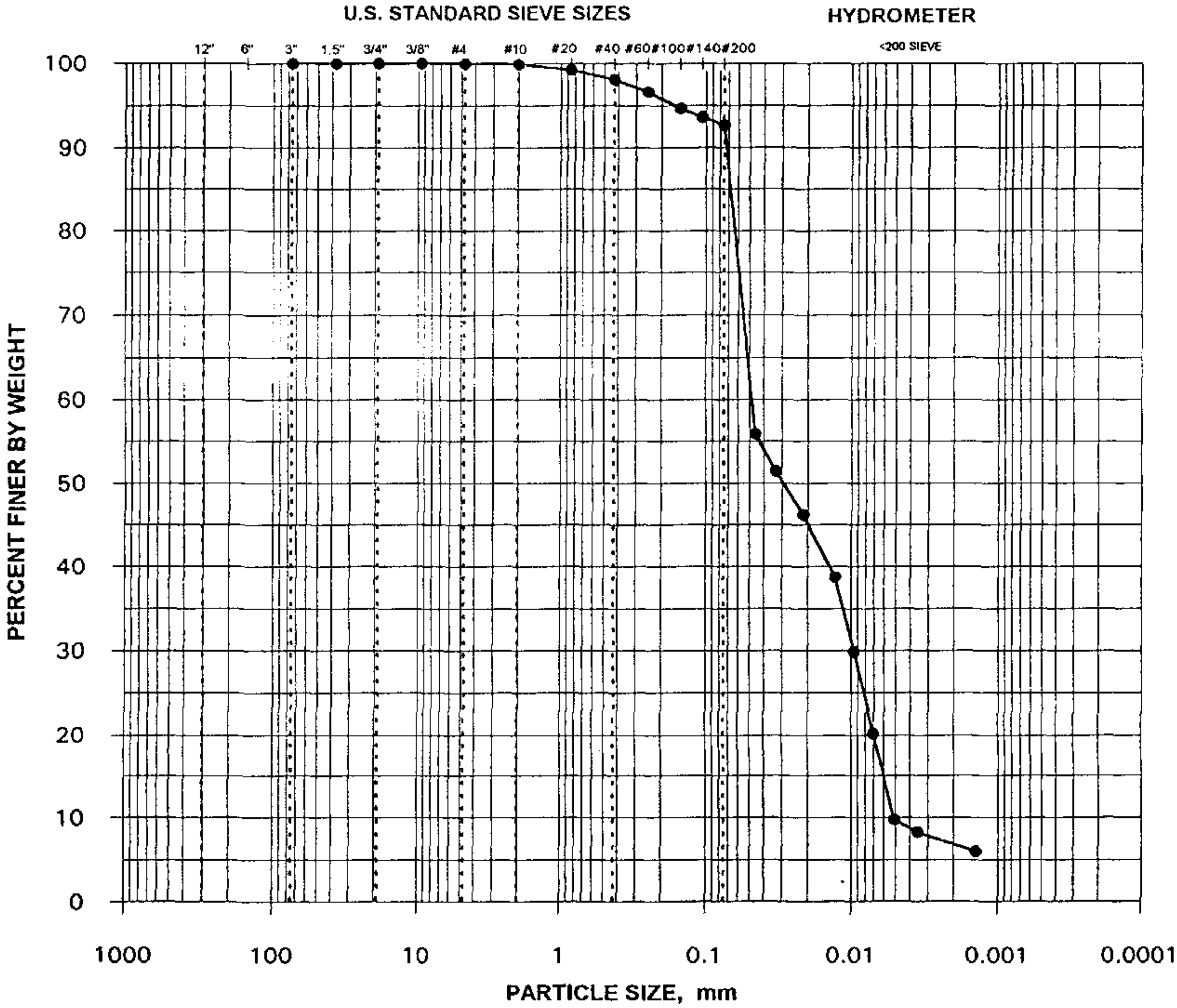
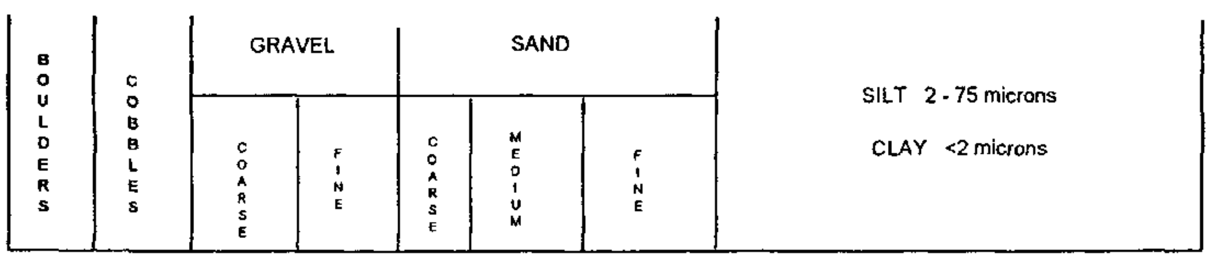
SILVER LAKE



CLIENT SAMPLE NO.: SLS-3 (0-60")

ETDC SAMPLE NO.: ETDC-6480



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April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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PARTICLE SIZE ANALYSIS
ASTM D 422

Project Name: SILVER LAKE
Client Number: SLS-4 (0-54")

Project Number: 483565.00500000
ETDC Number: ETDC-6482

Specific Gravity = 2.3310 Measured

* Moisture Content = 388.8%

SIEVE ANALYSIS

COARSE	Sieve No.	Diameter mm	Percent Finer
	3"	75.000	100.0%
	1.5"	37.500	100.0%
	0.75"	19.000	100.0%
	0.375"	9.500	100.0%
	#4	4.750	100.0%
	#10	2.000	100.0%

FINE	Sieve No.	Diameter mm	Percent Finer
	#20	0.850	98.9%
	#40	0.425	96.8%
	#60	0.250	94.5%
	#100	0.149	90.6%
	#140	0.106	88.5%
	#200	0.075	86.6%

HYDROMETER ANALYSIS

HYDROMETER	Diameter mm	Percent Finer
	0.04577	52.8%
	0.03287	49.8%
	0.02110	46.8%
	0.01271	39.4%
	0.00942	29.0%
	0.00693	20.1%
	0.00499	12.6%
	0.00358	6.7%
	0.00142	5.2%

*DRY SAMPLE BASIS

Ken Mueller
Quanterra
April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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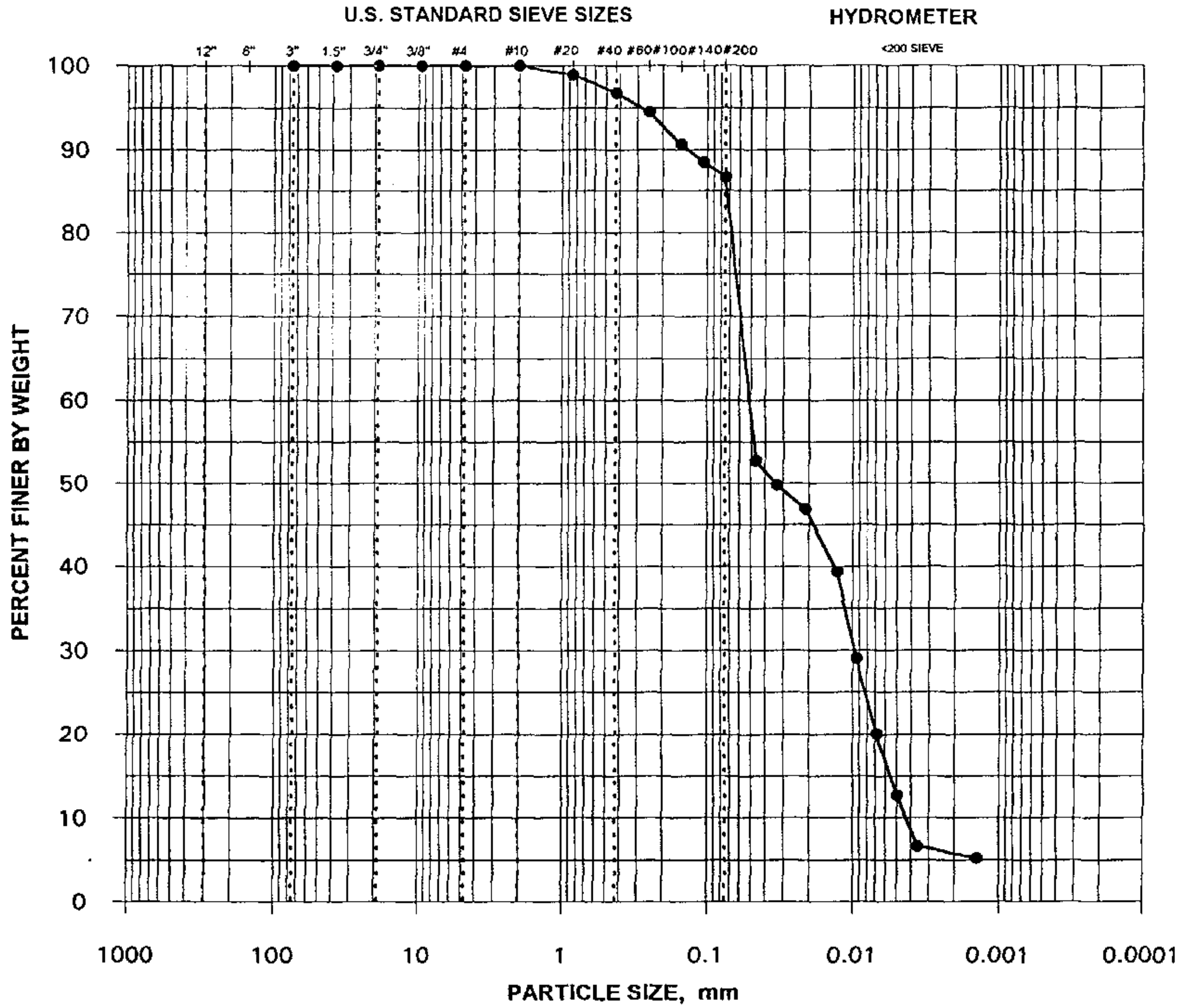
SILVER LAKE



CLIENT SAMPLE NO.: SLS-4 (0-54")

ETDC SAMPLE NO.: ETDC-6482

BOULDERS	COBBLES	GRAVEL		SAND			SILT 2 - 75 microns CLAY <2 microns
		COARSE	FINE	COARSE	MEDIUM	FINE	

SILVER LAKE SEDIMENT MOISTURE CONTENT DATA

Ken Mueller
Quanterra
April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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MOISTURE CONTENT
ASTM D 2216

PROJECT NAME: SILVER LAKE **PROJECT NUMBER:** 483565.00500000

ETDC SAMPLE NO.	CLIENT SAMPLE NO.	% MOISTURE	% SOLIDS
ETDC-6478	SLS-1 (0-66")	156.7	39.0
ETDC-6479	SLS-2 (0-54")	167.3	37.4
ETDC-6480	SLS-3 (0-60")	441.9	18.5
ETDC-6481	HCSE-12 (0-66")	239.6	29.4
ETDC-6482	SLS-4 (0-54")	388.8	20.5

SILVER LAKE SEDIMENT SPECIFIC GRAVITY DATA

Ken Mueller
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April 10, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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SPECIFIC GRAVITY
ASTM D 854

PROJECT NAME: SILVER LAKE **PROJECT NUMBER:** 483565.00500000

ETDC SAMPLE NO.	CLIENT SAMPLE NO.	SPECIFIC GRAVITY
ETDC-6478	SLS-1 (0-66")	2.4269
ETDC-6479	SLS-2 (0-54")	2.4273
ETDC-6480	SLS-3 (0-60")	2.2899
ETDC-6481	HCSE-12 (0-66")	2.3969
ETDC-6482	SLS-4 (0-54")	2.3310

SILVER LAKE SEDIMENT BULK DENSITY DATA

Ken Mueller
Quanterra
April 10, 1995
Client Project ID: *Silver Lake*
ETDC Project No.: 483565.00500000

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BULK DENSITY/ DRY DENSITY EM-1110-2-1906, APPENDIX II

PROJECT NAME: SILVER LAKE PROJECT NUMBER: 483565.00500000

ETDC SAMPLE NUMBER:	CLIENT SAMPLE NUMBER:	AVERAGE LENGTH, INCHES:	AVERAGE DIAMETER, INCHES:	WET WEIGHT, GRAMS:	MOISTURE CONTENT, %:	BULK DENSITY, PCF:	DRY DENSITY, PCF:
THESE VALUES REPRESENT REMOLDED DENSITIES:							
ETDC-6473	SLS-1 (0-5.5')	0.7498	2.4983	73.28	266.58	75.96	20.72
ETDC-6474	SLS-2 (0-4.5')	0.7513	2.5008	80.61	92.57	83.22	43.22
ETDC-6475	SLS-3 (0-5')	0.7453	2.4992	68.6	177.85	71.49	25.73
ETDC-6476	SLS-4 (0-4.5')	0.7497	2.5007	61.32	996.96	63.46	5.78
ETDC-6477	HCSE-12 (0-5.5')	0.7565	2.4988	64.12	488.80	65.85	11.18
THESE VALUES REPRESENT AS RECEIVED DENSITIES:							
ETDC-6473	SLS-1 (0-5.5')	11.5000	1.8500	595.16	266.58	73.36	20.01
ETDC-6474	SLS-2 (0-4.5')	10.7500	1.8500	629.08	92.57	82.95	43.08
ETDC-6475	SLS-3 (0-5')	11.0000	1.8500	556.7	177.85	71.74	25.82
ETDC-6476	SLS-4 (0-4.5')	12.1000	1.8500	541.73	996.96	63.46	5.79
ETDC-6477	HCSE-12 (0-5.5')	11.0000	1.8500	508.79	488.80	65.56	11.14

Ken Mueller
Quanterra
Revised May 4, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

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BULK DENSITY/ DRY DENSITY EM-1110-2-1906, APPENDIX II

PROJECT NAME: SILVER LAKE PROJECT NUMBER: 483565.00500000

ETDC SAMPLE NUMBER:	CLIENT SAMPLE NUMBER:	AVERAGE LENGTH, INCHES:	AVERAGE DIAMETER, INCHES:	WET WEIGHT, GRAMS:	MOISTURE CONTENT, %:	BULK DENSITY, PCF:	DRY DENSITY, PCF:
THESE VALUES REPRESENT REMOLDED DENSITIES:							
ETDC-6473	SLS-1 (0-5.5')	0.7498	2.4983	73.28	266.58	75.96	20.72
ETDC-6473R	SLS-1 (0-5.5')	0.7522	2.4990	91.8	82.43	94.81	51.97
ETDC-6474	SLS-2 (0-4.5')	0.7513	2.5008	80.61	92.57	83.22	43.22
ETDC-6475	SLS-3 (0-5')	0.7453	2.4992	68.6	177.85	71.49	25.73
ETDC-6476	SLS-4 (0-4.5')	0.7497	2.5007	61.32	996.96	63.46	5.78
THESE VALUES REPRESENT AS RECEIVED DENSITIES:							
ETDC-6473	SLS-1 (0-5.5')	11.5000	1.8500	595.16	266.58	73.36	20.01
ETDC-6473R	SLS-1 (0-5.5')	4.0495	1.8700	246.61	78.93	84.49	47.22
ETDC-6474	SLS-2 (0-4.5')	10.7500	1.8500	629.08	226.49	82.95	25.41
ETDC-6475	SLS-3 (0-5')	11.0000	1.8500	556.7	177.85	71.74	25.82
ETDC-6476	SLS-4 (0-4.5')	12.1000	1.8500	541.73	996.96	63.46	5.79

SILVER LAKE SEDIMENT TIME RATE OF CONSOLIDATION DATA

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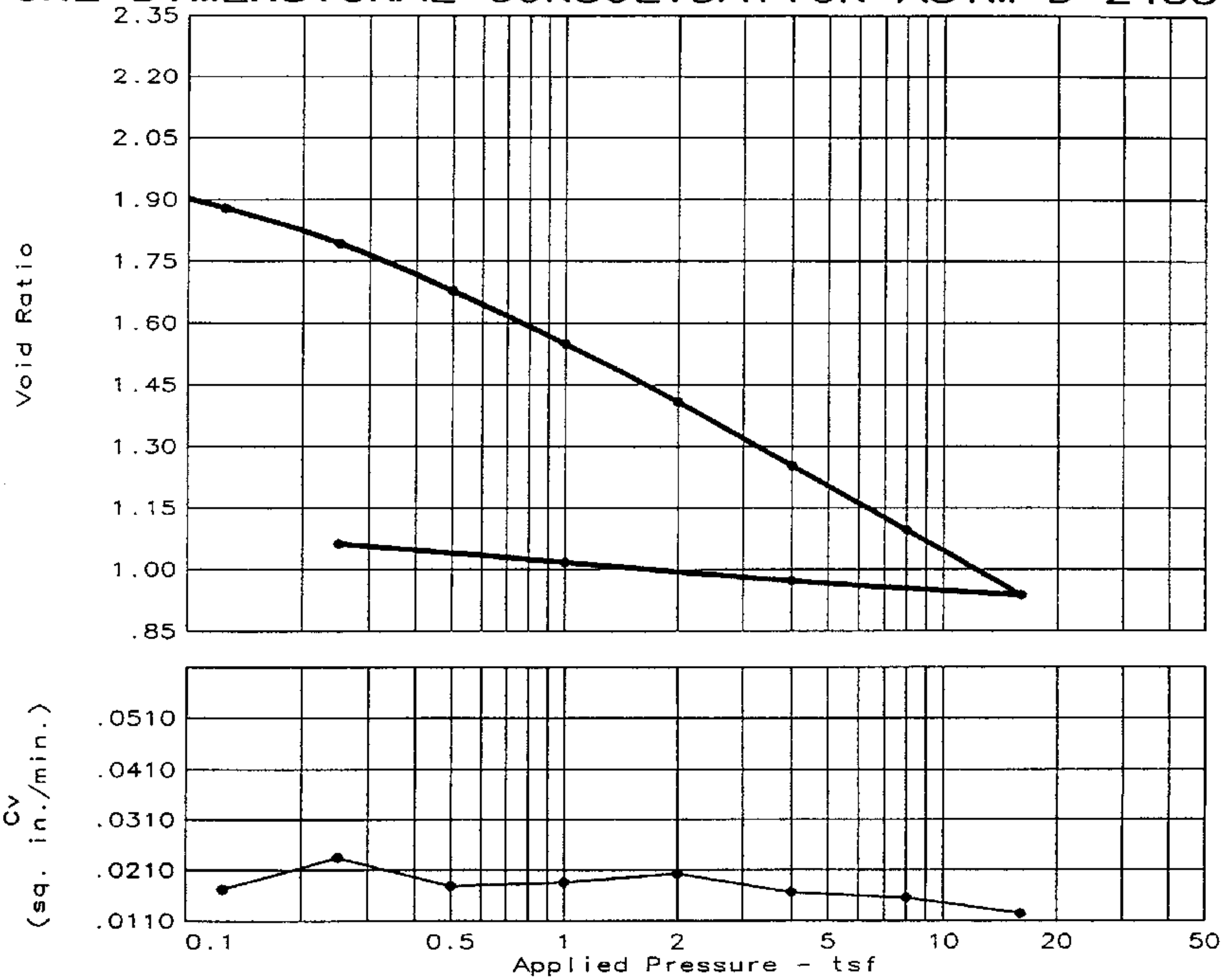
ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
101.3 %	82.4	52.0	ND	ND	2.58	0.43	0.53	2.0990

TEST RESULTS	MATERIAL DESCRIPTION
C_v at 0.50 tsf applied = 0.018 sq. in./min. C_v at 16.00 tsf applied = 0.012 sq. in./min.	Dark brown SILT DEPTH:(0-5.5') Class: ML

ETDC Project Name: SILVER LAKE
ETDC Project No.: 483565.005
ETDC Sample No.: 6473R
Client Sample No.: SLS-1

ONE-DIMENSIONAL CONSOLIDATION ASTM D 2435

IT Corp. - GEOTECHNICAL LABORATORY

Remarks:

SAMPLE RECEIVED IN 1.9 SAMPLE TUBE AT 84.5 PCF WET DENSITY. REMOLDED SAMPLE TO APPROXIMATE NAT'L DENSITY: 94.8 PCF

682A-6-93

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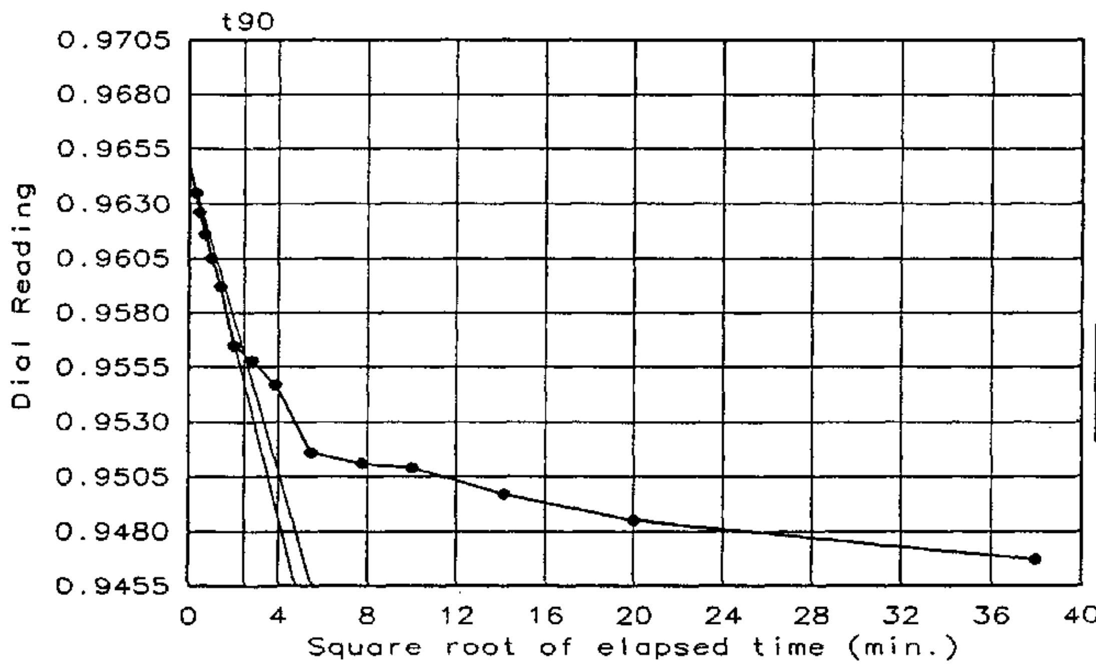
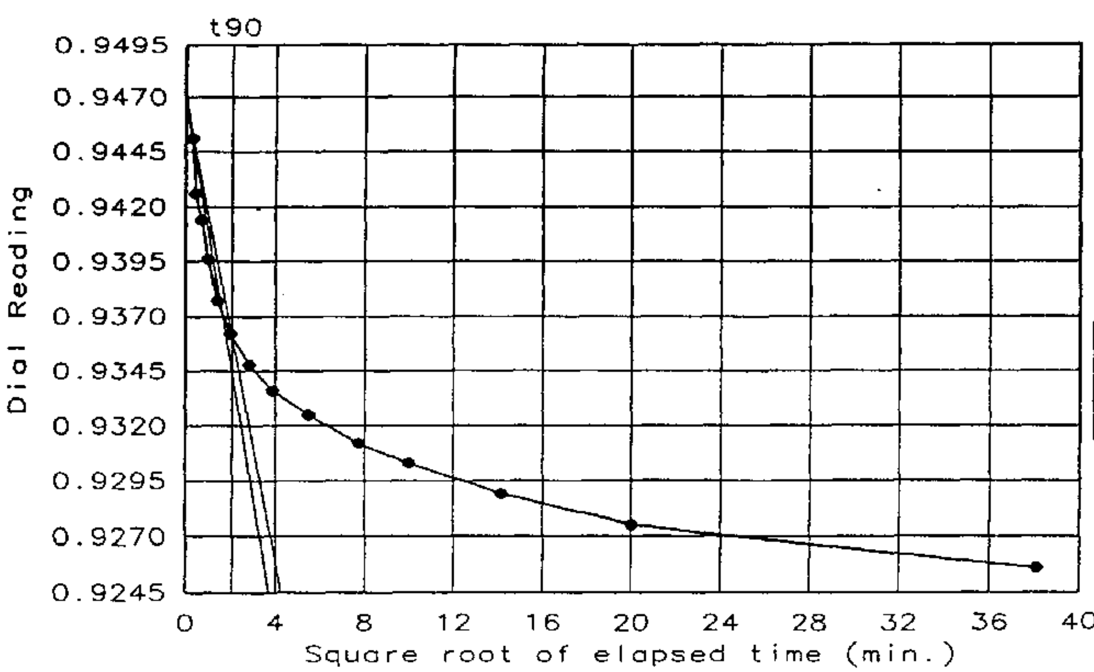
Dial Reading vs. Time

ETDC Project Name: SILVER LAKE
ETDC Project No.: 483565.005
ETDC Sample No.: 6473R
Client Sample No.: SLS-1



Load No.= 2
Load= 0.13 tsf
D_0 = 0.9648
D_{90} = 0.9561
D_{100}= 0.9551
T_{90}= 6.16 min.

C_v @ T_{90} =
.017 in.^{2}/min.



Load No.= 3
Load= 0.25 tsf
D_0 = 0.9470
D_{90} = 0.9361
D_{100}= 0.9349
T_{90}= 4.27 min.

C_v @ T_{90} =
.023 in.^{2}/min.

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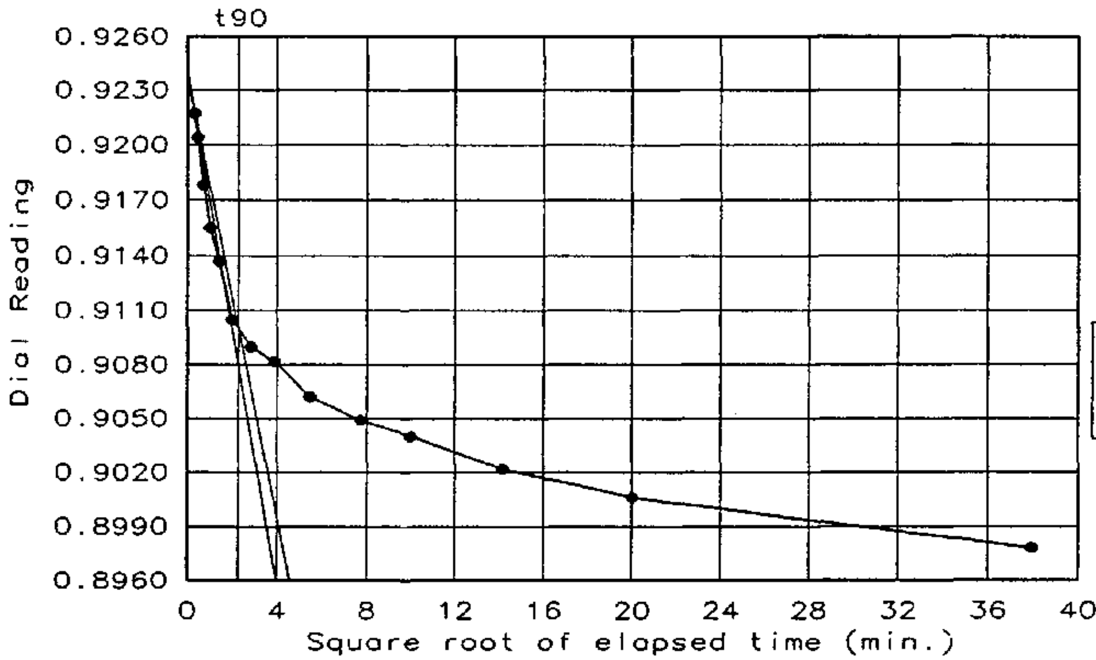
Ken Mueller
Quanterra
Revised May 4, 1995
Client Project ID: Silver Lake
ETDC Project No.: 483565.00500000

IT ENVIRONMENTAL TECHNOLOGY
DEVELOPMENT CENTER
OAK RIDGE, TN
(615) 482-6497

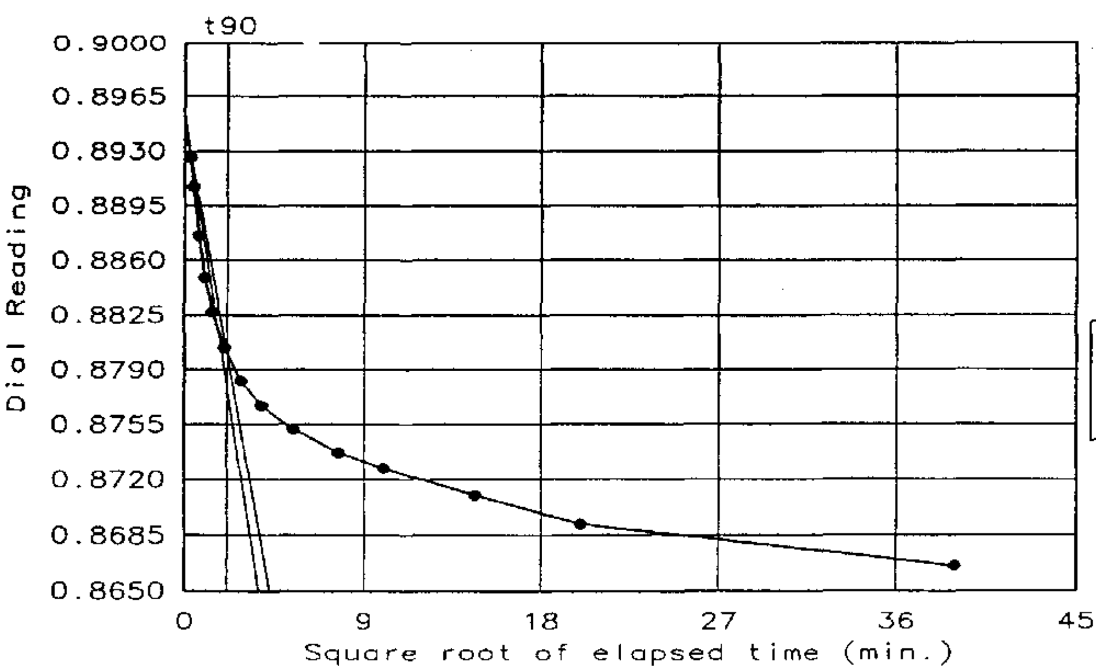
Dial Reading vs. Time

ETDC Project Name: SILVER LAKE
ETDC Project No.: 483565.005
ETDC Sample No.: 6473R
Client Sample No.: SLS-1



Load No.= 4
Load= 0.50 tsf
D_0 = 0.9239
D_{90} = 0.9100
D_{100}= 0.9084
T_{90}= 5.23 min.

C_v @ T_{90} =
.018 in.^{2}/min.



Load No.= 5
Load= 1.00 tsf
D_0 = 0.8952
D_{90} = 0.8800
D_{100}= 0.8784
T_{90}= 4.58 min.

C_v @ T_{90} =
.019 in.^{2}/min.

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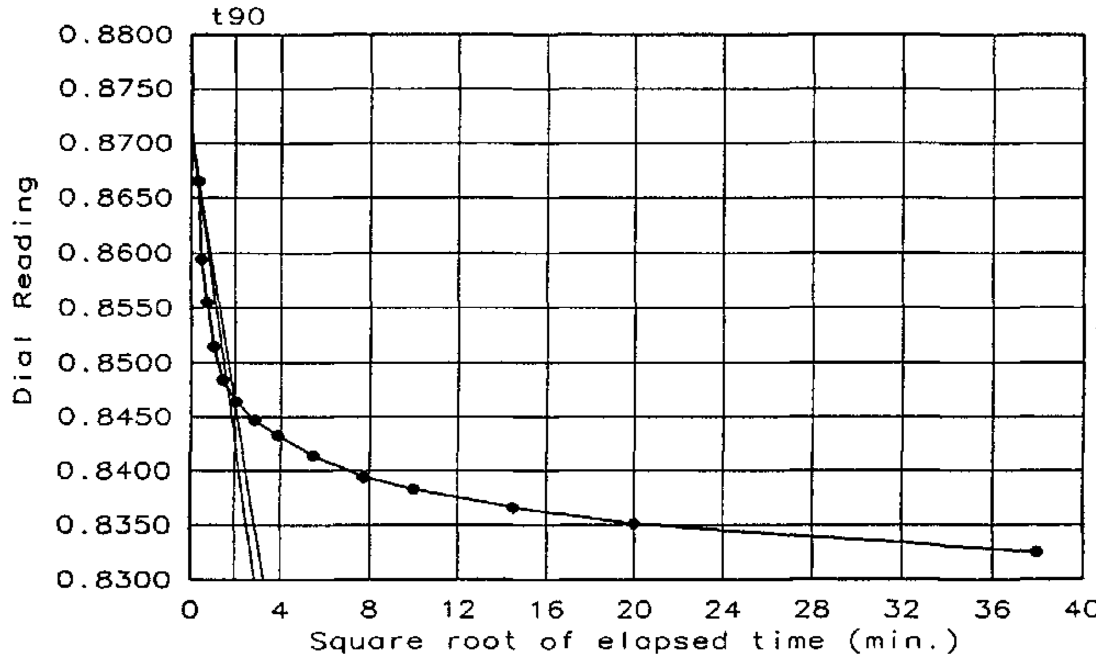
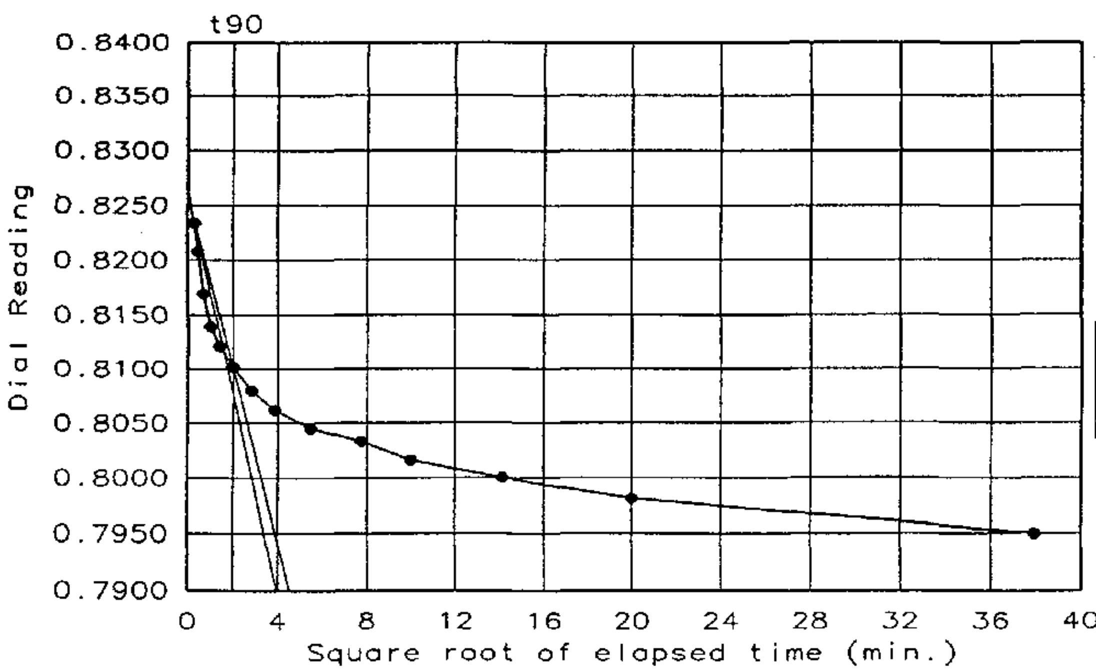
Dial Reading vs. Time

ETDC Project Name: SILVER LAKE
ETDC Project No.: 483565.005
ETDC Sample No.: 6473R
Client Sample No.: SLS-1



Load No.= 6
Load= 2.00 tsf
D_0 = 0.8711
D_{90} = 0.8466
D_{100}= 0.8439
T_{90}= 3.79 min.

C_v @ T_{90} =
.020 in.^{2}/min.



Load No.= 7
Load= 4.00 tsf
D_0 = 0.8263
D_{90} = 0.8102
D_{100}= 0.8084
T_{90}= 4.07 min.

C_v @ T_{90} =
.017 in.^{2}/min.

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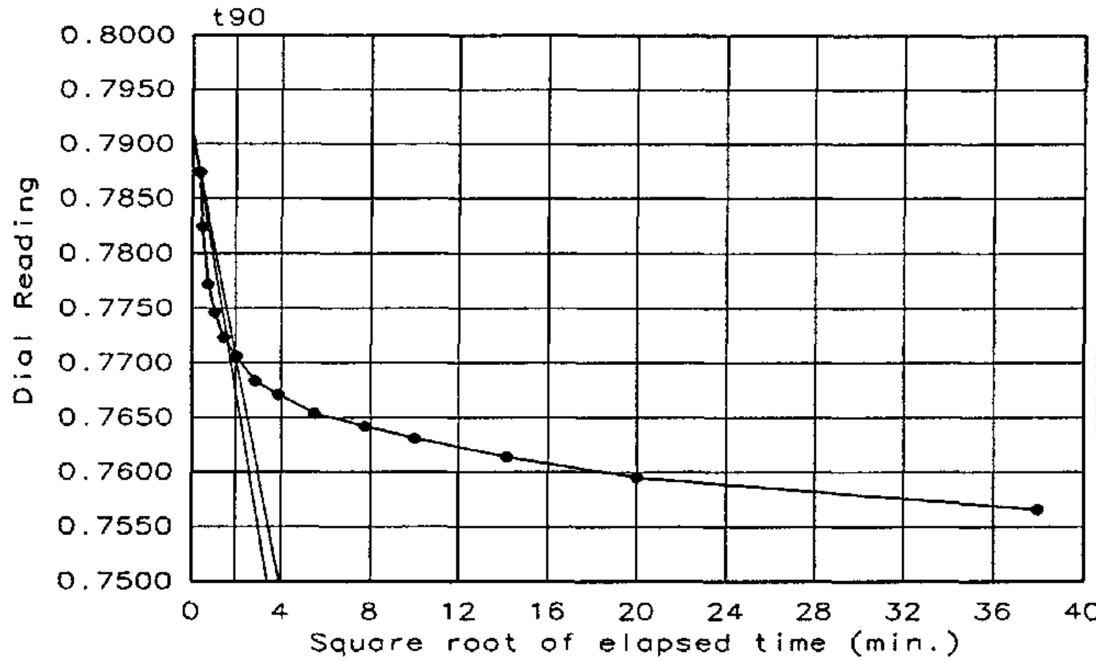
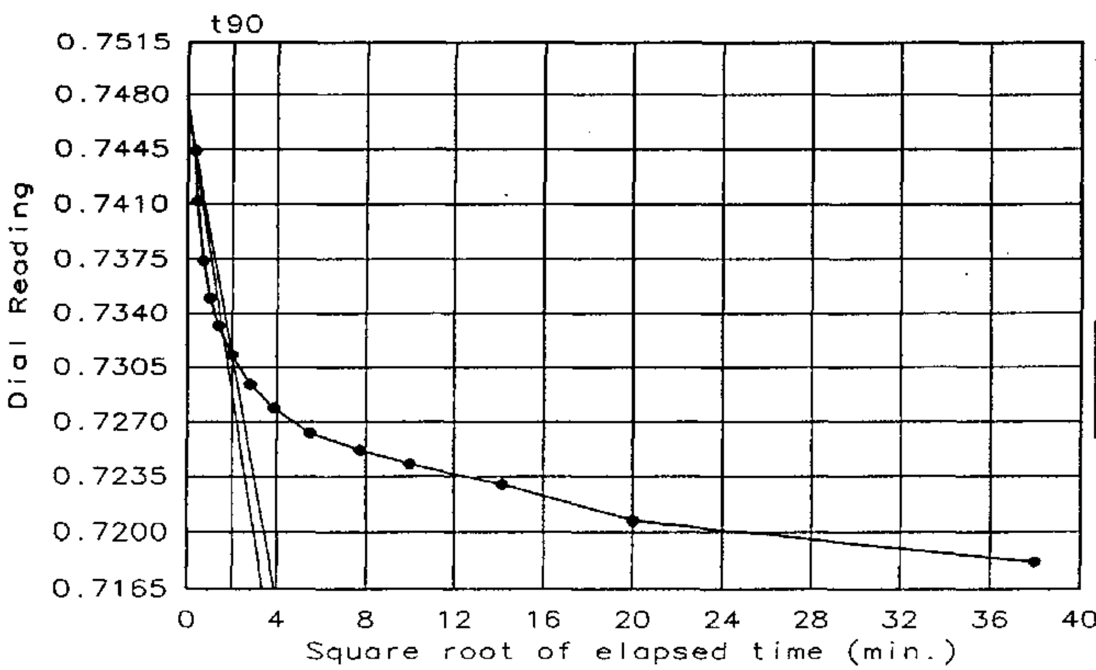
Dial Reading vs. Time

ETDC Project Name: SILVER LAKE
ETDC Project No.: 483565.005
ETDC Sample No.: 6473R
Client Sample No.: SLS-1



Load No.= 8
Load= 8.00 tsf
D_0 = 0.7912
D_{90} = 0.7707
D_{100}= 0.7685
T_{90}= 3.80 min.

C_v @ T_{90} =
.016 in.^{2}/min.



Load No.= 9
Load= 16.00 tsf
D_0 = 0.7473
D_{90} = 0.7313
D_{100}= 0.7295
T_{90}= 4.08 min.

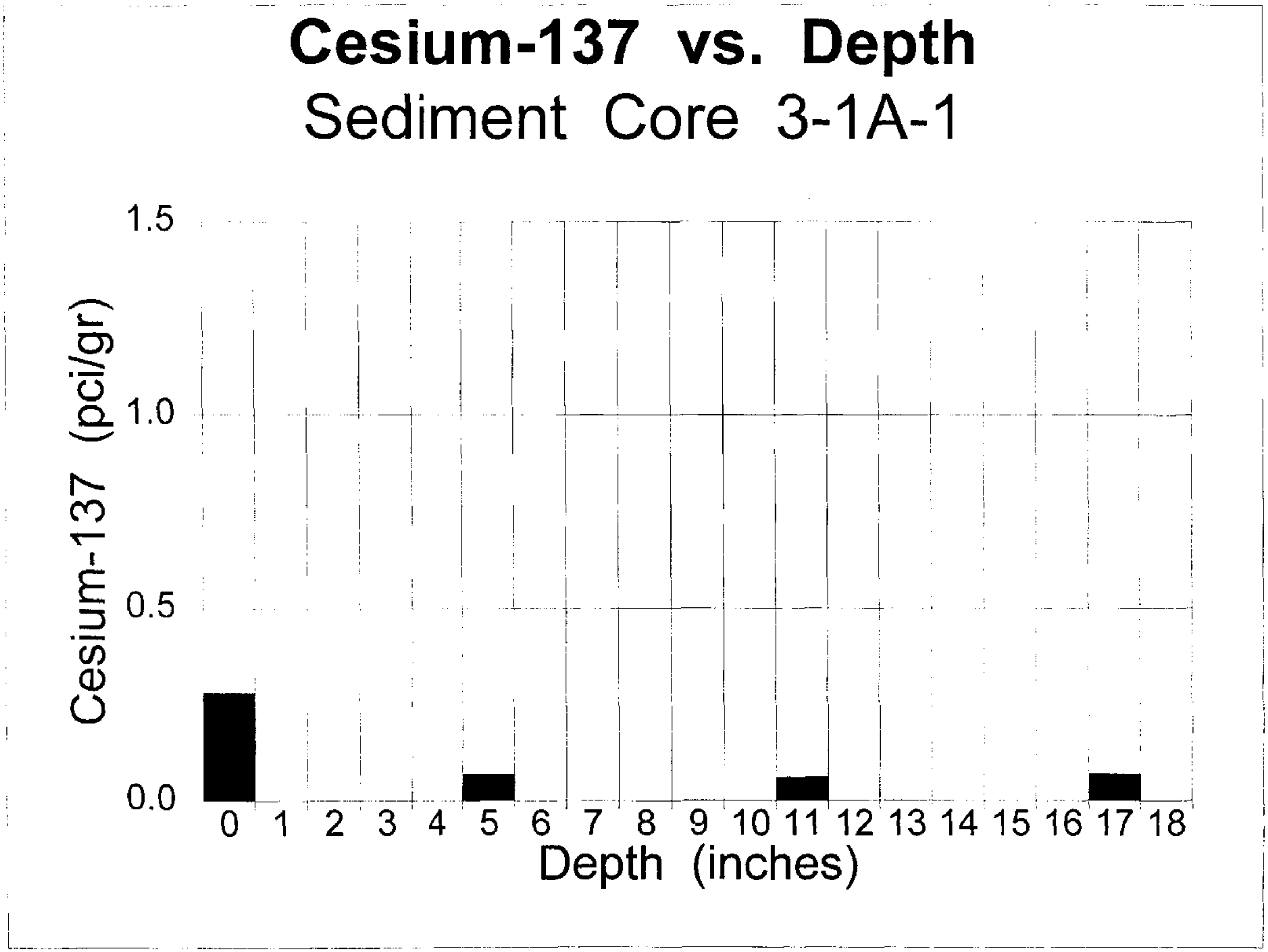
C_v @ T_{90} =
.012 in.^{2}/min.

IT Corp. - GEOTECHNICAL LABORATORY

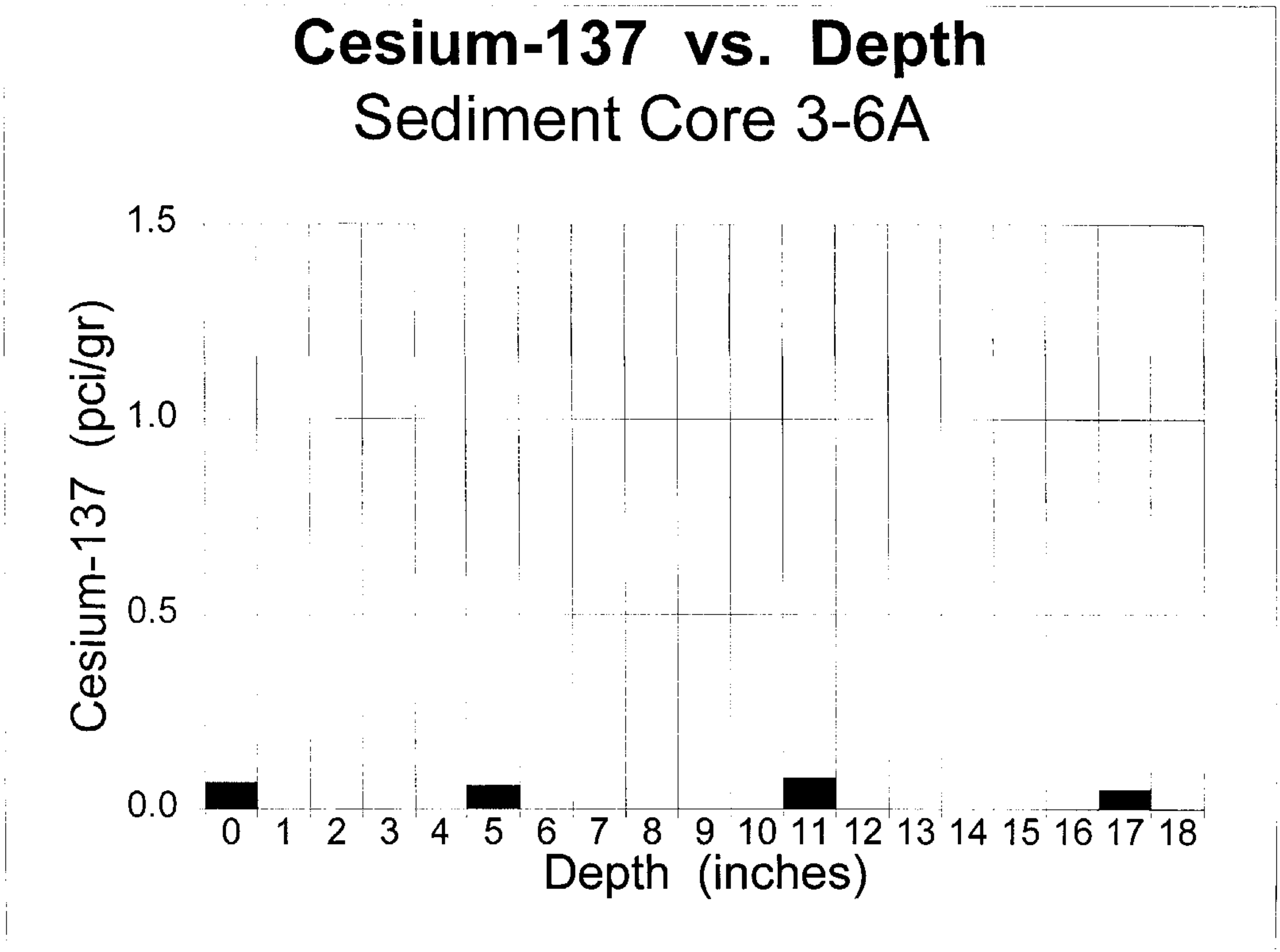
APPENDIX B

APPENDIX B

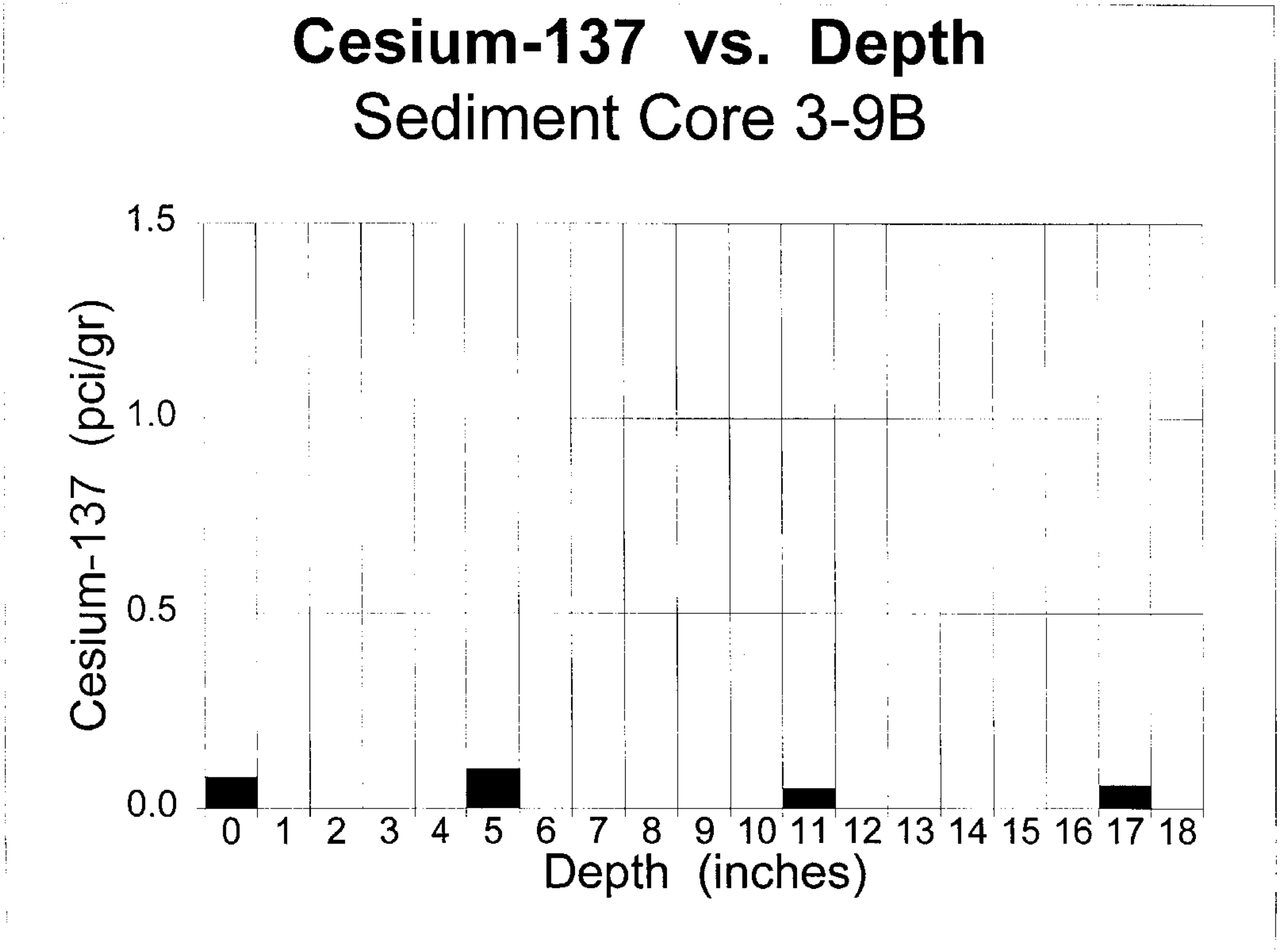
CESIUM-137 SCREENING RESULTS



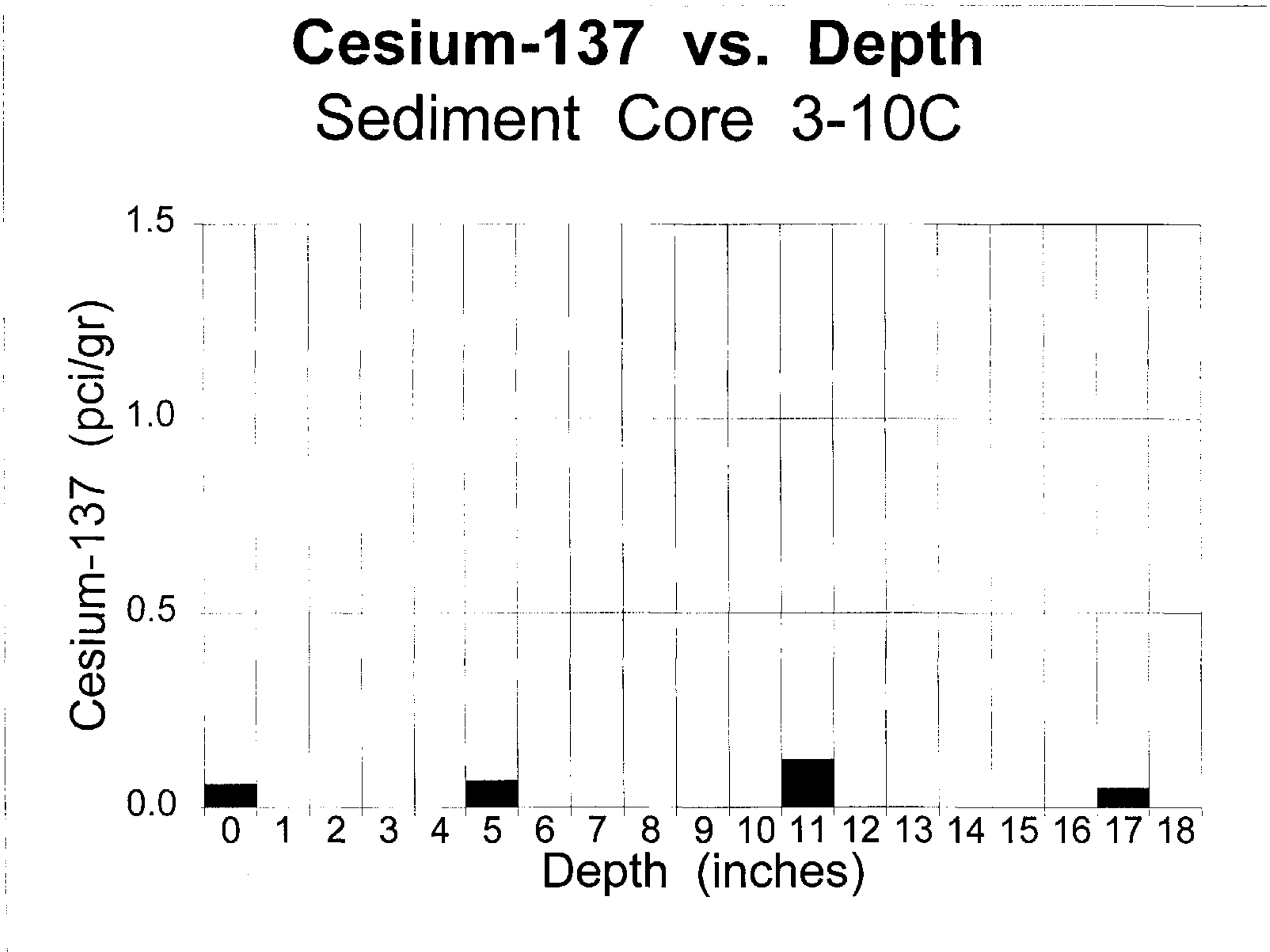
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



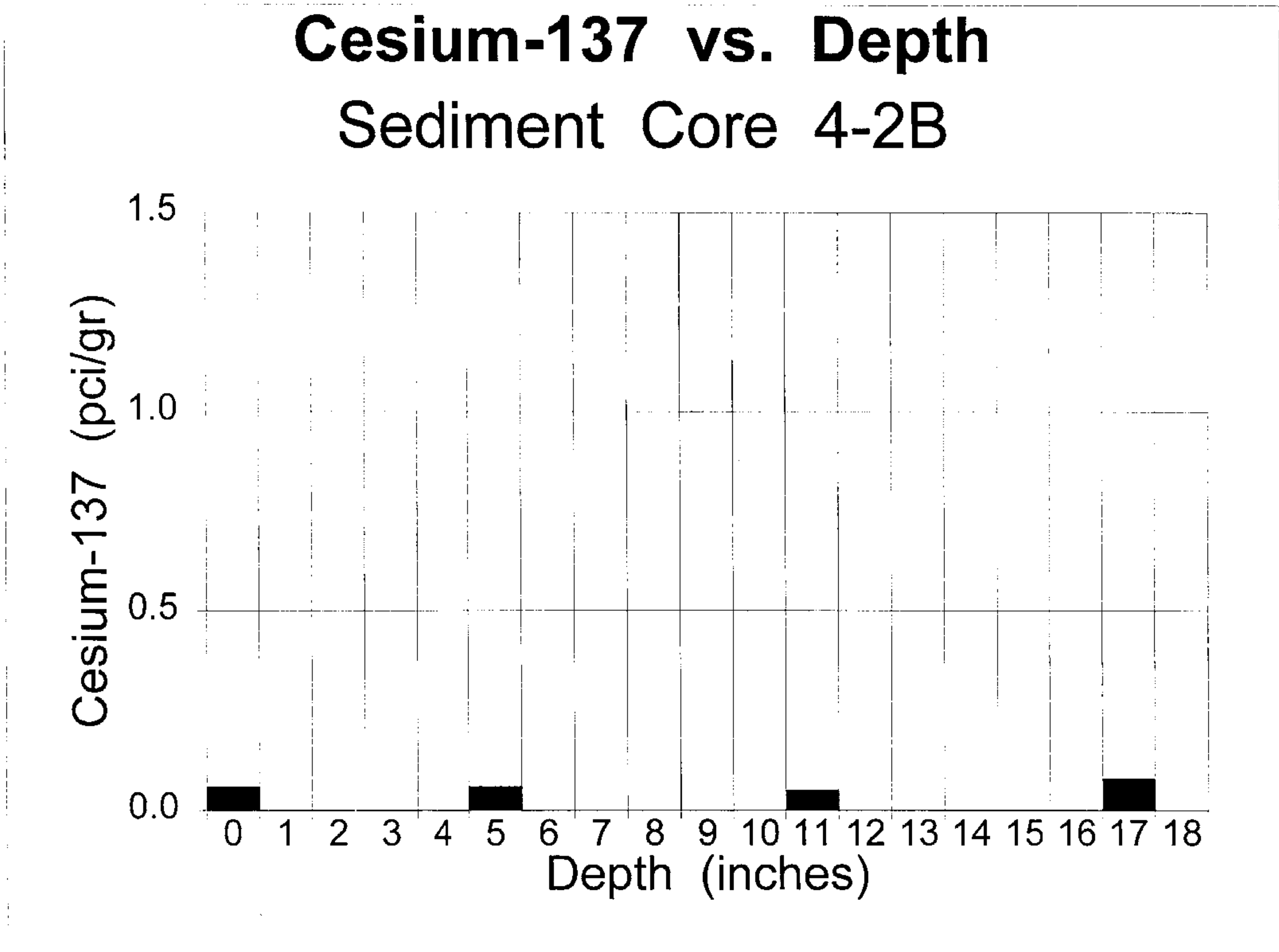
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



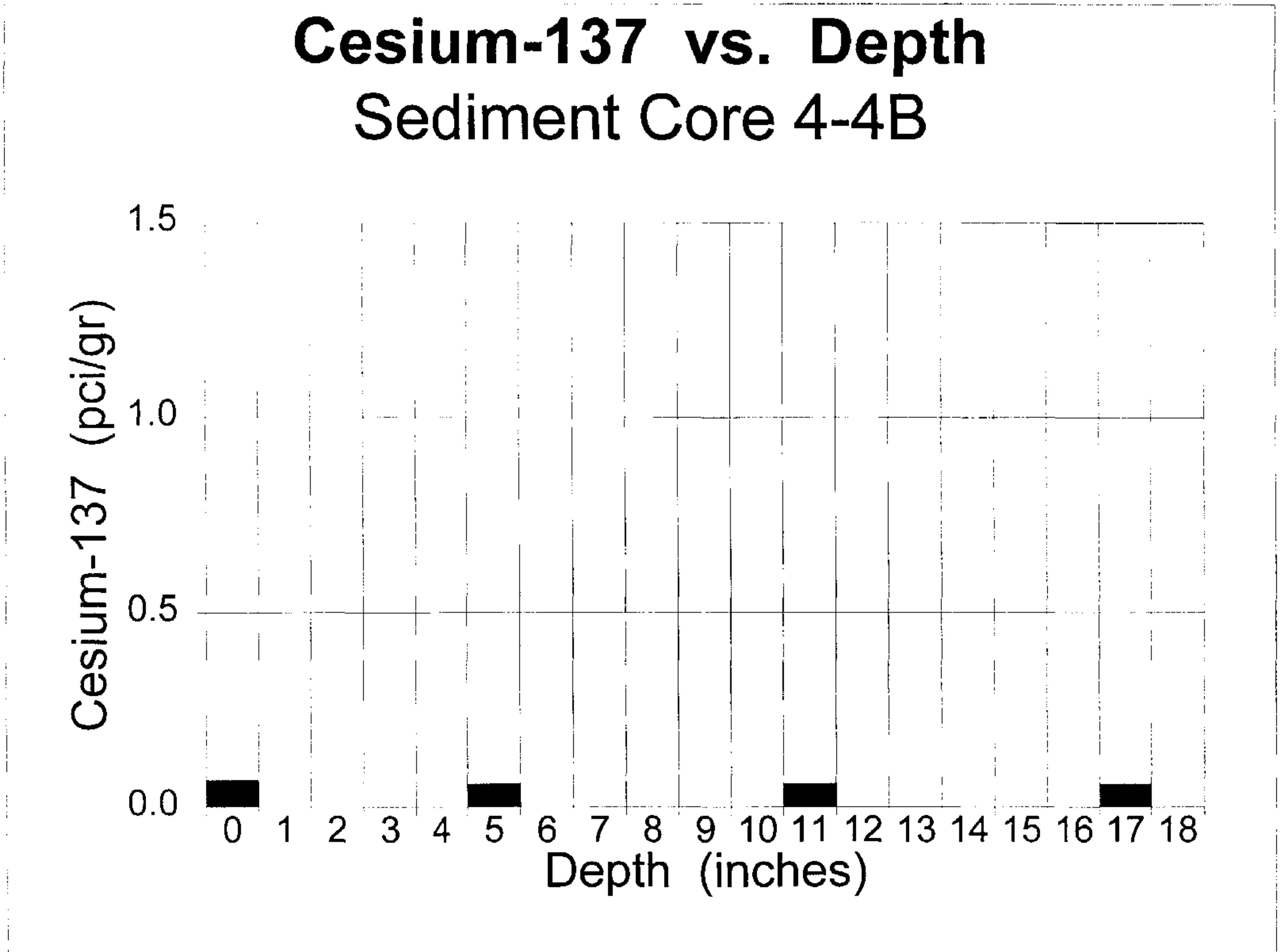
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



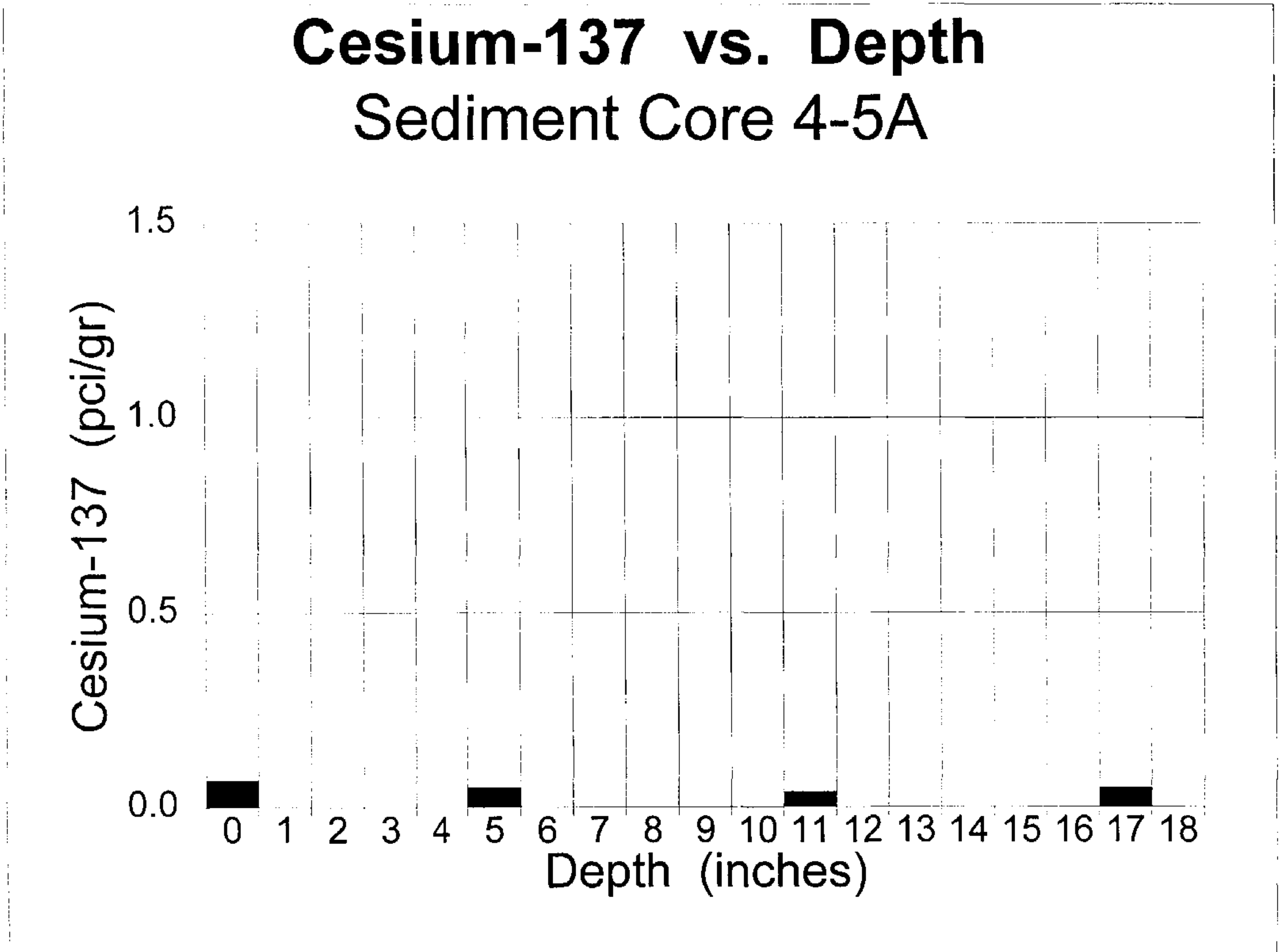
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



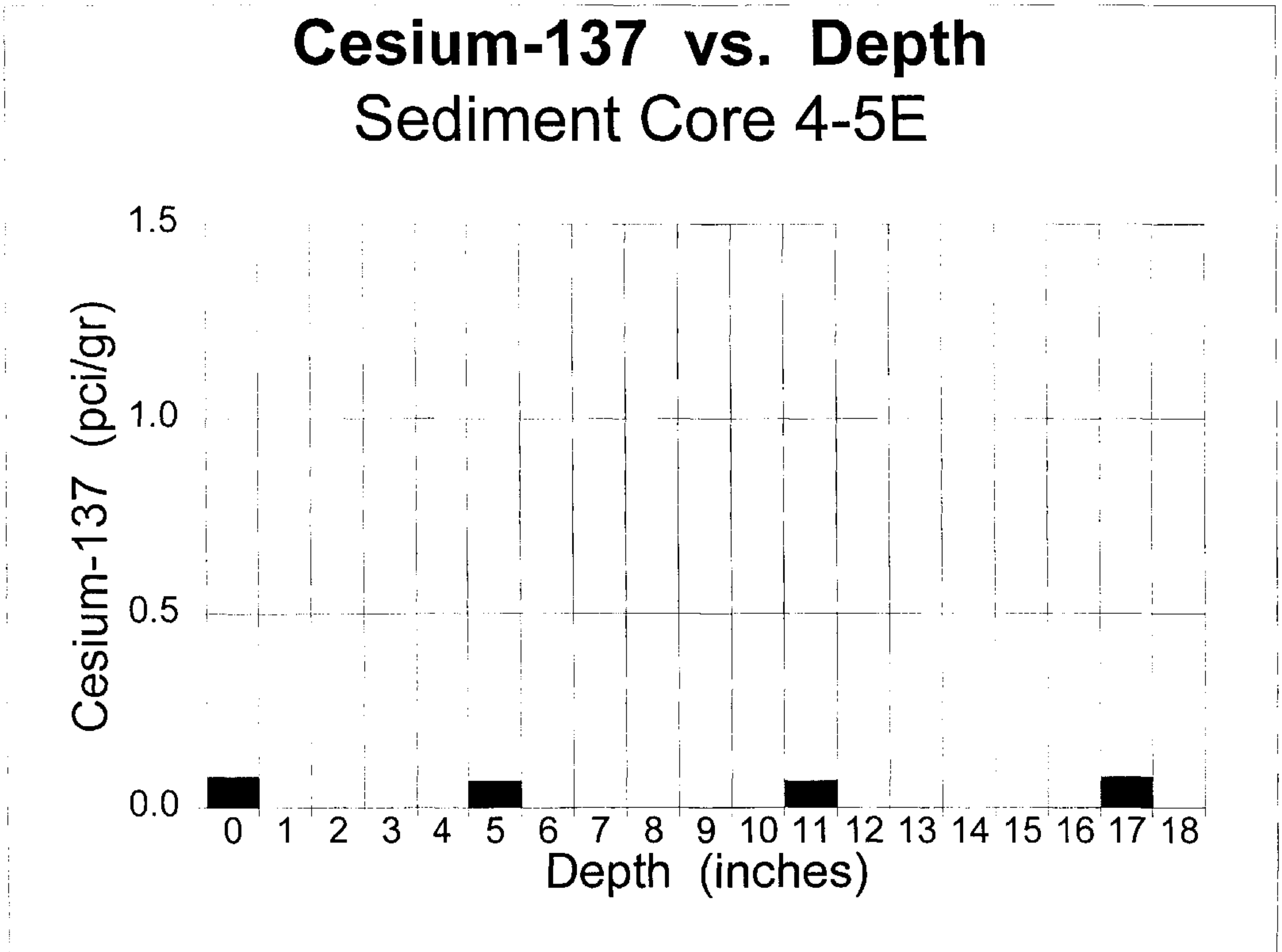
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



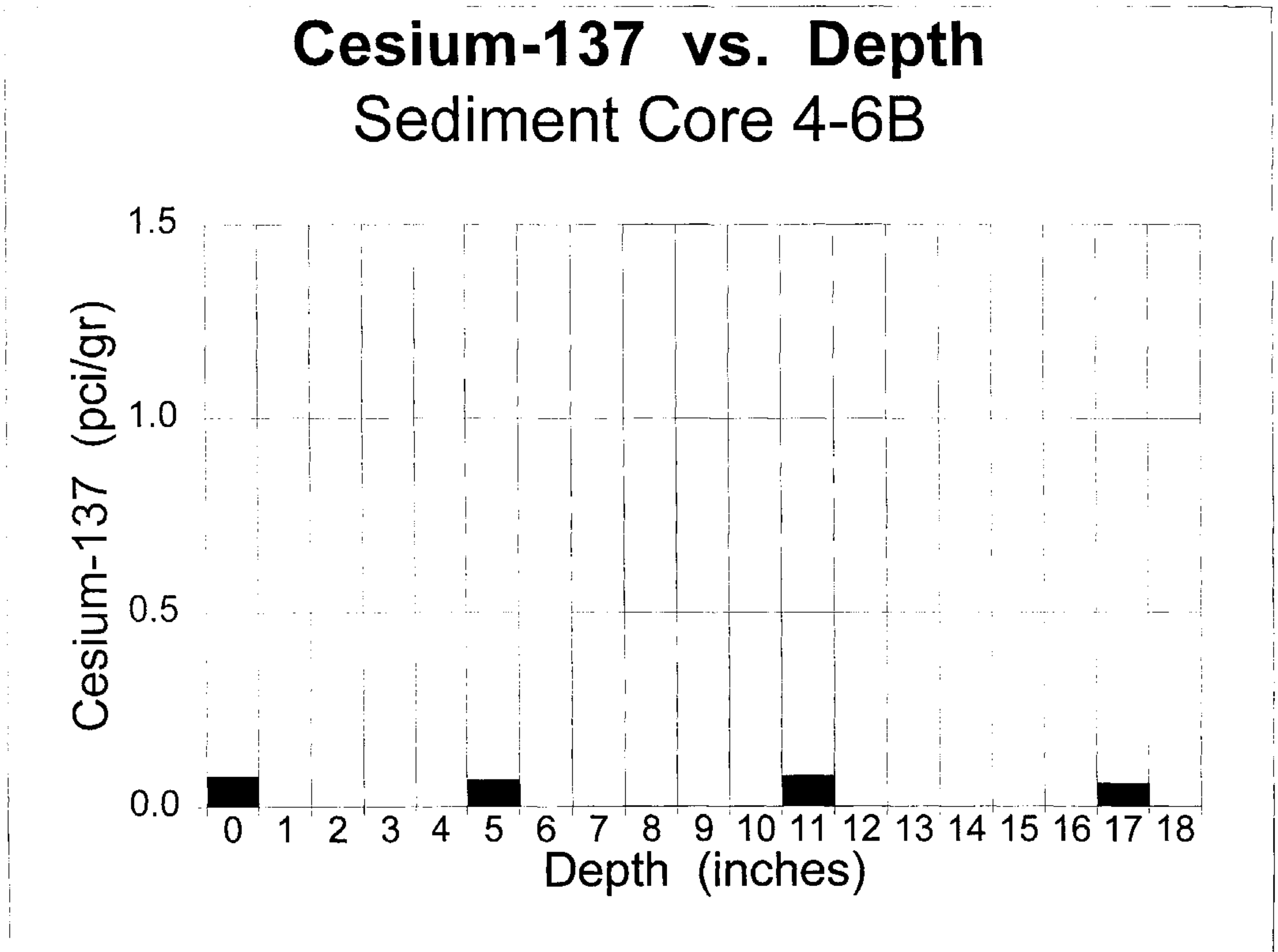
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



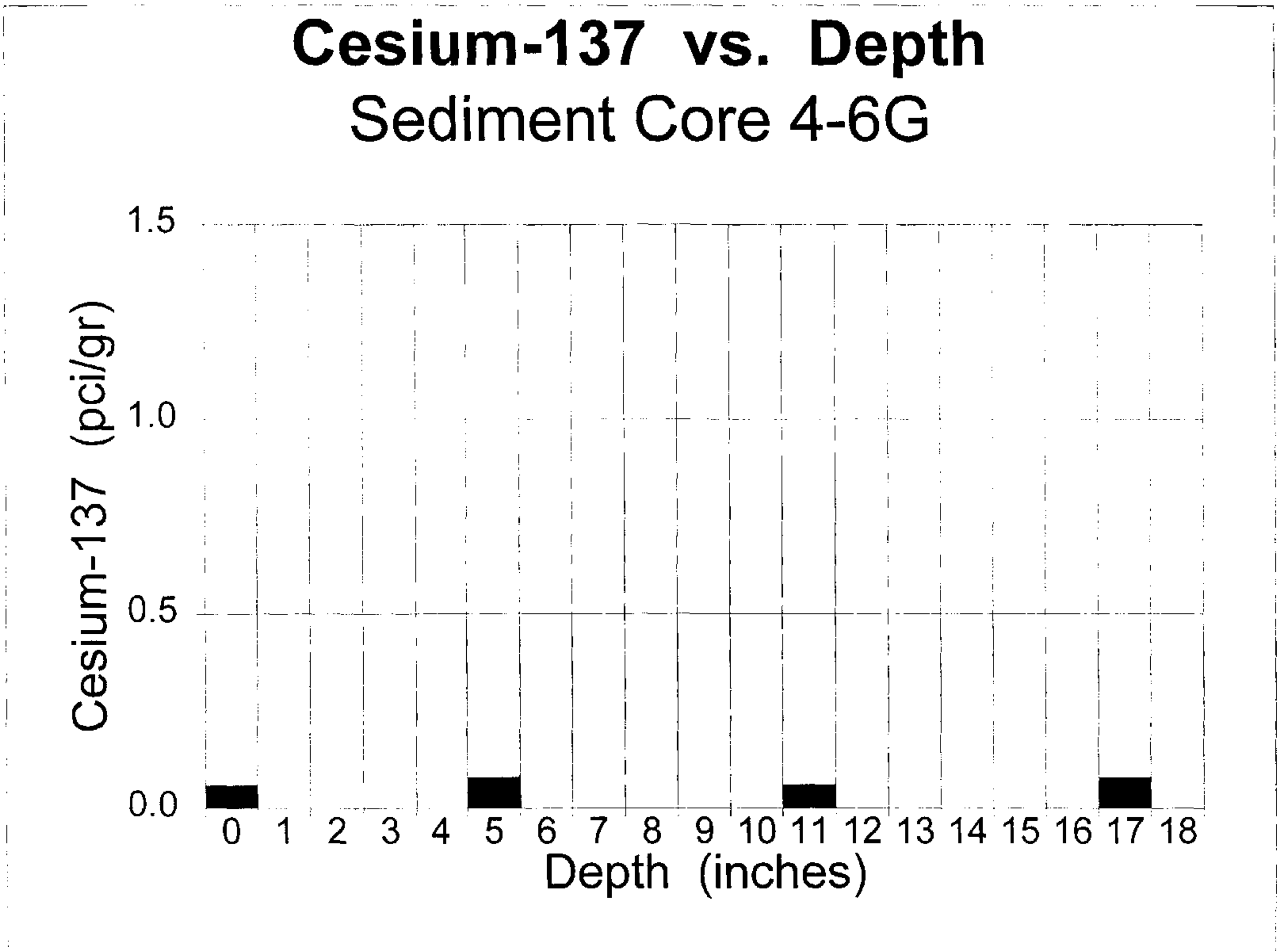
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



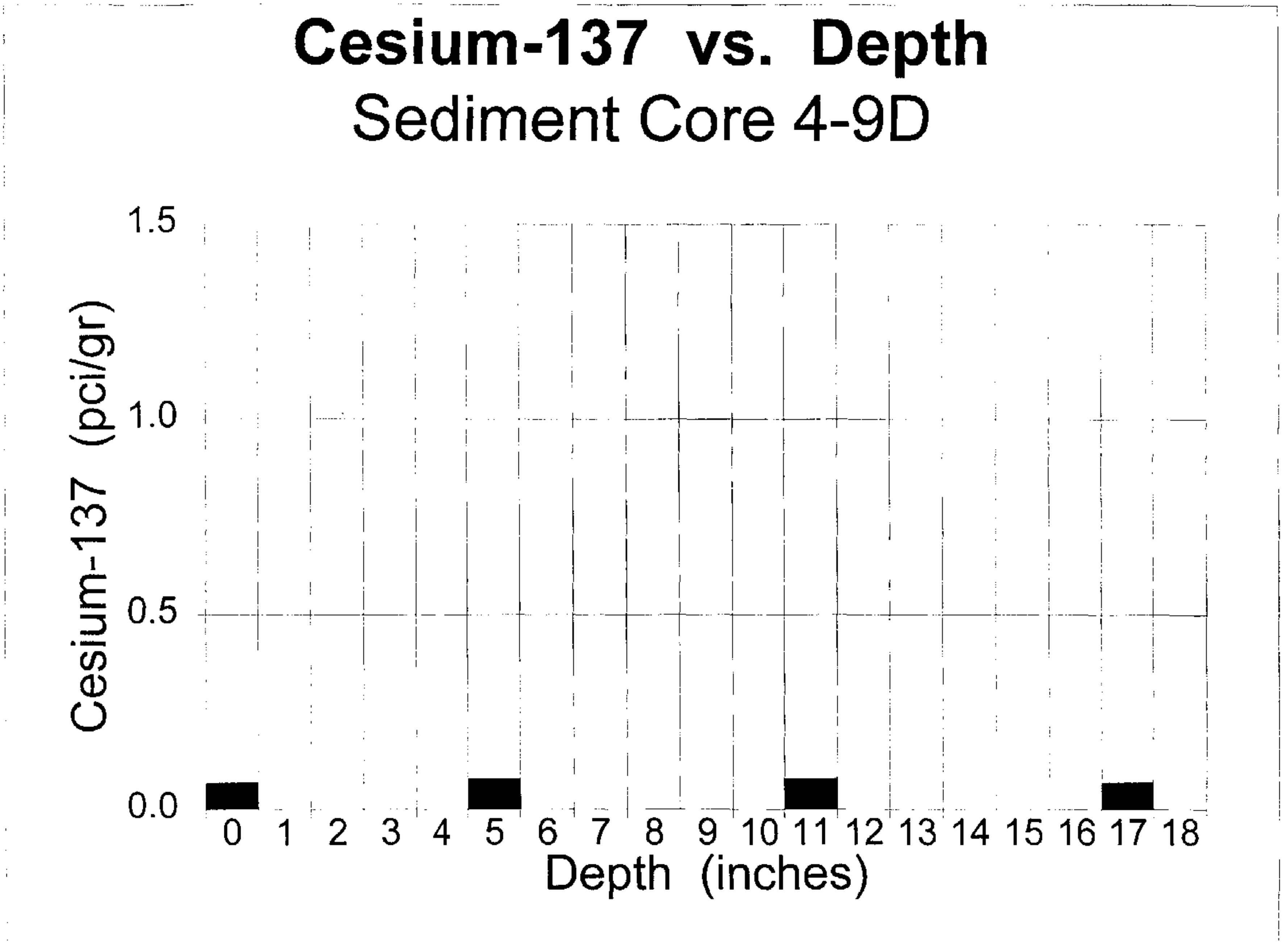
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



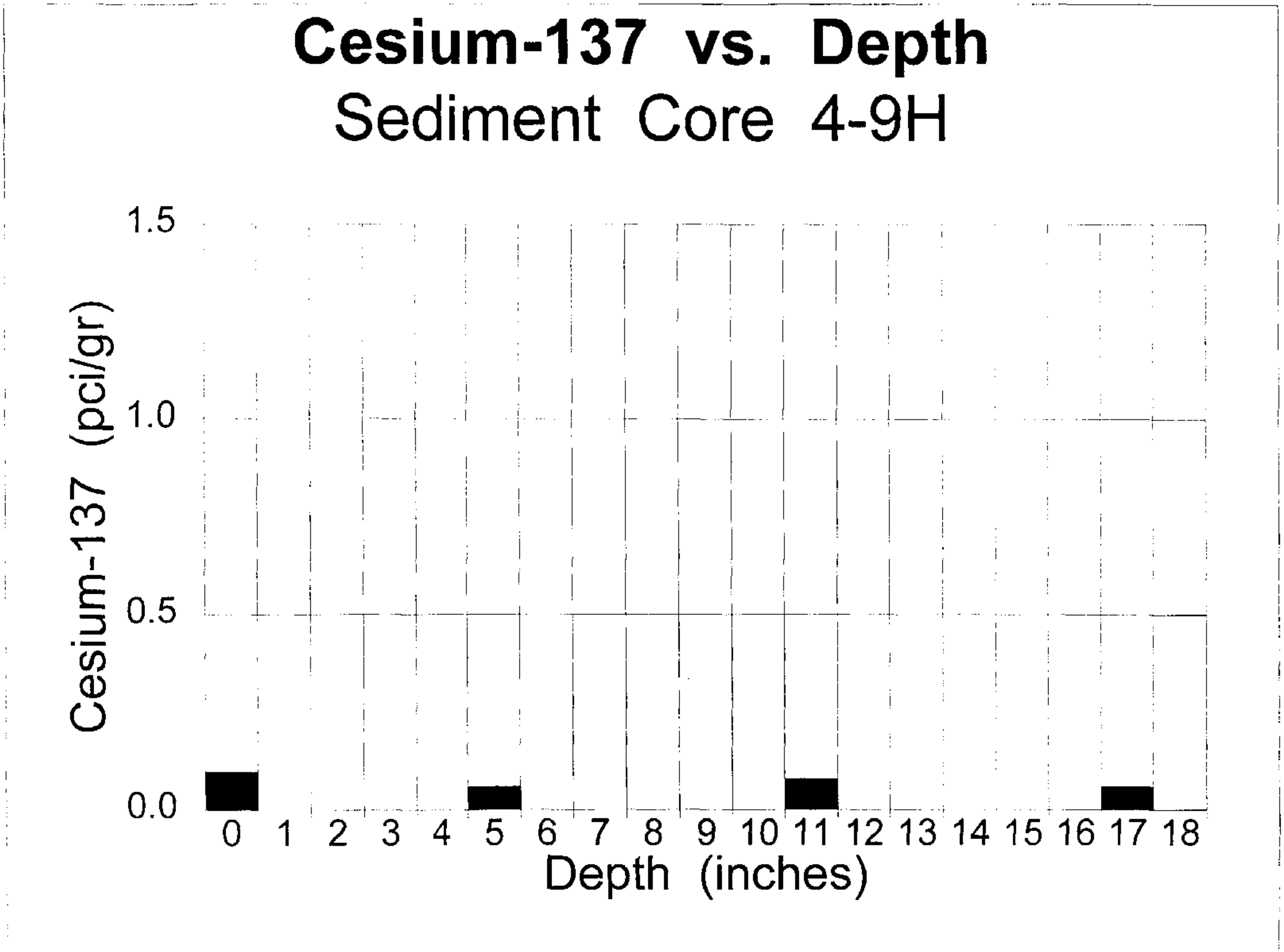
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.

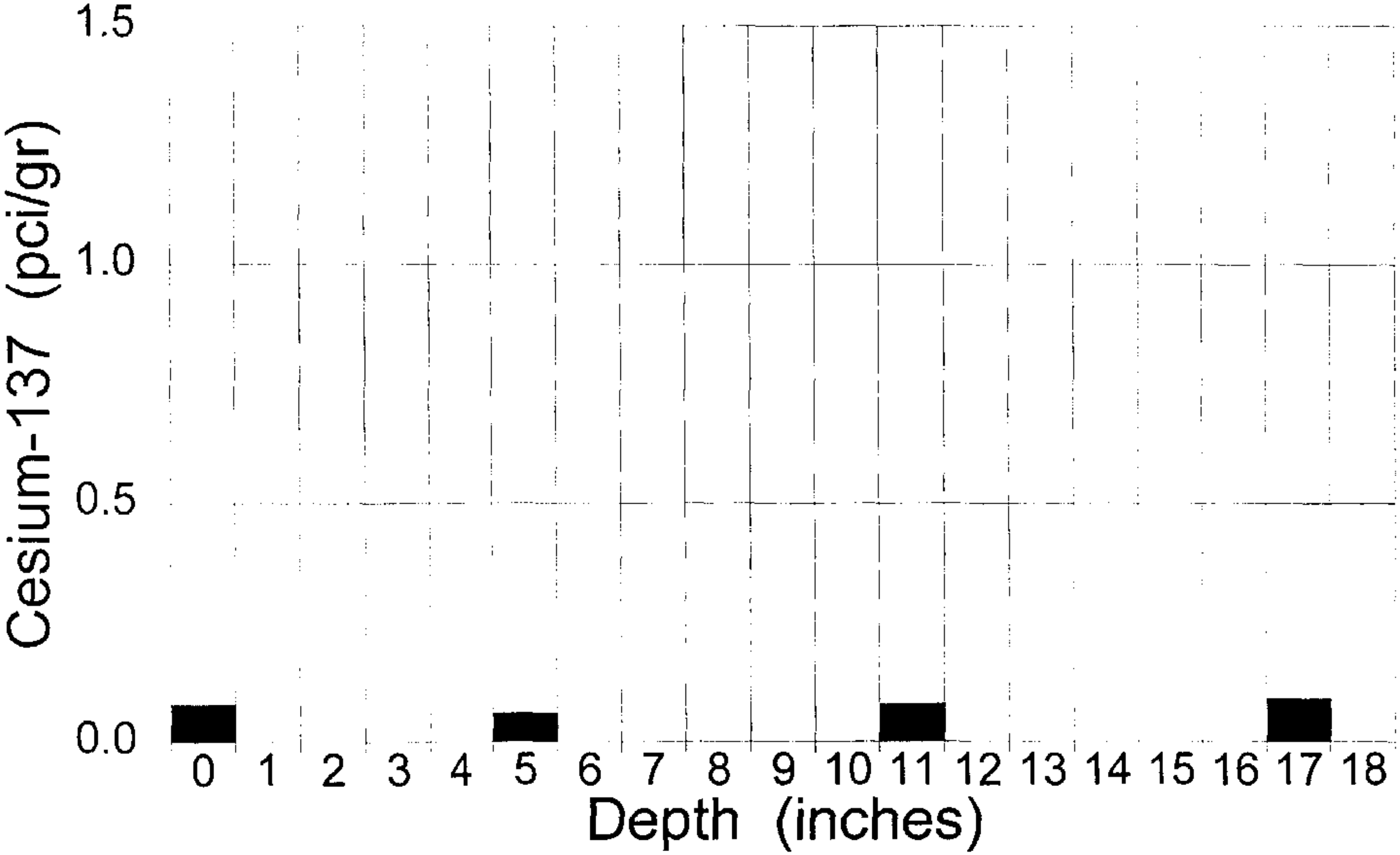


Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.

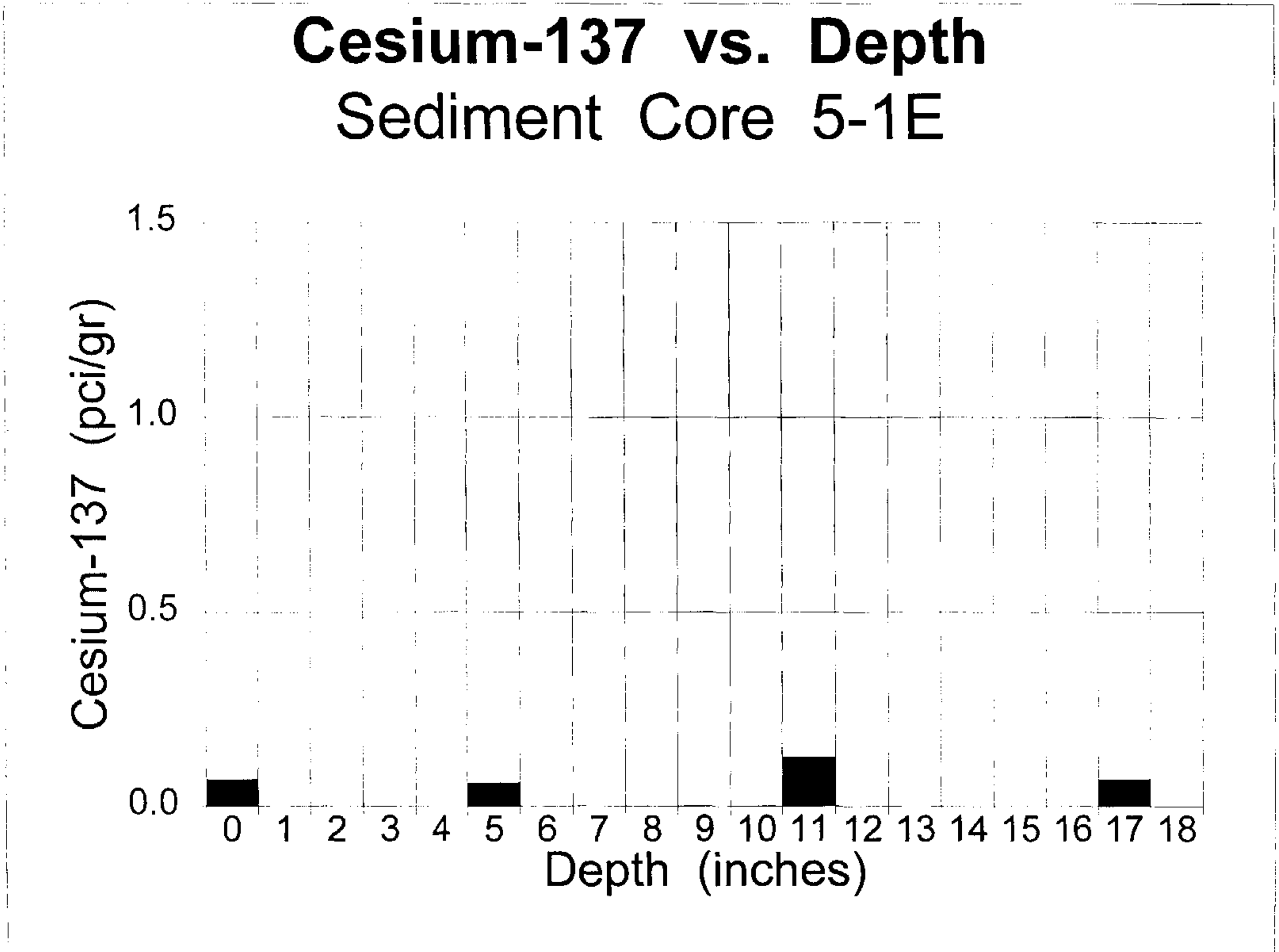


Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.

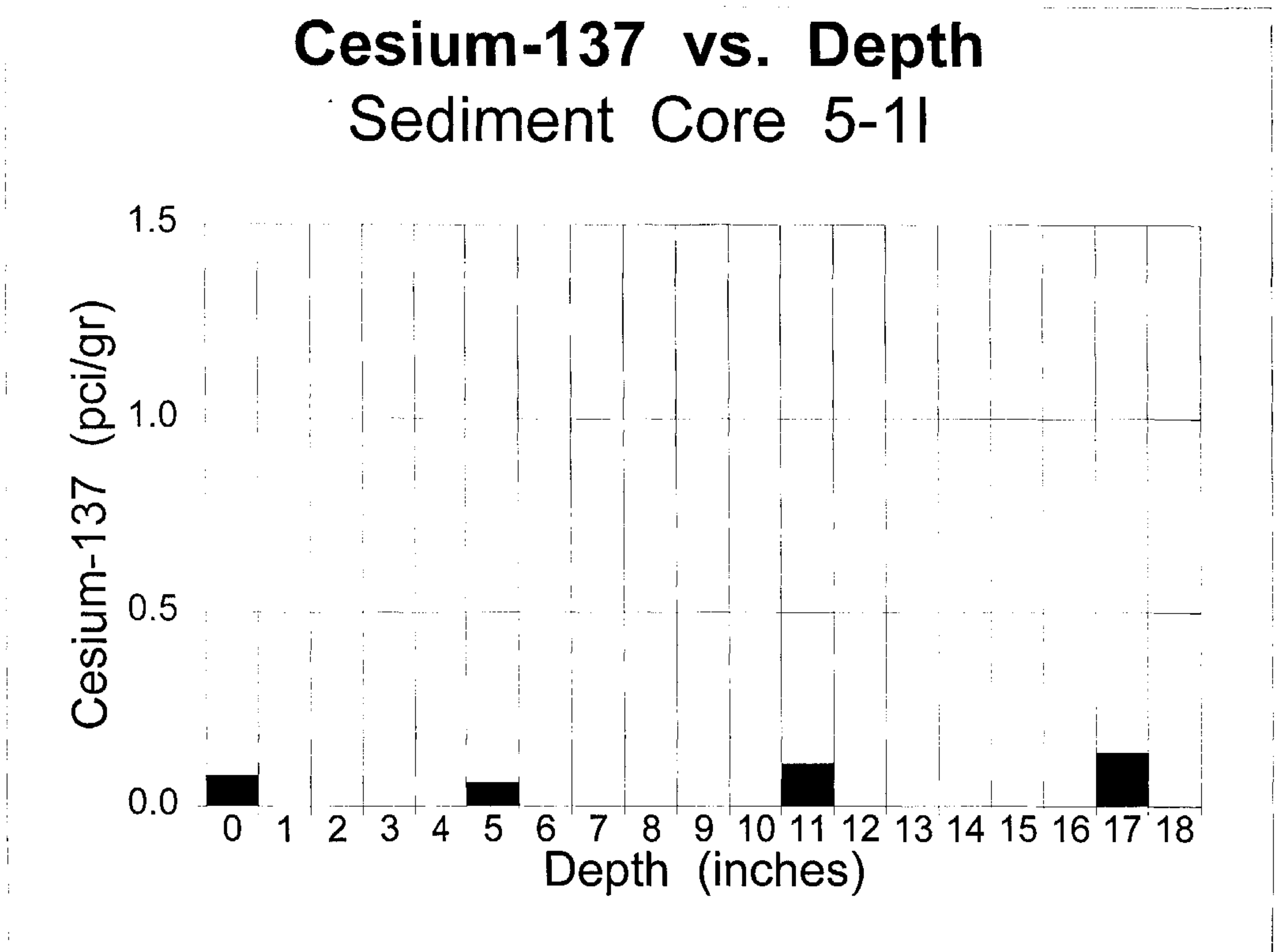
Cesium-137 vs. Depth
Sediment Core 4-10B



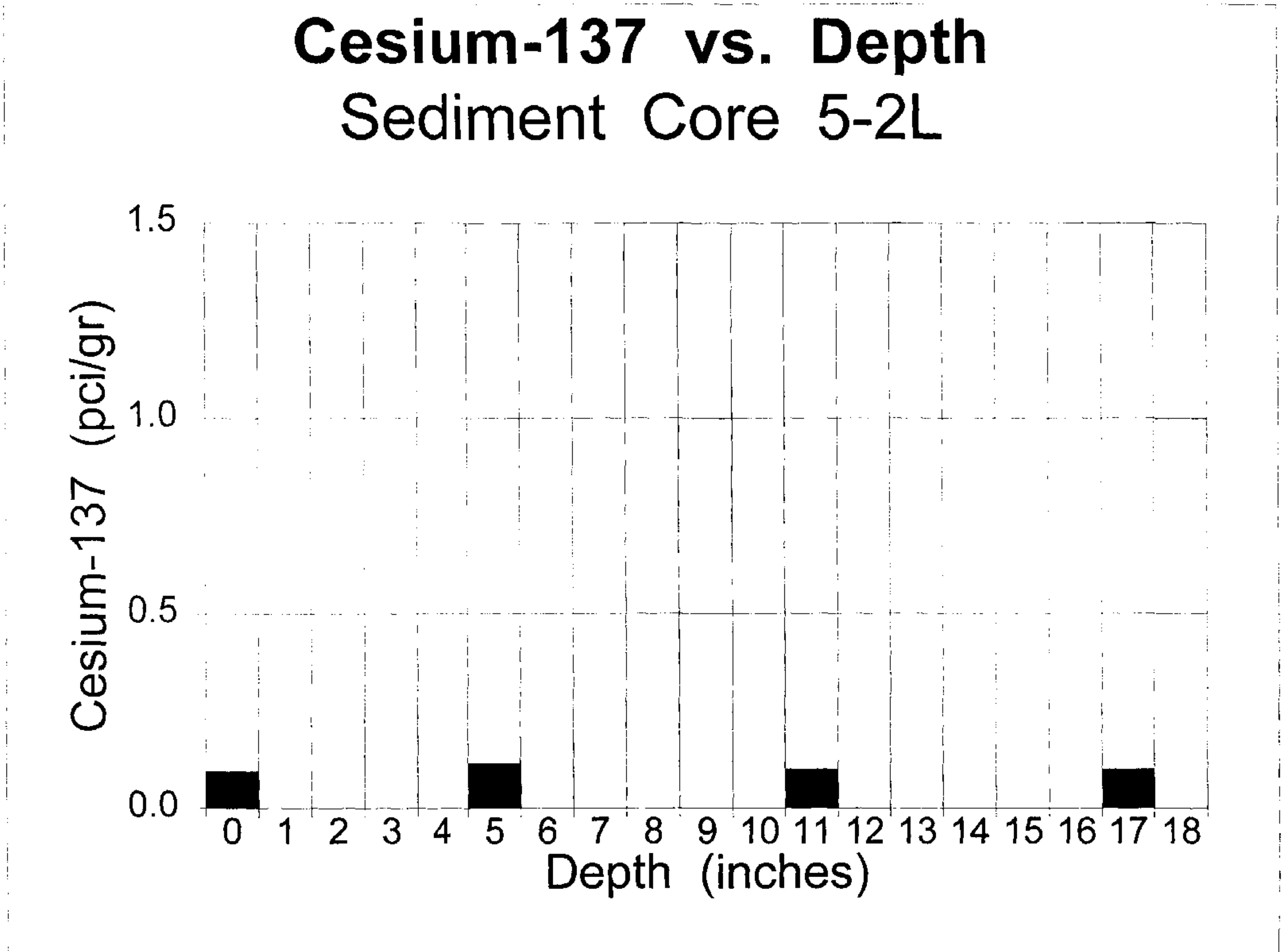
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



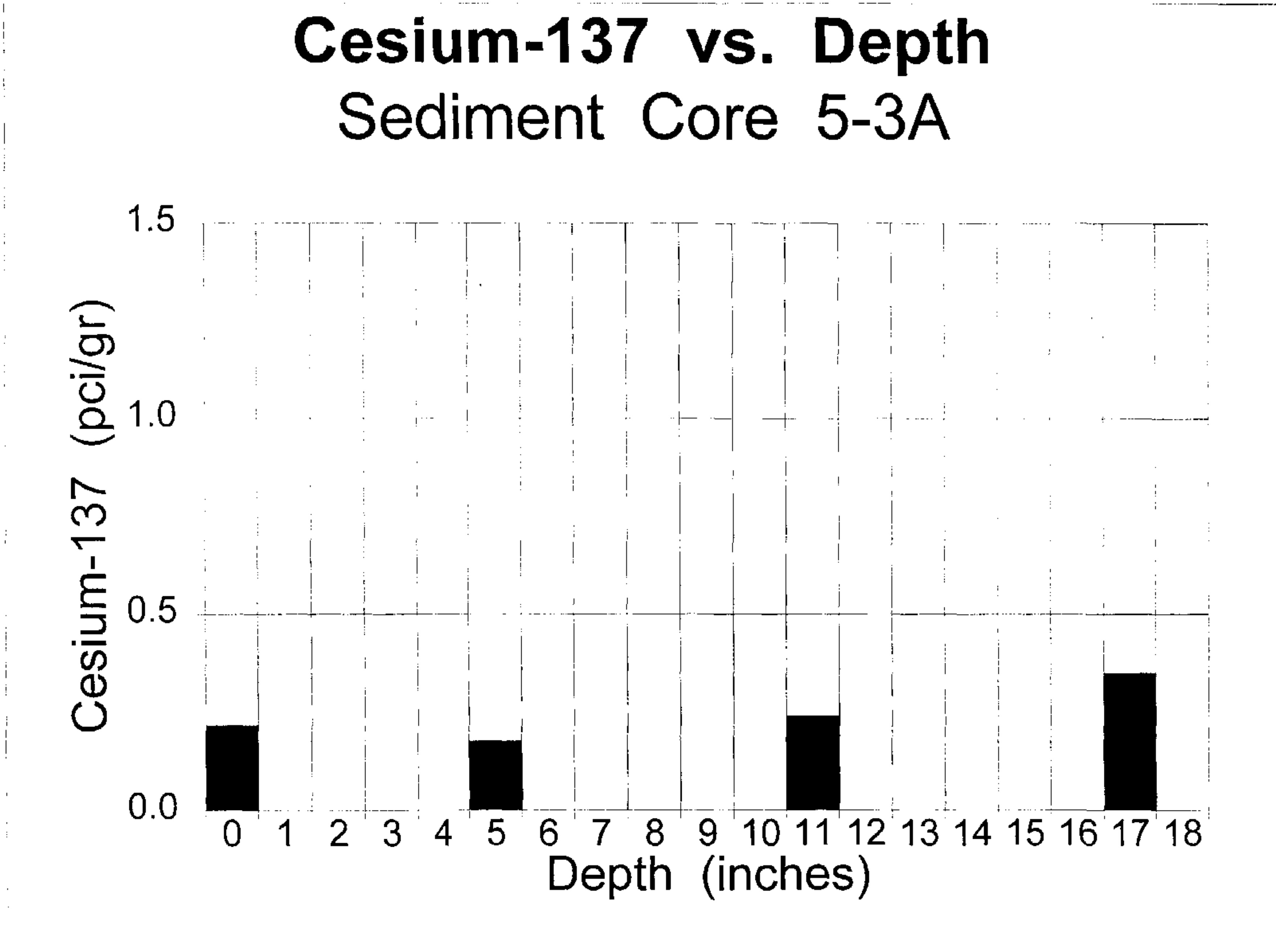
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



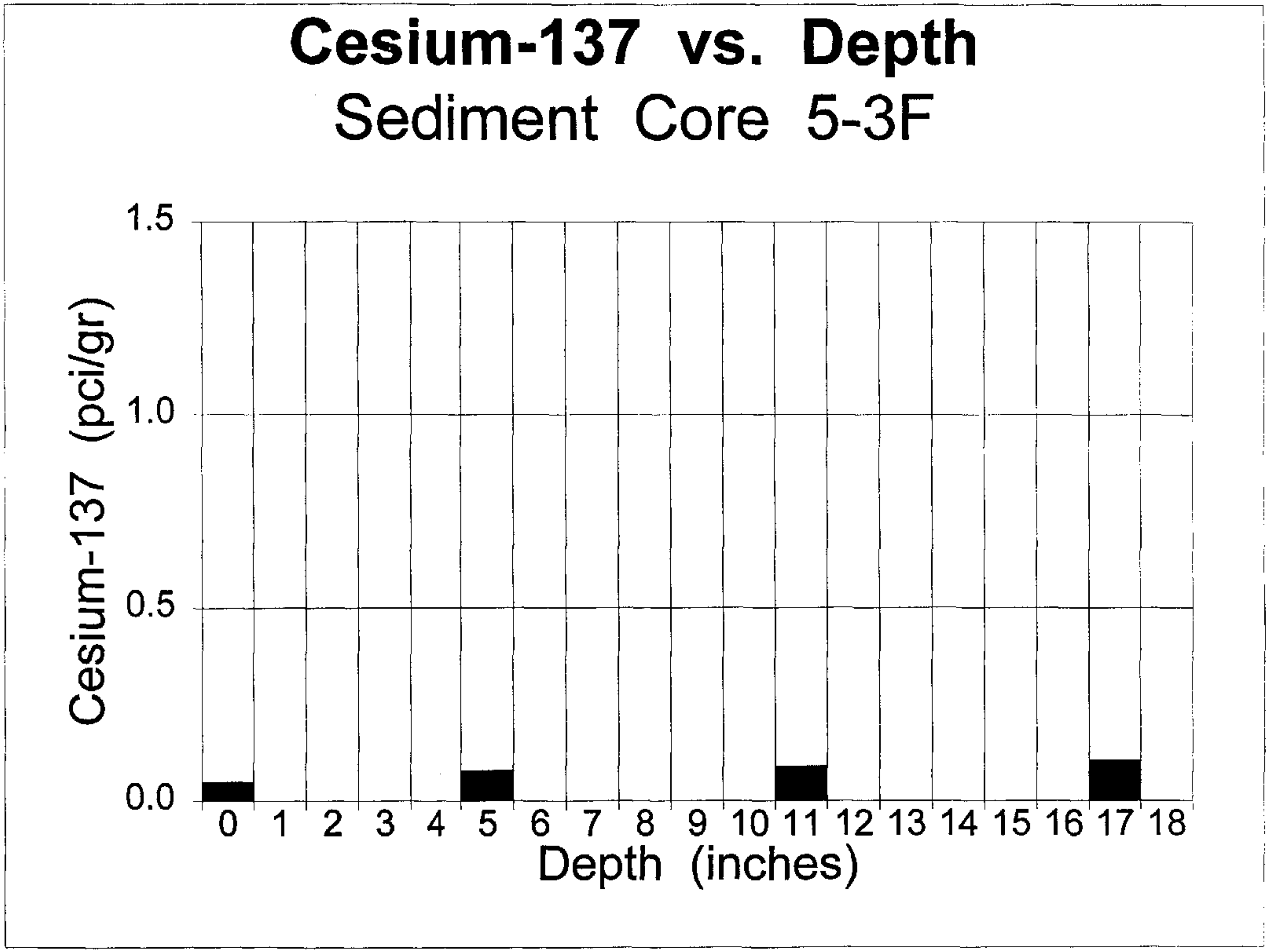
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



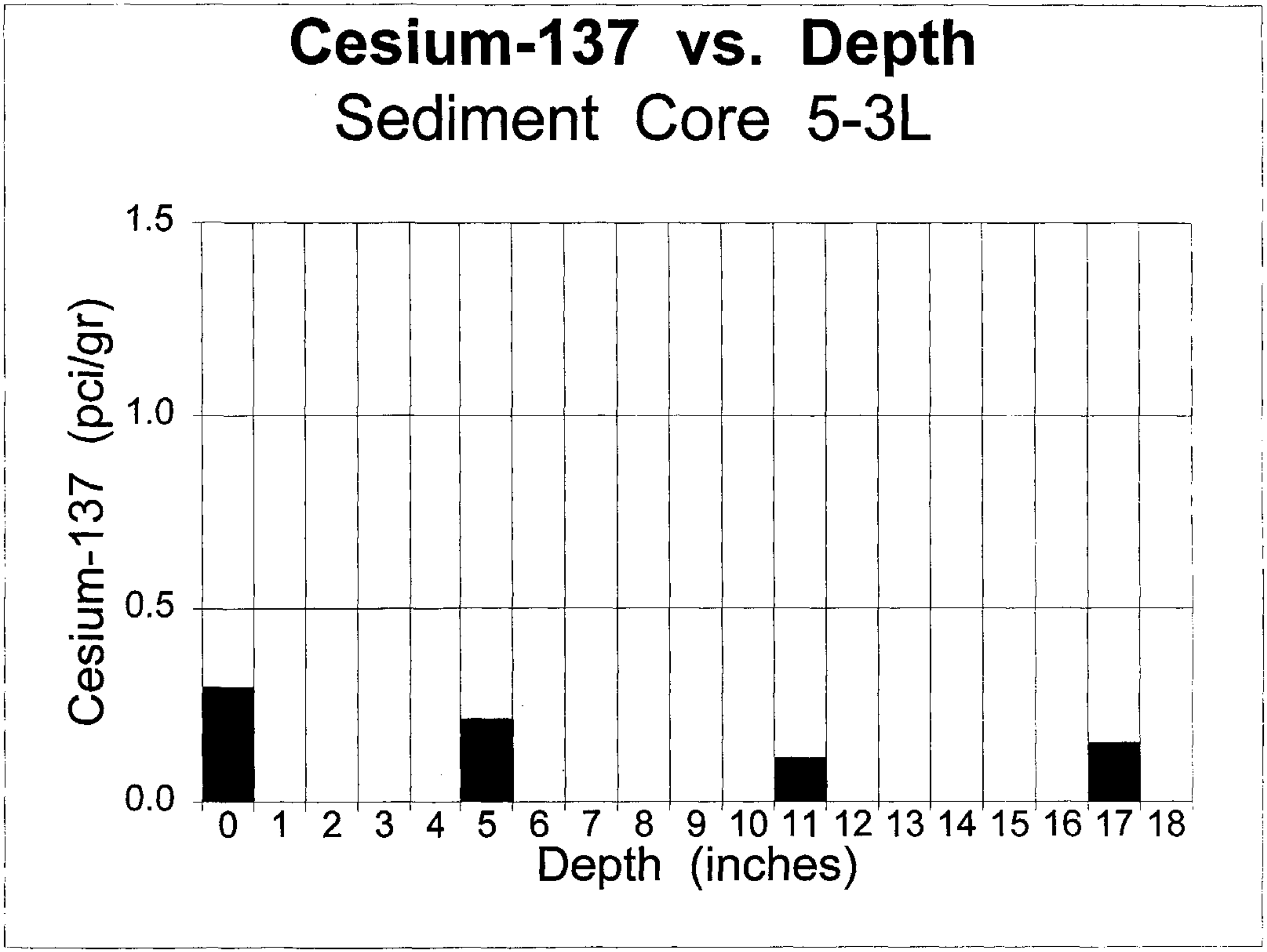
Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



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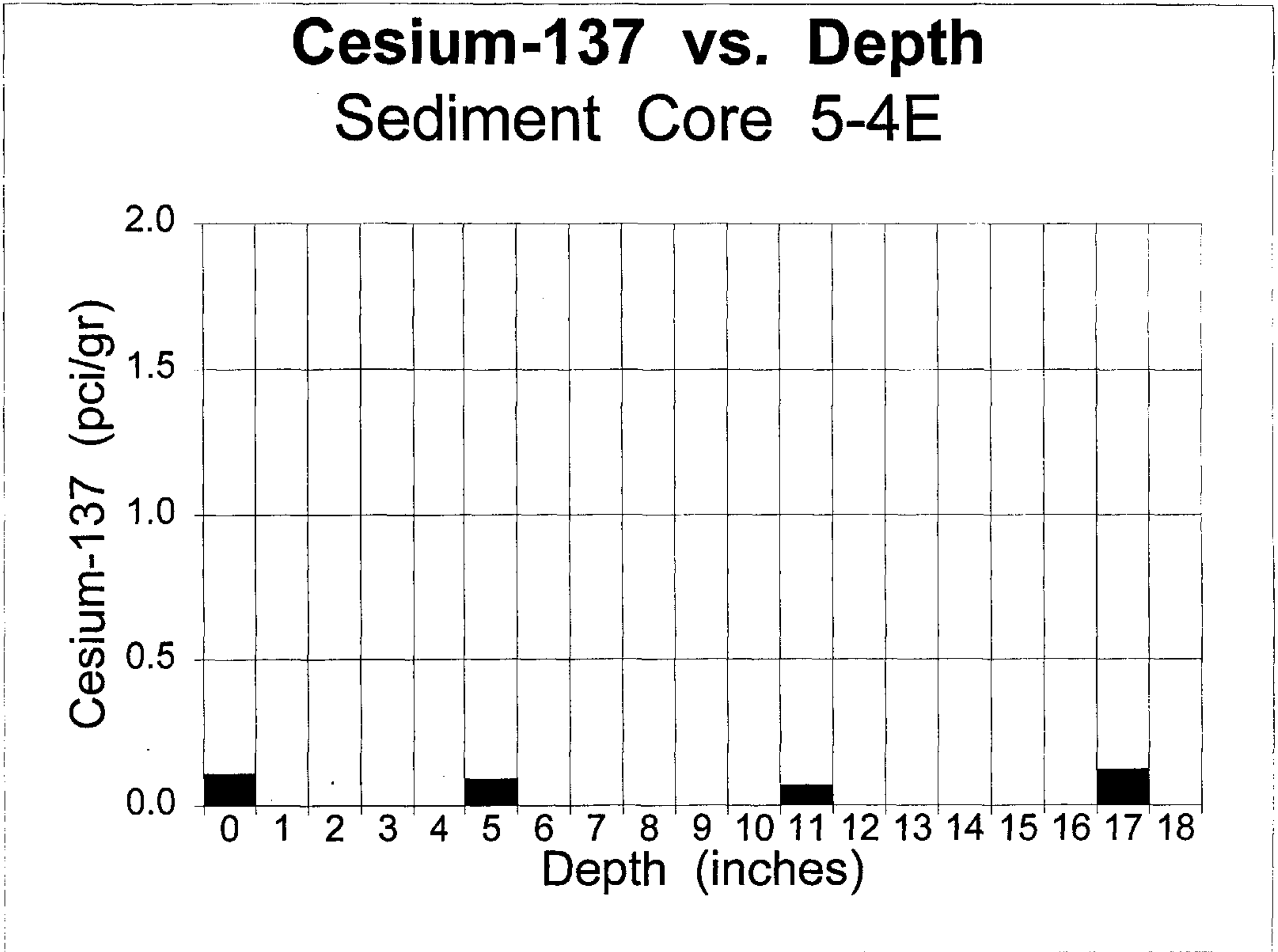
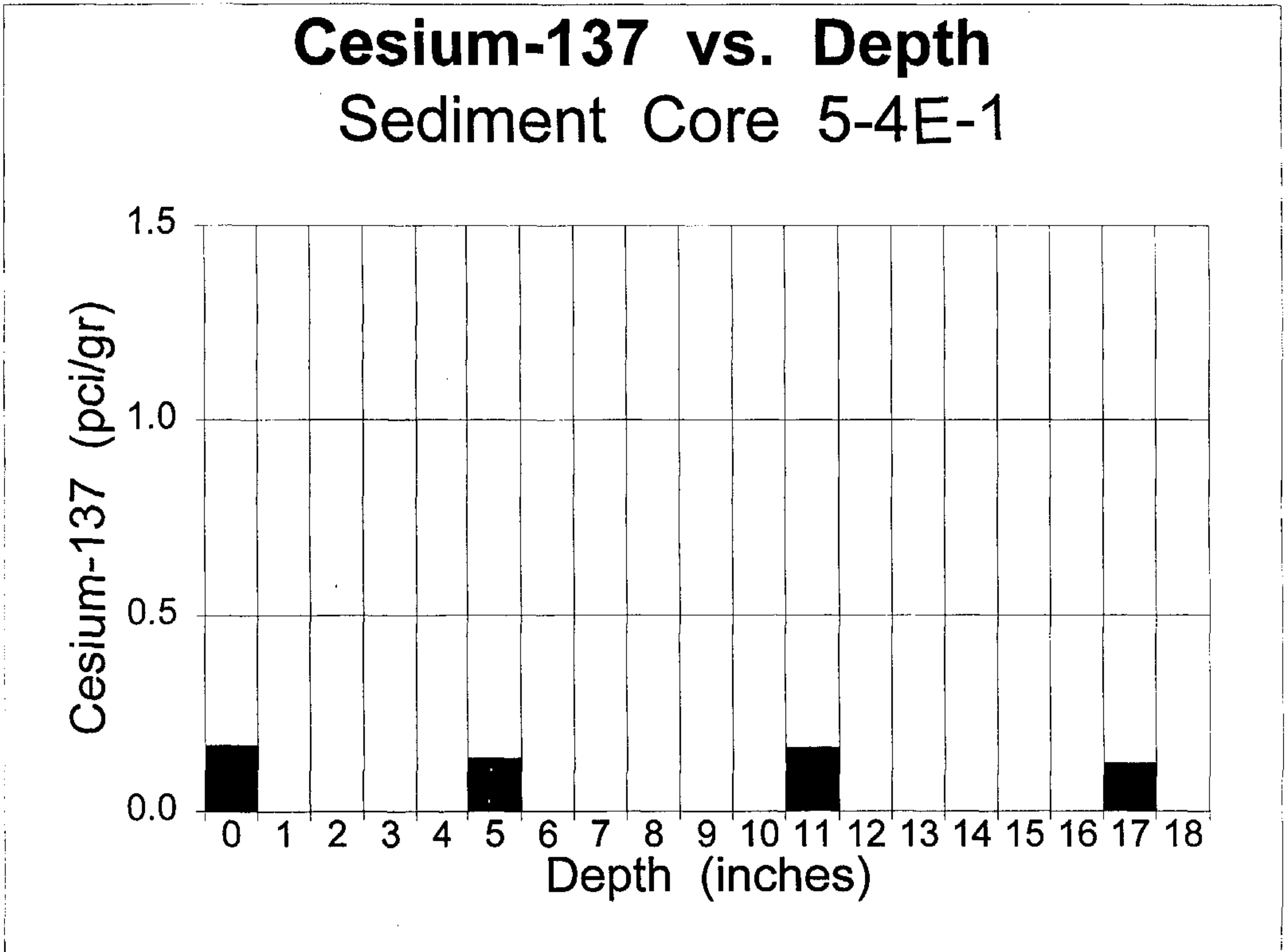
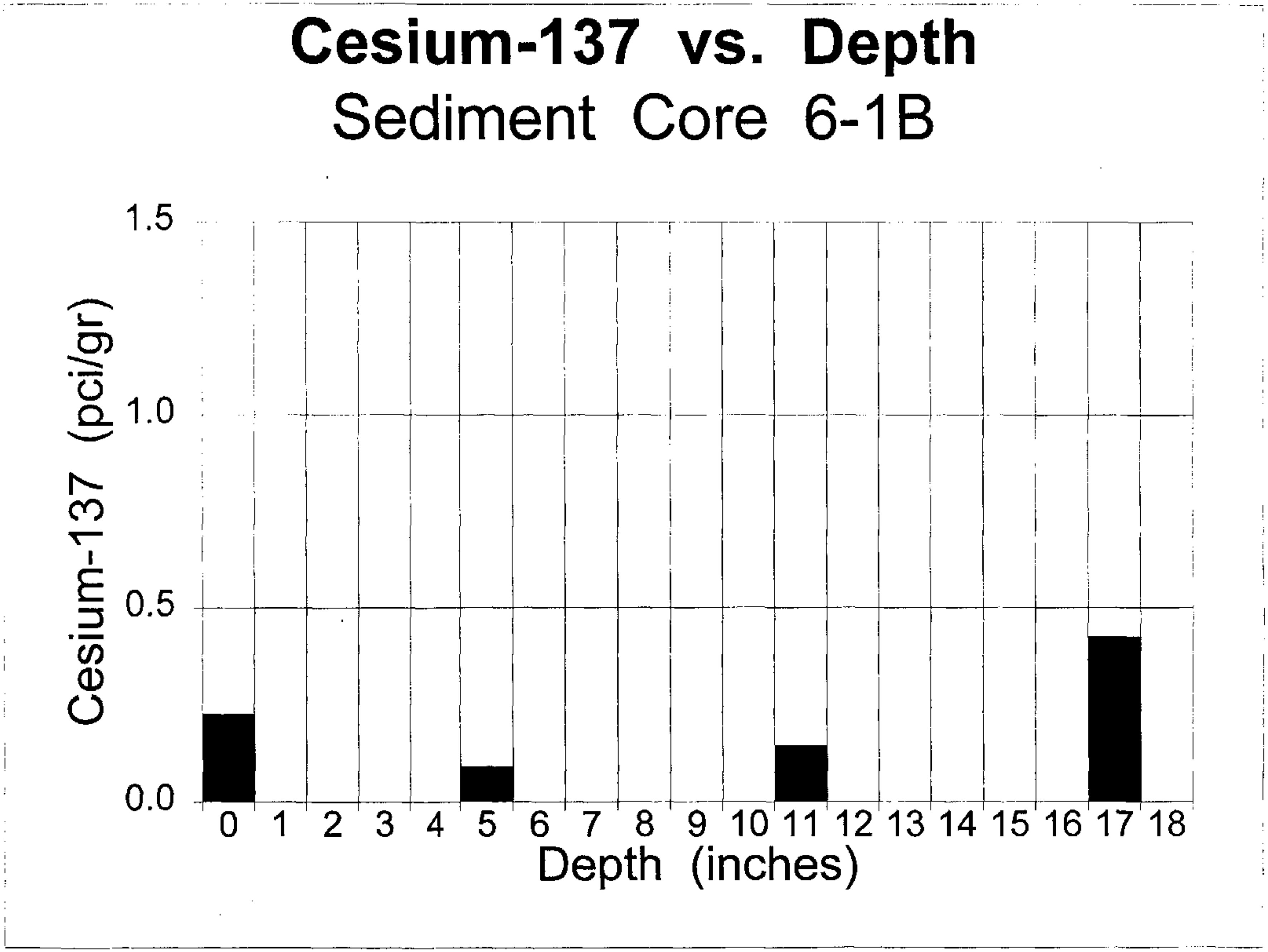


Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



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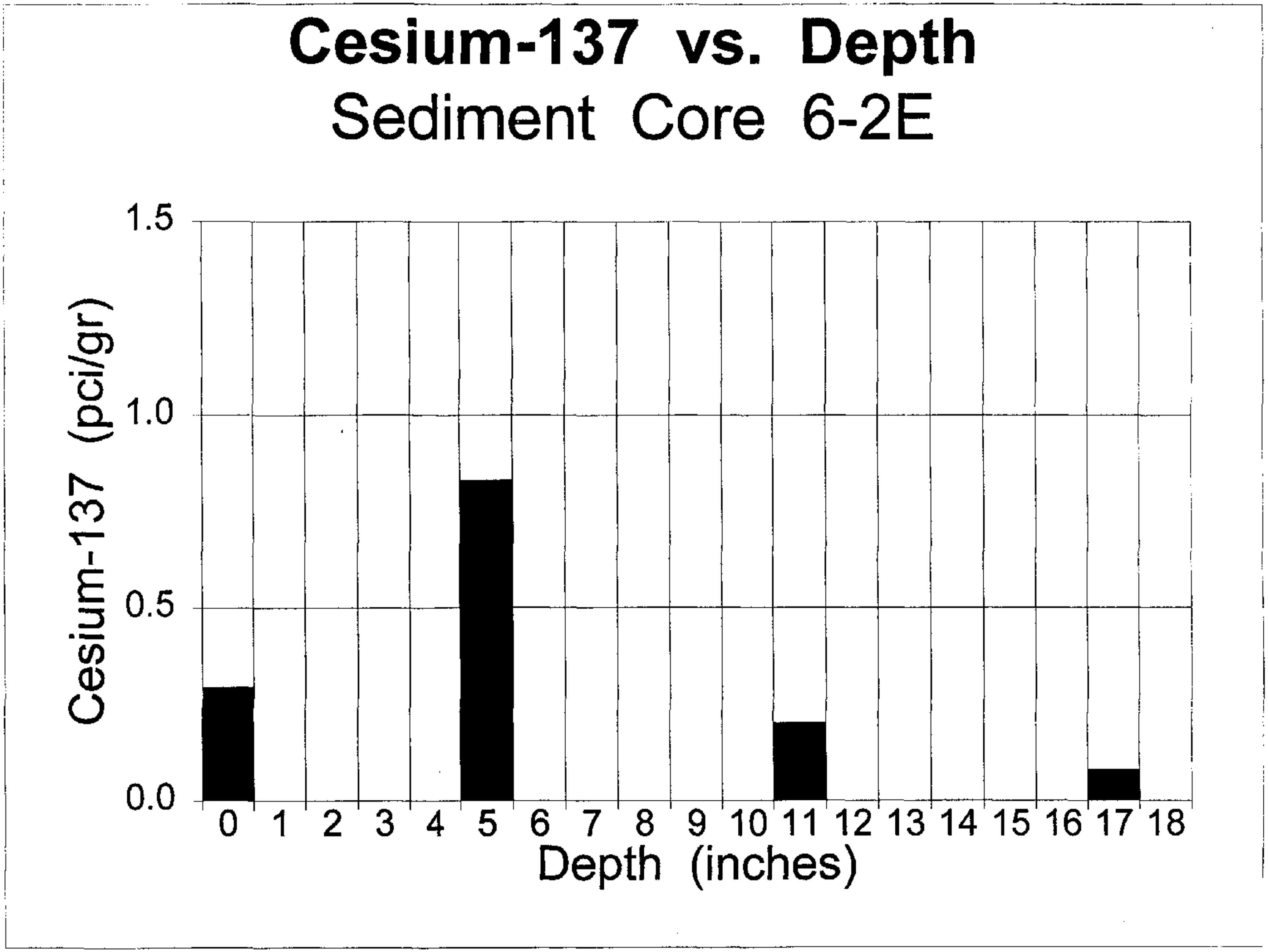

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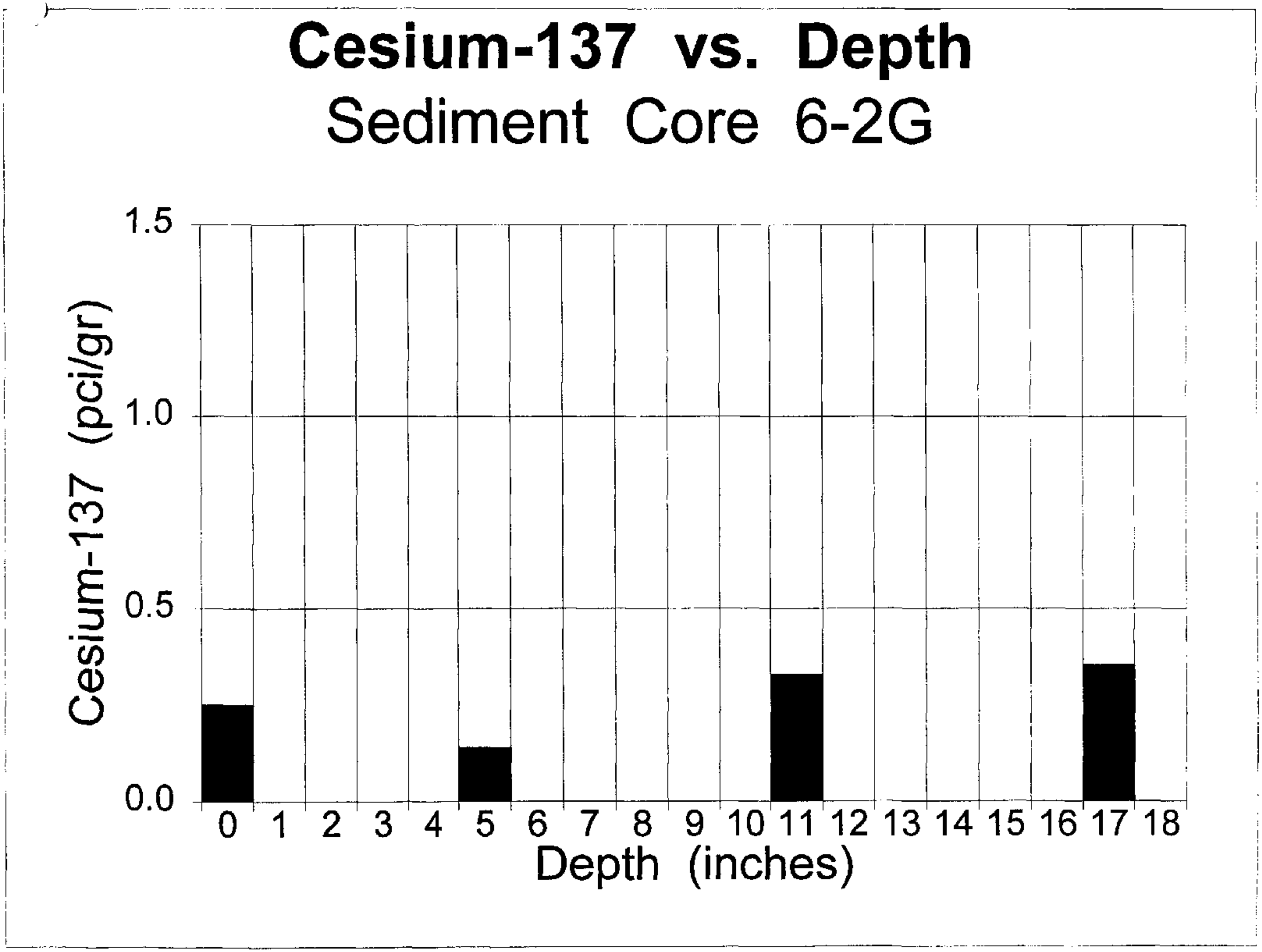

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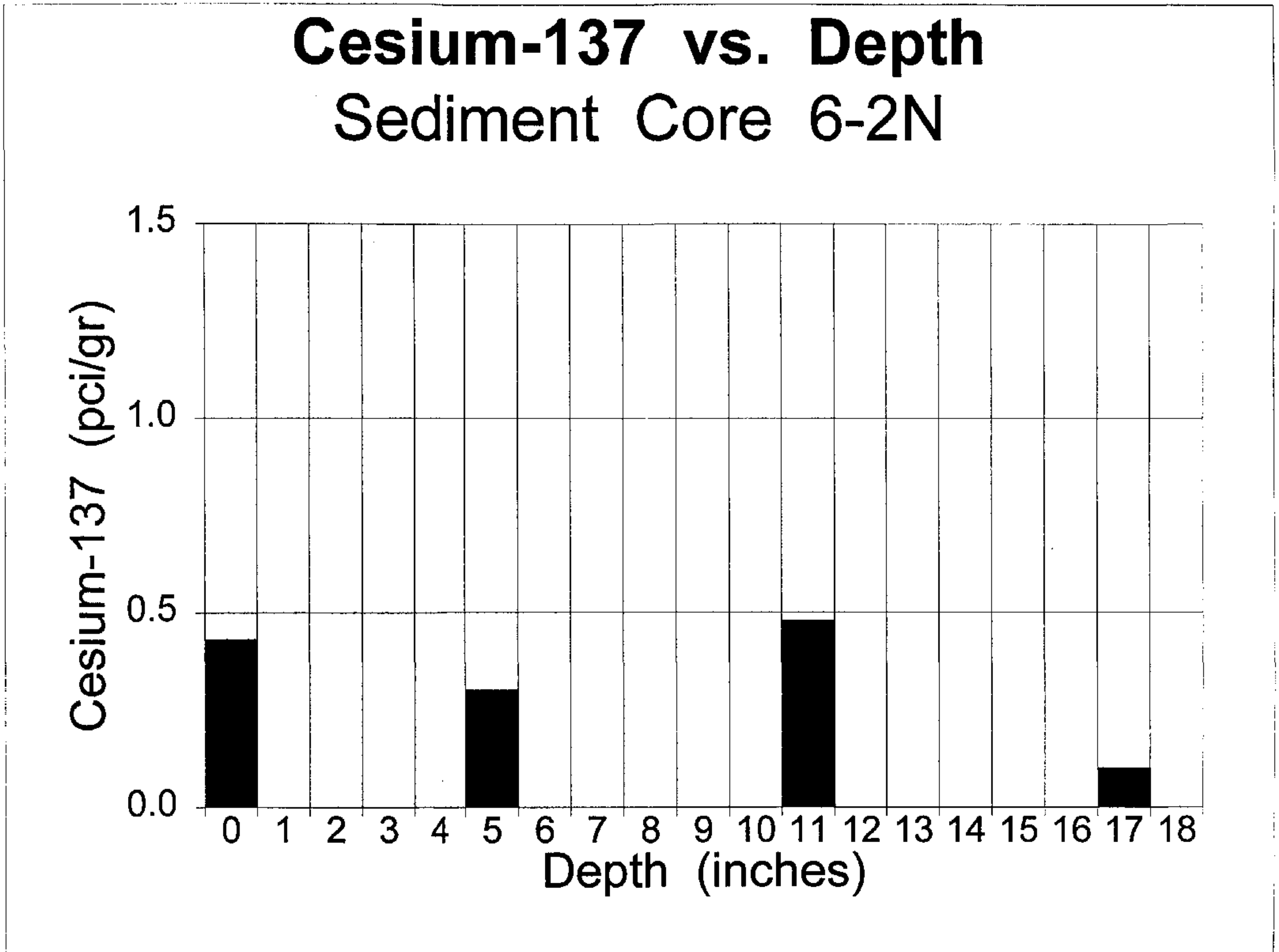

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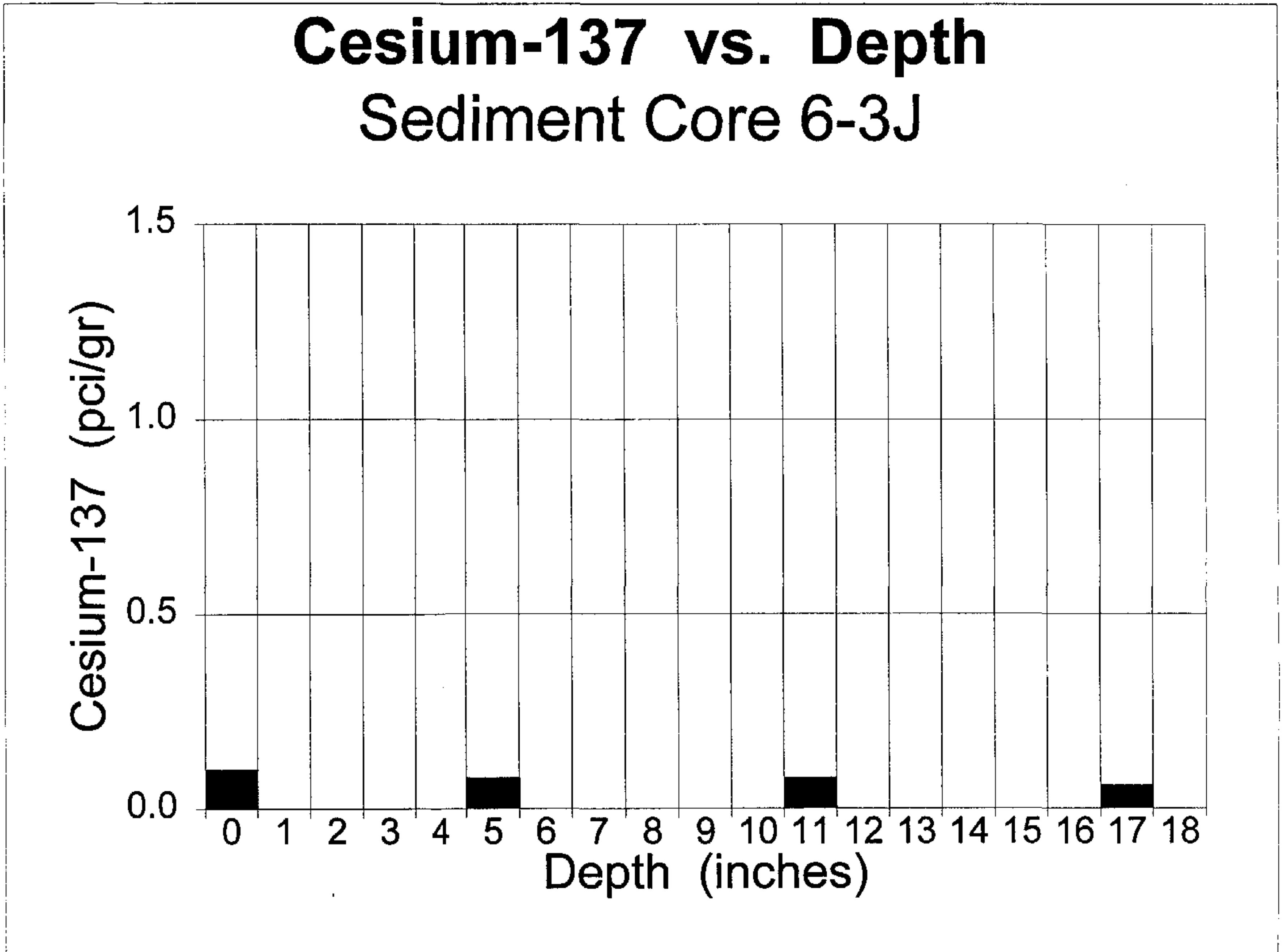

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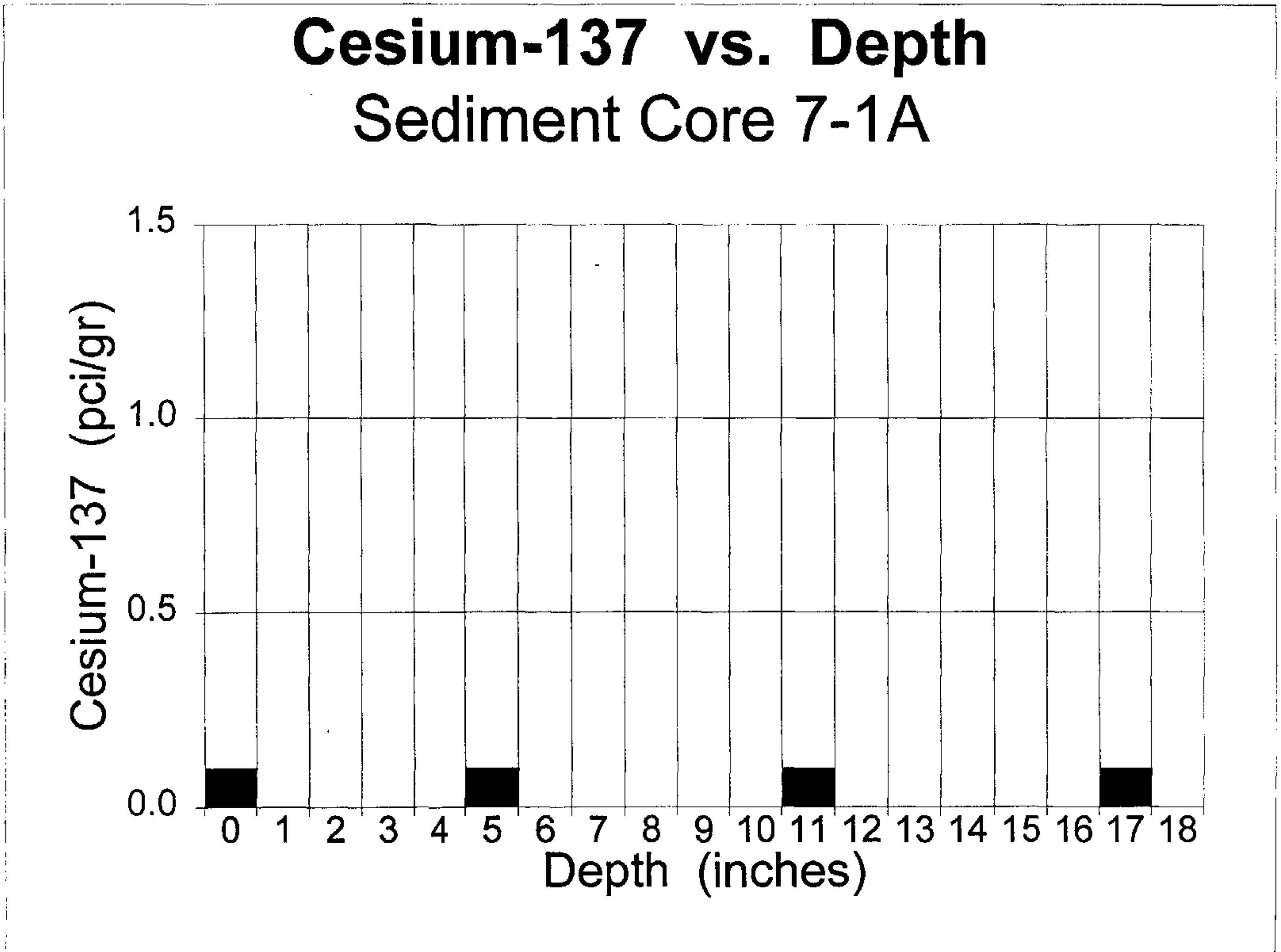

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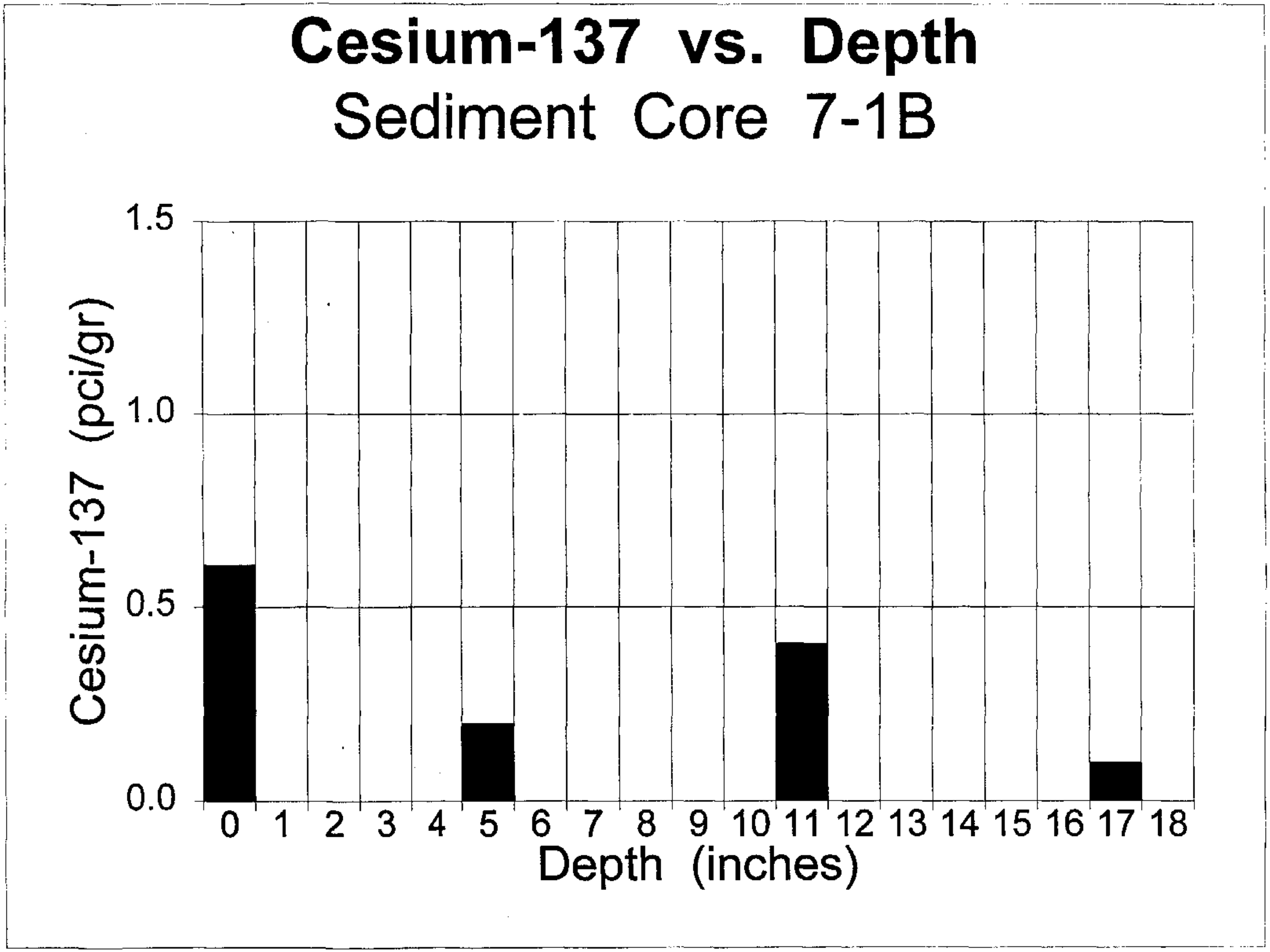
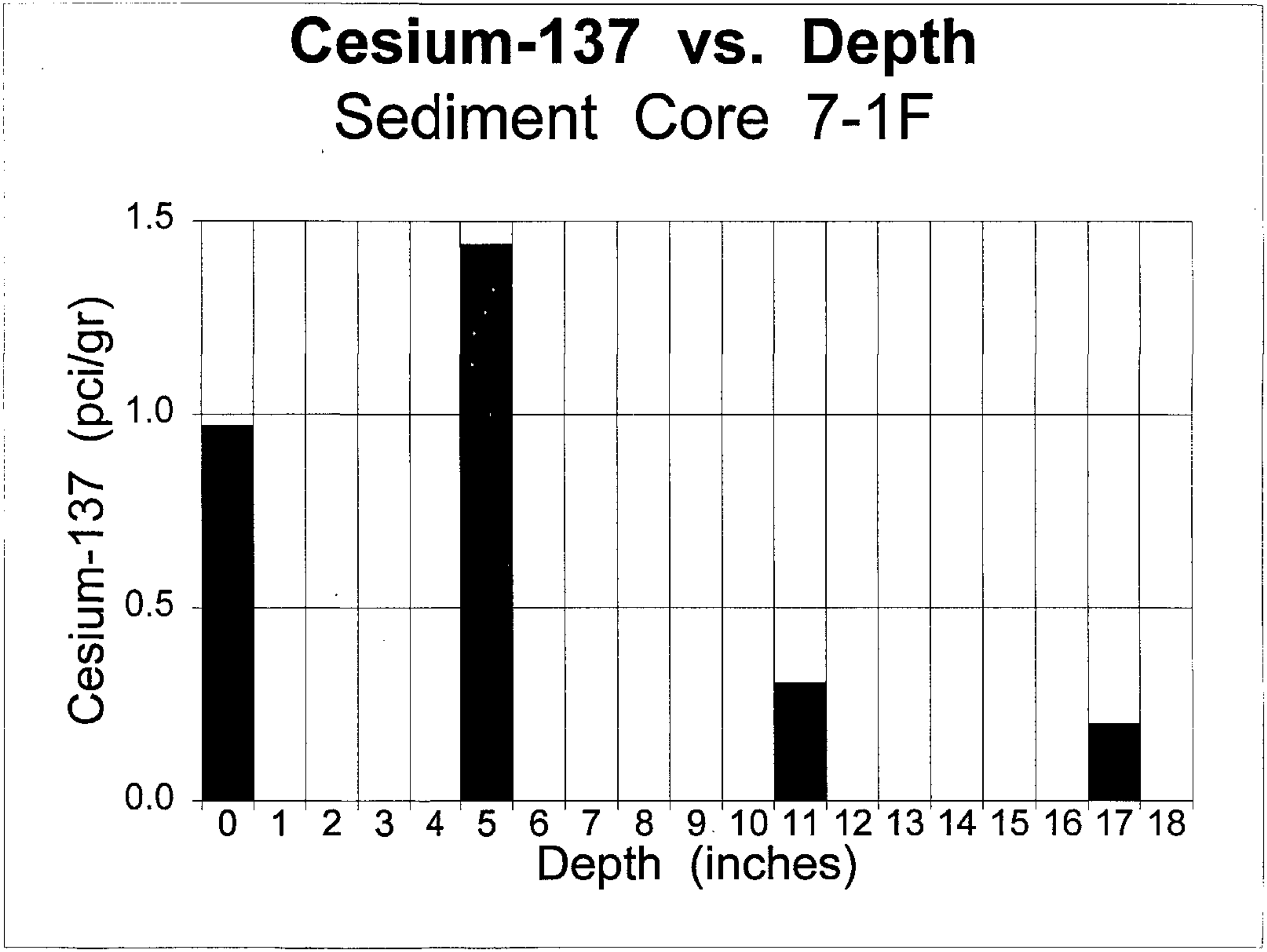
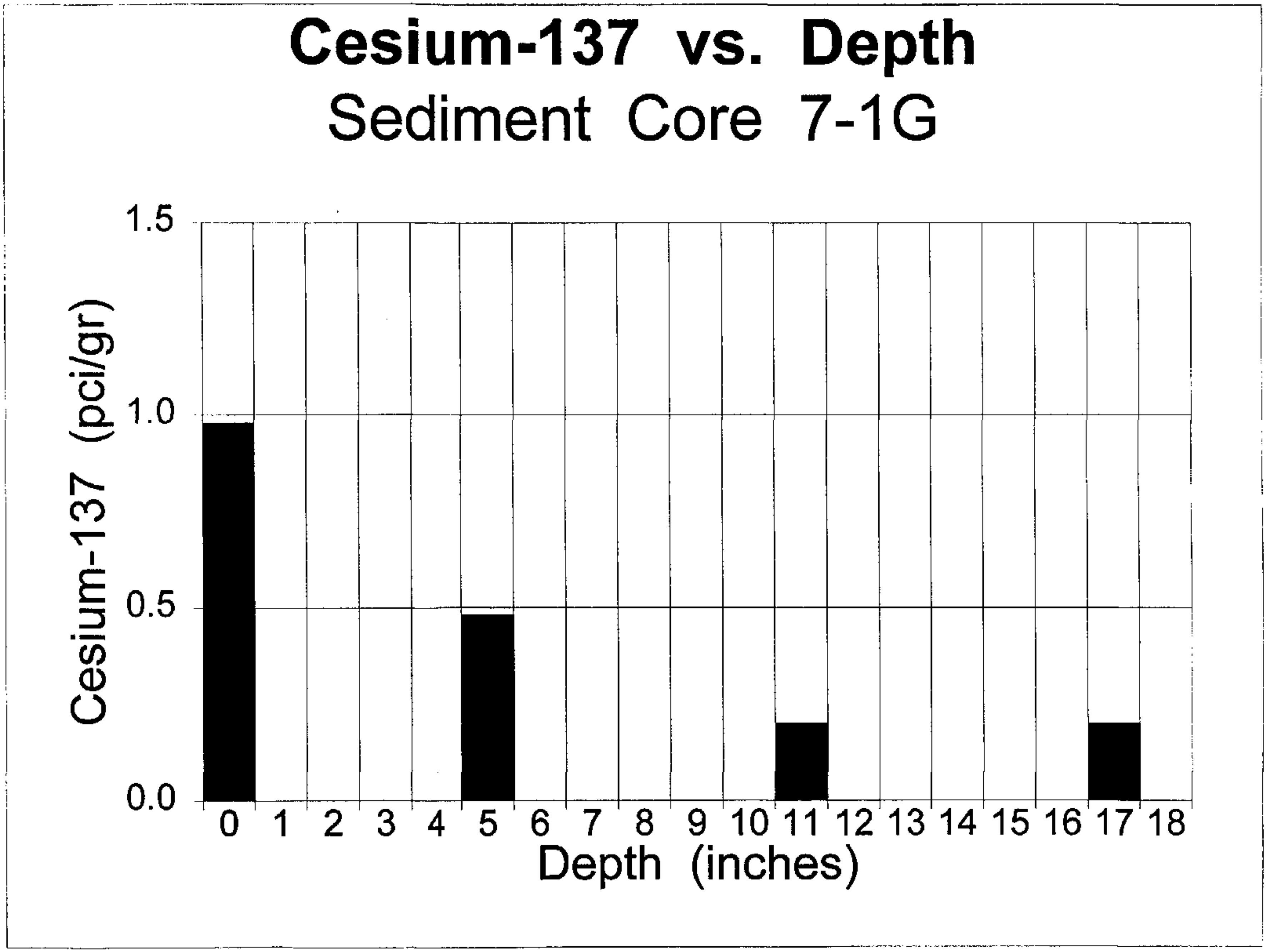


Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



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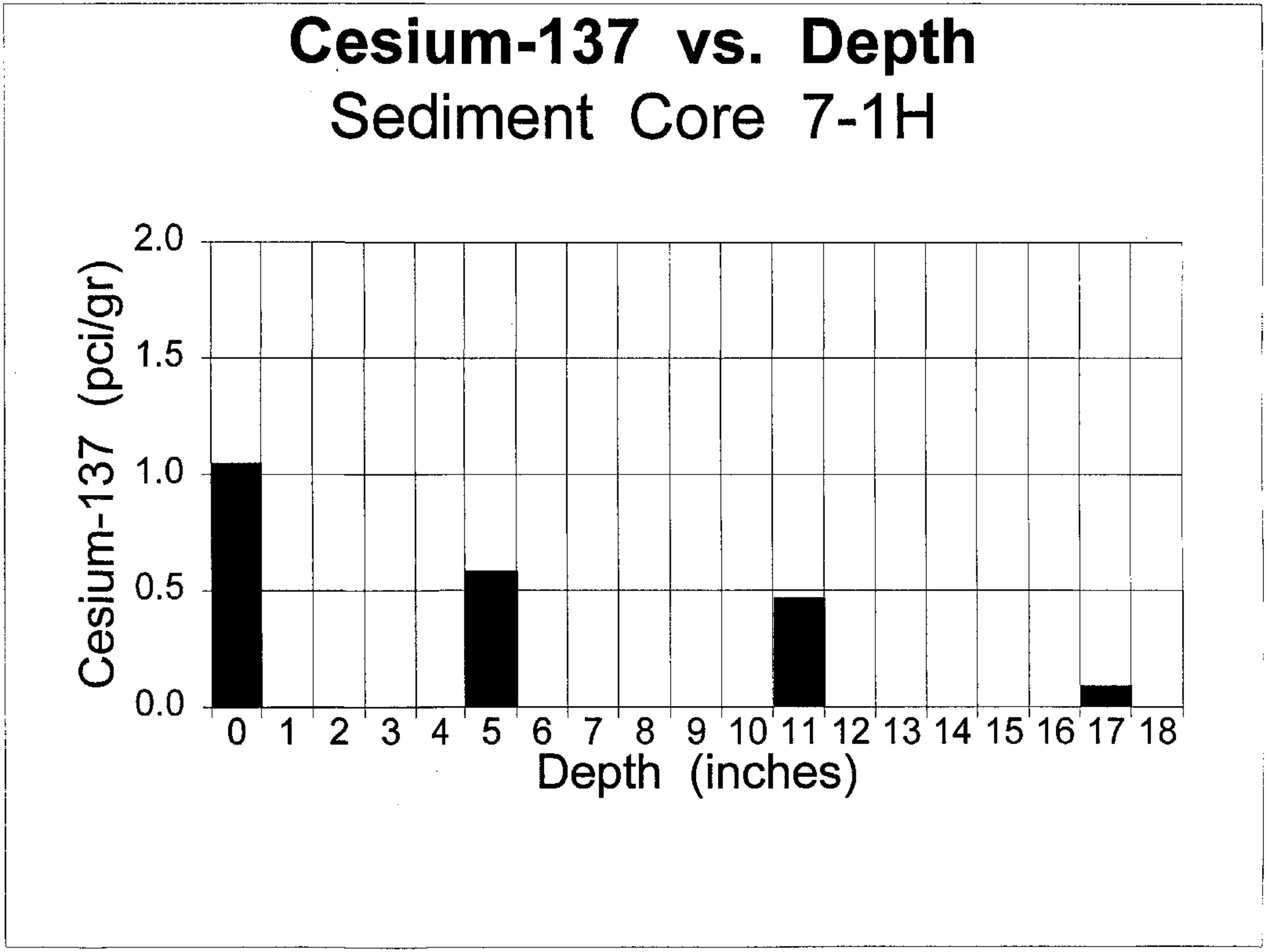

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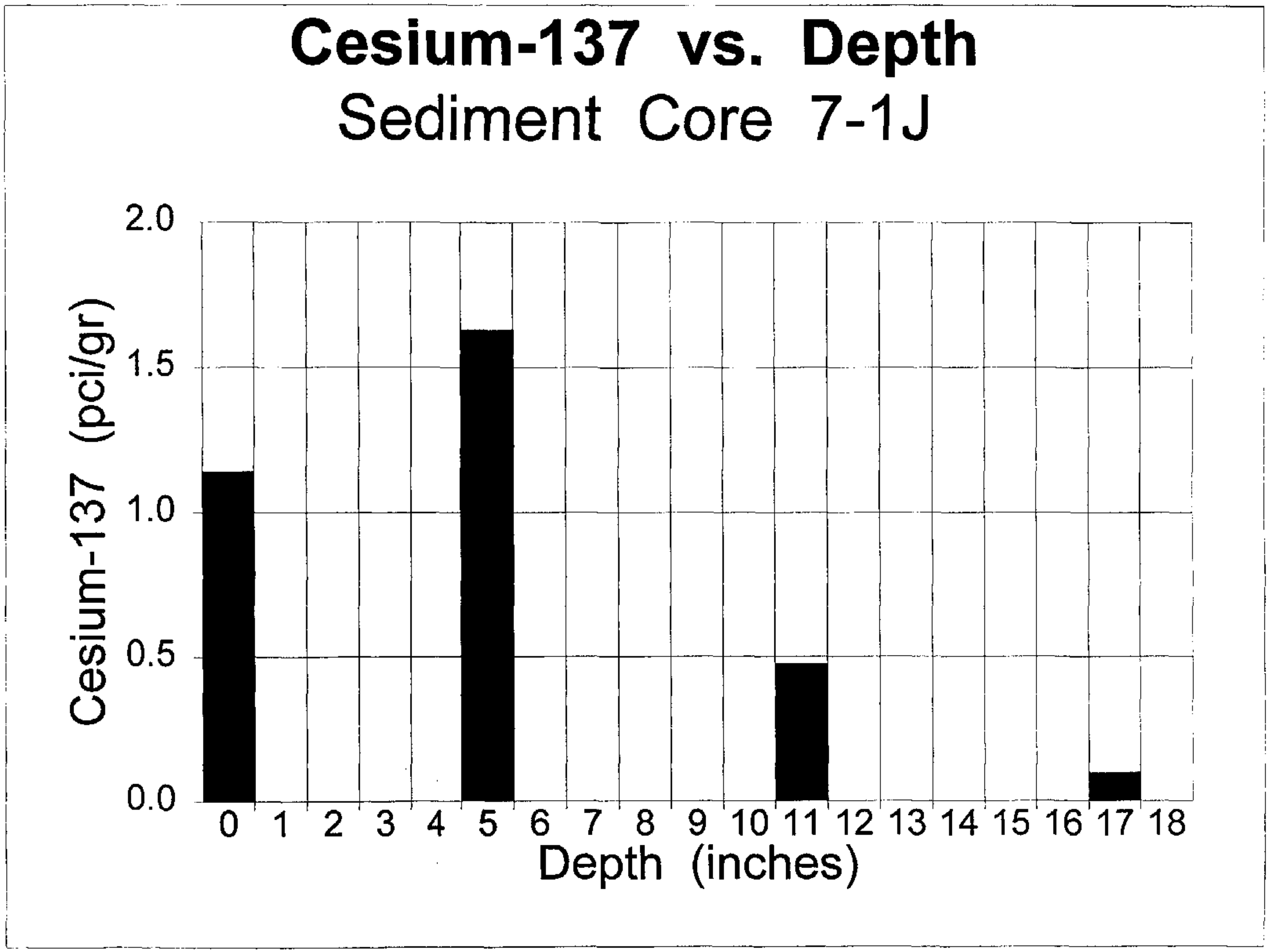

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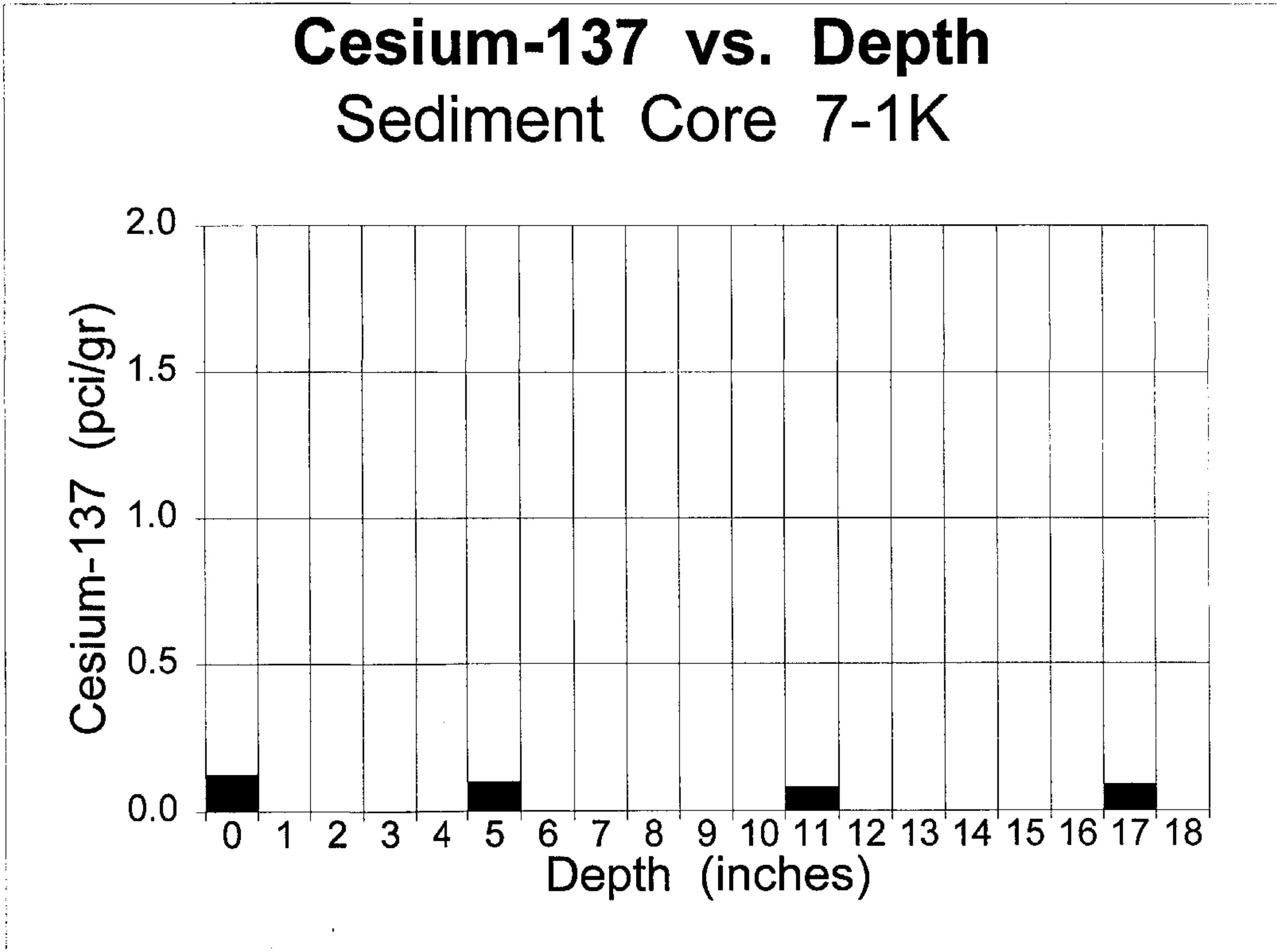

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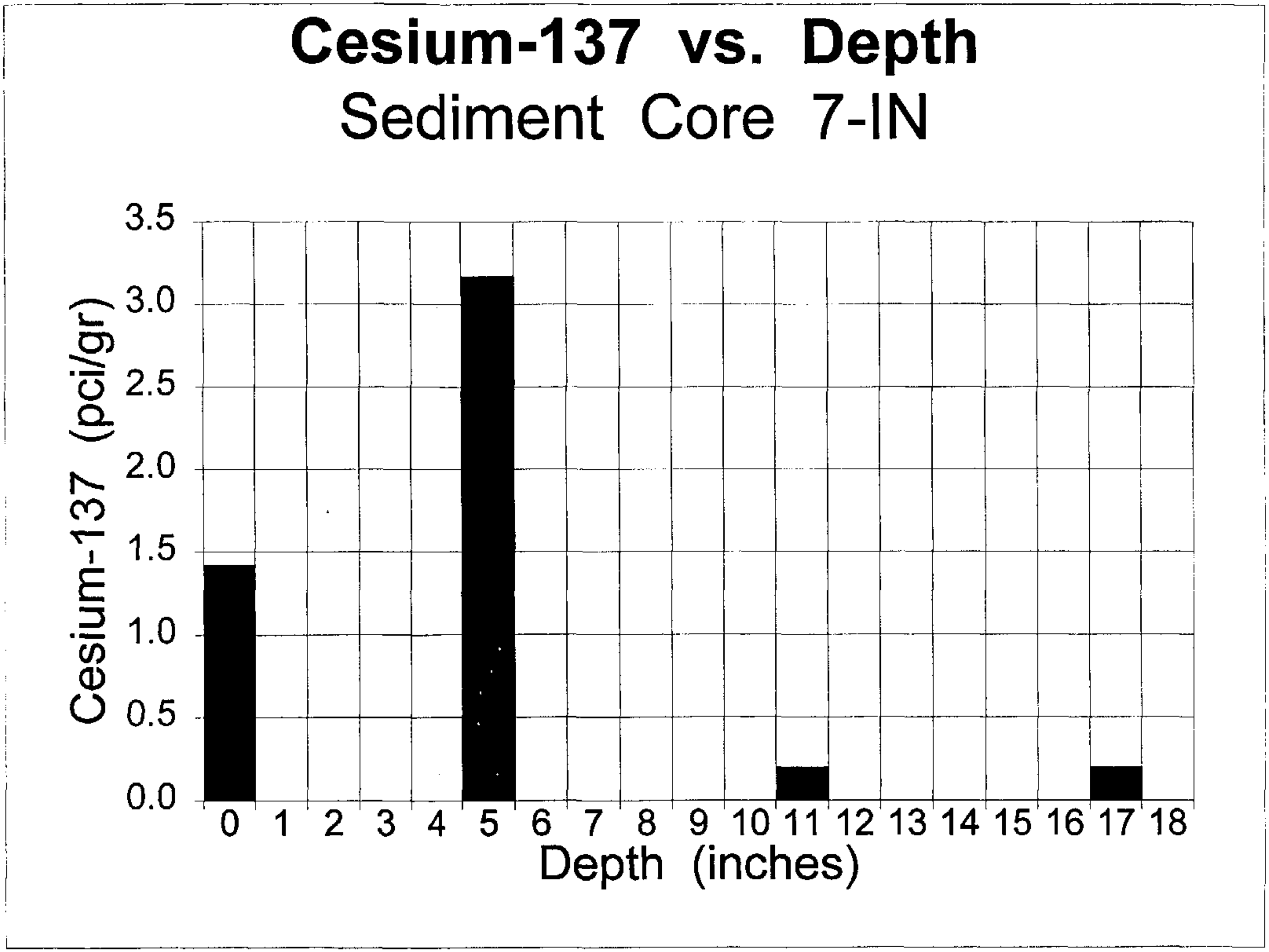

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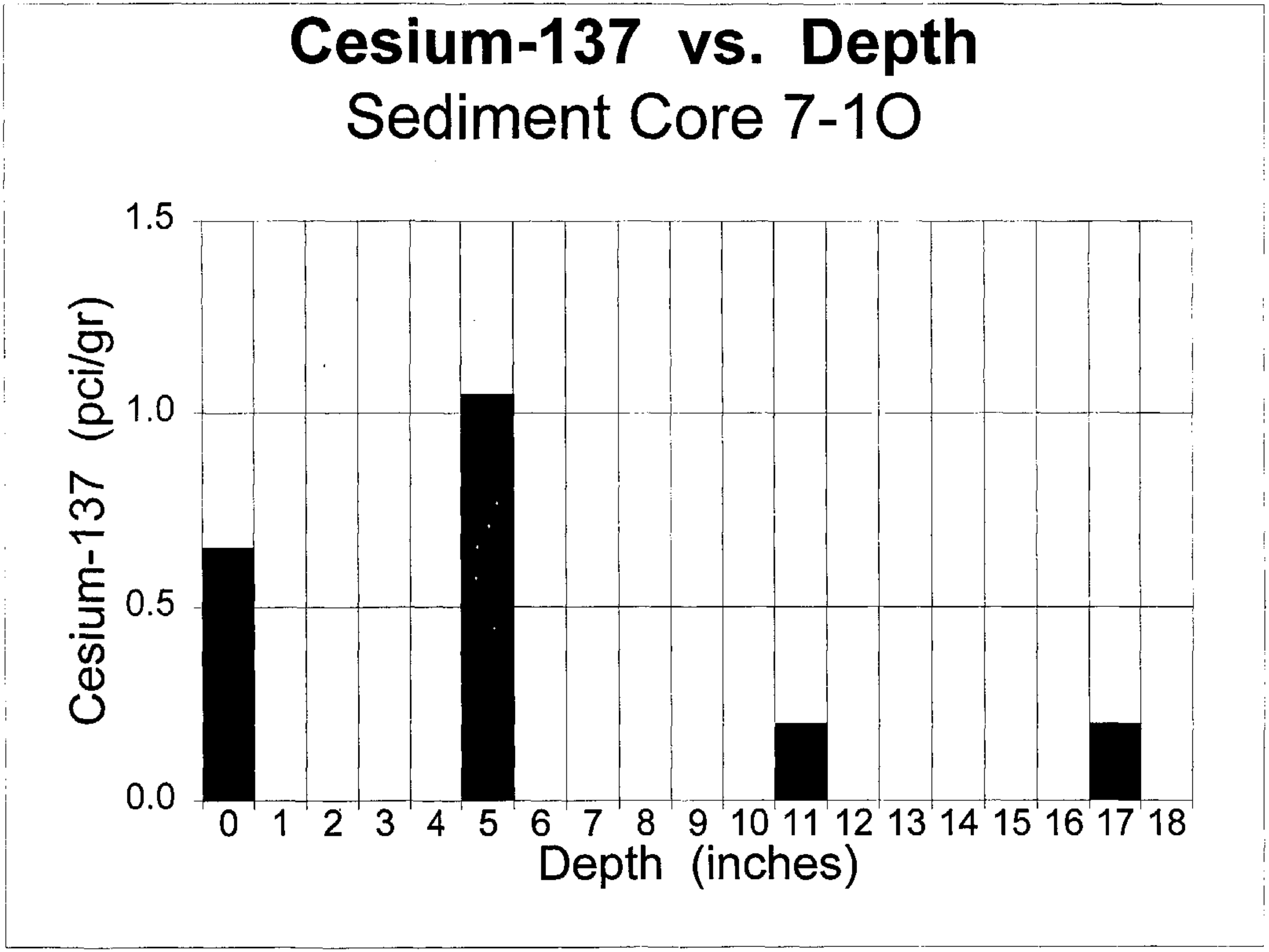

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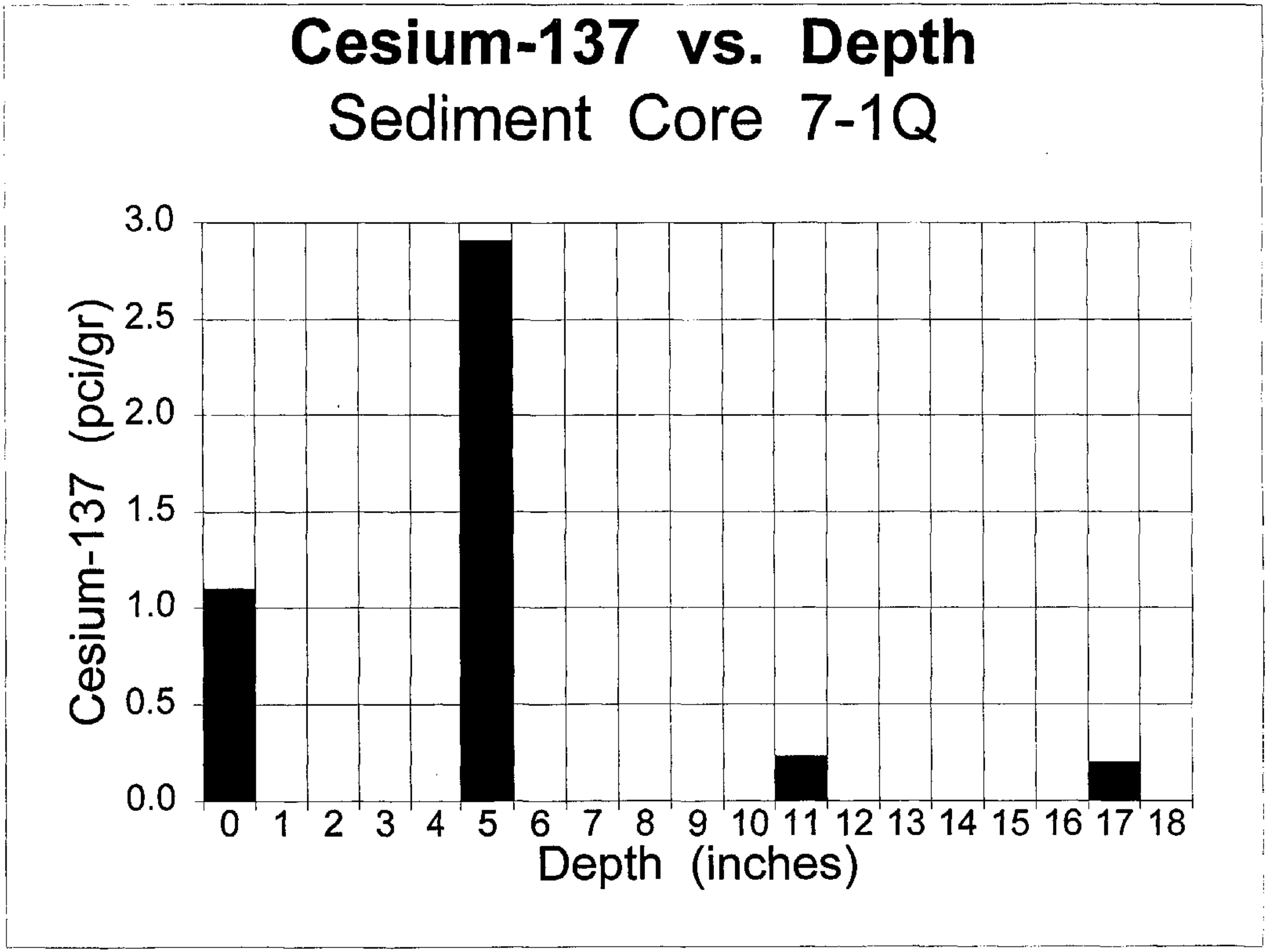

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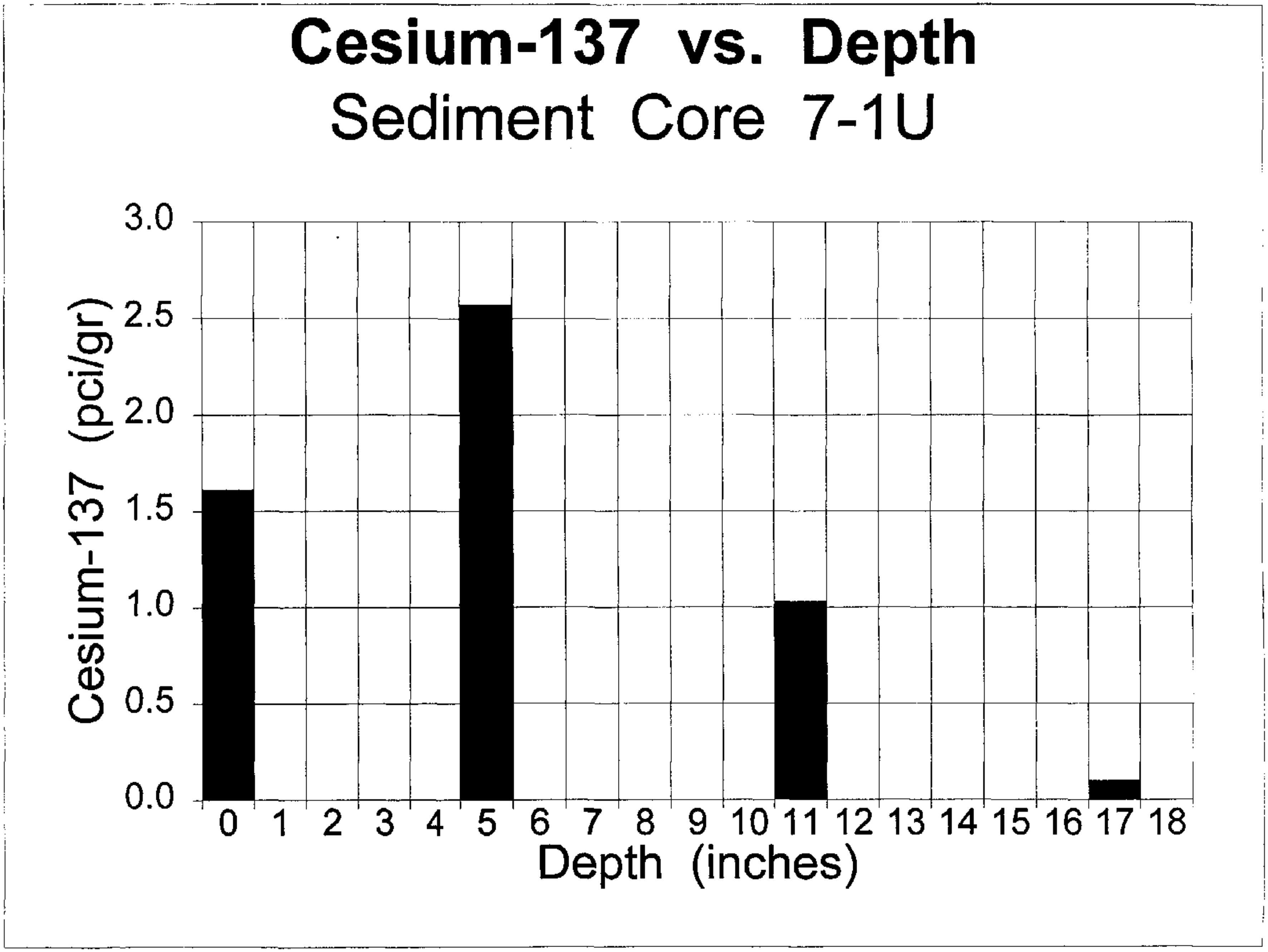

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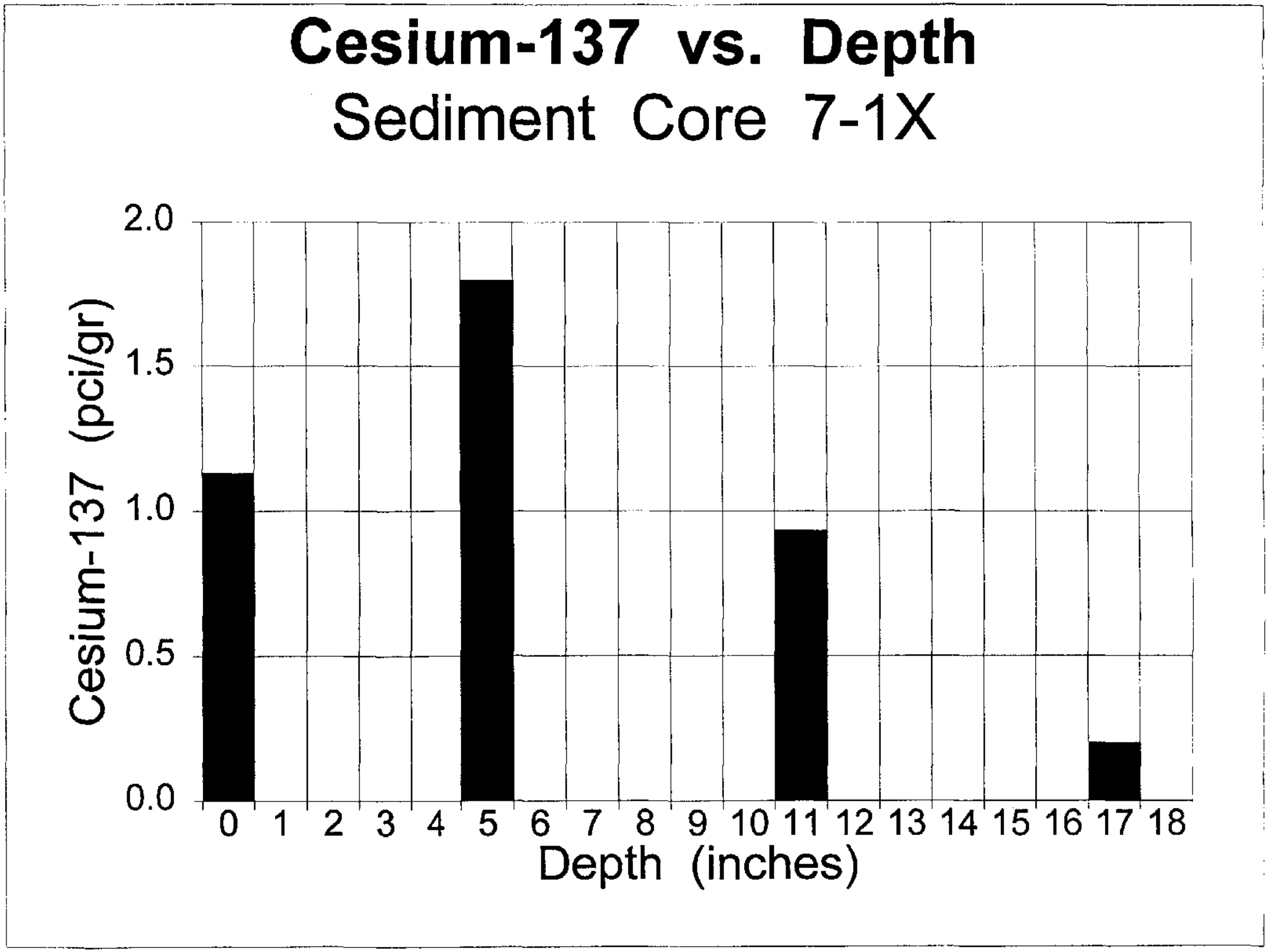

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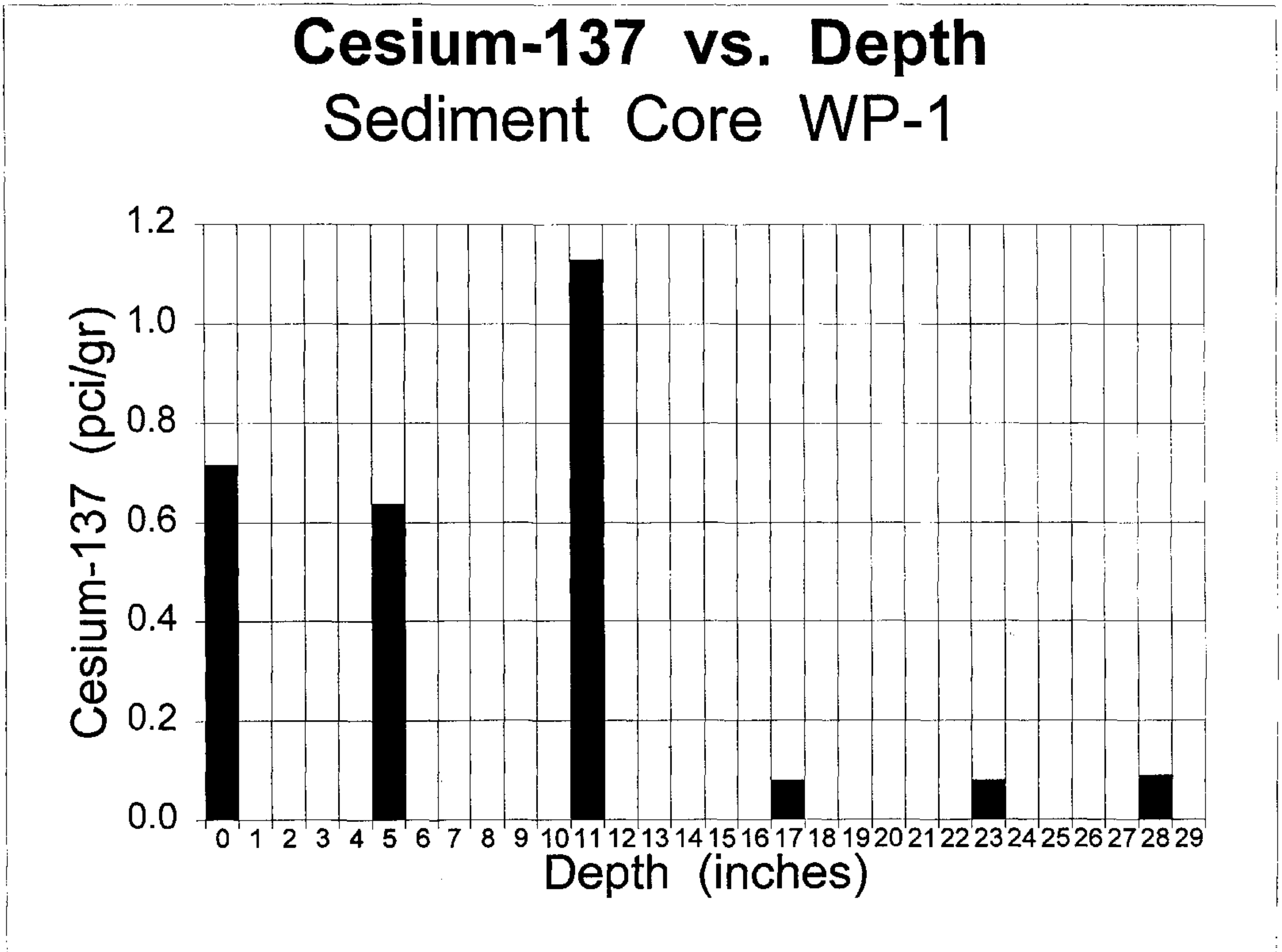

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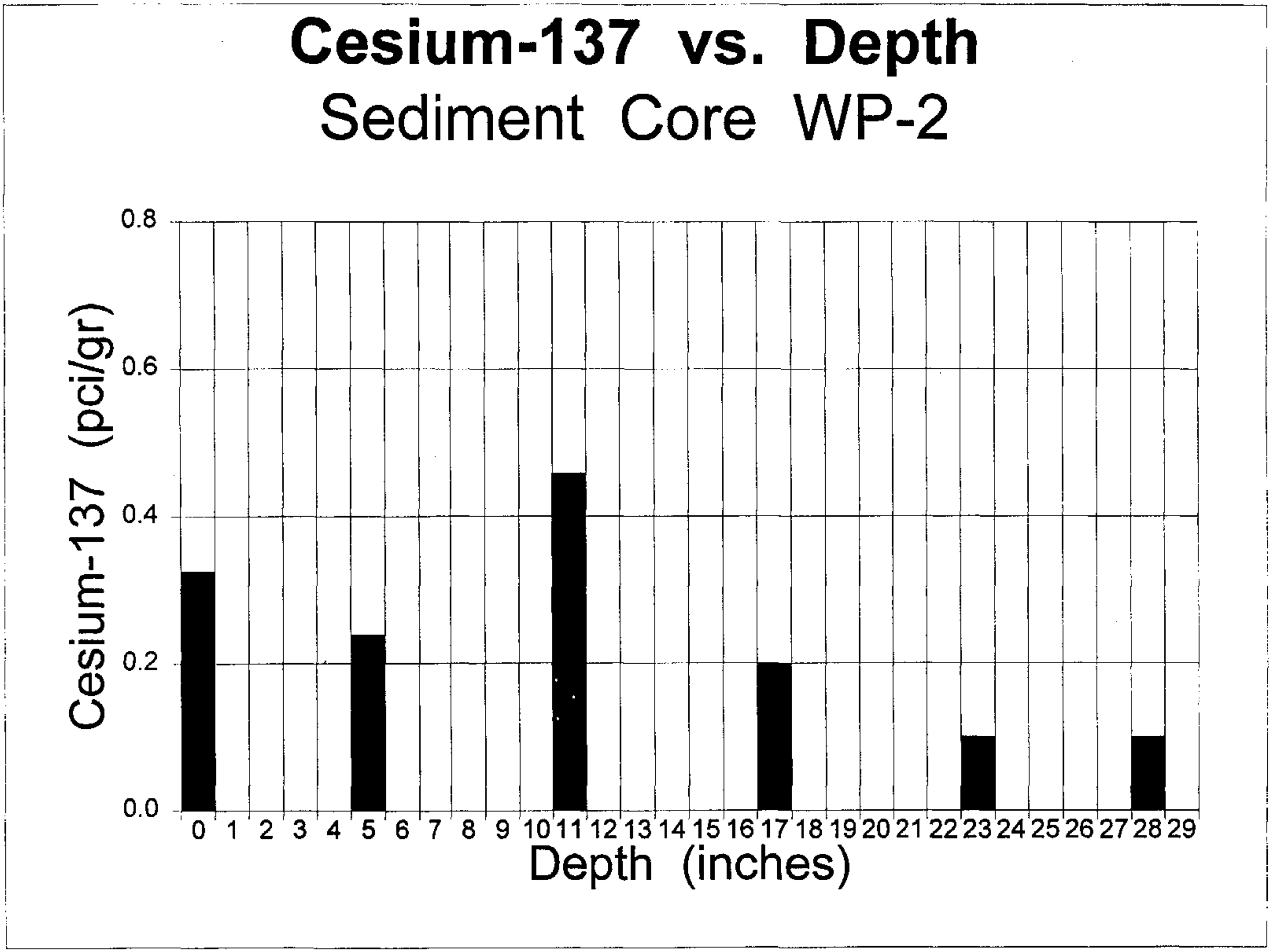

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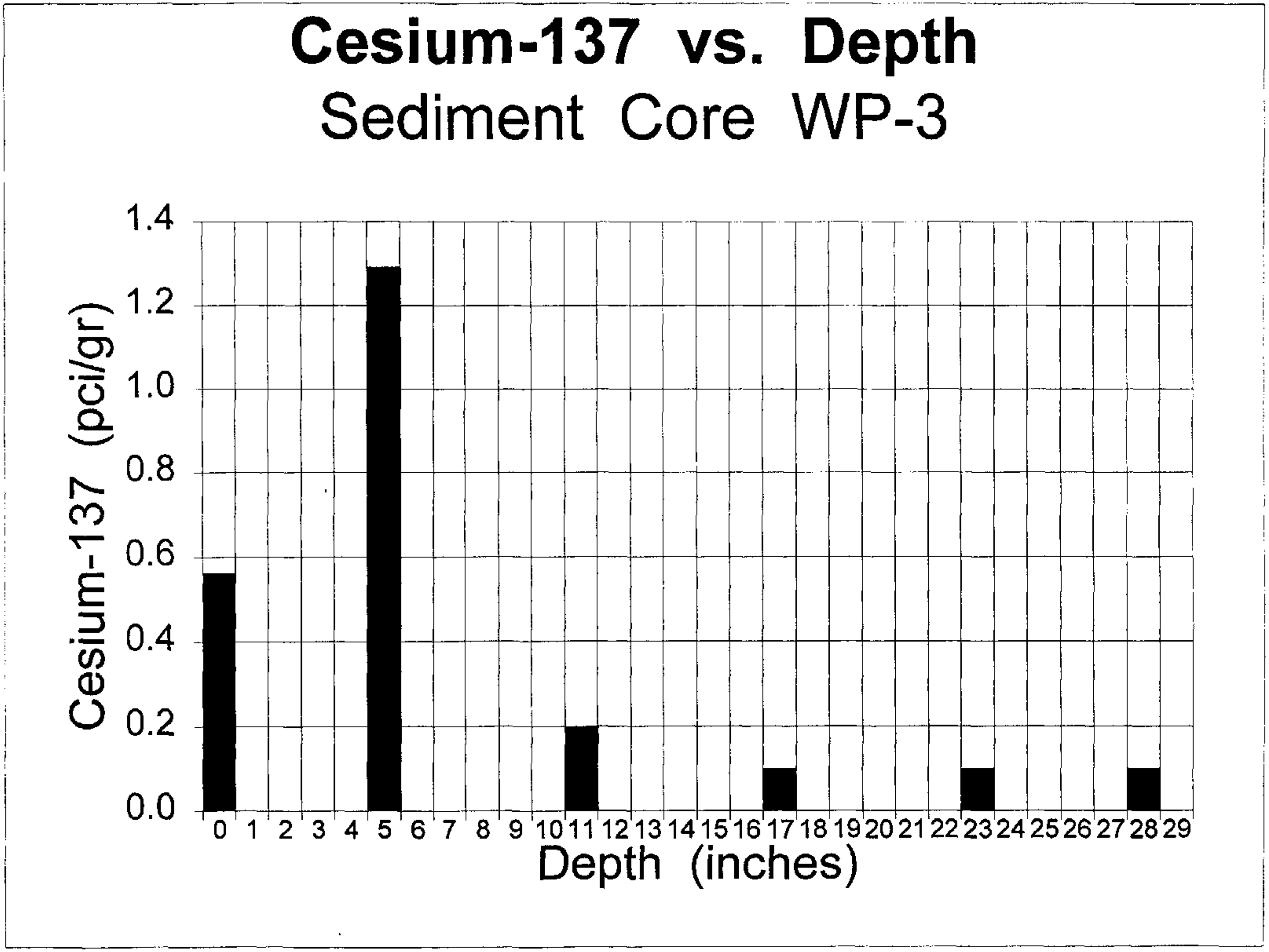

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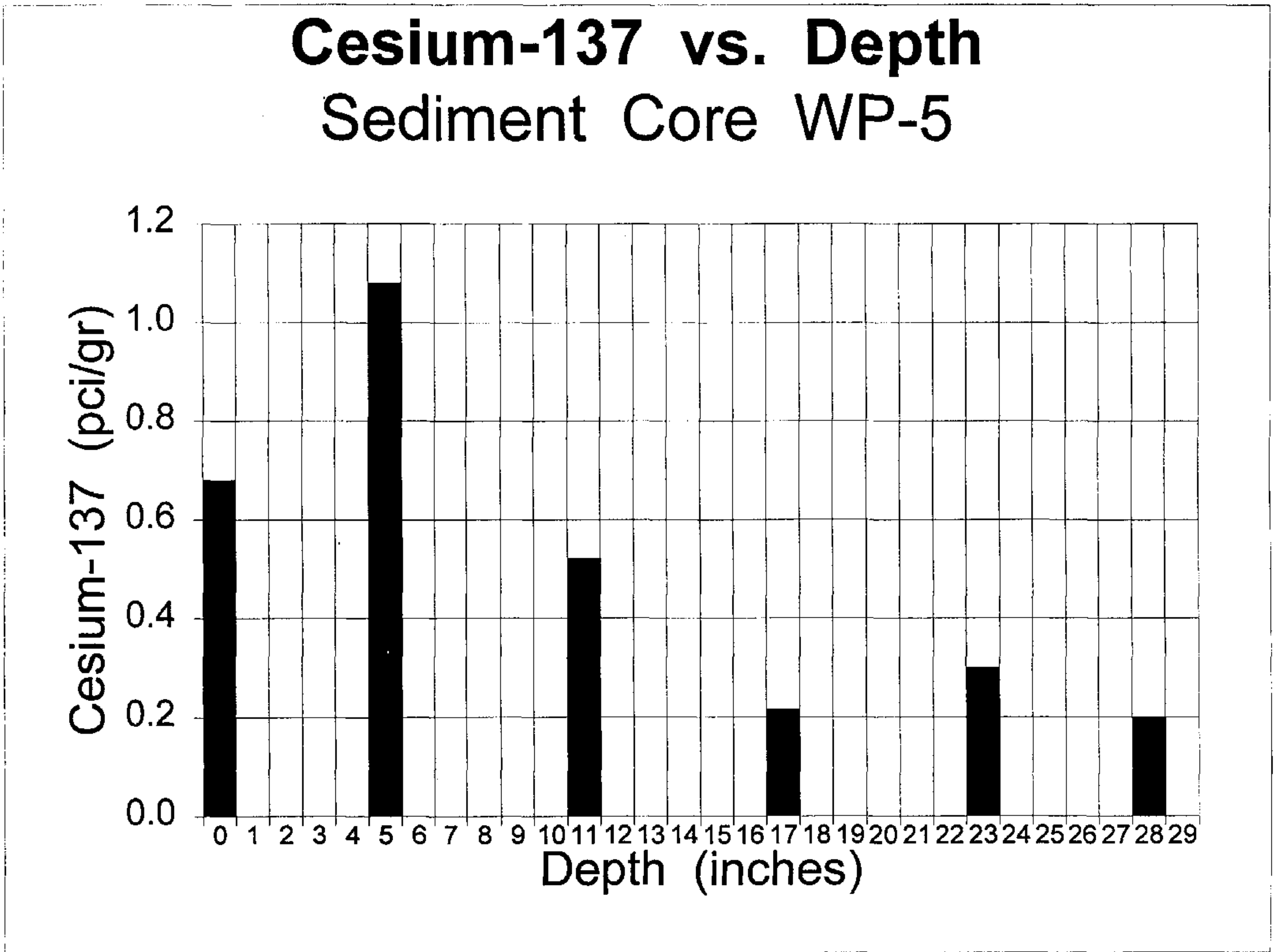

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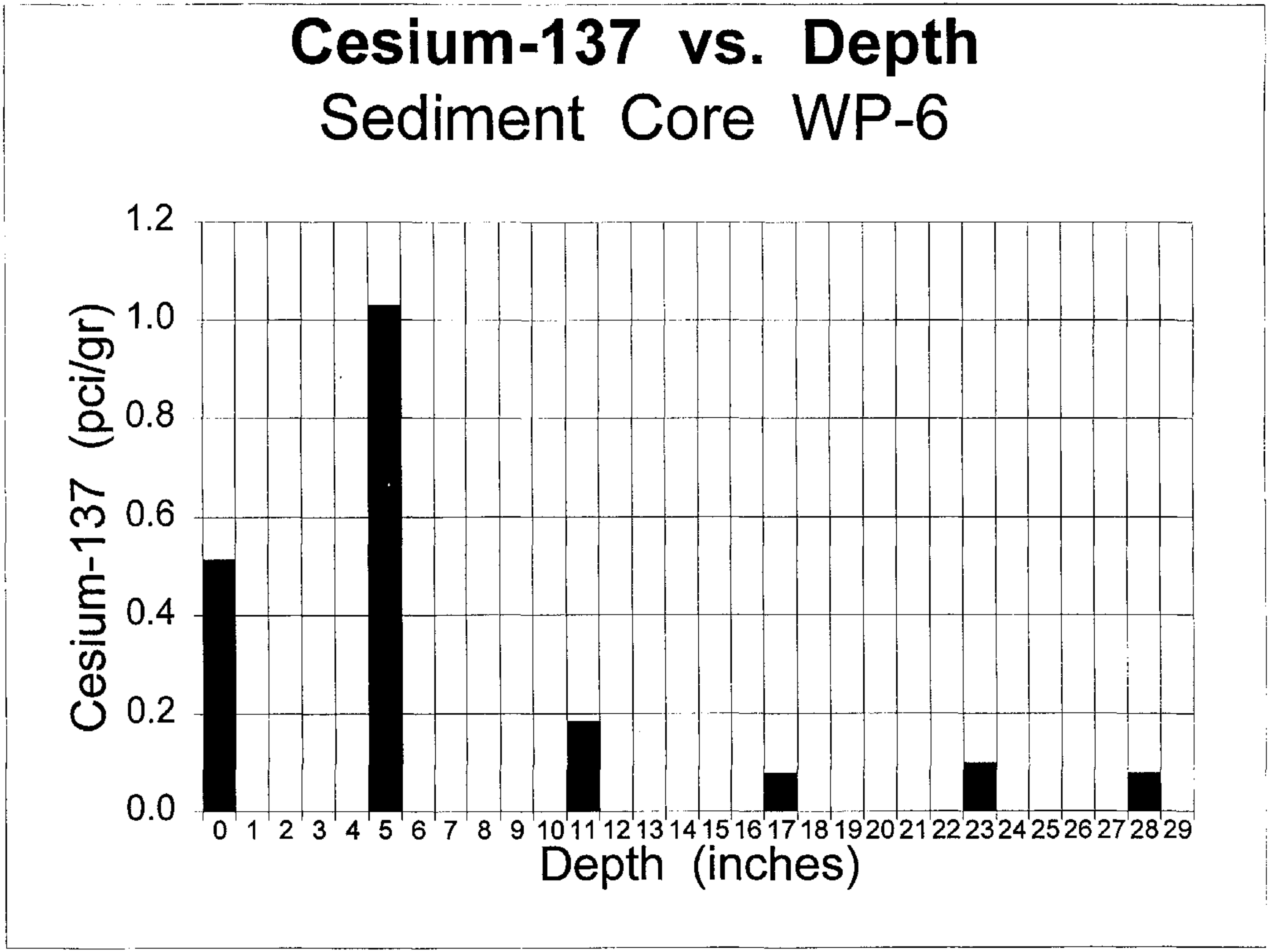
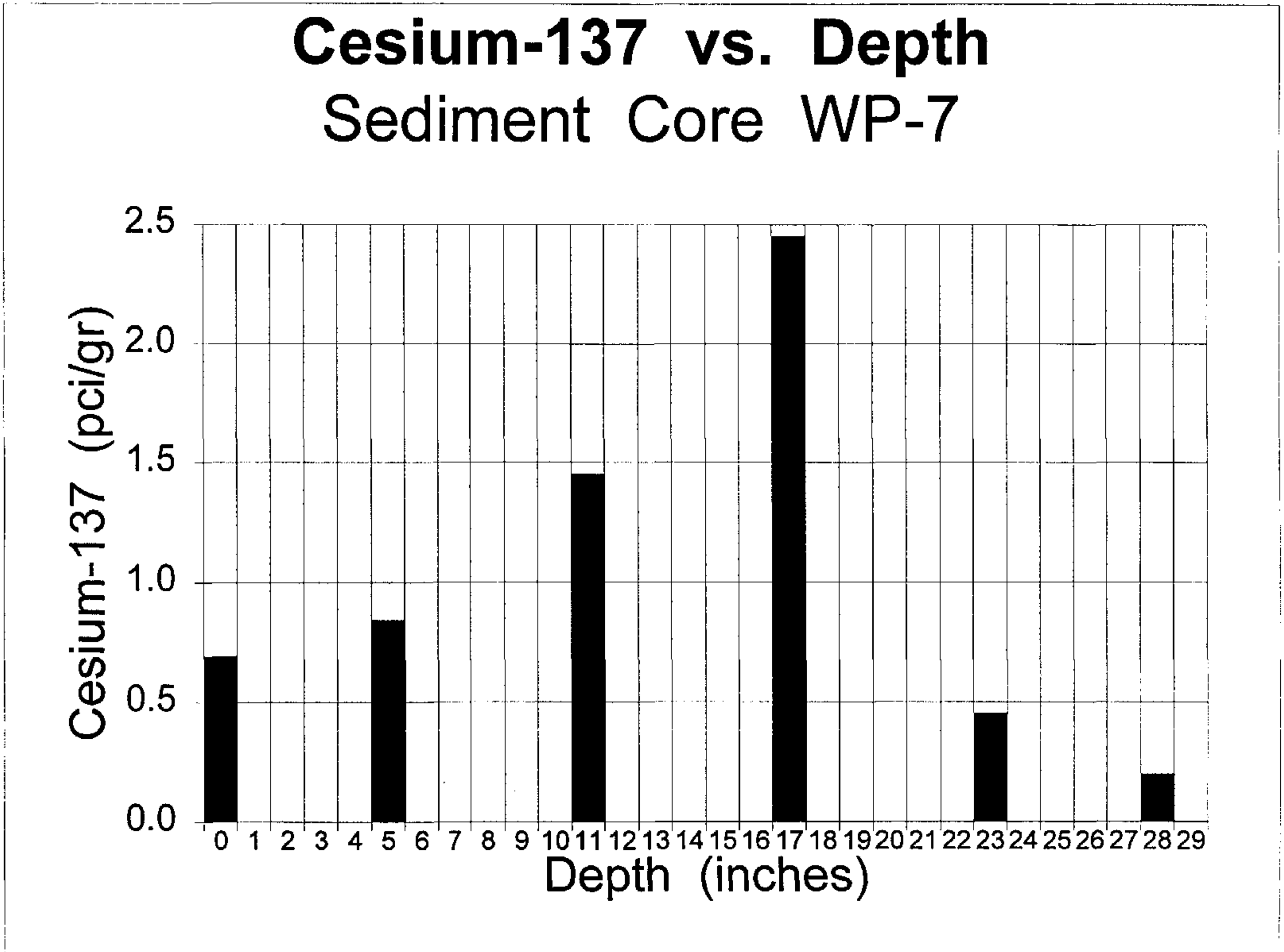


Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.



Note: This profile is for screening purposes only. Additional analyses at this location, if performed, may modify the profile.

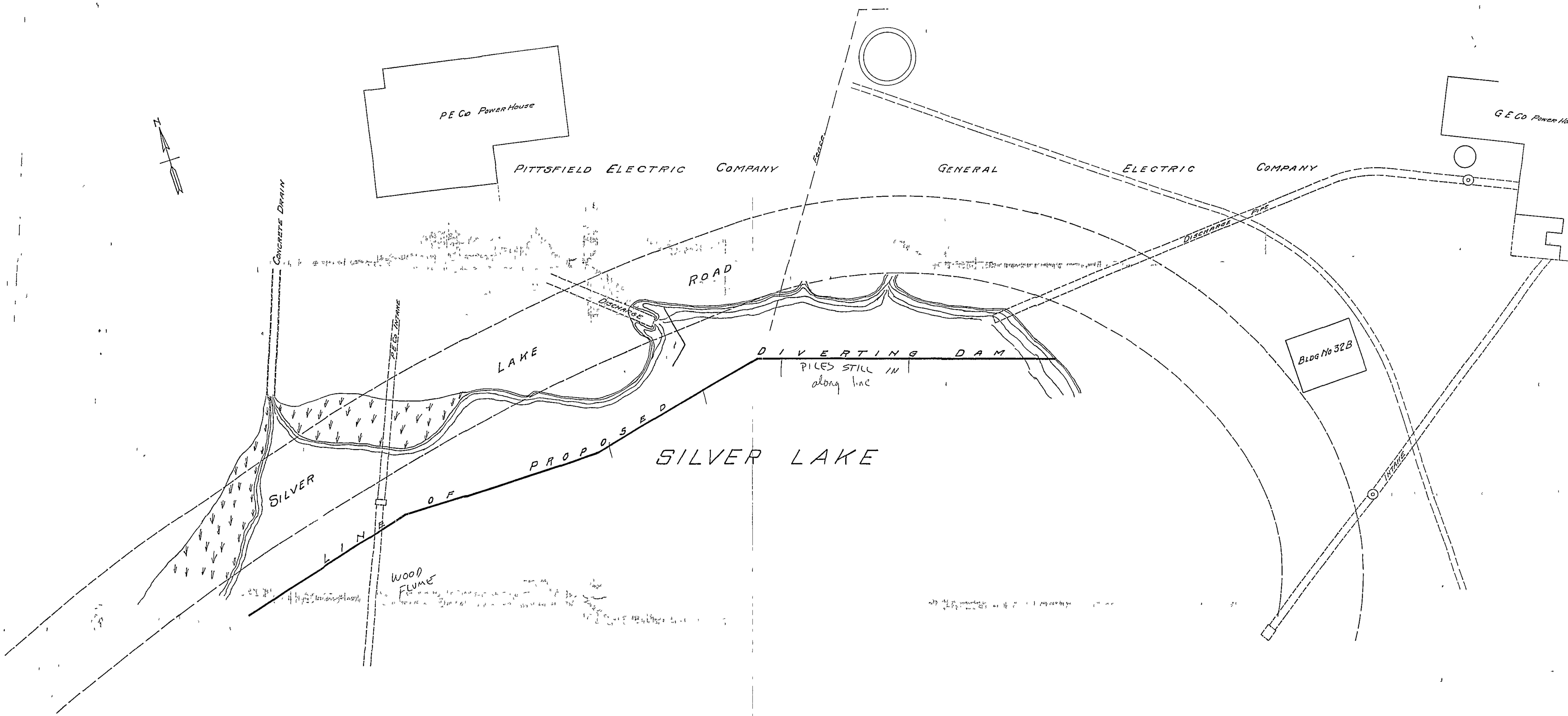
APPENDIX C

APPENDIX C

HISTORICAL SILVER LAKE MAPPING

T-8311407-B
THIRD ANGLE PROJECTION
PILE PLAN
SCALE 1/8"=1'0"
MEAN WATER LEVEL EL -(35 71)
SECTION BB
32 PILES-40-0 LONG
12 PILES-30 0 LONG
PLAN
SECTION YY
SECTION ZZ
DETAIL OF MANHOLE OPNG AND COVER
ONE REQUIRED PER 32'0 SECTION
SECTION BB
SECTION THROUGH PIPES INTAKE
LOCATION PLAN
WOOD FLUME
PROPOSED SLUICE GATE PIT
PEES INTAKE PIPE
CONCRETE
FIN FL ENGINE ROOM BLDG 31 EL -22 15
PROPOSED INTAKE PIPE
PILE PLAN
FIRST MADE FOR BLD 31 - POWER HOUSE
BEGUN BY C.T. Germano
FINISHED BY 5-4-43
GENERAL ELECTRIC WORKS PITTSFIELD
T-8311407-B

1572375

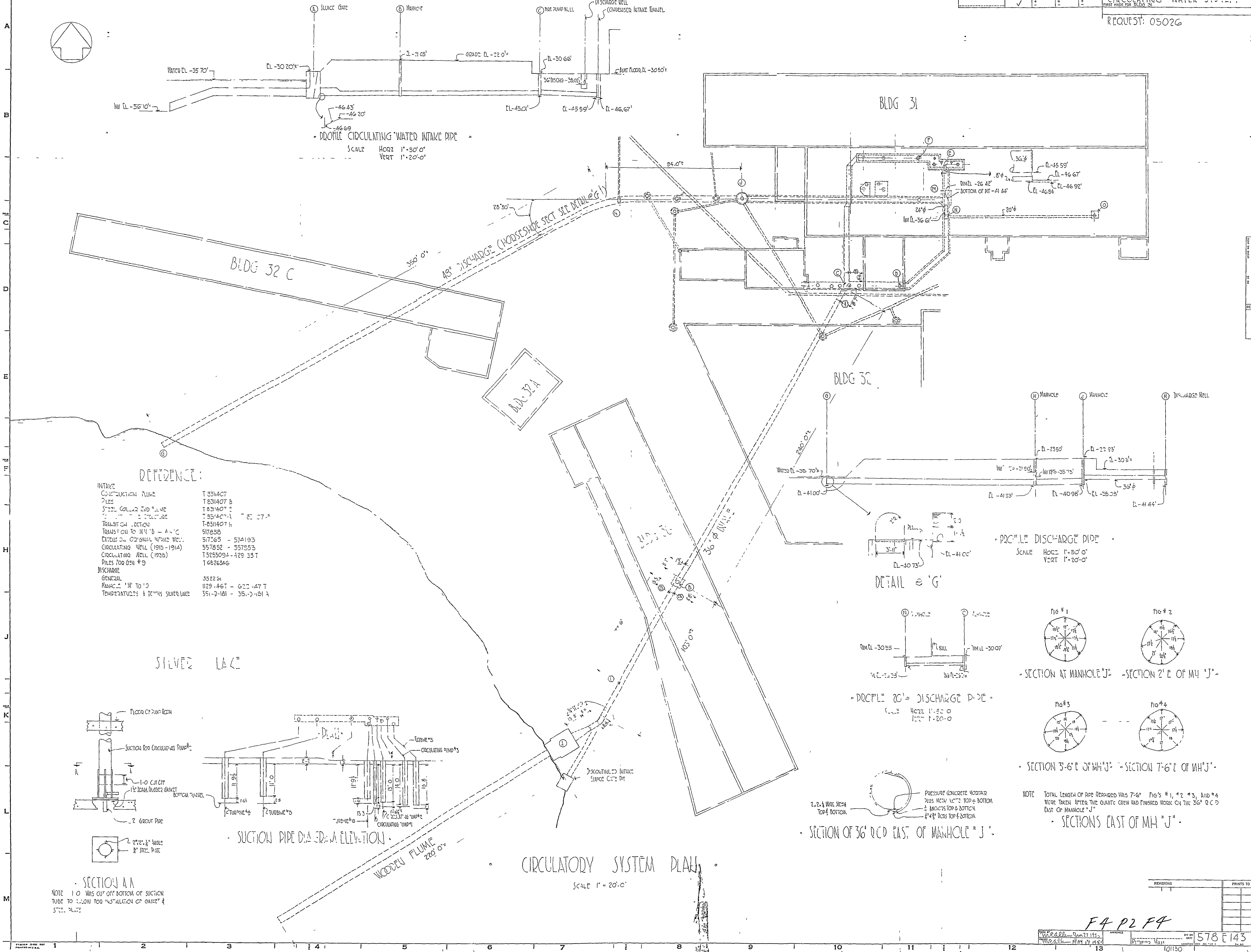


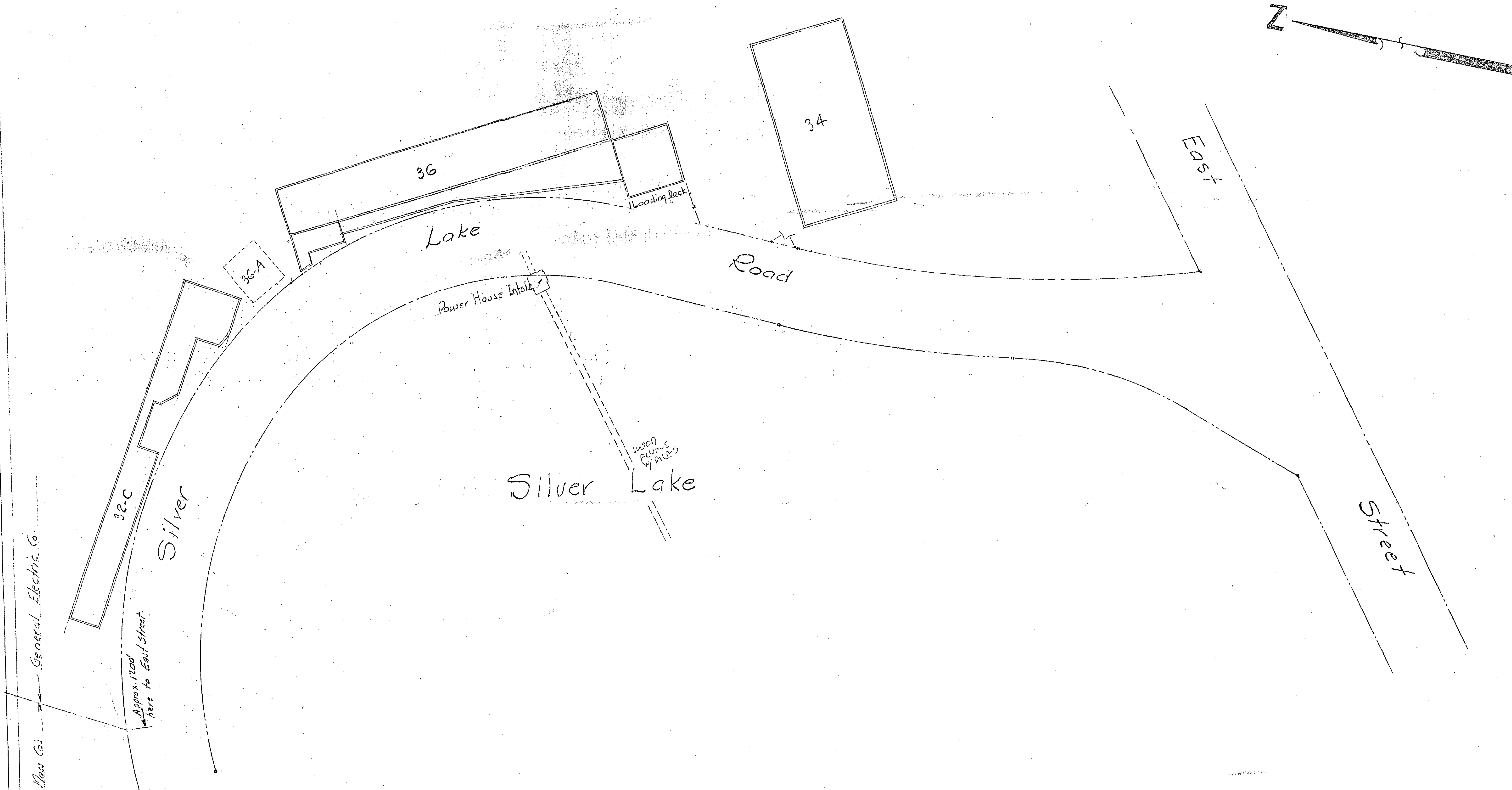
DO NOT DESTRO
RETURN TO BLDGS & GROUND.

GENERAL ELECTRIC CO, PITTSFIELD WORK
PROPOSED HOT WATER CHANNEL IN SILVER LAKE
DRAWN BY A.N.Clark June 2nd 1921
No 1572375
Scale 1"=40

Misc #3

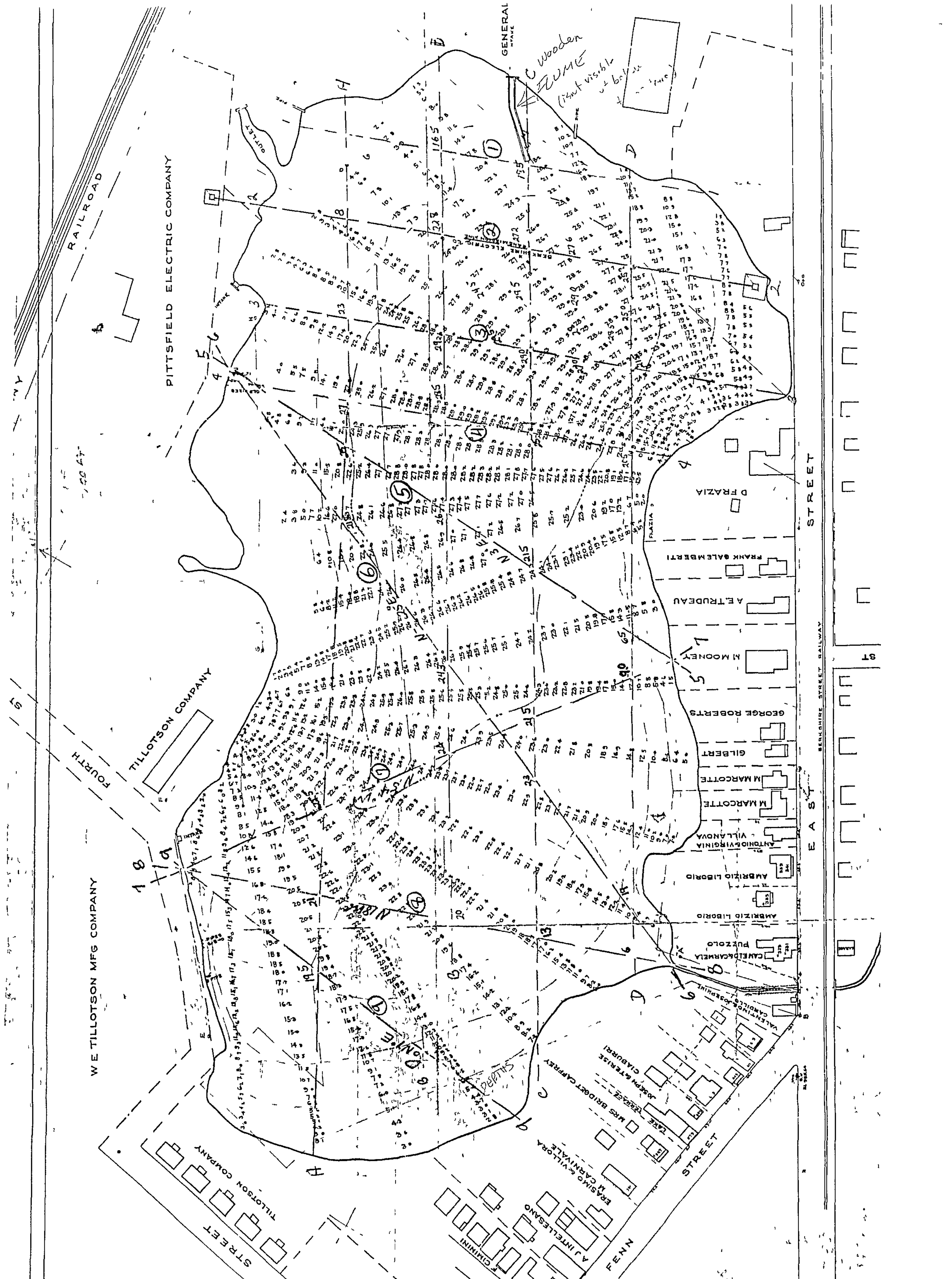
FILE 3 POCKET 13 FC

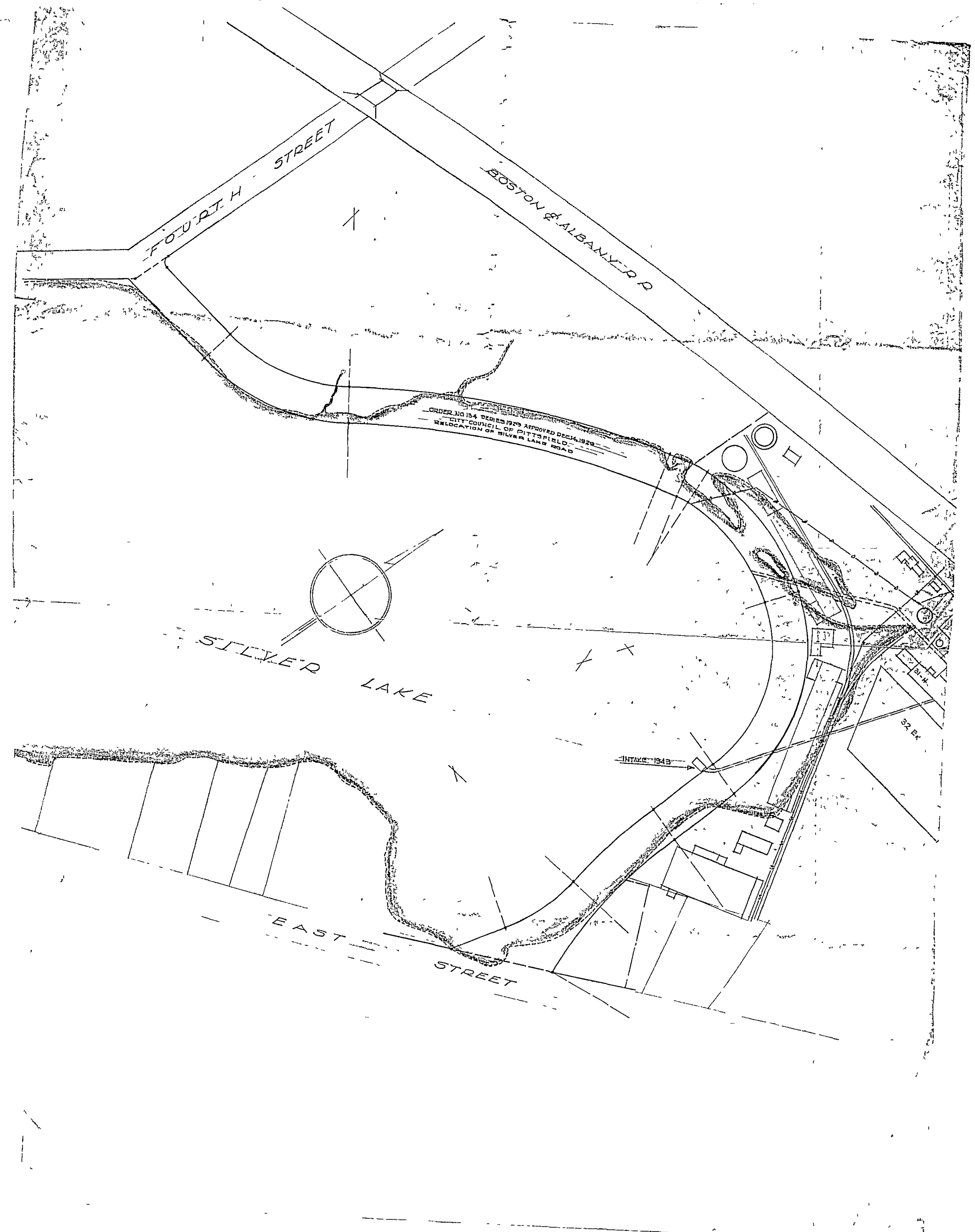

REQUEST: 05026
PROFILE CIRCULATING WATER INTAKE PIPE
SCALE HORZ 1" = 50'0" VERT 1" = 20'0"
SLUICE GATE
MANHOLE
DISCHARGE WELL
CONDENSER INTAKE TUNNEL
BLDG 31
BLDG 32 C
BLDG 32A
BLDG 3C
48" DISCHARGE (HORSESHOE SECT SEE DETAIL @ 'G')
36" ϕ INTAKE
REFERENCE:
INTAKE
DISCHARGE
SILVER LAKE
PROFILE DISCHARGE PIPE
DETAIL @ 'G'
PROFILE 20" DISCHARGE PIPE
SECTION AT MANHOLE "J"
SECTION 2' E OF MH "J"
SECTION 3'-6" E OF MH "J"
SECTION 7'-6" E OF MH "J"
SECTIONS EAST OF MH "J"
SECTION OF 36" RCD EAST OF MANHOLE "J"
DISCONTINUED INTAKE SLUICE GATE PIT
WOODEN FLUME 220'0"
SUCTION PIPE DIAGRAM ELEVATION
SECTION A A
CIRCULATORY SYSTEM PLAN
SCALE 1" = 20'-0"
F4 P2 F4
578 E 143



Scale 1" = 40'

F3 P13 F1


RAILROAD
PITTSFIELD ELECTRIC COMPANY
TILLOTSON COMPANY
W E TILLOTSON MFG COMPANY
FOURTH ST
GENERAL
Wooden FLUME
D FRAZIA
FRANK GALEMBERTI
A E TRUDEAU
M MOONEY
GEORGE ROBERTS
GILBERT
M MARCOTTE
M MARCOTTE
ANTONIO & VIRGINIA VILLANOVA
AMBRIZIO LIBORIO
AMBRIZIO LIBORIO
PUZZOLO
MRS BRIDGET CAFFREY
CIABURRI
M CARNIVALE
A J INTELLESANO
BERKSHIRE STREET RAILWAY
EAST STREET
FENN STREET
STREET


FOURTH STREET
BOSTON & ALBANY R.R.
ORDER NO 154 SERIES 1929 APPROVED DEC 14 1929
CITY COUNCIL OF PITTSFIELD
RELOCATION OF SILVER LAKE ROAD
SILVER LAKE
INTAKE 1948
EAST STREET

NO	DATE	REVISIONS	BY	CK	APVD
2	3 31 64	Added 4KV M/C SNGR W.O. 110555			
1	12-21-48	GENERAL CHANGES TO DATE			

PLAN OF SILVER LAKE PROPERTY

WESTERN MASS. ELECTRIC Co.

ENGINEERING DEPT. DEC 15 1930 PITTSFIELD OFFICE

DRAWN			EST. P.E. 359
TRACED			
CHECKED	C.S.V.N.B.	12-15-30	
APPROVED			

APPENDIX D

APPENDIX D

REPORT ENTITLED "AMBIENT AIR MONITORING FOR PCBS, MAY 10, 1995 THROUGH AUGUST 24, 1995" ZOREX ENVIRONMENTAL ENGINEERS AND BERKSHIRE ENVIRONMENTAL CONSULTANTS, JANUARY 1996

Ambient Air Monitoring for PCB
May 10, 1995 through August 24, 1995

General Electric Company
Pittsfield, MA

Zorex Environmental Engineers, Inc.
247 South Street, 2nd Floor
Pittsfield, MA 01201
(413) 447-7585

and

Berkshire Environmental Consultants, Inc.
152 North Street, Suite 250
Pittsfield, MA 01201
(413) 443-0130

January 1996

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PROJECT SUMMARY

Zorex Environmental Engineers, Inc. has completed additional ambient air monitoring for polychlorinated biphenyls (PCBs) in Lenoxdale, Massachusetts at Woods Pond and in Pittsfield, Massachusetts at Silver Lake and along the Housatonic River. The sampling was conducted as part of continuing Site Assessment activities for General Electric (GE) in Pittsfield, Massachusetts. This sampling program follows two previous ambient PCB air sampling programs: a one year sampling program for ambient PCBs at and around the GE facility conducted from August 14, 1991 to August 20, 1992, and a four month sampling program at and around the GE facility conducted from May 1993 through August 1993. The current ambient air sampling program was conducted to obtain valid and representative ambient air data for the following purposes:

1) to obtain representative data on ambient air levels of PCBs around the water bodies of Silver Lake, Woods Pond and the Housatonic River; and

2) to evaluate the validity of the low volume sampling method and the comparability of the low volume sampling results with results from the high volume sampler.

The ambient air sampling program consisted of eight high volume sampling events between May 10, 1995 and August 24, 1995 and three low volume sampling events on June 24-25, July 9-10, and August 8-9, 1995. Three high-volume samplers were located at or along Silver Lake, Woods Pond, and the Housatonic River. A fourth high-volume sampler, used for determining background PCB concentrations, was located 3.5 miles west of the GE facility at Berkshire Community College. Low-volume sampling was conducted at two elevations at the Silver Lake site. Meteorological data from an on-site weather station were collected concurrently with the ambient PCB data.

The ambient monitoring program was conducted in accordance with the Scope of Work for Additional PCB Ambient Air Monitoring, Silver Lake, Housatonic River and Woods Pond for General Electric Company, Pittsfield, Massachusetts, dated June, 1994, and the 1995 Quality Assurance Project Plan (QAPP) for PCB ambient air monitoring.

High-volume samples were collected in accordance with the EPA Compendium Method TO-4. Low-volume samples were collected in accordance with EPA Compendium Method TO-10. Sample extracts were analyzed for seven PCB Aroclors using gas chromatography with electron capture detection (GC-ECD) as described in EPA Method 608. Additional high-resolution analyses using gas chromatography/mass spectrometry (GC/MS) were conducted to confirm Method 608 results.

High volume sampling results show an ambient concentration measured at Silver Lake similar to that previously observed in 1993. The mean spring/summer concentration in 1995 was 0.017 $\mu g/m^3$ as compared with a mean spring/summer concentration of 0.011 $\mu g/m^3$ in 1993. The mean spring/summer ambient PCB concentration along the Housatonic River (Fred Garner Park) and at Woods Pond measured 0.0055 $\mu g/m^3$ and 0.0033 $\mu g/m^3$, respectively. A mean ambient PCB concentration of 0.0012 $\mu g/m^3$ recorded during this 1995 sampling period at Berkshire Community College (BCC) is comparable to concentrations observed at BCC in 1991-92 (<0.0005 $\mu g/m^3$) and 1993 (0.0015 $\mu g/m^3$).

Low volume sampling at Silver Lake was completed at high and low elevations on three sampling days. All of the high elevation, low volume samples were below the low volume detection limit of approximately 0.029 $\mu g/m^3$. The low elevation, low volume samples showed an average concentration above the surface of Silver Lake of 0.078 $\mu g/m^3$. This concentration is approximately one-half of that measured in the same location in 1993.

The sampling and analytical data meet the quality assurance criteria. The data are valid. A comparison of the high volume and low volume data at Silver Lake demonstrates consistent results. Because of a significant difference in detection limits, however, the low volume and high volume methods are not directly comparable.

1.0 INTRODUCTION

Ambient air monitoring for polychlorinated biphenyls (PCBs) was conducted for General Electric Company (GE) around Silver Lake in Pittsfield, Massachusetts, the Housatonic River floodplain in Pittsfield, Massachusetts and at Woods Pond in Lenoxdale, Massachusetts. This additional PCB ambient air monitoring program was conducted as part of on-going investigations of the Housatonic River and Silver Lake pursuant to the Massachusetts Contingency Plan (MCP) and GE's RCRA Corrective Action Permit, under the supervision of the Massachusetts Department of Environmental Protection (MA DEP) and the U.S. Environmental Protection Agency (EPA).

The ambient air sampling program was designed to meet two objectives: 1) to obtain valid and representative ambient air levels of PCBs at locations near Silver Lake, Woods Pond, and the Housatonic River bank between the GE facility and the confluence of the east and west branches of the Housatonic River; and 2) to evaluate the validity of the low volume sampling method and the comparability of the low volume sampling results with results from the high volume sampler.

Ambient air monitoring consisted of eight high volume sampling events beginning on May 10, 1995 and ending on August 24, 1995 and three low volume sampling events on June 24-25, July 9-10, and August 8-9, 1995. Meteorological data from an on-site weather station were collected concurrently with the ambient PCB sampling. All ambient air sampling, field work, sample collection, sample shipment and recordkeeping were completed by Zorex Environmental Engineers, Inc., Pittsfield, Massachusetts. The samples were analyzed by Quanterra Environmental Services in Knoxville, Tennessee.

This final report presents a summary of all ambient air analytical results, sampling activities, quality assurance/quality control objectives, laboratory data sheets, meteorological data, and conclusions regarding the sampling objectives.

2.0 AMBIENT AIR SAMPLING PROJECT DESCRIPTIONS

2.1 Ambient Air Sampling Program

2.1.1 High-Volume

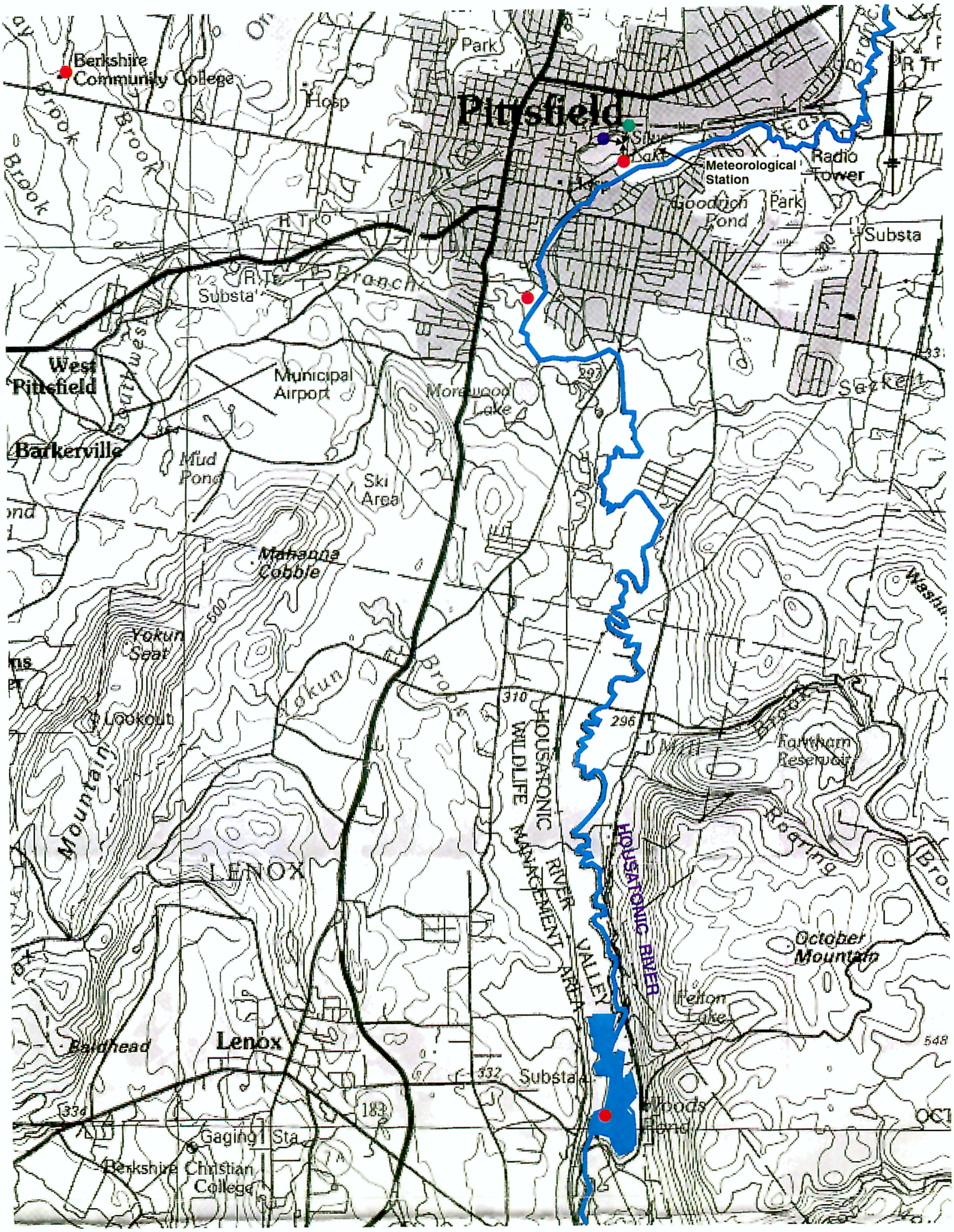
Ambient air sampling for PCBs was completed using high-volume samplers at four sampling sites. Three of the monitors were sited at or along open waterways near or downriver from the GE Pittsfield facility as follows: 1) the eastern shore of Silver Lake, Pittsfield; 2) the Biological Treatment Structure on Woods Pond, Lenoxdale; and 3) the west bank of the Housatonic River in Fred Garner Park, Pittsfield. A fourth monitor was located on the grounds of Berkshire Community College (BCC), approximately 3.5 miles west of the GE facility. For data quality assessment, a fifth monitor was co-located at the Silver Lake site. The locations of the monitoring stations are presented below and are shown in Figure A.

Sampling Location	MCP Site
Silver Lake	Silver Lake
Silver Lake (Co-located)	Silver Lake
Fred Garner Park	Housatonic River
Woods Pond	Housatonic River
Berkshire Community College (Background)	Background

High volume samples were collected using General Metal Works PS-1 samplers in accordance with EPA Method TO-4 summarized below in Section 2.2.1. The sampler inlets were approximately two meters above ground level. Samples were collected every fifteen days beginning May 10, 1995, and ending August 24, 1995 for a total of eight sampling events.

2.1.2 Low-Volume

Low-volume sampling was completed at two elevations at the Silver Lake site. One low volume sampler was placed at a high elevation (approximately two meters high), similar to the high volume monitors at that site, and the other approximately one feet above the surface of the water (Silver Lake) at this site. The purpose of these low volume samplers was to collect data for comparison to the high volume data and thus to evaluate the validity of the low volume sampling technique used at this and other sites near the GE facility in the past and to evaluate the comparability of the low volume data with the high volume data. A set of



LEGEND

- HIGH-ELEVATION, LOW-VOLUME AIR MONITORING LOCATION
- LOW-ELEVATION, LOW-VOLUME AIR MONITORING LOCATION
- HIGH-ELEVATION, HIGH-VOLUME AIR MONITORING LOCATION

NOTES:

1. Base map prepared using Pittsfield, Mass.- New York-Conn. 30x60 USGS Quad. 1986 PI 1989.
2. Sampling locations are approximate.

1 0 1 2

APPROXIMATE SCALE 1" = 1 MILE

12/95 D54-JVM
10197080/10197N07 CDR

GENERAL ELECTRIC COMPANY
PITTSFIELD MASSACHUSETTS

AIR MONITORING LOCATION PLAN

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE A

co-located low volume monitors at the high and low elevations was also installed at the Silver Lake site as a precision check on the primary samplers. Silver Lake has known elevated PCB concentrations suspected of contributing to previously monitored levels of ambient PCBs. The Silver Lake site was also monitored at high-elevations (2-6 meters) as described in Section 2.1.1 above. The locations of the low volume monitoring station are shown in Figure A.

Low-volume samples were collected in accordance with EPA Method TO-10 described below in Section 2.2.2. Samples were collected on June 24-25, July 9-10, and August 8-9, 1995 for a total of three 24 hour sampling events.

2.2 Ambient Air Sampling Methods

2.2.1 High-Volume Methods

A 24-hour sample was collected from 7 a.m. to 7 a.m. on each sampling day at each of the high-volume sampling sites. The samples were collected according to the U.S. EPA Compendium Method TO-4, Method for the Determination of Organochlorine Pesticides and Polychlorinated Biphenyls in Ambient Air. This method employs a General Metal Works PS-1 modified high-volume sampler consisting of a glass fiber filter with a polyurethane foam (PUF) backup absorbent cartridge. The sampler inlet was located 2-6 meters from the ground. Ambient air was drawn through the cartridge at a rate of 200-280 liters per minute for 24-hours. The total air volume collected for each sample was approximately 370 standard cubic meters.

The samplers were monitored at six-hour intervals over the 24-hour sampling period. At the end of the sampling period, the sampling modules containing the fiber filters and PUF adsorbents were removed from the samplers. Each glass fiber filter was placed in a glass petri dish and each PUF adsorbent (inside a glass cartridge) was wrapped in hexane rinsed aluminum foil. Each fiber filter and PUF adsorbent set was labeled as one sample. The samples were wrapped, packaged in blue ice and sent under chain of custody to the Quanterra Environmental Services Laboratory in Knoxville, Tennessee for analysis.

2.2.2 Low-Volume Methods

A 24-hour low volume air sample was collected from 7 a.m. to 7 a.m. on three separate occasions at the low-elevation and high-elevation low-volume sampling sites. The samples were collected according to the U.S. EPA Compendium Method TO-10, Method for the Determination of Organochlorine Pesticides in Ambient Air Using Low-Volume Polyurethane Foam (PUF) Sampling with Gas Chromatography/Electron Capture Detector (GC/ECD). This method employs a low-volume pump controlled by a flow meter which draws ambient air through a polyurethane foam cartridge (PUF) contained in a glass holder. The sampler inlet was located approximately 12 inches from the water level for the low-elevation samplers and approximately 8 feet above the water level for the high-elevation samplers. Ambient air was drawn through the cartridge at a rate of approximately 5 liters per minute for 24-hours. The total air volume collected for each sample was approximately 7.0 standard cubic meters.

The samplers were monitored at six-hour intervals over the 24-hour sampling period. During these six-hour checks, barometric pressure, temperature, flow and magnehelic pressure readings were taken. When necessary, the air flow was adjusted to the target flowrate. At the end of the sampling period, the PUF cartridges were removed from the sampling train. Each PUF cartridge (inside a glass holder) was wrapped in hexane rinsed aluminum foil. The PUF samples were labeled, wrapped, packaged in blue ice and sent under chain of custody to the Quanterra Environmental Services Laboratory in Knoxville, Tennessee.

2.3 Analytical Methods

2.3.1 Method 608

The PCBs in both the high and low-volume samples were recovered by Soxhlet extraction with 5% ether in hexane. The extracts were reduced in volume using Kuderna-Danish (K-D) concentration techniques and subjected to column chromatographic cleanup. The extracts were analyzed for PCBs using gas chromatography with electron capture detection (GC-ECD), as described in EPA Method 608.

Quanterra Environmental Services analyzed the samples for the following individual PCB Aroclors: PCB-1016, PCB-1221, PCB-1232, PCB-1242, PCB-1248, PCB-1254, and PCB-1260.

The quantities of PCBs in each sample were reported by Quanterra Environmental Services as a specific Aroclor in μg/PUF above the analytical detection limit of 0.2 μg/PUF. These quantities were divided by the standard air volume sampled to provide ambient concentrations in micrograms per cubic meter ($\mu g/m^3$).

2.3.2 High-Resolution

For confirmation of the results from Method 608, some high-volume samples were split and analyzed by both Method 608 and high-resolution gas chromatography/mass spectrometry (GC/MS). A total of 10 high-volume samples was sent for high-resolution analysis. The high-resolution analyses were completed by Quanterra Environmental Services, Knoxville, Tennessee. The quantities of PCBs in each sample were reported for each PCB isomer group in μg/sample above the analytical detection limit. The individual isomer groups were also summarized for each sample and reported as total PCBs.

2.4 Project Detection Limits

The PCB project detection limit for high-volume samples is 0.0005 $\mu g/m^3$, based on a laboratory detection limit of 0.2 μg/PUF for an average 24-hour air volume of 370 m^3. The project detection limit for low-elevation samples is 0.029 $\mu g/m^3$ based on a laboratory detection limit of 0.2 μg/PUF for an average 24-hour air volume of 6.8 m^3.

2.5 Meteorological Data

An on-site weather station was installed in East Street Area 2 at the GE facility in July 1991 to continuously record meteorological data concurrently with sampling. The Climatronics Electronic Weather Station (EWS) measures and records, every 15 minutes, wind speed, wind direction, wind standard deviation, precipitation, relative humidity, temperature and integrated solar radiation. The location of the weather station is identified on Figure A.

The station was installed and continues to operate in accordance with EPA guidance contained in On-Site Meteorological Program Guidance for Regulatory Modeling Applications, U.S. EPA, June 1987 and the Quality Assurance Plan for Meteorological Monitoring Station at General Electic Company, Pittsfield, Massachusetts. The siting of the meteorological station was approved by MA DEP in May 1991. The meteorological station has been successfully audited by DEP.

2.6 Quality Assurance/Quality Control

The objective of the Quality Assurance Project Plan is to ensure that the data collected on ambient levels of PCB were adequate to meet the objective of the monitoring program and the intended uses of the data. The following procedures were carried out to assure quality in the design and implementation of the monitoring program.

- The sampling and analytical procedures were conducted in accordance with EPA Compendium Method TO-4, EPA Compendium Method TO-10 and EPA recommended guidelines.

- All phases of the sampling program were adequately documented. Documentation was maintained to evidence the validity of calibrations, sample collection, flow calculations, sample custody, analytical performance, data reduction and audit procedures. A record book has been maintained to identify and reconstruct sampling events, calibration procedures, maintenance and repair activity, and other related information.

- The GE Project Manager was kept informed of sampling activity with update memoranda.

2.6.1 Calibrations

Calibrations for all sampling equipment were conducted in accordance with the schedules and procedures specified in the EPA High Volume Reference Method TO-4 and Method TO-10. All data and calculations for the calibrations are maintained in a calibration log file.

2.6.2 Quality Control

The following internal quality control checks were performed on each high-volume sampler:

- A one-point calibration check of the calibrated flow rate versus sampler magnehelic pressure indication was performed on each sampler before and after each sampling event;

- A zero check on the samplers' pressure gauges was verified before and after each sampling event;

- A leak check was performed on each sampler before and after each sampling event;

- A recording and adjustment of the sampler pressure indicator was undertaken to maintain a constant rate flow at six-hour intervals during the sampling event; and

- One additional sampler was located at Silver Lake as a sampling precision check. The ambient PCB data from the co-located sampler were used to verify the precision of the primary sampler.

The following internal quality control checks were performed on each low-volume sampler:

- A zero check on the samplers' pressure gauges was verified before and after each sampling event;

- A leak check was performed on each sampler before and after each sampling event;

- A recording and adjustment of the sampler's pressure indicator and flowmeter reading was undertaken to maintain a constant rate flow at six-hour intervals during the sampling event; and

- Two additional samplers, one at high elevation and one at low elevation, were located at Silver Lake as a sampling precision check on the primary sampler. The ambient PCB data from the co-located samplers were used to verify the precision of the primary sampler.

The following quality control measures were performed in both the high and low volume sampling to insure the integrity of the ambient air samples:

- One PUF from each batch of 21 PUFs was extracted by Quanterra Environmental Services before the batch was shipped from Quanterra. The PUF was analyzed as a blank check for PCBs for that batch. The blank control limit was the detection limit. Each set of PUFs used for sampling was verified using this method.

- One PUF field blank was transported with the samples to and from the field and was handled as all of the other PUFs, except no air was drawn through it. The PUF was shipped along with the samples to the laboratory for analysis. The analysis of the high volume field blank for the May 10-11, and the August 23-24, 1995 sampling events showed that the field blank PUFs for these two events contained PCB levels of 0.2 μg and 0.29 μg, respectively. The ambient air PCB concentrations were adjusted to reflect this level of contamination. The field blanks for the remaining sampling events analyzed by Quanterra were verified blank.

- All samples were labeled and transported under chain-of-custody by Federal Express to Quanterra Environmental Services. At Quanterra, the samples were recorded and handled according to strict chain-of-custody outlined in the SOP provided in the Quality Assurance Project Plan (QAPP) for this project.

2.6.3 Data Validation

All sampling data recorded in the field and flow calculations based on the field data were verified by the Project Manager before final recording. Calibration charts for flow calculations were validated by the Project QA Manager.

Quanterra Environmental Services has documented procedures for data validation of analytical results. These procedures comply at a minimum with the requirements in Method TO-4, Method TO-10 and associated references. These were submitted as part of the QAPP. Analytical results and laboratory validation procedures were reviewed by the Zorex Project Manager.

2.6.4 Meteorological Data

The meteorological station was installed and operates in accordance with the standard operating procedures recommended by the manufacturer, Climatronics Corporation. Additional EPA guidance is contained in <u>On-Site Meteorological Program Guidance for Regulatory Modeling Applications</u>, U.S. EPA, revised February 1993. The meteorological station is operated in accordance with the <u>Quality Assurance Plan for Meteorological Monitoring Station at General Electic Company, Pittsfield, Massachusetts</u>. The siting of the meteorological station was approved by MA DEP in May 1991. The MA DEP conducted a Quality Assurance audit of the station in August 1993.

3.0 ANALYTICAL RESULTS

3.1 Ambient PCB Concentrations

3.1.1 Results

Ambient 24-hour concentrations of total PCBs in $\mu g/m^3$ from high-volume samples collected between May 10, 1995 and August 24, 1995, for each of the monitoring locations are presented in Table 1. Ambient 24-hour concentrations of total PCBs in $\mu g/m^3$ from low-volume samples collected on June 24-25, July 9-10 and August 8-9, 1995 for the Silver Lake monitoring location are presented in Table 2. In both of these tables, the Method 608 analytical results are presented without parentheses, while the high-resolution analytical results for those samples that were subjected to high-resolution analysis are shown in parentheses. (The two methods are compared in Section 3.1.2.) In computing the average site concentrations for the May - August sampling period, non-detect (ND) measurements were assumed for the purposes of this report to be one half the detection limit (per EPA Guidance in Air/Superfund National Technical Guidance Study Series. Volume 4, Procedures for Dispersion Modeling and Air Monitoring for Superfund Air Pathway Analysis. U.S. EPA, July 1989).

3.1.2 Comparison of Method 608 and High-Resolution Analysis

Method 608 is the specified analytical method for the EPA TO-4 PCB sampling procedure. It is not a compound-specific method, but quantifies PCB as Aroclors by matching a pattern of peaks on a chromatogram with a known standard. The total PCBs in a sample are quantified as the Aroclor which most closely matches the peak pattern. It is a visual method subject to interpretation by the analyst. In addition, the quantification of PCBs using Method 608 chromatograms is further complicated by the potential for non-PCB compounds with similar retention times as PCB isomers being interpreted as PCB isomers. Thus, Method 608 tends to provide a very conservative quantification of total PCBs in the sample.

TABLE 1
24-HOUR HIGH-VOLUME AMBIENT PCB CONCENTRATION IN $\mu g/m^3$[1]
METHOD 608 (HIGH RESOLUTION)[2]

DATE	WOODS POND	FRED GARNER PARK	SILVER LAKE	SILVER LAKE (Co-Locator)	BCC
May 10-11, 1995	0.0022[3]	0.0021[3]	0.0023[3]	0.0038[3]	0.00053[3,4]
May 25-26, 1995	0.0040	0.0035	0.011	0.011	ND
June 9-10, 1995	0.0030	0.0041	0.013	0.011	ND
June 24-25, 1995	0.0062(0.0042)	0.0092(0.0083)	0.020(0.035)	0.018(0.027)	0.0022(0.0011)
July 9-10, 1995	0.0021	0.0062	0.019	0.018	0.0011[4]
July 24-25, 1995	0.0057(0.0042)	0.012(0.010)	0.036(0.034)	0.032(0.036)	0.0027(0.0012)
August 8-9, 1995	0.001[5,6]	ND	0.013[5]	0.012[5]	0.0014[4]
August 23-24, 1995	0.0025[3]	0.0065[3]	0.024[3]	0.0162[3]	0.0006[3,4]
Mean Concentration[7]	0.0033	0.0055	0.017	0.015	0.0012
Max 24-Hour Occurrence Date of Occurrence	0.0062 6/24/95	0.012 7/24/95	0.036 7/24/95	0.032 7/24/95	0.0027 7/24/95
Min 24-Hour Occurrence Date of Occurrence	0.001 8/8/95	<0.0005 8/8/95	0.0023 5/10/95	0.0038 5/10/95	0.0005 5/25/95 - 6/9/95

ND Non-Detect (ND) samples had a detection limit of 0.0005 $\mu g/m^3$ unless otherwise noted.
1 Quantified as Aroclor 1242 and 1254 unless otherwise noted.
2 Results of the Method 608 anlyses are presented without parentheses; results of the high resolution GC/MS analyses (where performed) are presented in parenthesis.
3 The adjusted concentration was determined by subtracting the level of contamination found on the blank from the analytical level found in the samples.
4 Quantified as Aroclor 1242.
5 Higher reporting limit due to interference.
6 Quantified as Aroclor 1254.
7 For averaging purposes, one-half of the detection limit was used for Non-Detect

TABLE 2
24 HOUR LOW-VOLUME AMBIENT PCB CONCENTRATIONS IN $\mu g/m^3$[1]
METHOD 608

DATE	SILVER LAKE High-Elevation	SILVER LAKE (Co-Locator) High Elevation	SILVER LAKE Low-Elevation	SILVER LAKE (Co-Locator) Low-Elevation
June 24-25, 1995	ND[2]	ND[2]	0.086	0.102
July 9-10, 1995	ND[2]	ND[3]	0.042	0.061
August 8-9, 1995	ND[2]	ND[2]	0.107	0.093
Mean Concentration	---	---	0.078	0.085
Max 24-Hour Occurrence	---	---	0.107	0.102
Date of Occurrence	---	---	8/8-9/95	6/24-25/95
Min 24-Hour Occurrence	---	---	0.042	0.061
Date of Occurrence[4]	---	---	7/9-10/95	7/9-10-95

ND Non-Detect (ND) samples had a detection limit (DL) of 0.029 $\mu g/m^3$ unless otherwise noted.

1 Quantified as Aroclor 1254
2 Sample had a detection limit of 0.028 $\mu g/m^3$
3 Sample had a detection limit of 0.029 $\mu g/m^3$
4 "---" Indicates a Non-Detect (ND) was found on more than one date.

Note For averaging purposes, one half of the detection limit (DL) was used for Non-Detect (ND).

High-resolution analysis, unlike Method 608, does not make the assumption of an Aroclor mixture of PCB isomers and allows the identification of true PCB isomers. Each group of PCB isomers (di-'s, tri-'s, etc.) is quantified with an isomer of the same group. For these reasons, this approach results in more accurate quantification of PCB concentrations than does Method 608.

A comparison of the results from the high-resolution analyses with the Method 608 analytical results is presented in Table 3 for all samples for which both types of analyses were performed. That table also lists the percent difference, and an indication of whether the difference was positive (high-resolution results were higher than Method 608 results) or negative (high-resolution results were lower than Method 608 results).

3.1.3 Data Anomalies

As part of the data validation procedures, all of the sampling results were reviewed for trends and characteristic values. Data that appeared to be unusually high, low, or otherwise irregular were flagged for further evaluation. Due to the fact that there were only eight sampling events, it was difficult to identify true data anomalies. No data were flagged for further evaluation.

TABLE 3
HIGH RESOLUTION CONFIRM DATA

DATE	SITE	SAMPLE VOLUME (m^3)	METHOD 608 CONCENTRATION ($\mu g/m^3$)	HIGH RESOLUTION CONCENTRATION ($\mu g/m^3$)	PERCENT DIFFERENCE %
June 24-25,1995	BCC	371.5	0.0022	0.0011	-50.0
	Woods Pond	371.5	0.0062	0.0042	-32.0
	Fred Garner Park	370.2	0.0092	0.0083	-9.8
	Silver Lake	370.1	0.020	0.035	+75.0
	Silver Lake Co-Locator	368.6	0.018	0.027	+50.0
July 24-25, 1995	BCC	365.8	0.0027	0.0012	-56.0
	Woods Pond	371.4	0.0057	0.0042	-26.0
	Fred Garner Park	370.1	0.012	0.010	-17.0
	Silver Lake	354.2	0.036	0.034	-5.6
	Silver Lake Co-Locator	371.5	0.032	0.036	+13.0

"-" Indicates a negative percent diffference
"+" Indicates a positive percent difference

3.2 Meteorological Data

Data from the on-site weather station were summarized and tabulated for each of the sampling days. Table 4 summarizes the mean, maximum and minimum temperatures for each sampling day. Table 5 summarizes the mean, maximum and minimum wind speed for each sampling day. Table 6 presents barometric pressure and total precipitation for each sampling day. The wind speed and wind direction data were combined to produce wind roses for each of the sampling days. The wind roses are presented in Appendix I.

TABLE 4
MEAN, MAXIMUM AND MINIMUM TEMPERATURE (°F)
ON SAMPLING DAYS

DATE	MEAN	MAXIMUM	MINIMUM
May 10-11, 1995	49.73	52.36	47.35
May 25-26, 1995	60.84	68.71	55.91
June 9-10, 1995	63.62	74.60	52.03
June 24-25, 1995	68.46	78.70	58.29
July 9-10, 1995	62.54	70.70	52.44
July 24-25, 1995	73.49	84.80	68.63
August 8-9, 1995	66.73	80.00	52.28
August 23-24, 1995	66.63	74.70	52.79

TABLE 5
MEAN, MAXIMUM AND MINIMUM WIND SPEED (mph)
ON SAMPLING DAYS

DATE	MEAN	MAXIMUM	MINIMUM
May 10-11, 1995	5.50	15.31	2.14
May 25-26, 1995	3.40	8.78	0.99
June 9-10, 1995	3.13	6.35	0.76
June 24-25, 1995	2.36	6.54	ND
July 9-10, 1995	5.18	9.70	0.76
July 24-25, 1995	3.36	11.33	0.77
August 8-9, 1995	2.78	6.67	ND
August 23-24, 1995	3.84	8.46	ND

TABLE 6
AVERAGE BAROMETRIC PRESSURE AND TOTAL PRECIPITATION
ON SAMPLING DAYS

DATE	MEAN PRESSURE (in HG)	TOTAL PRECIPITATION (in)
May 10-11, 1995	28.90	0.03
May 25-26, 1995	29.10	0.03
June 9-10, 1995	29.05	0
June 24-25, 1995	29.03	0
July 9-10, 1995	28.95	0
July 24-25, 1995	29.00	0.26
August 8-9, 1995	29.25	0
August 23-24, 1995	29.00	0

4.0 DATA QUALITY

4.1 Data Quality in Terms of the Data Quality Objectives

To establish appropriate quality assurance procedures for the air sampling and analysis, a Quality Assurance Project Plan (QAPP) was developed and submitted to the MA DEP and EPA. A revised version of the QAPP, dated May 1995, was submitted as a supplement to GE's Sampling and Analysis Plan/Data Collection and Analysis Quality Assurance Plan. The QAPP defined the quality assurance objectives in terms of comparability, completeness, representativeness, precision and accuracy. The QAPP also fully described the organization of the project including the assignment of responsibility for specific quality assurance and quality control procedures to meet the project's quality assurance objectives. The QAPP was developed in accordance with the OTS Guidance Document for the Preparation of Quality Assurance Project Plans, U.S. EPA, 1984, and the Quality Assurance Handbook for Air Pollution Measurement Systems, U.S. EPA, 1976.

4.1.1 Validity

A valid sample was defined as an air sample that was collected over 24-hours, +/- 30 minutes at a rate of 200 - 280 liters per minute. Additionally, a valid sample represented a minimum total collected volume of air of 288 cubic meters. Only samples which met the criteria for validity were used in the calculations for completeness, precision and accuracy.

4.1.2 Representativeness

All samples were collected at the locations approved by the MA DEP and EPA as being representative for the purpose of this study.

4.1.3 Comparability

All measured PCB concentrations were converted to $\mu g/m^3$ for comparison with the standard.

4.1.4 Completeness

Including the co-located sites and trip blanks, there were 40 possible high volume samples and 15 possible low volume samples from the entire monitoring event. Of these, all samples met the criteria for validity as defined in the QAPP. Completeness, therefore, was measured as 100 percent.

4.1.5 Precision

Field sampling precision was measured by samples taken at the co-located samplers. The high-volume co-located sampler was at Silver Lake. The samplers were positioned 2-4 meters apart. The calibration, sampling and analytical procedures for the two samplers were the same as for all samplers. The co-located sampler operated whenever the primary sampler operated.

The low-volume co-located samplers were located at Silver Lake. The samplers were positioned approximately one meter apart. The calibration, sampling and analytical procedures for the two co-located samplers were the same as for the two primary samplers. The co-located samplers were operated whenever the primary samplers were operated.

The average percent difference and standard deviation were calculated in accordance with procedures defined in the QAPP. The calculations were made only with data which were considered hits (i.e. not ND). The calculations are presented in Appendix II. Using this approach, the average percent difference in ambient concentrations between the high-volume co-located sampling sites was 2.0 percent and the standard deviation was 10.8 percent. The average percent difference in ambient concentrations between the low-elevation, low-volume, co-located sampling sites was 16.9 percent and the standard deviation was 20.7 percent. The high-elevation, low-volume co-located samples were all ND. A control limit of variation between the samplers was not specified in the QAPP. The number of sample events for high volume and low volume sampling was eight and three, respectively. This is not a statistically significant number of samples. The standard deviation calculation, therefore, provides little meaning.

4.1.6 Accuracy

One-point calibration checks were conducted before and after each sampling event and were used as a check of flow measurements. The one-point calibration checks on all samplers were within ± 10% deviation of calculated flow values.

4.2 <u>Quality Assurance/Quality Control</u>

Calibrations for all sampling equipment were conducted in accordance with the schedules and procedures specified in the EPA High Volume Reference Method, Method TO-4, and Method TO-10. The calibration orifice calibration was completed by BGI Incorporated of Waltham, MA.

One-point calibration checks of the calibrated flow rate versus sampler magnehelic pressure indication were performed on each sampler before and after each sampling event. The readings were documented.

Six-hour recordings of the sampler pressure indicators, adjusted flowrate, flowmeter readings, temperature readings, and barometric pressure readings were recorded on the high volume and low volume sampling event data sheets. All sampling event data sheets are presented in Appendix III.

All high volume and low volume air flow calculations to determine air flow through the samplers were conducted on air flow calculations sheets, contained in the sampling event file. Copies of all air flow calculation sheets are contained in Appendix IV.

All samples were sent to Quanterra Environmental Services under Chain of Custody/Request for Analysis (COC/RA) by Federal Express. All COC/RA forms and Federal Express Airbills are maintained with the analytical results.

All maintenance activities and repair work done on the samplers were recorded in the maintenance log. Activities involving the Meteorological Station on East Street were recorded in a calibration/maintenance log. All Method Blank check confirmation sheets are maintained together with the analytical data.

4.3 Problems and Disruptions

The following problems and disruptions occurred during the sampling program:

- The generators powering the Silver Lake monitors ran out of gas at approximately 7 p.m. on May 10, 1995. Neither generator was able to be restarted until approximately 9 p.m. on May 10, 1995. The monitors were run for an extra 2.5 hours on May 11, 1995. It was determined that the Silver Lake monitors ran for 25 hours ± 1/2 hour. The samples were recorded as valid samples.

- The on-off timer at the Woods Pond site malfunctioned and the sampler was not able to be started at 7:30 a.m. May 10, 1995 as planned. A new on-off timer was installed and sampling began at 8:00 a.m. on May 10, 1995, ending at 8:00 a.m. on May 11, 1995. The samples were recorded as valid.

- The analysis of the high-volume field blank for the May 10-11, 1995 sampling event showed that the blank PUF contained PCB levels of 0.2 μg. The ambient air PCB concentrations were adjusted to reflect this level of contamination.

- The Woods Pond sampler was not started until 8:00 a.m. on June 24, 1995 because the on-off timer was set incorrectly. The sampler ran until 8:00 a.m. on June 25, 1995 with no other interruptions. The samples were recorded as valid.

- The power supply at Fred Garner Park was not available until 8:10 a.m. on July 9, 1995. The sampler was started at 8:15 a.m. and was run until 8:15 a.m. on July 10, 1995. The samples were recorded as valid.

- The analysis of the high-volume field blank for the August 23-24, 1995 sampling event showed that the blank PUF contained PCB levels of 0.29 μg. The ambient air PCB concentrations were adjusted to reflect this level of contamination.

All of the problems and disruptions listed above were resolved in an expedient manner and to the satisfaction of the GE Project Manager. The problems encountered were not unusual for the type of sampling program undertaken, and they did not affect the quality of the data for the purposes of this study. These problems were considered while assessing the Quality Assurance/ Quality Control techniques performed to assure valid data. All of the data quality objectives defined in the QAPP were met.

5.0 INTERPRETATION OF DATA

5.1 Comparison of Data with 1991-1992 Summer Months and 1993 Summer

1995 PCB concentration data from the high volume and low volume low elevation Silver Lake sites are directly comparable to data collected in the 1993 sampling program. 1995 data from the BCC site are directly comparable with data from the 1991-92 and 1993 sampling programs. Table 7 summarizes a comparison of the 1991-92, 1993 and 1995 sampling studies.

TABLE 7

Comparison Between 1991-92, 1993 and 1995 Sampling Programs

	Average PCB Conc. ($\mu g/m^3$) May-August, 1991-92[1]	Average PCB Conc.($\mu g/m^3$) May-August, 1993	Average PCB Conc. ($\mu g/m^3$) May-August 1995
BCC	<0.0005	0.0015	0.0012
Silver Lake High Volume	NA	0.011	0.015
Silver Lake Low Volume	NA	0.16[2]	0.078[3]

1 Samples collected during months of May, June, July and August in the 1991-1992 year-long study.
2 Average of six sampling events (May - August, 1993)
3 Average of three sampling events (May - August, 1995)

The 1995 ambient PCB concentrations at the background site (BCC) and the Silver Lake high volume site are comparable to concentrations observed in 1995. The concentrations observed at the Silver Lake low volume site in 1995 are approximately one-half that observed in 1993.

5.2 Comparison of High-Volume and Low-Volume Methods

The 1993 study attempted to more accurately identify sources of ambient PCBs. The results of this study were inconclusive partly because of the question of comparability of low volume and high volume sampling results. It was a stated objective of this 1995 sampling program to evaluate the validity of the low volume sampling method and the comparability of the low volume results with results from the high volume sampler.

As noted earlier, the high volume samples were collected in accordance with EPA Compendium Method TO-4. The low volume samples were collected in accordance with EPA Compendium Method TO-10. There is a substantial difference in the PCB detection limits (DL) for these two methods: the low volume TO-10 DL is 0.029 $\mu g/m^3$ and the high volume TO-4 DL is 0.0005 $\mu g/m^3$. This difference is due to the difference in the total volume of air sampled: 6.8 m^3 per sample for low volume and 370 m^3 per sample for high volume.

To evaluate the comparability of the two methods, the scope of work for the 1995 air monitoring program called for the collection of three rounds of low volume air samples at two elevations at the Silver Lake site during the summer of 1995. These three rounds of low volume sampling were conducted on June 24-25, July 9-10 and August 8-9, 1995. One set (primary and co-locator) of low volume samplers was placed so that the inlet was at the same elevation (i.e. the high elevation) as the high volume samplers at this site. A second set of low volume samplers was placed so that the inlet was one feet above the surface of Silver Lake (i.e. the low elevation site). A high volume sampler was not placed and was never intended to be placed at a low elevation because of the sampler configuration and the very large volume of air sampled. Each of the high volume and low volume samplers at the Silver Lake site included a co-located sampler to evaluate precision.

It should be noted that, after all the 1995 air sampling rounds were conducted, GE realized that, although the scope of work had called for three rounds of low volume sampling, the approval letter from the MA DEP and EPA for the proposed investigations of the Housatonic River and Silver Lake (dated September 12, 1994) stated that, in order to determine the comparability of the high volume and low volume data, eight rounds of low volume air sampling should be conducted at the Silver Lake monitoring site concurrent with the eight rounds of high volume sampling. These additional rounds of low volume sampling were inadvertently not scheduled. However, as discussed further below, based on review of the results obtained, it would not seem necessary or useful to conduct additional low volume air sampling.

For the three sampling events for which both high volume and low volume samples were collected, the high volume analytical results for the Silver Lake site are similar to the results obtained for that site during previous ambient air studies. The high elevation, high volume concentrations for these three events averaged 0.017 $\mu g/m^3$. The high elevation concentrations using the low volume monitors were all below the

DL of approximately 0.029 $\mu g/m^3$. The low elevation concentrations using low volume monitors averaged 0.078 $\mu g/m^3$.

Comparative results of the high volume and low volume sampling at Silver Lake are summarized in Table 8.

The precision monitors all provided results similar to those of the primary monitors indicating the results are repeatable. In addition, the accuracy results, based on the analytical recovery of surrogate compounds, were also well within acceptable ranges. Thus, the high volume and low volume data appear to be valid.

A comparison of the high volume and low volume data demonstrates consistent results, but not a definitive conclusion that the methods are comparable. On each of the three occasions when both high volume and low volume samples were collected, the PCB concentrations detected at the high elevation, high volume monitors were lower than the detection limit for the low volume sampler, and the concentrations reported for the low volume samplers at high elevation were all below the detection limit. These data suggest that the low volume and high volume sampling methods are comparable, but do not confirm that.

Additional low volume data using this method would not be useful for comparing the validity of the high volume and low volume methods because the detection limit for the low volume method is too high (i.e. above the ambient PCB concentration present at that elevation) to provide more definitive data.

In addition, further low volume sampling is unnecessary to characterize the PCB levels in the area near the surface of Silver Lake. Together, the 1995 sampling and the 1993 sampling programs provide a total of 11 low volume/low elevation samples at Silver Lake. Eleven samples would be considered adequately representative of the four month "summer" or worst case period.

TABLE 8

Ambient Air Monitoring for PCBs
Silver Lake Site
Comparison of Low Volume and High Volume Results
June 24/25, July 9/10 and August 8/9, 1995
General Electric Company

Location	Concentration ($\mu g/m^3$) 6/25/95	Concentration ($\mu g/m^3$) 7/10/95	Concentration ($\mu g/m^3$) 8/9/95
High Elevation/Low Volume	<0.028 (<0.028)[1]	<0.028 (<0.029)[1]	<0.030 (<0.034)[1]
High Elevation/High Volume	0.020 (0.018)[1]	0.019 (0.018)[1]	0.0129 (0.0116)[1]
Low Elevation/Low Volume	0.086 (0.102)[1]	0.042 (0.061)[1]	0.107 (0.093)[1]

1 Co-located sample results are in parenthesis

5.3 Meteorological Variables

It was not a primary objective of this sampling program to identify what impact various meteorological parameters had on the ambient concentrations of PCBs. This relationship was investigated and evaluated in the 1991-92 and 1993 studies. Data from this study are summarized here for reference.

The meteorological parameters of temperature, wind speed, barometric pressure, precipitation and wind direction measured at the on-site weather station were compared with the measured high volume PCB concentrations at all of the sampling sites. To assist in the interpretation of ambient concentrations and meteorological parameters, several graphs of measured PCB concentrations against the various meteorological parameters were developed. Tables 4, 5 and 6 (in Section 3.2 of this report) provide data on sampling days for temperature, wind speed, barometric pressure and precipitation. In addition, Graphs A, B, and C provide ambient concentrations versus temperature, barometric pressure and wind speed. These graphs and tables were developed to assist in identifying any patterns in the ambient concentrations that could be explained by meteorological variables which were monitored on-site.

A summary of the identified relationships between the 1995 PCB concentrations and meteorological variables of temperature, wind speed, and barometric pressure is presented in the following sections. Since previous efforts at statistical evaluations of meteorological data and ambient concentrations did not prove to be effective in interpreting ambient PCB data, no statistical analyses were conducted.

5.3.1 Temperature

Data from this 1995 study indicate that at the Silver Lake high-volume station ambient PCB concentrations begin to increase at ambient temperatures around 50-60°F. This trend was observed both in the data for 1993 and in the data for 1991-92, particularly when ambient PCB concentrations were relatively high. A similar relationship in the data appears to be present, but to a lesser extent, at the Fred Garner Park site along the Housatonic River.

Review of the meteorological data on days with maximum and minimum PCB concentrations reveals information consistent with the foregoing conclusions. The maximum concentrations at all of the high-elevation monitors occurred when the average daily temperature was greater than 68°F. The maximum PCB concentrations at the high-elevation monitors, except Woods Pond, occurred on the day with the highest average daily temperature (July 24-25; 73°F). At Woods Pond, the second highest PCB concentration occurred on this day.

The minimum concentrations recorded at Silver Lake and Fred Garner Lake occurred on May 10-11, the day with the lowest average daily temperature of 49°F.

As in previous studies, review of these data indicates that average daily temperature appears to have an impact on ambient PCB concentrations. In general, ambient PCB concentrations increase with ambient temperature.

5.3.2 Wind Speed

To investigate whether ambient PCB concentrations may be linked to wind speed, the ambient PCB concentrations for the high-elevation monitors were plotted against the 24-hour average wind speed for each sampling day. This graph is presented as Graph B. An inspection of this graph reveals no evidence of a relationship between wind speed and ambient concentrations of PCBs at the high-elevation monitors.

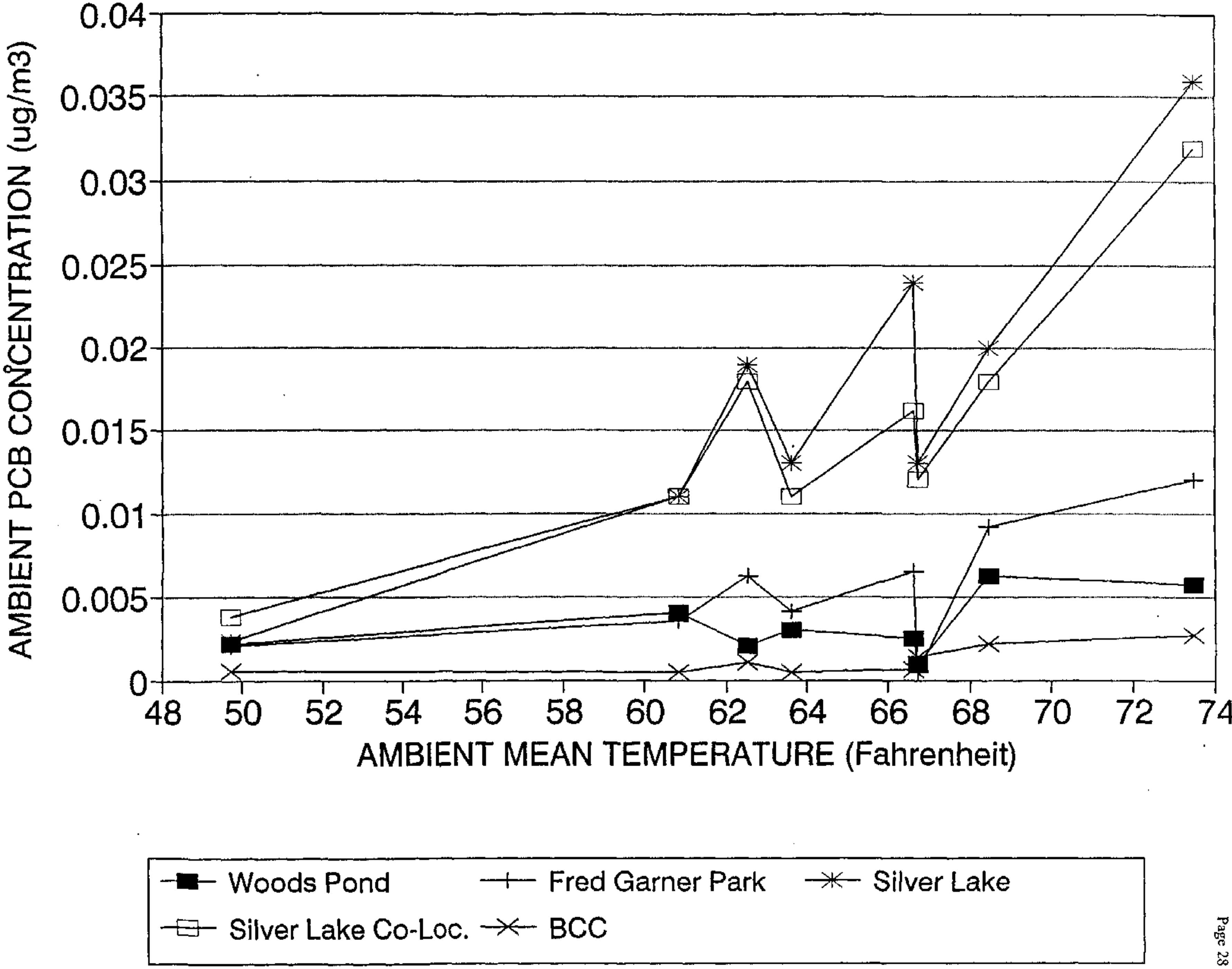
5.3.3 Barometric Pressure

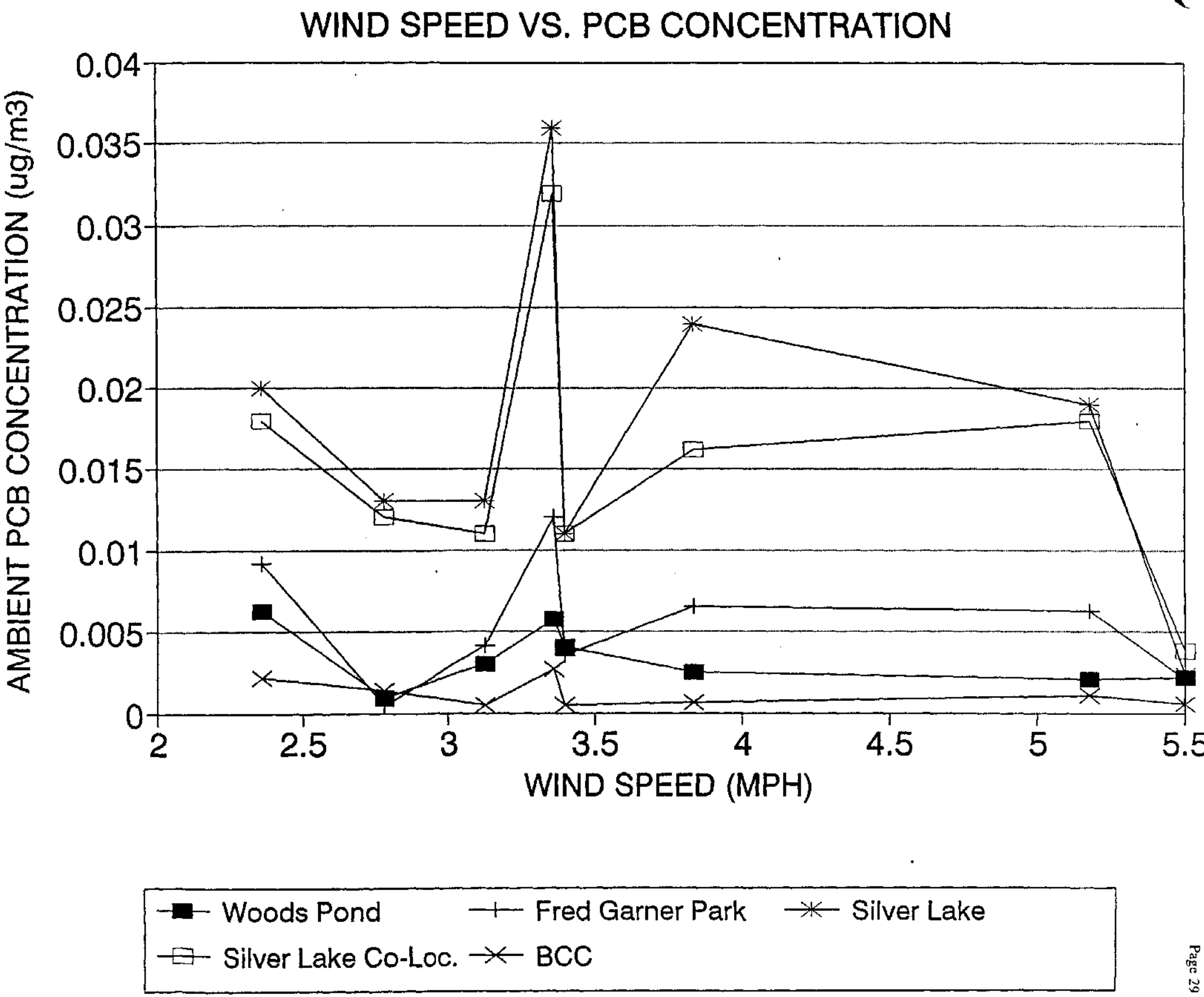
Ambient PCB concentrations for the high-elevation monitors were plotted against the average barometric pressure for each sampling day. These graphs are presented in Graph C. An inspection of this graph shows no identifiable pattern or relationship. There is thus no evidence, to suggest that barometric pressure impacted ambient concentrations of PCB.

5.3.4 Summary

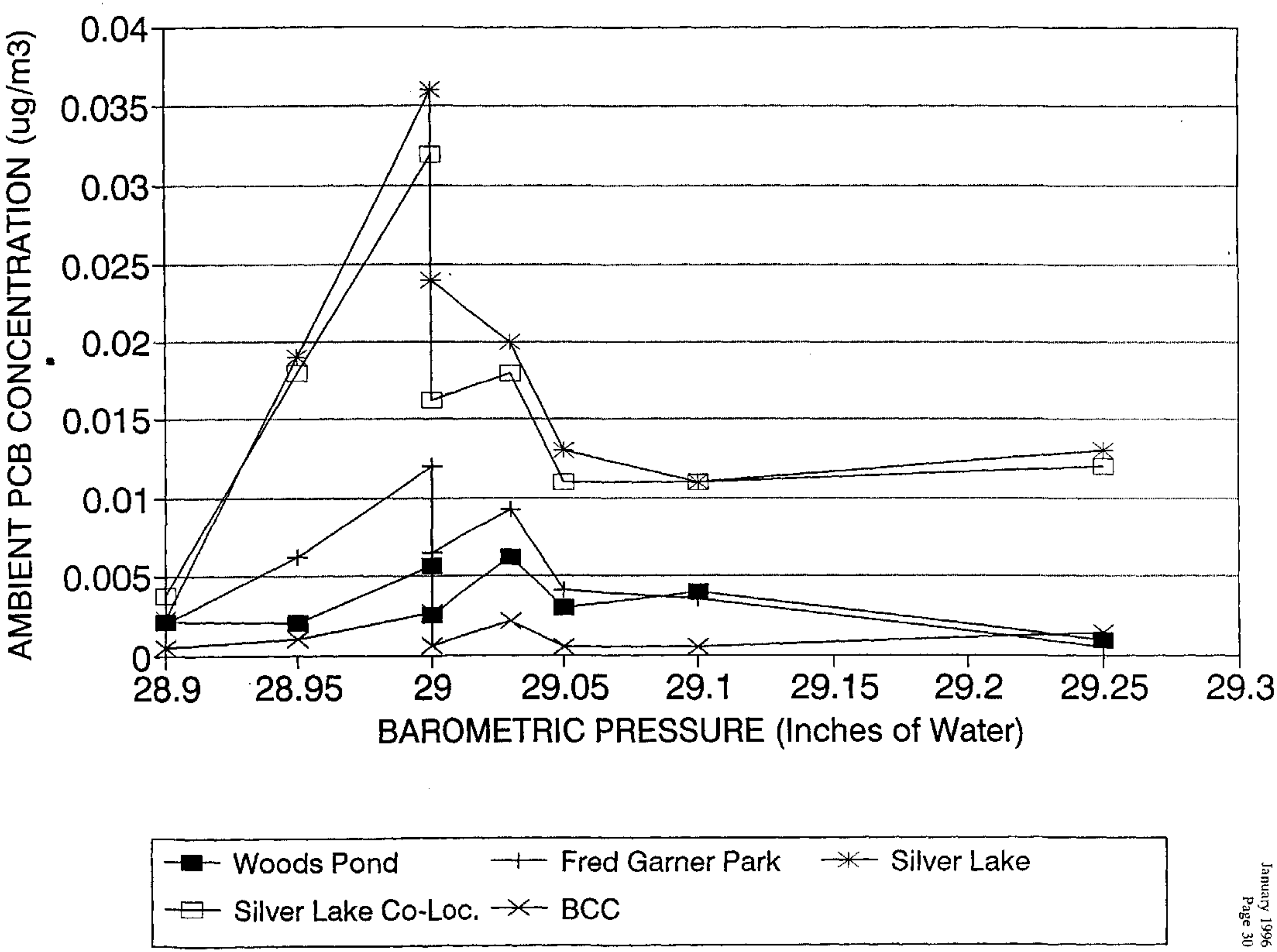
The meteorological parameter of temperature appears to have some impact on the variation in ambient PCB concentrations. The impact of temperature appears more pronounced at Silver Lake than at the other high-volume monitoring stations. It is nevertheless not clear to what degree temperature directly affects ambient PCB concentrations.

TEMPERATURE VS. PCB CONCENTRATION




WIND SPEED VS. PCB CONCENTRATION
AMBIENT PCB CONCENTRATION (ug/m3)
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
2
2.5
3
3.5
4
4.5
5
5.5
WIND SPEED (MPH)
Woods Pond
Fred Garner Park
Silver Lake
Silver Lake Co-Loc.
BCC

BAROMETRIC PRESSURE VS. AMBIENT PCB CONCENTRATION

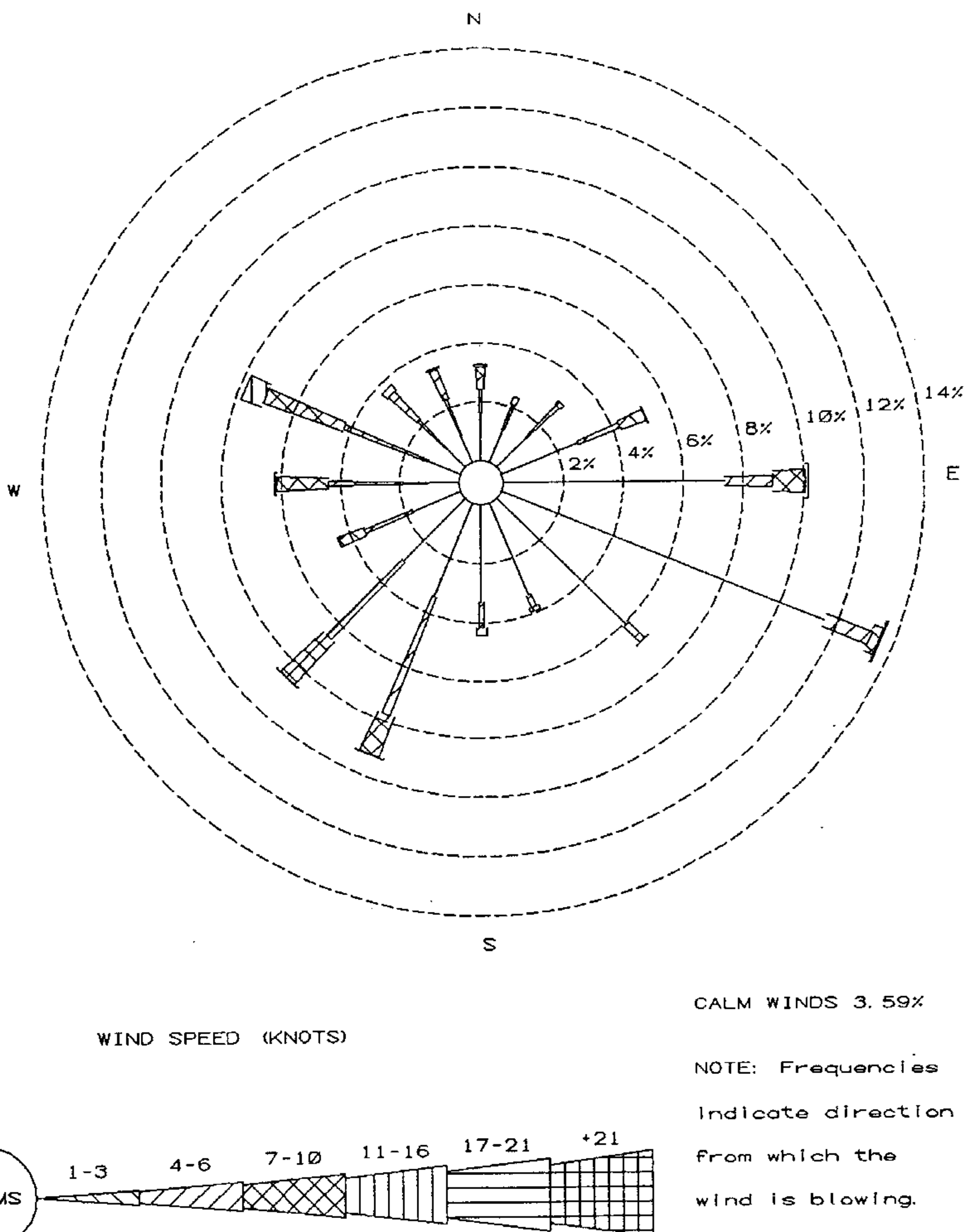


APPENDIX I

Sampling Event Wind Roses

1995 SAMPLING PERIOD

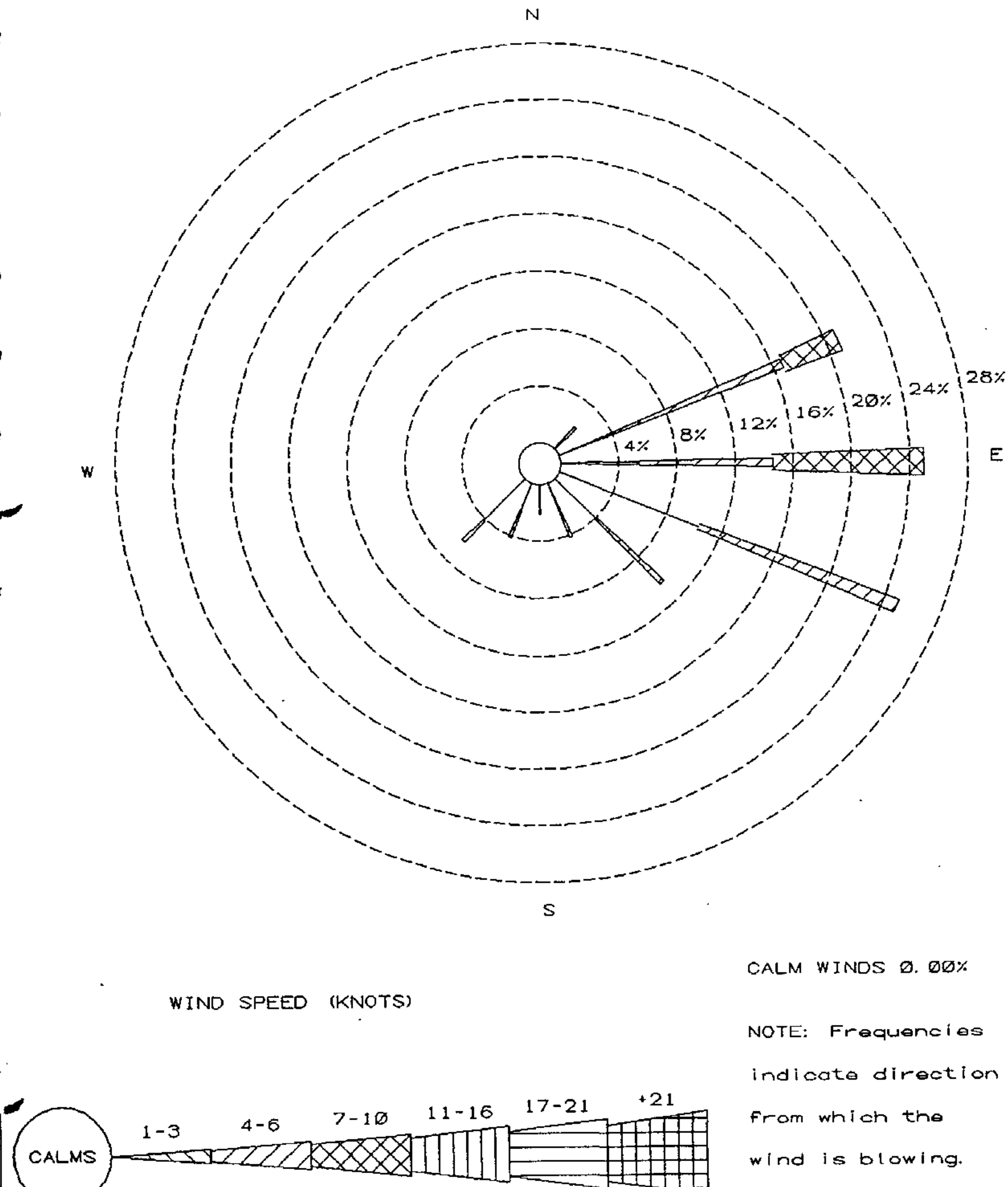
May 1-August 31; Midnight-11 PM



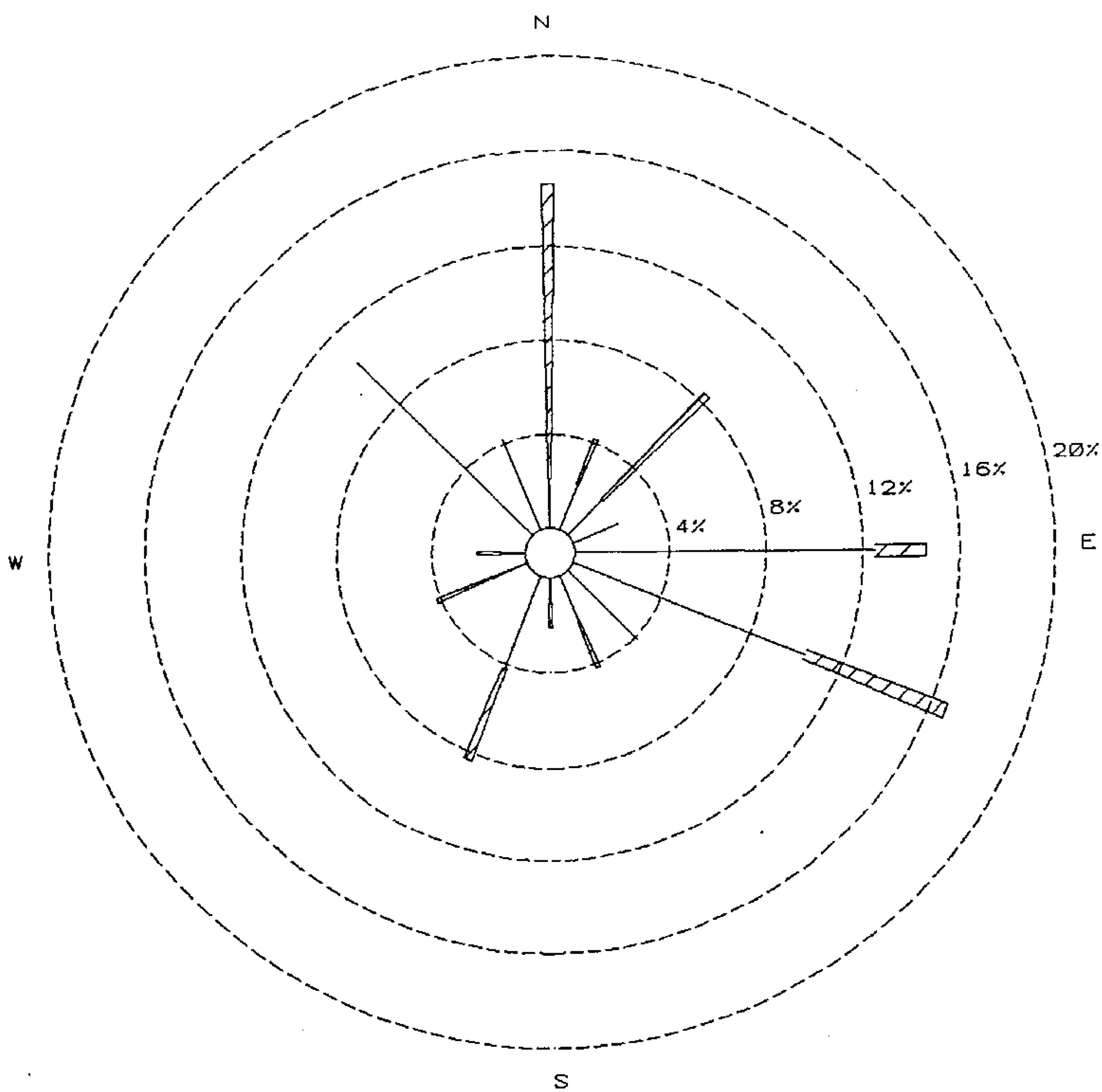
CALM WINDS 3.59%

NOTE: Frequencies indicate direction from which the wind is blowing.

May 10-May 11; 7 AM-6 AM

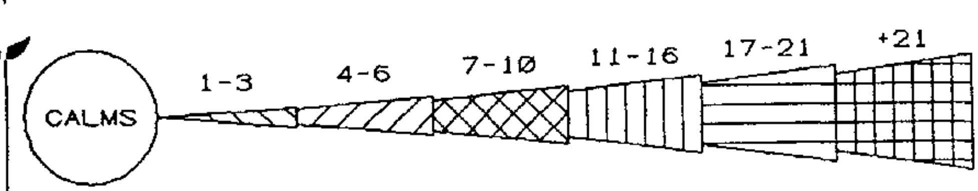


May 25-May 26; 7 AM-6 AM



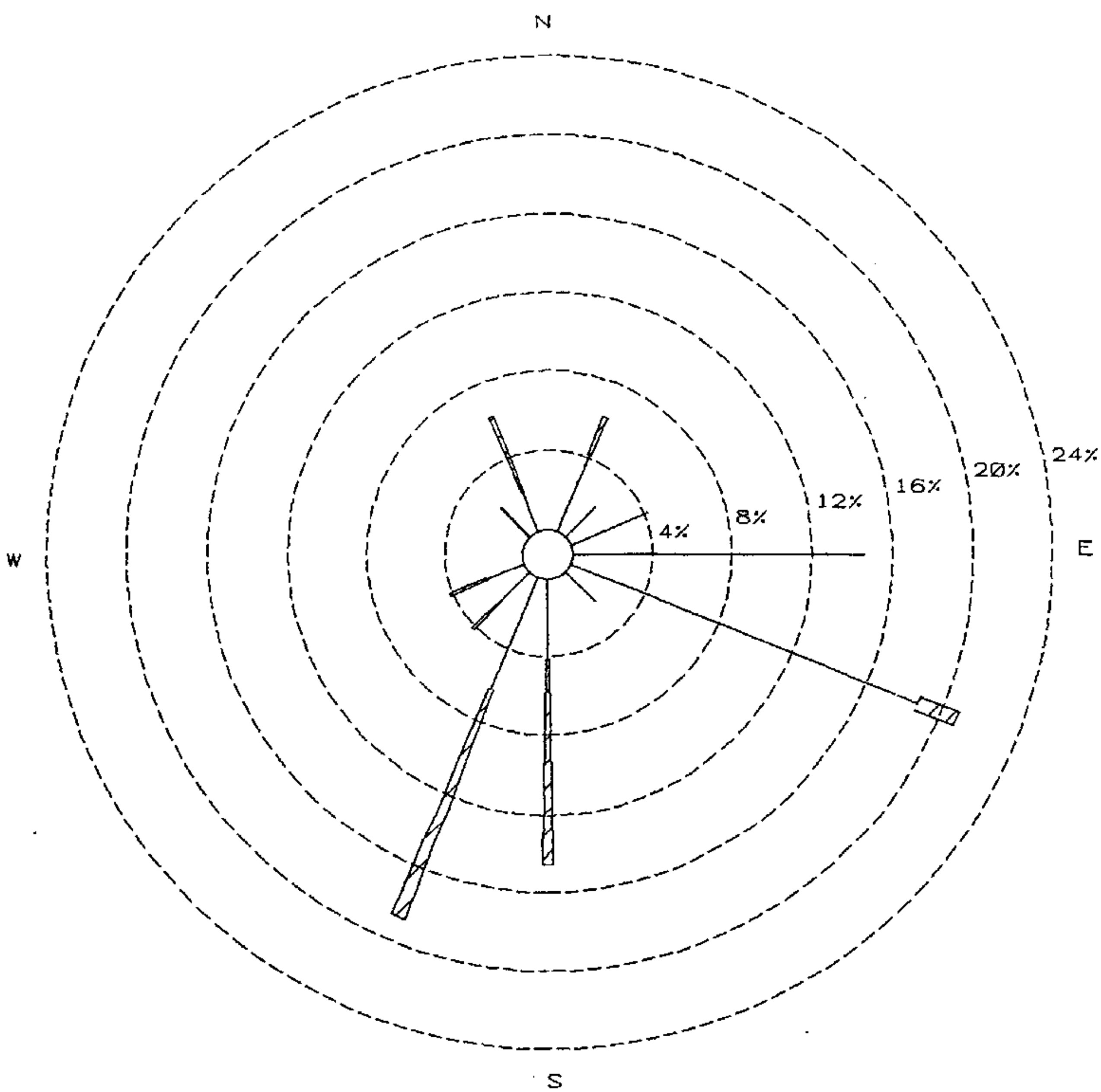
CALM WINDS 0.00%

WIND SPEED (KNOTS)



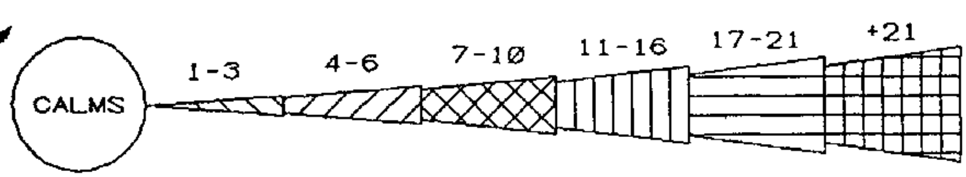
NOTE: Frequencies indicate direction from which the wind is blowing.

June 9-June 10; 7 AM-6 AM



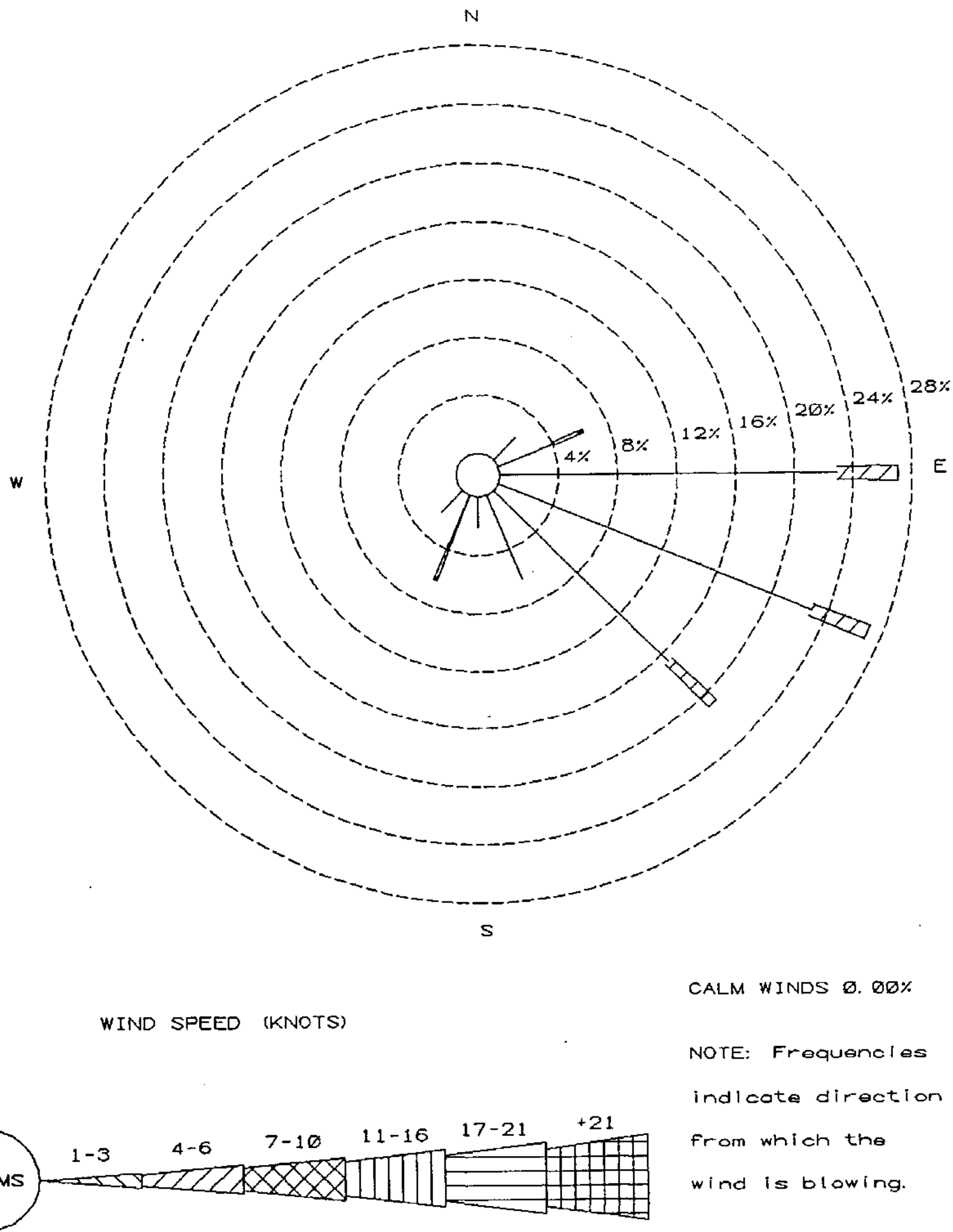
CALM WINDS 0.00%

WIND SPEED (KNOTS)



NOTE: Frequencies indicate direction from which the wind is blowing.

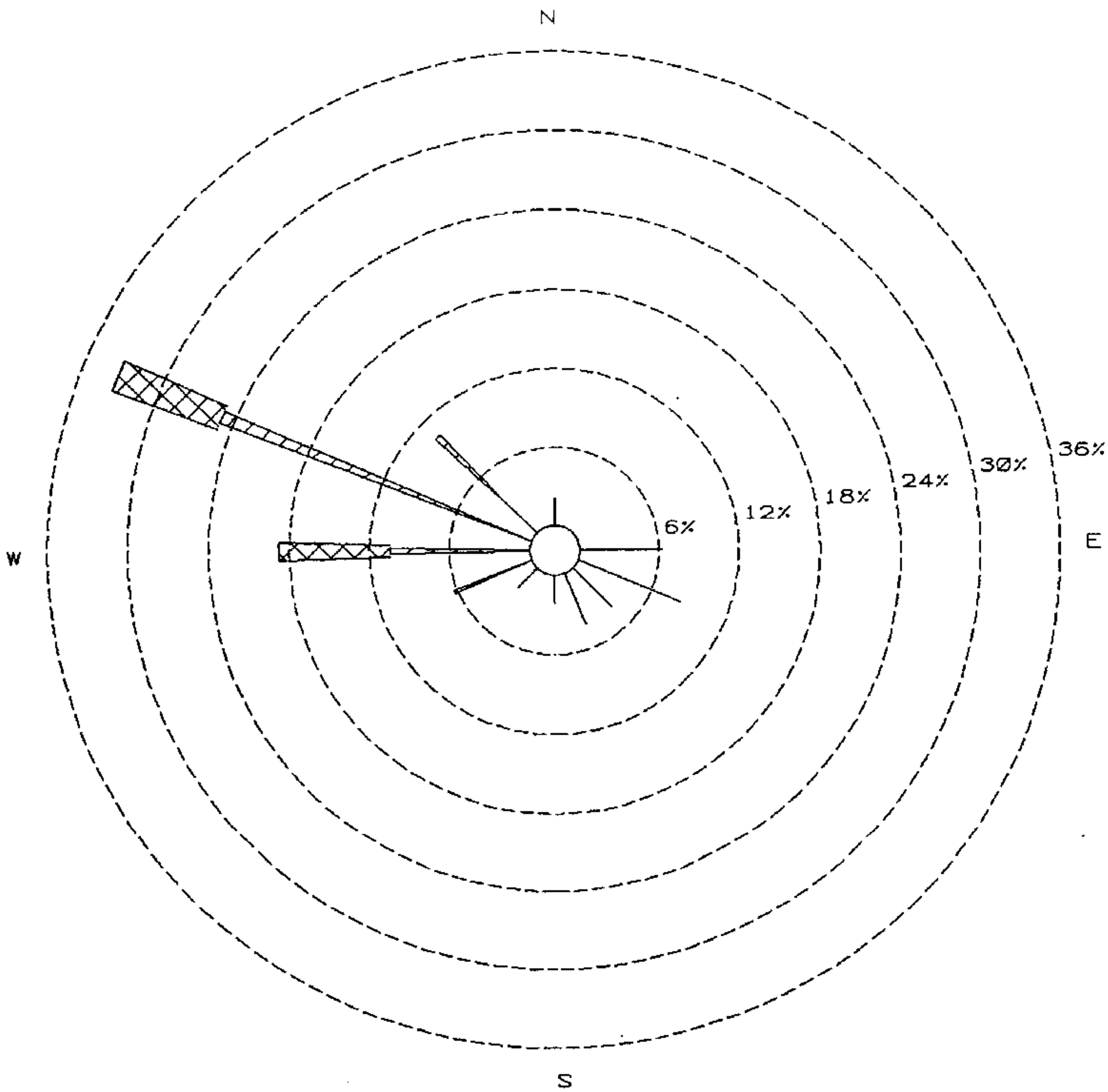
June 24-June 25; 7 AM-6 AM



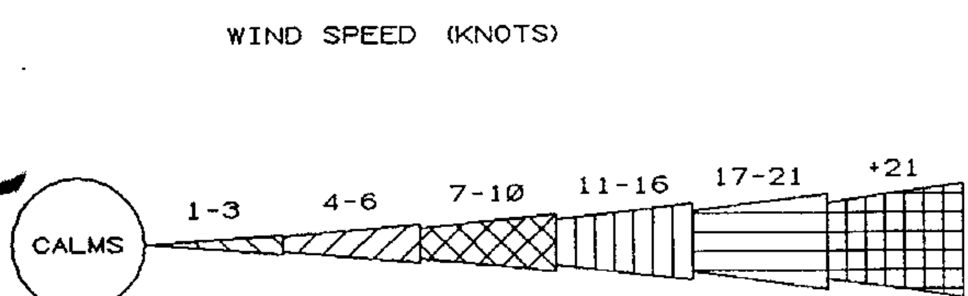
CALM WINDS Ø.ØØ%

NOTE: Frequencies indicate direction from which the wind is blowing.

July 9-July 10; 7 AM-6 AM

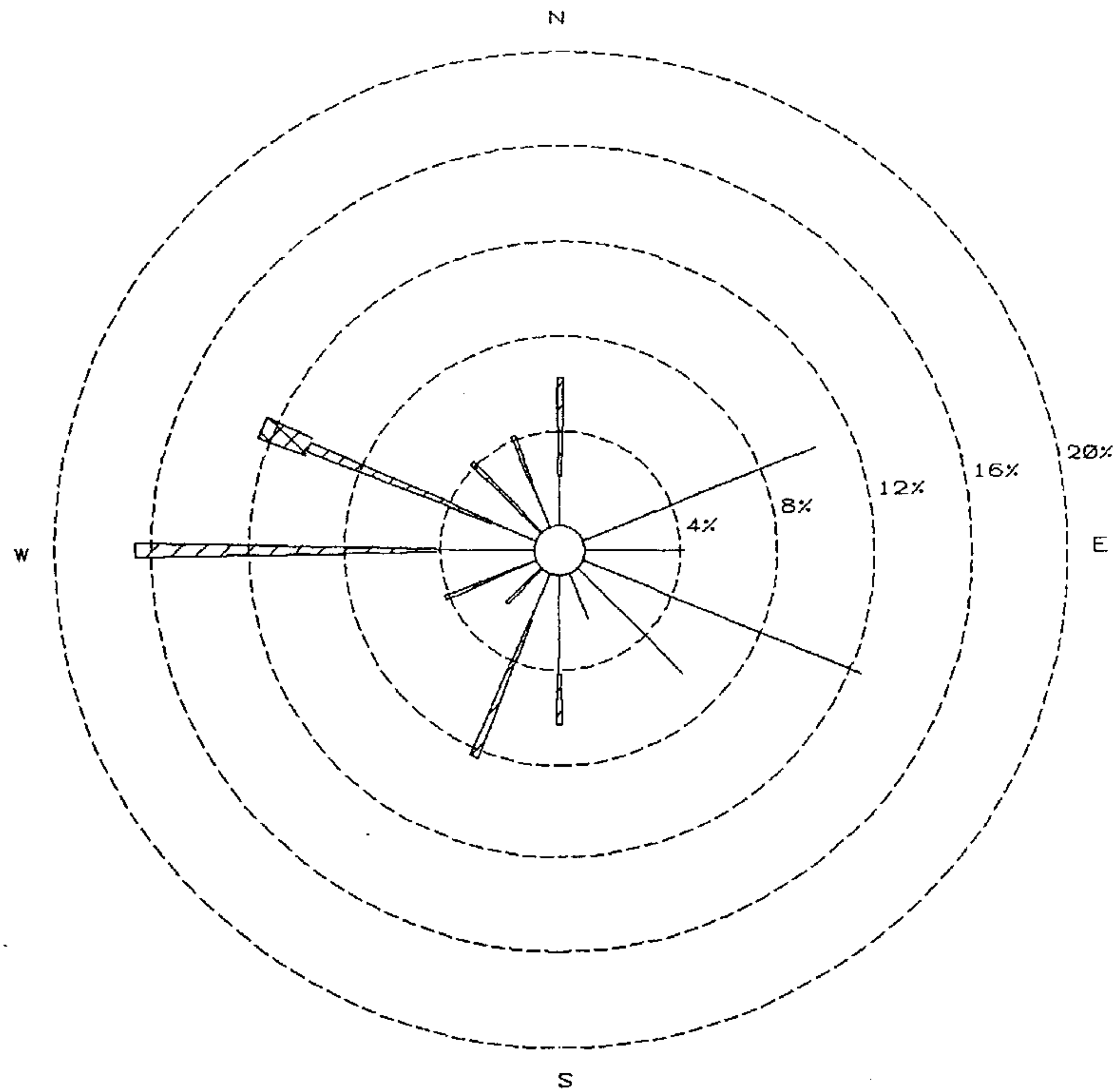


CALM WINDS 2.08%



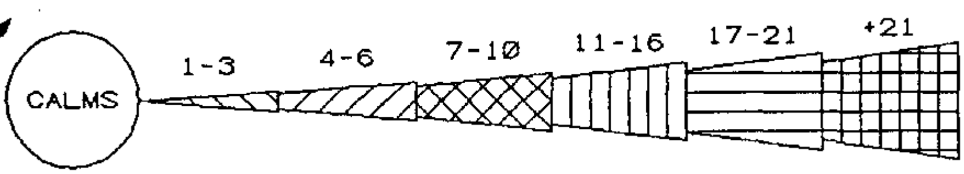
NOTE: Frequencies indicate direction from which the wind is blowing.

July 24-July 25; 7 AM-6 AM



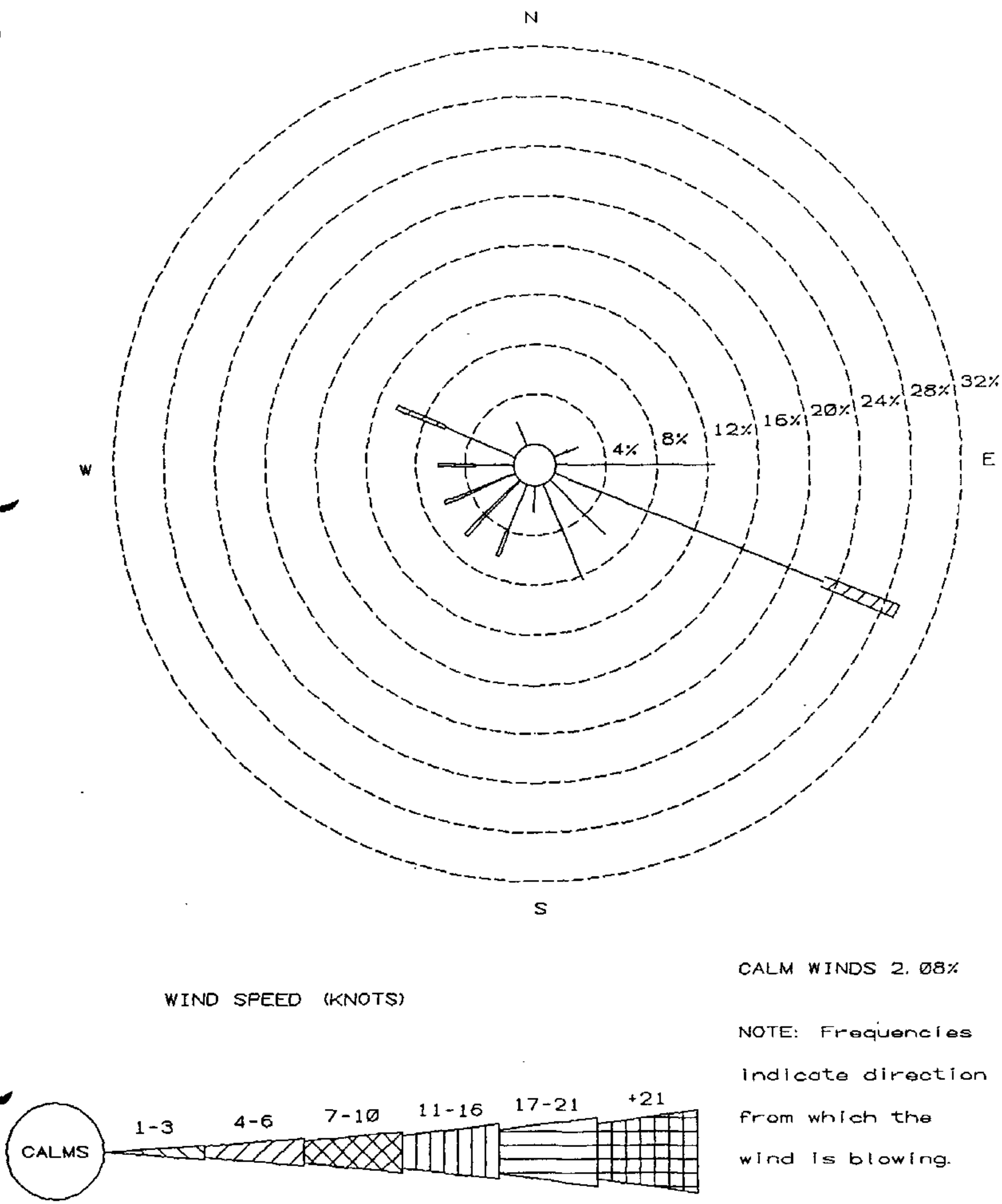
CALM WINDS 0.00%

WIND SPEED (KNOTS)



NOTE: Frequencies indicate direction from which the wind is blowing.

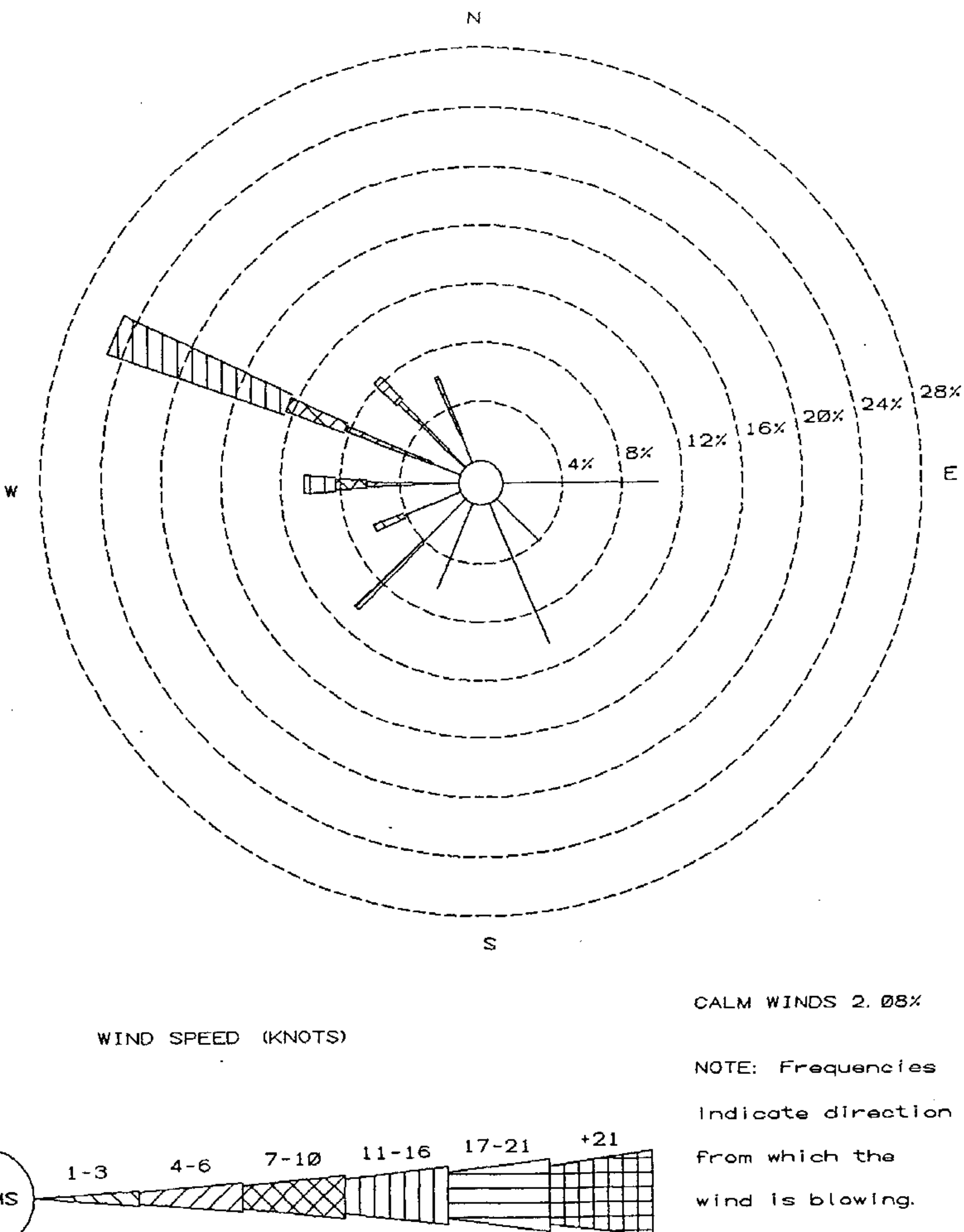
August 8-August 9; 7 AM-6 AM



CALM WINDS 2.08%

NOTE: Frequencies indicate direction from which the wind is blowing.

August 23-August 24; 7 AM-6 AM



CALM WINDS 2.08%

NOTE: Frequencies indicate direction from which the wind is blowing.

APPENDIX II

Sum of Difference and Standard Deviation Calculations

Berkshire Environmental Consultants, Inc.
194 Fenn Street, Pittsfield, MA 01201 • (413) 443-0130 • Fax (413) 443-1297

Project No:	Date:	Client:	Subject:	Init:
01-05-95	10/24/95	General Electric	Precision Calculations	AMS

High - Volume (Primary / Colocated Sampler)
Method 608

Date	Primary Silverlake	Colocated Silverlake	di	di^2
7/10-11/95	0.0023	0.0038	-0.652	0.425
25-26/95	0.011	0.011	0	0
9-10/95	0.013	0.011	0.154	0.0237
-25/95	0.020	0.018	0.1	0.01
9-10/95	0.019	0.018	0.0526	0.00277
24-25/95	0.036	0.032	0.111	0.0123
3-9/95	0.013	0.012	0.0769	0.00592
3/23-24/95	0.0236	0.0162	0.314	0.0983

Average % Deviation $\frac{\Sigma d_i}{n} = \frac{0.157}{8} = 0.0196 = 1.96\%$

Standard Deviation $\sqrt{\frac{\Sigma d_i^2 - (\Sigma d_i)^2/n}{n-1}} = \sqrt{\frac{0.578 - 0.00308}{7}} = 0.108$

10.8%

Berkshire Environmental Consultants, Inc.
194 Fenn Street, Pittsfield, MA 01201 • (413) 443-0130 • Fax (413) 443-1297

Project No:	Date:	Client:	Subject:	Init:
01-05-95	10/25/95	General Electric	Precision Calculation	AME

Low-Volume, Low-Elevation (Primary/Colocated Sampler)
Silver Lake

Date	Primary	Colocated	d'	d'^2
6/24-25/95	0.086	0.102	-.186	0.0246
7/9-10/95	0.042	0.061	-0.452	0.205
8/8-9/95	0.107	0.093	0.131	0.0171

Average % Deviation $\frac{\Sigma d'}{n} = \frac{-0.507}{3} = -0.169$ 169%

Standard deviation $\sqrt{\frac{\Sigma d'^2 - (\Sigma d')^2/n}{n-1}} = \sqrt{\frac{0.257 - 0.257/3}{n-1}} = 0.207$

20.7%

APPENDIX III

Sampling Data Sheets

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 5/10 - 5/11/95

Performed By: Barlow, Bordeau, Sanders
Ostrobinski, Bijak, Hawkins

Blank Sample No.: 100 - 051195 - BL

SAMPLER LOCATION		BCC	FGP	SL	BET	SL		
SAMPLER NO.		006	007	008	009	010		
SAMPLE HEAD NO.		106	107	108	109	110		
SAMPLE NO.		NA	NA	NA	NA	NA		
MAG. (FLOW) SETTING		60	55	55	60	60		
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓		
START-UP MAG. READING		60	55	55	60	60		
TIMER SET TO START AT		7:30	7:30	7:30	8:02	7:30		
TIME OF SAMPLE HEAD INST.		6:15	7:25	6:50	5:40	6:45		
ETM READING (START)		1800.93	1627.17	24.31	202.51	202.65		
ETM READING (FINISH)		1824.94	1651.18	49.85	226.51	228.21		
EST. TIME OF SAMPLER START		7:30	7:30	7:30	8:02	7:30		
6-HOUR READINGS	MAG. READING	61	56	56	55	60		
	MAG. ADJUSTED TO	60	55	55	60	60		
	ETM READING	1807.24	1633.94	30.04	209.13	208.41		
	TIME	1:45PM	2:15PM	1:15	2:40PM	1:15		
12-HOUR READINGS	MAG. READING	59	55	55	60	58		
	MAG. ADJUSTED TO	60	—	—	—	60		
	ETM READING	1812.21	1638.70	35.27	213.74	213.61		
	TME	6:46	7:01	6:23	7:16	6:23		
18-HOUR READINGS	MAG. READING	60	55	54	60	58		
	MAG. ADJUSTED TO	—	—	55	—	60		
	ETM READING	1818.41	1643.82	41.05	218.94	219.42		
	TIME	12:58	12:08	1:20	12:28	1:21		
FINAL MAG. READING		65	59	51	63	58		
TIME OF SAMPLE COLLECTION		9:07	10:50	10:03	9:38	10:03		

Pic 6.3/6.2 5.89/5.9 6.1/6.0 6.0/6.0 6.1/6.0

SL ~~Stop~~ Lost at approx. 6:30 PM

SL Restart at 8:55 PM

41.05
24.31
16.74
~~17.50~~

#4
219.42
202.65
16.77

17.51

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 5/25-5/26/95 Performed By: JAB, JLB, AS, DO, JB

Blank Sample No.: ______

SAMPLER LOCATION		BCC	FGP	SL	BET	SL		
SAMPLER NO.		006	007	008	009	010		
SAMPLE HEAD NO.		106	107	108	109	110		
SAMPLE NO.								
MAG. (FLOW) SETTING		60	55	56	60	61		
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓		
START-UP MAG. READING		60	55	56	60	61		
TIMER SET TO START AT		7:30	7:30	7:30	7:30	7:30		
TIME OF SAMPLE HEAD INST.		6:46	7:23	7:08	6:10	7:10		
ETM READING (START)		1824.96	1651.20	50.02	226.54	228.34		
ETM READING (FINISH)		1848.96	1675.21	74.03	250.55	252.35		
EST. TIME OF SAMPLER START		7:30	7:30	7:30	7:30	7:30		
6-HOUR READINGS	MAG. READING	59	55	54	60	66		
	MAG. ADJUSTED TO	60	55	56	60	61		
	ETM READING	1830.57	1657.08	55.32	232.83	233.66		
	TIME	1:05 pm	1:20 pm	12:45 pm	1:46 pm	12:45 pm		
12-HOUR READINGS	MAG. READING	60	56	55	62	61		
	MAG. ADJUSTED TO	—	55	56	60	—		
	ETM READING	183664	166317	61.42	238.82	239.75		
	TME	7:10	7:27	6:53	7:47	6:54		
18-HOUR READINGS	MAG. READING	60	56	56	59	61		
	MAG. ADJUSTED TO	60	55	—	60	—		
	ETM READING	184336	166882	67.40	244.46	245.84		
	TIME	1:56	1:08	1:00	1:28	1:01		
NAL MAG. READING		64	56	57	63	63		
E OF SAMPLE COLLECTION		8:30	7:50	8:05	9:03	8:07		

o: 29.0 57°F 6.2 6.0 6.1 6.0 6.0

: 29.1 57°F 6.1 5.9 6.1 6.0 6.1

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 6/9-6/10 1995 Performed By: JB,AS,JB,JB,TS,DO

Blank Sample No.: 100-061095-BL

		6.2	~~4~~5.9	5.9	5.9	6.0		
SAMPLER LOCATION		BCC	FGP	SL	BET	SL		
SAMPLER NO.		006	007	008	009	010		
SAMPLE HEAD NO.		106	107	108	109	110		
SAMPLE NO.		2120	—	—	—	—		
MAG. (FLOW) SETTING		60	55	56	60	61		
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓		
START-UP MAG. READING		60	55	56	60	61		
TIMER SET TO START AT		7:30	7:30	7:30	7:30	7:30		
TIME OF SAMPLE HEAD INST.		6:40	7:25	7:01	6:05	7:05		
ETM READING (START)		1849.01	1675.23	74.06	250.62	252.43		
ETM READING (FINISH)		1873.04	1699.24	98.09	274.64	276.47		
EST. TIME OF SAMPLER START		730	7:30	7:30	7:30	7:30		
6-HOUR READINGS	MAG. READING	58	53	54	58	60		
	MAG. ADJUSTED TO	58	55	56	60	61		
	ETM READING	1854.81	1681.29	79.54	257.11	257.93		
	TIME	1:20PM	1:35PM	1:00PM	2:00pm	1:00PM		
12-HOUR READINGS	MAG. READING	56*	55	56	60	61		
	MAG. ADJUSTED TO	~~60~~57*	—	—	—	60		
	ETM READING	1859.89	1686.36	85.28	262.62	263.68		
	TME	6:22	6:37	6:43	7:30	6:44		
18-HOUR READINGS	MAG. READING	60	57	57	62	62		
	MAG. ADJUSTED TO	—	55	56	60	61		
	ETM READING	1865.95	1692.43	90.39	268.14	268.79		
	TIME	12:25	12:42	11:50	1:01	11:51		
FINAL MAG. READING		60	56	55	60	60		
TIME OF SAMPLE COLLECTION		9:15	8:10	7:30	8:35	7:45		
		6.1	5.8	6.0	5.9	5.9		

* Can't increase flow

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 6/24-6/25 1995 Performed By: JAB, AS, MH, JLB, DD

Blank Sample No.: 100-062595-BL

SAMPLER LOCATION		BCC	FGP	SL	BET	SL		
SAMPLER NO.		006	007	008	009	010		
SAMPLE HEAD NO.		106	107	108	109	110		
SAMPLE NO.		—	—	—	—	—		
MAG. (FLOW) SETTING		60	55	56	60	61		
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓		
START-UP MAG. READING		60	55	56	60	61		
TIMER SET TO START AT		~~6:30am~~ 7:30 am	7:30	7:30 a	~~7:30am~~ 8:04am	7:30 ✓		
TIME OF SAMPLE HEAD INST.		5:35am	7:18	6:33a	6:08 am	6:37a		
ETM READING (START)		1873.08	1699.26	98.13	274.68	276.49		
ETM READING (FINISH)		1897.08	1723.27	122.13	298.68	300.49		
EST. TIME OF SAMPLER START		7:30	7:30	730	8:04	7:30		
6-HOUR READINGS	MAG. READING	58	53	55	57	58		
	MAG. ADJUSTED TO	60	55	56	60	61		
	ETM READING	1878.54	1705.17	103.81	280.40	282.17		
	TIME	12:57	1:25	1:13PM	1:48PM	1:12 PM		
12-HOUR READINGS	MAG. READING	62	56	56	61	61		
	MAG. ADJUSTED TO	60	55	—	60	—		
	ETM READING	1885.52	1710.90	110.78	286.05	289.14		
	TME	7:56	7:08 PM	8:09	7:25 PM	8:09		
18-HOUR READINGS	MAG. READING	60	55	56	62	60		
	MAG. ADJUSTED TO	—	—	—	60	61		
	ETM READING	1890.14	1716.60	114.80	291.82	293.19		
	TIME	12:33	12:50	12:10	1:12	12:12		
FINAL MAG. READING		60	57	57	60	61		
TIME OF SAMPLE COLLECTION		8:00	8:20	7:45	8:40	7:45		

Pre-Audit	6.2	6.0	5.8	5.7	6.2
Post-Audit	6.1	6.0	6.1	6.0	5.9

H H H H

METHOD TO-10 SAMPLING DATA SHEET

DATE: 6/24-6/25 1995

PERFORMED BY AS,JAB,MH,JJB,DO   BAROMETRIC PRESSURE: 0 hr 29.20 6 hr 28.95
12 hr 28.85 18 hr 28.85
24 hr 28.85

REVIEWED BY:

SAMPLING LOCATION	Hi Elevation 1°	Hi Elevation Co.	Low Elevation 1°	Low Elevation Co
SAMPLE NUMBER	NA	NA	NA	NA
PUMP NUMBERS				
FLOW METER	058521	055216	055217	062659
SET FLOW POINT	85	85	85	85

FLOW METER DATA Samples installed @ 7:00 AM

SAMPLE START 0 HRS	TIME	7:30 am	7:30 am	7:30 am	7:30 am
	INDICATION Flow m.	87	86	85	87
	ML/MIN				
	IN. VACUUM mag.	20	20	~~39~~ 20	39
	TEMPERATURE				
6 HOUR READING	TIME	1:14 pm	1:15 pm	1:15 pm	pm
	INDICATION	85	84	83	84
	ML/MIN				
	IN. VACUUM	20	20	~~35~~ 20	35
	TEMPERATURE				
12 HOUR READING	TIME	8:09	8:09	8:09	8:09
	INDICATION	83	85	83	84
	ML/MIN				
	IN. VACUUM	20	20	~~34~~ 20	34
	TEMPERATURE				
18 HOUR READING	TIME	12:14	12:14	12:14	12:14
	INDICATION	85	84	84	83
	ML/MIN				
	IN. VACUUM	20	20	~~33~~ 20	33
	TEMPERATURE				
SAMPLE STOP (24 HOUR)	TIME				
	INDICATION	85	85	85	85
	ML/MIN				
	IN. VACUUM	20	20	20	33
	TEMPERATURE				

SAMPLE COLLECTION TIME: 7:30

TOTAL SAMPLING TIME (MIN) 1440

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 7/9-7/10 1995

Performed By: JAG, JCB, AA, EA, DO, JB

Blank Sample No.: 100-071095-BL

PRE-AUDIT		6.2	6.0	5.9	5.9	6.0		
SAMPLER LOCATION		BCC	FGP	SL	BET	SL		
SAMPLER NO.		006	007	008	009	010		
SAMPLE HEAD NO.		106	107	108	109	110		
SAMPLE NO.		–	–	–	212	206		
MAG. (FLOW) SETTING		60	57	57	60	61		
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓		
START-UP MAG. READING		58*	57	53*	60	61		
TIMER SET TO START AT		7:30	7:30	7:30	7:30	7:30		
TIME OF SAMPLE HEAD INST.		6:20	7:20	6:50	6:55	6:45		
ETM READING (START)		1897.10	1772.02	170.60	298.70	348.85		
ETM READING (FINISH)		1921.10	1796.02	194.61	322.70	372.86		
EST. TIME OF SAMPLER START		7:30	→	→	→	→		
6-HOUR READINGS	MAG. READING	57	54	53	60	61		
	MAG. ADJUSTED TO	*	57	*	—	—		
	ETM READING	1902.39	1777.93	176.35	304.91	354.60		
	TIME	12:47	1:25	1:15	1:42	1:15		
12-HOUR READINGS	MAG. READING	57	58	52-53	61	61		
	MAG. ADJUSTED TO	✓	57	*	60	✓		
	ETM READING	1909.19	1784.34	182.32	311.34	360.56		
	TIME	7:30	7:49	7:14	8:09	7:12		
18-HOUR READINGS	MAG. READING	57	58	52	61	62		
	MAG. ADJUSTED TO	MAXED	57	53 MAXED	60	61		
	ETM READING	1914.08	1789.21	187.18	316.23	365.42		
	TIME	12:28	12:42	12:05	1:02	12:04		
FINAL MAG. READING		60	59	53	63	61		
TIME OF SAMPLE COLLECTION		8:50	8:00	7:35	8:15	7:30		
POST-AUDIT		6.1	6.0	5.8	5.8	5.8		

* Maxed out

METHOD TO-10 SAMPLING DATA SHEET

DATE: 7/9-7/10 1995

PERFORMED BY JAB, JLB, AA, EA, DO, JB

REVIEWED BY: ____________

BAROMETRIC PRESSURE: 0 hr 28.87 18 hr 28.90
6 hr 28.9 24 hr 28.95
12 hr 28.85

SAMPLING LOCATION		Hi Elevation 1°	High Elevation Co	Low Elevation 1°	Low Elevation Co
SAMPLE NUMBER					
PUMP NUMBERS					
FLOW METER		058521	055216	055217	062659
SET FLOW POINT		85	85	85	85
FLOW METER DATA					
SAMPLE START 0 HRS	TIME	7:30	7:30	7:30	7:30
	INDICATION flowm	85	85	85	85
	ML/MIN				
	IN. VACUUM mag	26	26	36	37
	TEMPERATURE				
6 HOUR READING	TIME	1:15			
	INDICATION	85	85	85	85
	ML/MIN				
	IN. VACUUM	26	26	26	37
	TEMPERATURE				
12 HOUR READING	TIME	7:15			
	INDICATION	85	85	85	85
	ML/MIN				
	IN. VACUUM	26	26	26	36
	TEMPERATURE				
18 HOUR READING	TIME	12:05			
	INDICATION	85	85	85	85
	ML/MIN				
	IN. VACUUM	26	26	26	36
	TEMPERATURE				
SAMPLE STOP (24 HOUR)	TIME	7:15			
	INDICATION	98	98	98	85
	ML/MIN				
	IN. VACUUM	33	33	33	36
	TEMPERATURE				

SAMPLE COLLECTION TIME: 7:30

TOTAL SAMPLING TIME (MIN) 1440

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 7/24 -7/25 1995 Performed By: JLB, JAB, JNB, AS, DO

Blank Sample No.: 100- 072595-BL

SAMPLER LOCATION		BCL	FGP	SL	BETS	SL		
SAMPLER NO.		006	007	008	009	010		
SAMPLE HEAD NO.		106	107	108	109	110		
SAMPLE NO.		—	—	—	—	—		
MAG. (FLOW) SETTING		59	57	57	60	61		
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓		
START-UP MAG. READING		58	57	52	60	61		
TIMER SET TO START AT		7:30A	8:15A	7:30A	7:31A	7:30A		
TIME OF SAMPLE HEAD INST.		6:30	8:10A	6:00A	7:00	6:05A		
ETM READING (START)		1921.20	1820.58	218.89	322.74	397.08		
ETM READING (FINISH)		1945.20	1844.58	242.89	346.73	421.08		
EST. TIME OF SAMPLER START		730	8:15	730	730	730		
6-HOUR READINGS	MAG. READING 55	~~[illegible]~~	55	50	58	60		
	MAG. ADJUSTED TO 56	~~[illegible]~~	57	50	60	60		
	ETM READING 1927.36	~~[illegible]~~	1826.22	224.73	329.40	402.94		
	TIME 1:49pm	~~[illegible]~~	1:55pm	1:30pm	2:10pm	1:30pm		
12-HOUR READINGS	MAG. READING	57	59	51	61	61		
	MAG. ADJUSTED TO	Maxed	57	Maxed	60	—		
	ETM READING	1934.26	1833.12	~~[illegible]~~ 232.31	335.28	410.54		
	TIME	8:31	8:48	8:55	8:04	8:56		
18-HOUR READINGS	MAG. READING	57	56	52	59	62		
	MAG. ADJUSTED TO	MAXED	57	MAXED	60	61		
	ETM READING	1938.13	1836.97	235.48	340.20	413.70		
	TIME	12:26	12:38	12:06	12:58	12:07		
FINAL MAG. READING		59	56	52	63	61		
TIME OF SAMPLE COLLECTION		8:07	8:25	7:30	8:45	7:30		
Pre ~~Post~~ Audit		6.0	6.1	6.2	6.0	6.0		
29.0 Post-Audit		6.1	6.0	6.1	5.8	5.7		

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 8/8-8/9 1995

Performed By: JB, JB, JB, DO

Blank Sample No.: 100-080995-BL

SAMPLER LOCATION		BCC	FGRP	SL	BETS	SL
SAMPLER NO.		006	007	008	009	010
SAMPLE HEAD NO.		106	107	108	109	110
SAMPLE NO.		—	—	—	—	—
MAG. (FLOW) SETTING		59	57	57	60	61
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓
START-UP MAG. READING		57	57	57	60	61
TIMER SET TO START AT		7:30	7:30	7:30	7:30	7:30
TIME OF SAMPLE HEAD INST.		6:46	7:23	7:01	6:10	7:03
ETM READING (START)		1945.22	1844.60	242.91	348.77	421.10
ETM READING (FINISH)		1969.23	1868.60	266.91	370.77	445.10
EST. TIME OF SAMPLER START		7:30	→	→	→	→
6-HOUR READINGS	MAG. READING	54	52	54	58	59
	MAG. ADJUSTED TO	54	57	56	60	61
	ETM READING	1951.62	1851.17	248.93	353.64	427.13
	TIME	1:50 PM	2:05 PM	1:30 PM	2:20 PM	1:30 PM
12-HOUR READINGS	MAG. READING	55	59	57	60	61
	MAG. ADJUSTED TO	MAXED	57	—	—	—
	ETM READING	1956.95	1856.80	254.97	359.33	433.17
	TIME	7:13	7:42	7:33	8:03	7:34
18-HOUR READINGS	MAG. READING	57	58	60	61	62
	MAG. ADJUSTED TO	MAXED	57	57	60	61
	ETM READING	1962.41	1861.96	259.73	364.47	437.94
	TIME	12:41	12:51	12:19	1:11	12:20
FINAL MAG. READING		60	60	57	65	61
TIME OF SAMPLE COLLECTION		8:15	8:30	7:30	8:52	7:30
Pre		6.1	6.1	6.0	6.0	6.0
Post		6.1	6.1	6.0	5.8	6.0

METHOD TO-10 SAMPLING DATA SHEET

DATE: 8/8 - 8/9/95

PERFORMED BY ______________________

REVIEWED BY: ______________________

BAROMETRIC PRESSURE: 0 hr 29.3" 6 hr 29.3"
12 hr 29.3" 18 hr 29.2
24 hr 29.2

		Hi Elev	Hi Elev Co	Low Elev	Low Elev Co
SAMPLING LOCATION		Hi Elev	Hi Elev Co	Low Elev	Low Elev Co
SAMPLE NUMBER					
PUMP NUMBERS					
FLOW METER		058521	053216	055217	062659
SET FLOW POINT					

FLOW METER DATA

SAMPLE START 0 HRS	TIME	7:30A	7:30A	7:30A	7:30A
	INDICATION	85	85	85	85
	ML/MIN				
	IN. VACUUM	81	81	81	39
	TEMPERATURE				
6 HOUR READING	TIME	1:30P	1:30P	1:30P	1:30P
	INDICATION	85	85	85	85
	ML/MIN				
	IN. VACUUM	74	74	74	39
	TEMPERATURE				
12 HOUR READING	TIME	7:35P	7:35P	7:35P	7:35P
	INDICATION	85	85	85	85
	ML/MIN				
	IN. VACUUM	70	70	70	38
	TEMPERATURE				
18 HOUR READING	TIME	12:20A	12:20A	12:20A	12:20A
	INDICATION	85	85	85	85
	ML/MIN				
	IN. VACUUM	74	74	74	38
	TEMPERATURE				
SAMPLE STOP (24 HOUR)	TIME	7:30	7:30	7:30	7:30
	INDICATION	85	85	85	85
	ML/MIN				
	IN. VACUUM	72	72	72	38
	TEMPERATURE				

SAMPLE COLLECTION TIME: ______________________

TOTAL SAMPLING TIME (MIN) ______________________

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 8/23/95 – 8/24/95 Performed By: JAB, JGB, DO

Blank Sample No.: 100

29.1 6.2 6.0 6.2 6.1 6.0

SAMPLER LOCATION		BCC	FGP	SL	BET	SL		
SAMPLER NO.		006	007	008	009	010		
SAMPLE HEAD NO.		106	107	108	109	110		
SAMPLE NO.								
MAG. (FLOW) SETTING		59	57	57	60	61		
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓		
START-UP MAG. READING		59	57	57	60	61		
TIMER SET TO START AT		7:30	7:30	7:30	7:30	7:30		
TIME OF SAMPLE HEAD INST.		6:15	7:28	6:35	7:05	6:40		
ETM READING (START)		1969.28	1868.63	266.96	370.84	445.15		
ETM READING (FINISH)		1993.28	1892.63	290.96	394.84	469.15		
EST. TIME OF SAMPLER START		7:30	→	→	→	→		
6-HOUR READINGS	MAG. READING	58	54	55	56	61		
	MAG. ADJUSTED TO	59	57	57	60	—		
	ETM READING	1975.95	1874.67	273.27	376.61	451.46		
	TIME	2:10	1:32	1:49	1:16	1:49		
12-HOUR READINGS	MAG. READING	57	58	58	62	60		
	MAG. ADJUSTED TO	59	57	57	60	61		
	ETM READING	1980.71	1880.31	278.08	382.85	456.31		
	TIME	6:59	7:11	6:38	7:31	6:40		
18-HOUR READINGS	MAG. READING	60	60	57	57	61		
	MAG. ADJUSTED TO	59	57	—	60	—		
	ETM READING	1986.34	1885.88	283.65	388.43	461.86		
	TIME	12:34	12:45	12:12	1:05	12:13		
FINAL MAG. READING		60	58	53	58	60		
TIME OF SAMPLE COLLECTION		9:15	8:29 AM	9:43	8:03 AM	9:47		

28.9 6.1 6.2 6.1 6.0 5.9

APPENDIX IV

Air Flow Calculation Sheets

Blank

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 100-051195-BL Name of Preparer: JBarlow

Sampler No.: Blank Name of Reviewer: ____________

Date: 6/1/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START		
6 HOURS		
12 HOURS		
18 HOURS		
FINISH		

2) Determine average flow rate.

$\overline{Qstd}$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Qstd}$= [ ] m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = [ ] hr.

4) Determine total standard volume.

Vs = $\overline{Qstd}$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = [ ] m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = [ ] ug/m3
= conc. of PCBs in sample (ug/m3)

Detected 0.2 ug/PUF Aroclor 1242

BCC

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 1060051195-006 Name of Preparer: J Barlow

Sampler No.: 006 Name of Reviewer: A Sanders

Date: 5/30/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	61	0.26
12 HOURS	59	0.256
18 HOURS	60	0.258
FINISH	65	0.268

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.26}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24.01}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{374.6}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = $\boxed{0.0011}$ ug/m3

1242 0.4ug/PUF

Adjusted (subtract 0.2 ug due to blank contam.) 0.0005 ug/m³

Fred Garner Park

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 107-051195-007 Name of Preparer: J Barlow

Sampler No.: 007 Name of Reviewer: A Sanders

Date: 5/30/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	55	0.257
6 HOURS	56	0.259
12 HOURS	55	0.257
18 HOURS	55	0.257
FINISH	59	0.265

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.259}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24.01}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{373.1}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = $\boxed{0.0027}$ ug/m3

1242 0.6 ug/PUF
1254 0.4 ug/PUF } 1.0 ug/PUF

Adjusted
(subtr 0.2 ug due [illegible]) 0.0021

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Silverlake

Sample No.: 110-051195-010   Name of Preparer: Jennifer Barlow

Sampler No.: 010   Name of Reviewer: A Sanders

Date: 5/30/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	60	0.258
12 HOURS	58	0.254
18 HOURS	58	0.254
FINISH	58	0.254

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.256}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start)   ET = $\boxed{25.56}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs)   Vs = $\boxed{392.6}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3)   Ca = $\boxed{0.0043}$ ug/m3

1242 0.9 ug/PUF
1254 0.8 ug/PUF
> 1.7 ug/PUF

Adjusted (blank contam) 0.0038 ug/m³

BETS

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 109-051195-009 Name of Preparer: JBarlow

Sampler No.: 009 Name of Reviewer: A.Sanders

Date: 5/30/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	55	0.248
12 HOURS	60	0.258
18 HOURS	60	0.258
FINISH	63	0.264

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}std$= $\boxed{0.257}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24.0}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{370.1}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = $\boxed{0.0027}$ ug/m3

1242 0.6 ug/PUF
1254 0.4 ug/PUF 1.0 ug/PUF Adjusted (blank cont.) 0.0022

Silverlake

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 108-051195-008 Name of Preparer: J Barlow

Sampler No.: 008 Name of Reviewer: A Sanders

Date: 5/30/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	55	0.258
6 HOURS	56	0.260
12 HOURS	55	0.258
18 HOURS	54	0.256
FINISH	51	0.249

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std= 0.256 m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 25.54 hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = 392.3 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = 0.0028 ug/m3
= conc. of PCBs in sample (ug/m3)

1242 0.4 ug/PUF
1254 0.7 ug/PUF
1.1 ug/PUF

Adjusted (blank contam) 0.0023 ug/PUF

BCC

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 100-052695-006 Name of Preparer: J Barlow

Sampler No.: 006 Name of Reviewer: Art Sanders

Date: 6/1/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	59	0.256
12 HOURS	60	0.258
18 HOURS	60	0.258
FINISH	64	0.266

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std= $\boxed{0.259}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{373.0}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = < $\boxed{0.00054}$ ug/m3

ND <0.2ug/PUF

Fred Garner Park

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 107-052695-007 Name of Preparer: J Barlow

Sampler No.: 007 Name of Reviewer: Art Sanders

Date: 6/1/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	55	0.257
6 HOURS	55	0.257
12 HOURS	56	0.259
18 HOURS	56	0.259
FINISH	56	0.259

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = 0.258 m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 24.01 hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = 371.7 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = 0.0035 ug/m3
= conc. of PCBs in sample (ug/m3)

Aroclor 1242 0.52 ug
Aroclor 1254 0.78 ug
1.3 ug/PUF

Silverlake

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 108-052695-008   Name of Preparer: JBarlow

Sampler No.: 008   Name of Reviewer: Art Sanders

Date: 6/1/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	56	0.257
6 HOURS	54	0.252
12 HOURS	55	0.255
18 HOURS	56	0.257
FINISH	57	0.259

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}std$ = $\boxed{0.256}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start)   ET = $\boxed{24.01}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs)   Vs = $\boxed{368.8}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3)   Ca = $\boxed{0.011}$ ug/m3

Aroclor 1242 1.5 ug/PUF
Aroclor 1254 2.6 ug/PUF
4.1 ug/PUF

BETs

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 109-052695-009 Name of Preparer: VBarlow

Sampler No.: 009 Name of Reviewer: Art Sanders

Date: 6/1/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	60	0.258
12 HOURS	62	0.262
18 HOURS	59	0.256
FINISH	63	0.264

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = 0.260 m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 24.01 hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = 374.5 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = .0040 ug/m3

Aroclor 1242 0.76 ug
Aroclor 1254 0.71 ug
1.5 ug/PUF

Silver Lake

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 110-092695-010 Name of Preparer: J Barlow

Sampler No.: 010 Name of Reviewer: Art Sanders

Date: 6/1/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	61	0.258
6 HOURS	60	0.256
12 HOURS	61	0.258
18 HOURS	61	0.258
FINISH	63	0.262

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = 0.258 m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 24.01 hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = 371.7 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = 0.011 ug/m3
= conc. of PCBs in sample (ug/m3)

Aroclor 1242 1.4 ug/PUF
Aroclor 1254 2.6 ug/PUF
4.0 ug/PUF

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 100-052095-BL Name of Preparer: JBarlow

Sampler No.: Blank Name of Reviewer: ____________

Date: 6/1/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START		
6 HOURS		
12 HOURS		
18 HOURS		
FINISH		

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std= [ ] m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = [ ] hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = [ ] m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = [ ] ug/m3
= conc. of PCBs in sample (ug/m3)

ND

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 106-061095-006 Name of Preparer: JBarlow

Sampler No.: 006-BCC Name of Reviewer: Art Sanders

Date: 6/15/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	58	0.254
12 HOURS	56	0.250
18 HOURS	60	0.258
FINISH	60	0.258

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.256}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24.03}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{369.1}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = $\boxed{<0.00059}$ ug/m3

ND

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 107-061095-007 Name of Preparer: Barlow

Sampler No.: 007- Fred Garner Pk. Name of Reviewer: [illegible]

Date: 6/15/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	55	0.257
6 HOURS	53	0.252
12 HOURS	55	0.257
18 HOURS	57	0.261
FINISH	56	0.259

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}std$= $\boxed{0.257}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24.01}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{370.2}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.0041}$ ug/m3
= conc. of PCBs in sample (ug/m3)

0.7 1242
0.8 1254 } 1.5 ug/PUF

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 108-061095-008 Name of Preparer: JBarlow

Sampler No.: 008 - Silverlake Name of Reviewer: Art Sanders

Date: 6/15/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	56	0.257
6 HOURS	54	0.252
12 HOURS	56	0.257
18 HOURS	57	0.259
FINISH	55	0.255

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std= $\boxed{0.256}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24.03}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{369.1}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.013}$ ug/m3
= conc. of PCBs in sample (ug/m3)

$\left.\begin{matrix} 1242 & 2.1 \\ 1254 & 2.6 \end{matrix}\right\}$ 4.7ug/puf

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 110-061095-010 Name of Preparer: JBarlow

Sampler No.: 010-Silverlake Name of Reviewer: Art Sanders

Date: 6/15/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	61	0.258
6 HOURS	60	0.256
12 HOURS	61	0.258
18 HOURS	62	0.260
FINISH	60	0.256

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}std$ = $\boxed{0.258}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24.04}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min/hr. x ET (hrs) Vs = $\boxed{372.1}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) $\overline{Ca}$ = $\boxed{0.011}$ ug/m3

1242 1.6
1254 2.3 } 3.9

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 109-061095-009
Name of Preparer: J Barlow
Sampler No.: 009 - BETS
Name of Reviewer: Art Sanders
Date: 6/15/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	58	0.254
12 HOURS	60	0.258
18 HOURS	62	0.262
FINISH	60	0.258

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 — $\overline{Q}$std= $\boxed{0.258}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) — ET = $\boxed{24.02}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) — Vs = $\boxed{371.8}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) — Ca = $\boxed{0.003}$ ug/m3

1242 0.5
1254 0.6 } AT ug/PUF

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 100-061095-BL Name of Preparer: JBarlow

Sampler No.: BLANK Name of Reviewer: ____________

Date: 6/15/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START		
6 HOURS		
12 HOURS		
18 HOURS		
FINISH		

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = ____ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = ____ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = ____ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = ____ ug/m3
= conc. of PCBs in sample (ug/m3)

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 1106-062595-006 Name of Preparer: JBarlow

Sampler No.: 006 - BCC Name of Reviewer: A Sanders

Date: 6/26/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	58	0.254
12 HOURS	62	0.262
18 HOURS	60	0.258
FINISH	60	0.258

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.258}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{371.5}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{.00022}$ ug/m3
= conc. of PCBs in sample (ug/m3)

$\left.\begin{array}{l}\text{0.4ug/PUF 1242}\\ \text{0.4ug/PUF 1254}\end{array}\right\}$ 0.8 ug/PUF Total

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 107-062595-001 Name of Preparer: JBarlow

Sampler No.: 007 - FGRP Name of Reviewer: ASanders

Date: 6/26/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	55	0.257
6 HOURS	53	0.252
12 HOURS	56	0.259
18 HOURS	55	0.257
FINISH	57	0.261

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.257}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24.01}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{370.2}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.0092}$ ug/m3
= conc. of PCBs in sample (ug/m3)

1.1 ug/PUF Aroclor 1242
2.3 ug/PUF Aroclor 1254 } 3.4 ug/PUF

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 108-062595-008   Name of Preparer: J Barlow

Sampler No.: 008-Silverlake   Name of Reviewer: A Sanders

Date: 6/26/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	56	0.257
6 HOURS	55	0.255
12 HOURS	56	0.257
18 HOURS	56	0.257
FINISH	57	0.259

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.257}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start)   ET = $\boxed{24.0}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs)   Vs = $\boxed{370.1}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3)   Ca = $\boxed{0.020}$ ug/m3

$\left.\begin{array}{l}\text{2.6 ug/PUF Aroclor 1242}\\ \text{4.7 ug/PUF Aroclor 1254}\end{array}\right\}$ 7.3 ug/PUF

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 110-062595-010 Name of Preparer: JBarlow

Sampler No.: 010 - Silver Lake Name of Reviewer: ASanders

Date: 6/26/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	61	0.258
6 HOURS	58	0.252
12 HOURS	61	0.258
18 HOURS	60	0.256
FINISH	61	0.258

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = 0.256 m3/min

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 24 hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = 368.6 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = 0.018 ug/m3

22 ug/PUF Aroclor 1242
4.4 ug/PUF Aroclor 1254 } 6.6 ug/PUF

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 109-062595-009 Name of Preparer: JBarlow

Sampler No.: 009-BE75 Name of Reviewer: ASanders

Date: 062595-009

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	57	0.252
12 HOURS	61	0.260
18 HOURS	62	0.262
FINISH	60	0.258

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.258}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24.0}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min/hr. x ET (hrs) Vs = $\boxed{371.5}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.0062}$ ug/m3
= conc. of PCBs in sample (ug/m3)

1.1 ug/PUF Aroclor 1242
1.2 ug/PUF Aroclor 1254 } 2.3 ug/PUF

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 100-062595-BL Name of Preparer: JBarlow

Sampler No.: Blank Name of Reviewer: ______

Date: 6/26/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START		
6 HOURS		
12 HOURS		
18 HOURS		
FINISH		

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = ☐ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = ☐ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = ☐ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = ☐ ug/m3

ND

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 106-071095-006 Name of Preparer: JBarlow

Sampler No.: 006-BCC Name of Reviewer: A Sanders

Date: 7/10/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	58	0.254
6 HOURS	57	0.252
12 HOURS	57	0.252
18 HOURS	57	0.252
FINISH	60	0.258

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.254}$ m3/min.

3) Determine elapsed time.

$\overline{ET}$ (hrs) = $\overline{ETM}$ (finish) - $\overline{ETM}$ (start) ET = $\boxed{24.0}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{365.8}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.0011}$ ug/m3
= conc. of PCBs in sample (ug/m3)

0.4 ug/PUF Aroclor 1242

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 107-071095-007 Name of Preparer: JBarlow

Sampler No.: 007- PGPark Name of Reviewer: ASanders

Date: 7/10/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	57	0.258
6 HOURS	54	0.252
12 HOURS	58	0.261
18 HOURS	58	0.261
FINISH	59	0.263

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}std$ = 0.259 m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 24.0 hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = 373.0 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = 0.0062 ug/m3
= conc. of PCBs in sample (ug/m3)

0.7ug/PUF Aroclor 1242
1.6 ug/PUF Aroclor 1254 } 2.3 ug/PUF Total Aroclor

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 108-071095-008 Name of Preparer: JBurk

Sampler No.: 008-Silverlake Name of Reviewer: A Sanders

Date: 7/10/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	53	0.249
6 HOURS	53	0.249
12 HOURS	53	0.249
18 HOURS	52	0.247
FINISH	53	0.249

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = 0.249 m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 24.01 hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = 358.7 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = 0.019 ug/m3
= conc. of PCBs in sample (ug/m3)

3.1 ug/PUF Aroclor 1242
3.6 ug/PUF Aroclor 1254 } 6.7 ug/PUF total

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 109-071095-009 Name of Preparer: J Barlow

Sampler No.: 009 - BET4 Name of Reviewer: A Sanders

Date: 7/10/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	60	0.258
12 HOURS	61	0.26
18 HOURS	61	0.26
FINISH	63	0.264

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = 0.260 m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 24.0 hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = 374.4 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = 0.0021 ug/m3
= conc. of PCBs in sample (ug/m3)

$\left.\begin{array}{l}\text{0.4 ug/PUF Aroclor 1242}\\ \text{0.4 ug/PUF Aroclor 1254}\end{array}\right\}$ 0.8 ug/PUF total Aroclor

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 110-071095-010 Name of Preparer: VBarlow

Sampler No.: 010-Silverlake Name of Reviewer: A Sanders

Date: 7/10/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	61	0.257
6 HOURS	61	0.257
12 HOURS	61	0.257
18 HOURS	62	0.259
FINISH	61	0.257

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = 0.257 m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 24.01 hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = 370.2 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = 0.018 ug/m3
= conc. of PCBs in sample (ug/m3)

3.1 ug/PUF Aroclor 1242 } 6.8 ug/PUF
3.7 ug/PUF Aroclor 1254 }

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 100-071095-BL Name of Preparer: J Barlow

Sampler No.: Blank Name of Reviewer: ____________

Date: 7/10/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START		
6 HOURS		
12 HOURS		
18 HOURS		
FINISH		

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}std$ = ____ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = ____ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = ____ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = <0.005 ug/m3

<0.2ug/PUF

ND

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 106-072595-006   Name of Preparer: JBarker

Sampler No.: 006 - BCC   Name of Reviewer: JAB

Date: 7/25/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	56	0.252
6 HOURS	55	0.25
12 HOURS	57	0.254
18 HOURS	57	0.254
FINISH	59	0.258

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}$std = $\boxed{0.254}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start)   ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs)   Vs = $\boxed{365.8}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3)   Ca = $\boxed{0.0027}$ ug/m3

0.6 ug/PUF - Aroclor 1242
0.4 ug/PUF - Aroclor 1254 } 1.0 ug/PUF

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 107-072595-007   Name of Preparer: JBarlow

Sampler No.: 007 - FtPark   Name of Reviewer: JAB

Date: 7/25/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	57	0.258
6 HOURS	55	0.254
12 HOURS	59	0.262
18 HOURS	56	0.256
FINISH	56	0.256

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}std$ = $\boxed{0.257}$ ✓ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start)   ET = $\boxed{24}$ ✓ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs)   Vs = $\boxed{370.1}$ ✓ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3)   Ca = $\boxed{0.012}$ ✓ ug/m3

$$\left.\begin{array}{l}\text{1.6 ug/PUF Aroclor 1242}\\ \text{2.7 ug/PUF Aroclor 1254}\end{array}\right\}\text{4.3 ug/PUF}$$

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 108-072595-008 Name of Preparer: J Barlow

Sampler No.: 008 - Silverlake Name of Reviewer: JAB

Date: 7/25/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	52	0.248
6 HOURS	50	0.243
12 HOURS	51	0.245
18 HOURS	52	0.248
FINISH	52	0.248

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}std$ = $\boxed{0.246}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{354.2}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = $\boxed{0.036}$ ug/m3

3.6ug/PUF Aroclor 1242
9.1ug/PUF Aroclor 1254 } 12.7

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 109-072595-009 Name of Preparer: J Barlow

Sampler No.: 009 - BETS Name of Reviewer: JAB

Date: 7/25/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	0.258
6 HOURS	58	0.254
12 HOURS	61	0.266
18 HOURS	59	0.256
FINISH	63	0.264

2) Determine average flow rate.

$\overline{Qstd}$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Qstd}$ = 0.258 m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start) ET = 23.99 hr.

4) Determine total standard volume.

Vs = $\overline{Qstd}$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = 371.4 m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = 0.0057 ug/m3
= conc. of PCBs in sample (ug/m3)

1.0 ug/PUF Aroclor 1242
1.1 ug/PUF Aroclor 1254 } 2.1 ug/PUF

AMBIENT AIR MONITORING FOR PCB
Flow Calculation and Data Record Sheet

Sample No.: 110-072595-010   Name of Preparer: J Barlow

Sampler No.: 010 - Silver Lake   Name of Reviewer: JAB

Date: 7/25/95

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	61	0.258
6 HOURS	60	0.255
12 HOURS	61	0.258
18 HOURS	62	0.26
FINISH	61	0.258

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1 + Q2 + Q3 + Q4 + Q5 / 5 $\overline{Q}std$ = $\boxed{0.258}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM (finish) - ETM (start)   ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs)   Vs = $\boxed{371.5}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED:

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)   Ca = $\boxed{0.032}$ ug/m3
= conc. of PCBs in sample (ug/m3)

3.2 ug/PUF Aroclor 1242 }
8.7 ug/PUF Aroclor 1254 } 11.9 ug/PUF

GE MCP AMBIENT MONITORING
Flow Calculation and Data Record Sheet

Sample No.: ______________

Sampler No.: 006

Date: 8/9/95

BCC

Name of Preparer: John Bordeau

Name of Reviewer: Art Sanders

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	57	.254
6 HOURS	54	.248
12 HOURS	55	.250
18 HOURS	57	.254
FINISH	60	.260

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\overline{Q}std$ = $\boxed{.253}$ m3/min. ✓

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) ET = $\boxed{24.01}$ hr. ✓

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{364.5}$ m3 ✓

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

? Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.0014}$ ug/m3 ✓

= conc. of PCBs in sample (ug/m3)

0.5

GE MCP AMBIENT MONITORING

Flow Calculation and Data Record Sheet

Sample No.: ____________

Sampler No.: 007

Date: 8/9/95

Fred Garner Park

Name of Preparer: John Bordeau

Name of Reviewer: Art Sanders

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	57	.258
6 HOURS	52	.248
12 HOURS	59	.262
18 HOURS	58	.260
FINISH	60	.264

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\overline{Q}std$ = $\boxed{.258}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{371.5}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{ND}$ ug/m3

= conc. of PCBs in sample (ug/m3)

GE MCP AMBIENT MONITORING

Flow Calculation and Data Record Sheet

Sample No.: ______________ Name of Preparer: John Bordeau

Sampler No.: 008 Name of Reviewer: Art Sanders

Date: 8/9/95

Silverlake Primary

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	57	.258
6 HOURS	54	.252
12 HOURS	57	.258
18 HOURS	60	.264
FINISH	57	.258

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\overline{Q}std$ = $\boxed{.258}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{371.5}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.013}$ ug/m3

= conc. of PCBs in sample (ug/m3)

4.8

GE MCP AMBIENT MONITORING

Flow Calculation and Data Record Sheet

Sample No.: ______
Sampler No.: 009
Date: 8/9/95

Woods Pond

Name of Preparer: John Bordeau
Name of Reviewer: Art Sanders

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	.258
6 HOURS	58	.254
12 HOURS	60	.258
18 HOURS	61	.260
FINISH	65	.268

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\overline{Q}std$ = $\boxed{.260}$ m3/min. ✓

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) ET = $\boxed{24}$ hr. ✓

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{374.4}$ m3 ✓

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) Ca = $\boxed{0.001}$ ug/m3 ✓

0.4

GE MCP AMBIENT MONITORING
Flow Calculation and Data Record Sheet

Sample No.: ______

Sampler No.: 010

Date: 8/9/95

Name of Preparer: John Bordeau

Name of Reviewer: Art Sanders

Silver Lake (co-locator)

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	61	.258
6 HOURS	59	.253
12 HOURS	61	.258
18 HOURS	62	.260
FINISH	61	.258

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\qquad$ $\overline{Q}$std = $\boxed{.257}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) $\qquad$ ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) $\qquad$ Vs = $\boxed{370.1}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) $\qquad$ Ca = $\boxed{0.012}$ ug/m3

4.3

GE MCP AMBIENT MONITORING

Flow Calculation and Data Record Sheet

Sample No.: ______________ Name of Preparer: John Bordeau

Sampler No.: 006 Name of Reviewer: Art Sanders

Date: 8/24/95

BCC

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	59	.258
6 HOURS	58	.256
12 HOURS	57	.254
18 HOURS	60	.260
FINISH	60	.260

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\overline{Q}std$ = $\boxed{.258}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{371.5}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.0013}$ ug/m3 ✓

= conc. of PCBs in sample (ug/m3)

0.0006

0.5 - 1242

Adj. to 0.21

GE MCP AMBIENT MONITORING
Flow Calculation and Data Record Sheet

Sample No.: ______________

Sampler No.: 007

Date: 8/24/95

Name of Preparer: John Bordeau

Name of Reviewer: Art Sanders

FGP

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	57	.258
6 HOURS	54	.252
12 HOURS	58	.260
18 HOURS	60	.264
FINISH	58	.260

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\qquad \overline{Q}std = \boxed{.259}$ m3/min. ✓

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) $\qquad$ ET = $\boxed{24}$ hr. ✓

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) $\qquad$ Vs = $\boxed{373.0}$ m3 ✓

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3) $\qquad$ Ca = $\boxed{0.0072}$ ug/m3 ✓

0.0065

2.7 – 1242+1254
Adj. to 2.41

GE MCP AMBIENT MONITORING

Flow Calculation and Data Record Sheet

Sample No.:

Sampler No.: 008

Date: 8/24/95

Name of Preparer: John Bordeau

Name of Reviewer: Art Sanders

Silver Lake Primary

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	57	.258
6 HOURS	55	.254
12 HOURS	58	.260
18 HOURS	57	.258
FINISH	53	.250

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\overline{Q}std$ = $\boxed{.256}$ m3/min. ✓

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) ET = $\boxed{24}$ hr. ✓

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{368.6}$ m3 ✓

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf)
= conc. of PCBs in sample (ug/m3)

Ca = $\boxed{0.0244}$ ug/m3 ✓

0.0236

9.0 - 1242+1254
Adj. to 8.71

GE MCP AMBIENT MONITORING

Flow Calculation and Data Record Sheet

Sample No.: ______________ Name of Preparer: John Bordeau

Sampler No.: 009 Name of Reviewer: Art Sanders

Date: 8/24/95

BET / Woods Pond

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from sampler calibration worksheet and write in below.

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	60	.258
6 HOURS	56	.250
12 HOURS	62	.262
18 HOURS	57	.252
FINISH	58	.254

2) Determine average flow rate.

$\overline{Q}std$ (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\overline{Q}std$ = $\boxed{.255}$ m3/min.

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) ET = $\boxed{24}$ hr.

4) Determine total standard volume.

Vs = $\overline{Q}std$ (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{367.2}$ m3

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.0033}$ ug/m3

= conc. of PCBs in sample (ug/m3)

0.0025

1.22-1242+1254

Adj. to 0.93

GE MCP AMBIENT MONITORING

Flow Calculation and Data Record Sheet

Sample No.: ____________ Name of Preparer: John Bordeau

Sampler No.: 010 Name of Reviewer: Art Sanders

Date: 8/24/95

Silver Lake - Colocator

1) To convert magnehelic readings to flow rate, obtain appropriate equation for sampler from *sampler calibration worksheet and write in below.*

EQUATION:

TIME	MAGNEHELIC READING	CALCULATED Qstd
START	61	.258
6 HOURS	61	.258
12 HOURS	60	.255
18 HOURS	61	.258
FINISH	60	.255

2) Determine average flow rate.

$\overline{Q}$std (m3/min.) = Q1+Q2+Q3+Q4+Q5 / 5 $\overline{Q}$std = $\boxed{.257}$ m3/min. ✓

3) Determine elapsed time.

ET (hrs) = ETM(finish) - ETM(start) ET = $\boxed{24}$ hr. ✓

4) Determine total standard volume.

Vs = $\overline{Q}$std (m3/min.) x 60 min./hr. x ET (hrs) Vs = $\boxed{370.1}$ m3 ✓

TO BE COMPLETED WHEN ANALYTICAL RESULTS ARE RETURNED :

5) Convert lab results (ug/puf) to ambient concentrations.

Ca = (ug/puf) / (m3/puf) Ca = $\boxed{0.0170}$ ug/m3 ✓

= conc. of PCBs in sample (ug/m3)

0.0162

6.3 — 1242+1254

Adj. to 6.01