3140 Finley Road
Downers Grove, IL 60515
630.795.3200
Fax: 630.795.1130

Clayton
GROUP SERVICES

EPA Region 5 Records Ctr.
269169

ILR000128249 Madison County LPC 1190505040

The Hartford Area Hydrocarbon Plume Site
Hartford, Illinois

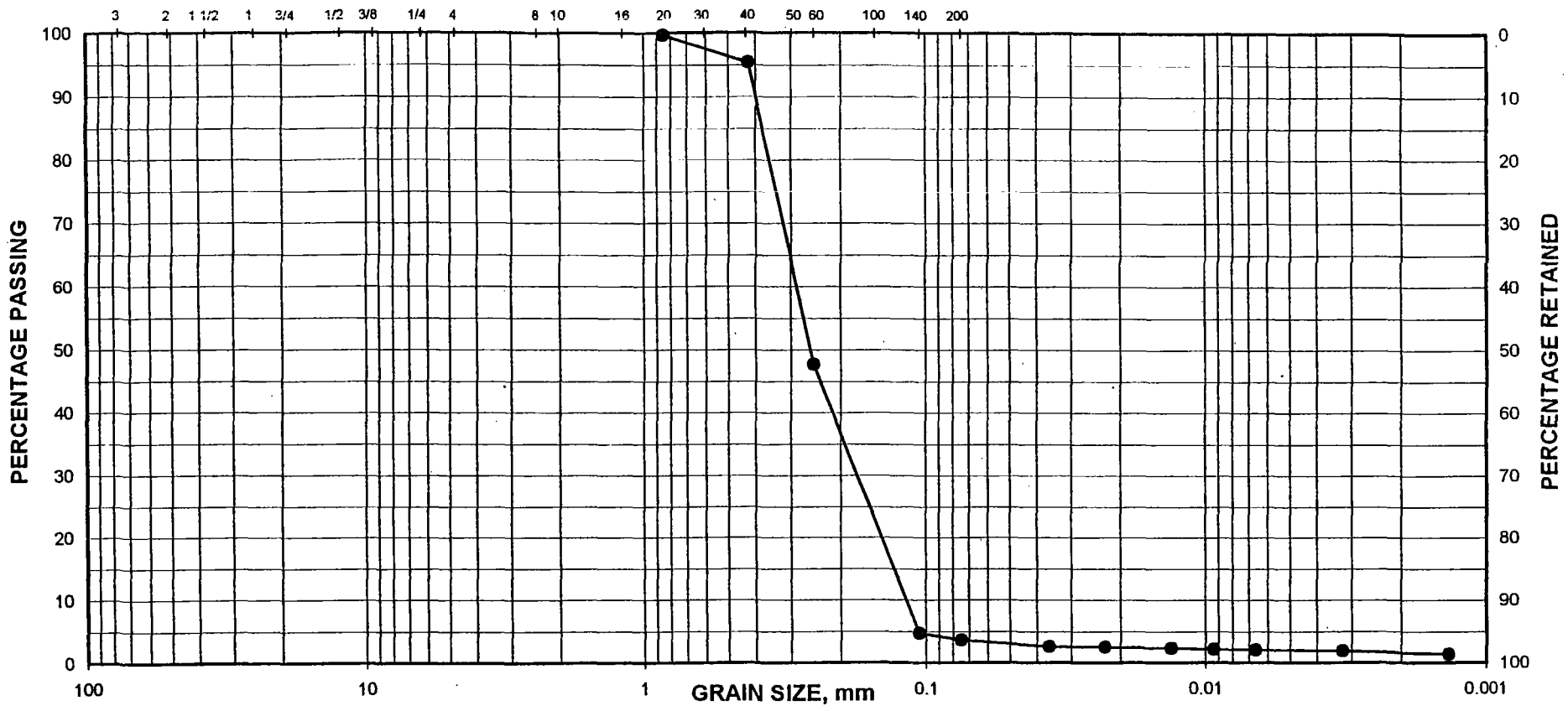
Preliminary (Subject to Change)
Soil Grain Size Analyses
Laboratory Reports

Received by Clayton Group Services, Inc.

August 16, 2004

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#7	MP-29	--	32.0 - 34.0	Brown Fine SAND, Trace Silt, SP

Natural Moisture Content, % = 19.6
Organic Content, % = 1.0

PHILIP ENVIRONMENTAL

E:\Gs#7.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#7 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/16/04 | Boring No.: MP-29 | Sample No.: – | Depth: 32.0 - 34.0

Total Sample Wt.: 70.62

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.22	0.3	99.7	99.7	0.8500
Sieve Portion	#40	3.29	4.6	95.4	95.4	0.4250
	#60	36.95	52.3	47.7	47.7	0.2500
	#140	67.30	95.3	4.7	4.7	0.1060
	#200	68.09	96.4	3.6	3.6	0.0750

Wt.of Sample at Start of Hydrometer: 70.62

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	6.7	22.0	1.8	2.6	2.6	0.0362
Portion	5	6.6	22.0	1.7	2.4	2.4	0.0229
	15	6.5	22.0	1.6	2.3	2.3	0.0132
	30	6.4	22.0	1.5	2.2	2.2	0.0094
	60	6.3	22.0	1.4	2.0	2.0	0.0066
	250	6.2	22.0	1.3	1.9	1.9	0.0032
	1440	6.0	21.5	1.0	1.4	1.4	0.0014

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 96 | Silt: 2 | Clay(<0.005): 2

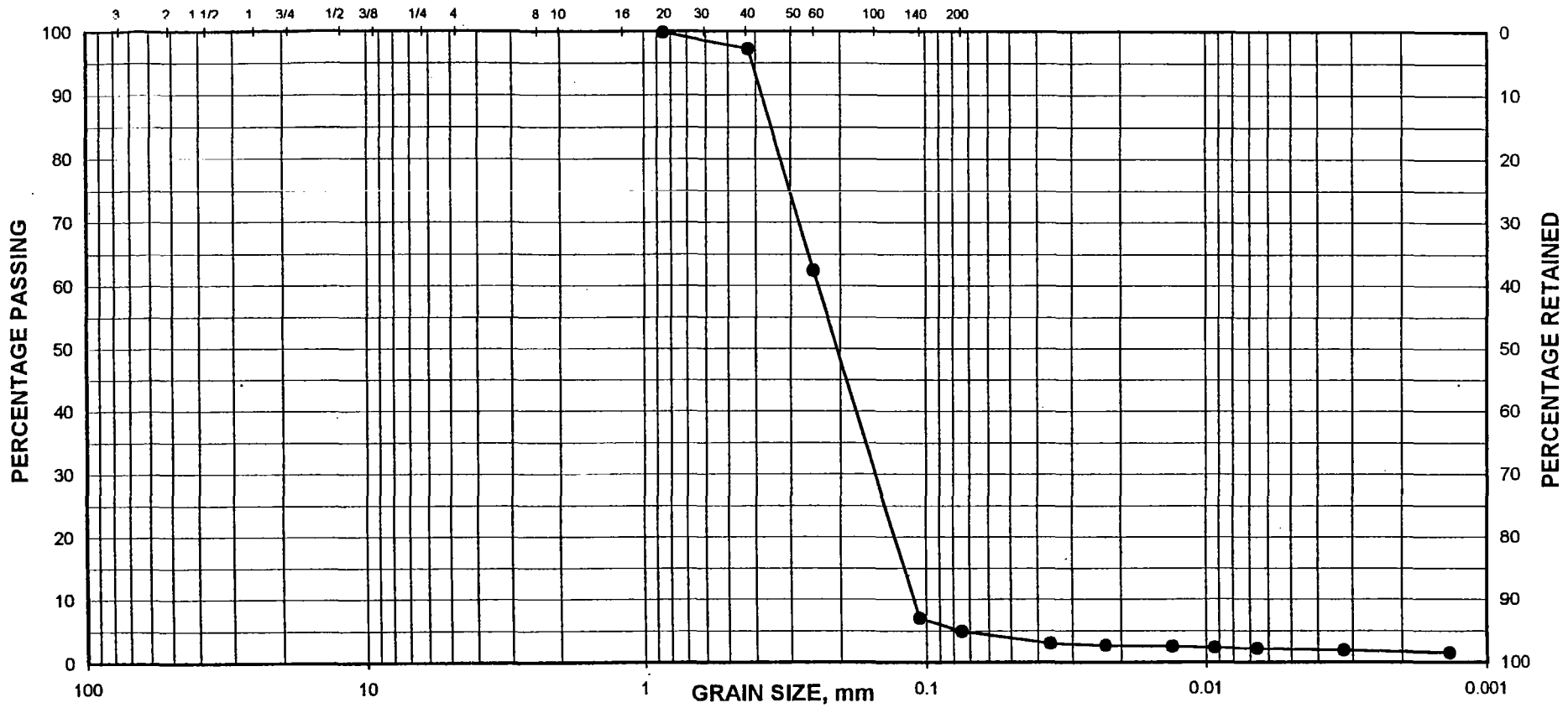
D10: 0.125 | D30: 0.180 | D60: 0.290

Cu: 2.3 | Cc: 0.9

Unified Classification: Brown Fine SAND, Trace Silt, SP

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#8	MP-42	--	32.0 - 34.0	Brown Fine SAND, Trace Silt, SP

Natural Moisture Content, % = 20.6
Organic Content, % = 0.3

PHILIP ENVIRONMENTAL

E:\Gs#8.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No : GS#8 | Project Name: Clayton - Hartford Illinois | Project Number: 62402462

Date: 7/16/04 | Boring No.: MP-42 | Sample No.: -- | Depth : 32.0 - 34.0

Total Sample Wt. 70.02

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.13	0.2	99.8	99.8	0.8500
Sieve Portion	#40	1.97	2.8	97.2	97.2	0.4250
	#60	26.31	37.6	62.4	62.4	0.2500
	#140	65.17	93.1	6.9	6.9	0.1060
	#200	66.61	95.1	4.9	4.9	0.0750

Wt.of Sample at Start of Hydrometer: 70.02

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. C°	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	7.0	22.0	2.1	3.0	3.0	0.0361
Portion	5	6.8	22.0	1.9	2.7	2.7	0.0229
	15	6.6	22.0	1.7	2.5	2.5	0.0132
	30	6.5	22.0	1.6	2.3	2.3	0.0094
	60	6.4	22.0	1.5	2.2	2.2	0.0066
	250	6.2	22.0	1.3	1.9	1.9	0.0032
	1440	6.0	21.5	1.0	1.4	1.4	0.0014

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 95 | Silt: 3 | Clay(<0.005): 2

D10: 0.115 | D30: 0.150 | D60: 0.237

Cu: 2.1 | Cc: 0.8

Unified Classification: Brown Fine SAND, Trace Silt, SP

LABORATORY TEST ASSIGNMENTS

PROJECT Clayton - Hartford
CONTRACT NUMBER 62402462

DATE ASSIGNED 07/15/04
PROJECT ENGINEER CM²

BORING NUMBER	SAMPLE NUMBER	SAMPLE TYPE	VISUAL CLASSIFICATION	MOISTURE CONTENT	PENETROMETER	DRY DENSITY	RIMAC	UNCONFINED COMPRESSION	ORGANIC HOT OVEN	SHRINKAGE LIMITS	ATTERBERG LIMITS, 1 PT or 3 PT	SIEVE ANALYSIS	PERCENT PASSING #200	HYDROMETER ANALYSIS	CONSOLIDATION	SWELL PRESSURE	SPECIFIC GRAVITY	MOISTURE DENSITY STANDARD	MOISTURE DENSITY MODIFIED	RELATIVE DENSITY	CBR or IBR	PERMEABILITY K-620	PERMEABILITY BACK PRES.	DIRECT SHEAR	TRIAXIAL SHEAR	SPECIAL INSTRUCTIONS
MP-12	32-34'	Bag		X					X					X												
MP-29	32-34'	Bag		X					X					X												

PHILIP

CHAIN OF CUSTODY

pg. 1 of 1 Work Order # _____

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: CLAYTON GROUP SERVICES
Address: 3140 FINLEY ROAD
City / State / Zip: DOWNERS GROVE, IL 60515
Contact: HEIDI L. MENDYGRAL Phone: (630) 795-3200
E-Mail: hmendygral@claytongp.com Fax: (630) 795-1130

Are the samples chilled? ☐ NO ☐ YES (Ice or Blue Ice)
Cooler Temperature: _____ °C
Preserved In: ☐ Lab ☐ Field
Comments:

Project Name / Number: HARTFORD WORKING GROUP. 15-03095.13-002
Sample Collector's Name: NORMAN BOLIVAR
Requested Due Date: STAT
Billing Instructions: PO# 15-03095.13-002

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	Other	Water	Drinking Water	Soil	Sludge	Sp. Waste	Grav. Solids w/ hydrocarbons	FOC	moisture
	MP-42 32'-34' 040713	07/13/04 1630	X										X			X	X	X
	MP-29 32'-34' 040713	07/13/04 0930	X										X			X	X	X
	MP42 W. 040715	07/15/04 1030	X										X					
	MP42 RAND 040715	07/15/04 1115	X										X					

Relinquished By	Date / Time	Received By	Date / Time
Norman O. Bolivar	07/15/04 1000	Amy Brady	07/16/04 0800

PARTICLE-SIZE ANALYSIS of SOILS (7)

PROJECT NAME: Clayton – Hartford
JOB NO.: 62402462
BORING NO.: MP-29
SAMPLE NO.: --
DEPTH, ft.: 32-34'
DESCRIPTION: Brown Fine SAND Trace Silt, SP

TESTED BY: CMB
DATE: 07/16/04
MC = 19.6
OC = 1.0
LL: ___
PL: ___

HYDROMETER [X] SIEVE [X] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 70.77

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	207
WET WT + TARE	4870
DRY WT + TARE	4862
WT TARE	1153

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:17	0	—	—
9:19	2	22.0	6.7
9:22	5	22.0	6.6
9:32	15	22.0	6.5
9:47	30	22.0	6.4
10:17	60	22.0	6.3
1:27	250	22.0	6.2
9:17	1440	21.5	6.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. + Sieve	Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	404.94	403.92
1½ in		NO. 30	—	—
1 in.		NO. 40	575.89	572.85
¾ in.		NO. 50	—	—
⅜ in.		NO. 60	403.66	369.97
NO. 4		NO. 100	—	—
NO. 8		NO. 140	374.39	344.04
NO. 10		NO. 200	308.34	307.55
		Pan	389.79	389.66

NO. 200 WASH

TARE NO. 4

WT. TARE + DRY MATL. (+200) 109.64

WT. TARE 41.69

WT. DRY MATERIAL (+200) 67.95

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(8)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-42
SAMPLE NO.: —
DEPTH, ft.: 32.0-34.0
DESCRIPTION: Brown Fine SP

TESTED BY: CMB
DATE: 07/16/04
MC= 20.6
OC= 0.3
LL: —
PL: —

HYDROMETER [X] SIEVE [X] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 70.05

HYGROSCOPIC MOISTURE

TARE NO.	51
WET WT + TARE	5139
DRY WT + TARE	5137
WT TARE	1124

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:21	0	—	—
9:23	2	22.0	7.0
9:26	5	22.0	6.75
9:36	15	22.0	6.6
9:51	30	22.0	6.5
10:21	60	22.0	6.4
1:31	250	22.0	6.2
9:21	1440	21.5	6.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	~~CUM.~~ WT. RET. + Sieve	Sieve
3 in.		NO. 16		
2 in.		NO. 20	404.07	403.94
1½ in		NO 30		
1 in.		NO 40	574.74	572.90
¾ in.		NO. 50		
⅜ in.		NO. 60	394.36	392.02
NO. 4		NO. 100		
NO. 8		NO. 140	382.92	344.06
NO. 10		NO. 200	309.00	307.56
		Pan	389.88	389.65

NO. 200 WASH

TARE NO. 5

WT. TARE + DRY MATL. (+200) 108.27

WT. TARE 41.59

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

MOISTURE & ORGANIC CONTENT DETERMINATION

Job No.: 62402462 Date: 07/16/04

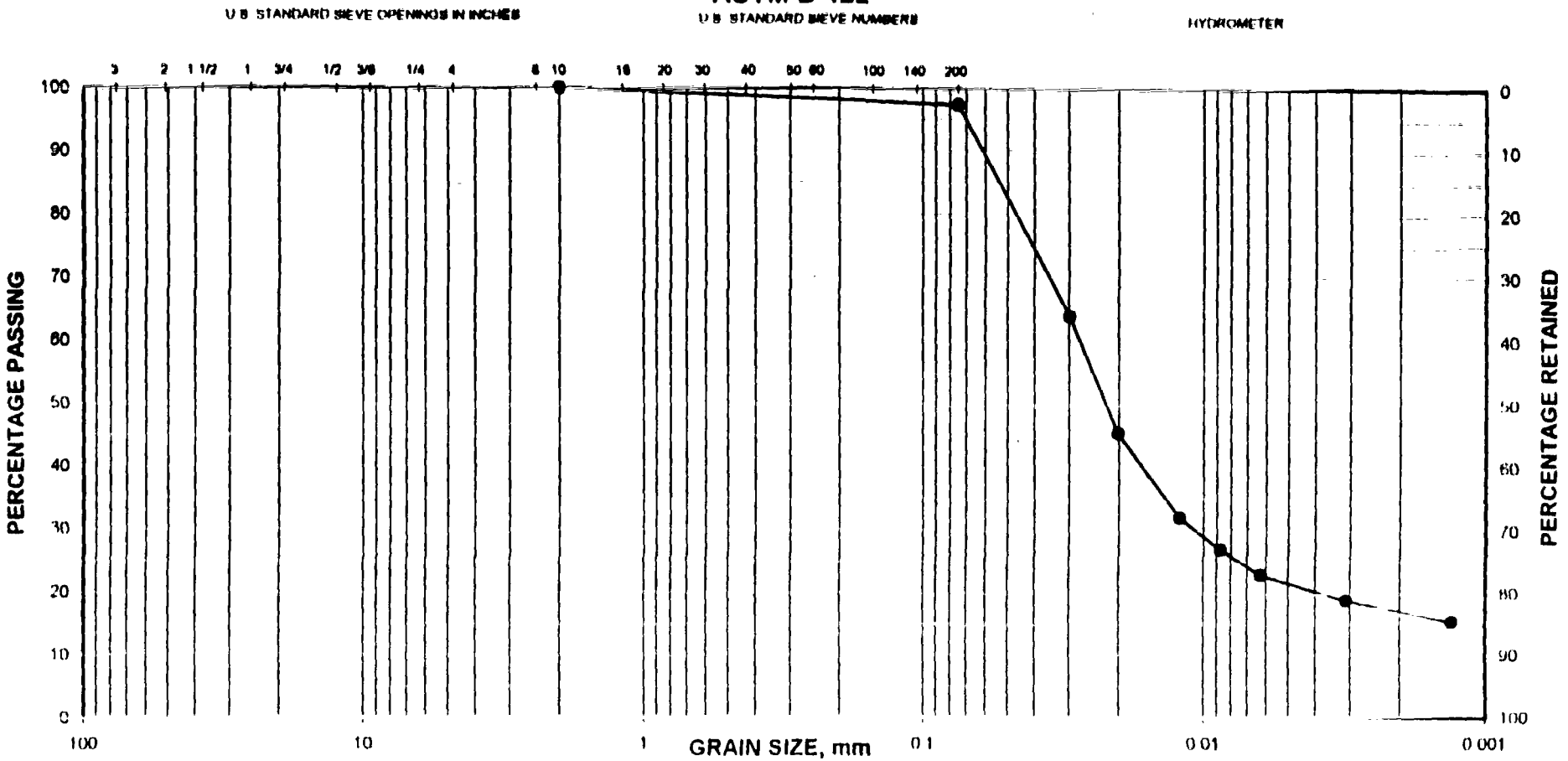
Boring/Sample	MP-42/32-34'	MP-25/32-34'			
Tare Number	219 (69)	32 (24)			
Wt. Wet Soil + Tare	216.26	220.68			
Wt. Dry Soil + Tare, Lab Oven	193.48	196.30			
Wt. Dry Soil + Tare, Hot Oven	193.12				
Tare Wt.	83.00	72.73			
Moisture Content, %	20.6	19.7			
Organic Content, %	0.3				
Penetrometer Reading, (Qp)		Tare Broke			
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					

Tested By: CWB Computed By: PC Checked By: CWB

PHILIP ENVIRONMENTAL

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#9	MP-47 MAIN	--	8.0 - 10.0	Brown Lean SILT, Trace Sand, ML

Natural Moisture Content, % = 30.5
Organic Content, % = 2.2

PHILIP ENVIRONMENTAL

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HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#9 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/19/04 Boring No.: MP-47 MAIN Sample No.: – Depth : 8.0 - 10.0

Total Sample Wt.: 48.12

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	1.24	2.6	97.4	97.4	0.0750

Wt.of Sample at Start of Hydrometer: 48.12

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	36.0	22.0	31.1	64.0	64.0	0.0299
Portion	5	27.0	22.0	22.1	45.5	45.5	0.0202
	15	20.5	22.0	15.6	32.1	32.1	0.0122
	30	18.0	22.0	13.1	27.0	27.0	0.0088
	60	16.0	22.0	11.1	22.9	22.9	0.0063
	250	14.0	22.0	9.1	18.8	18.8	0.0031
	1440	12.5	21.5	7.5	15.4	15.4	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 3 Silt: 76 Clay(<0.005): 22

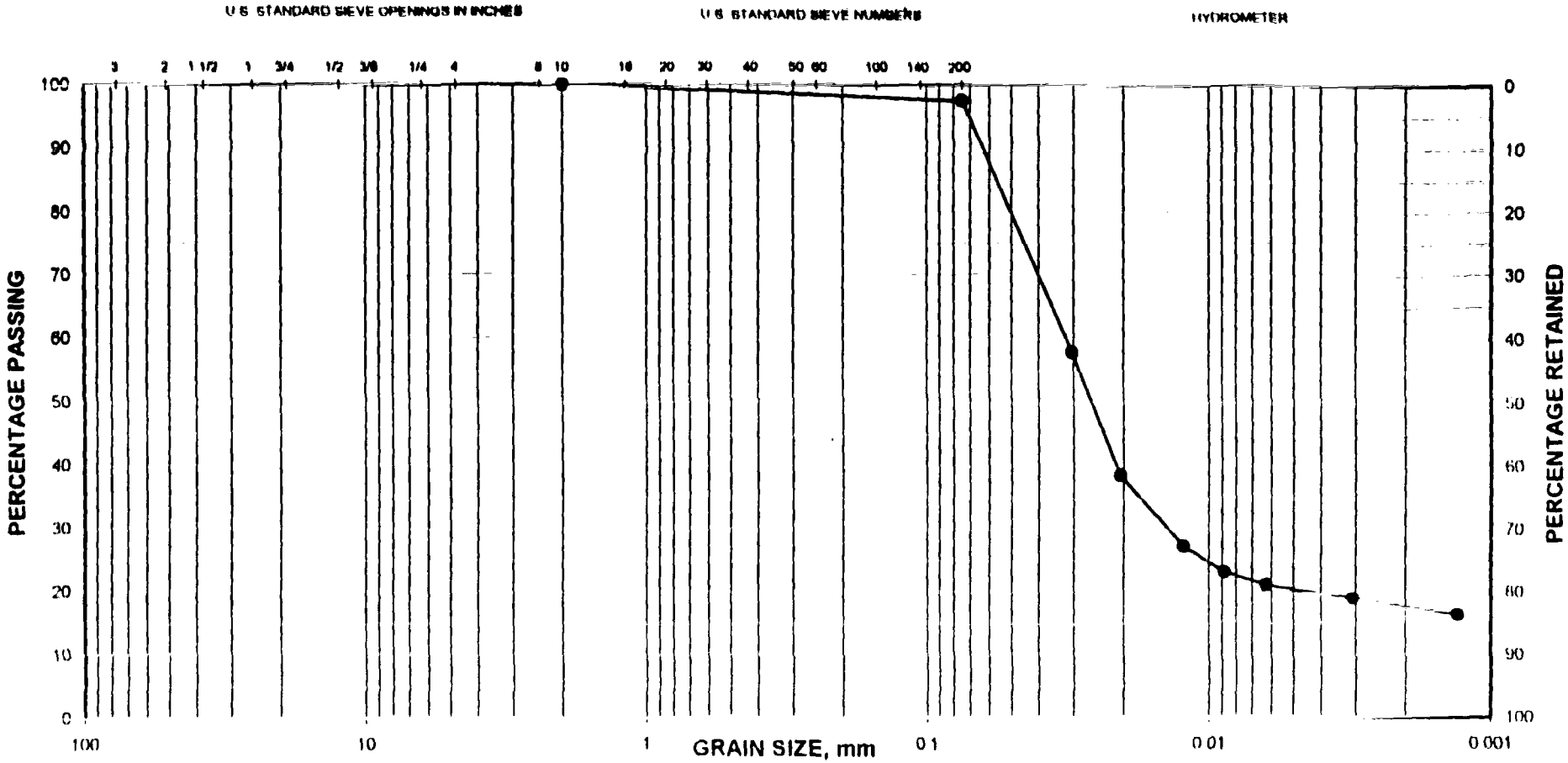
D10: <0.001 D30: 0.011 D60: 0.028

Cu: N/A Cc: N/A

Unified Classification: Brown Lean SILT, Trace SAND, ML

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#10	MP-47 MAIN	--	10.0 - 12.0	Brown Lean SILT, Trace Sand, ML

Natural Moisture Content, % = 34.5
Organic Content, % = 2.2

PHILIP ENVIRONMENTAL

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HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#10 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/19/04 Boring No.: MP-47 MAIN Sample No.: -- Depth : 10.0 - 12.0

Total Sample Wt.: 48.25

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	1.19	2.5	97.5	97.5	0.0750

Wt.of Sample at Start of Hydrometer: 48.25

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	33.0	22.5	28.3	58.0	58.0	0.0305
Portion	5	23.5	22.5	18.8	38.5	38.5	0.0206
	15	18.0	22.5	13.3	27.2	27.2	0.0123
	30	16.0	22.5	11.3	23.1	23.1	0.0088
	60	15.0	22.5	10.3	21.1	21.1	0.0063
	250	14.0	22.5	9.3	19.0	19.0	0.0031
	1440	13.0	21.5	8.0	16.4	16.4	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 2 Silt: 77 Clay(<0.005): 20

D10: <0.001 D30: 0.015 D60: 0.032

Cu: N/A Cc: N/A

Unified Classification: Brown Lean SILT, Trace SAND, ML

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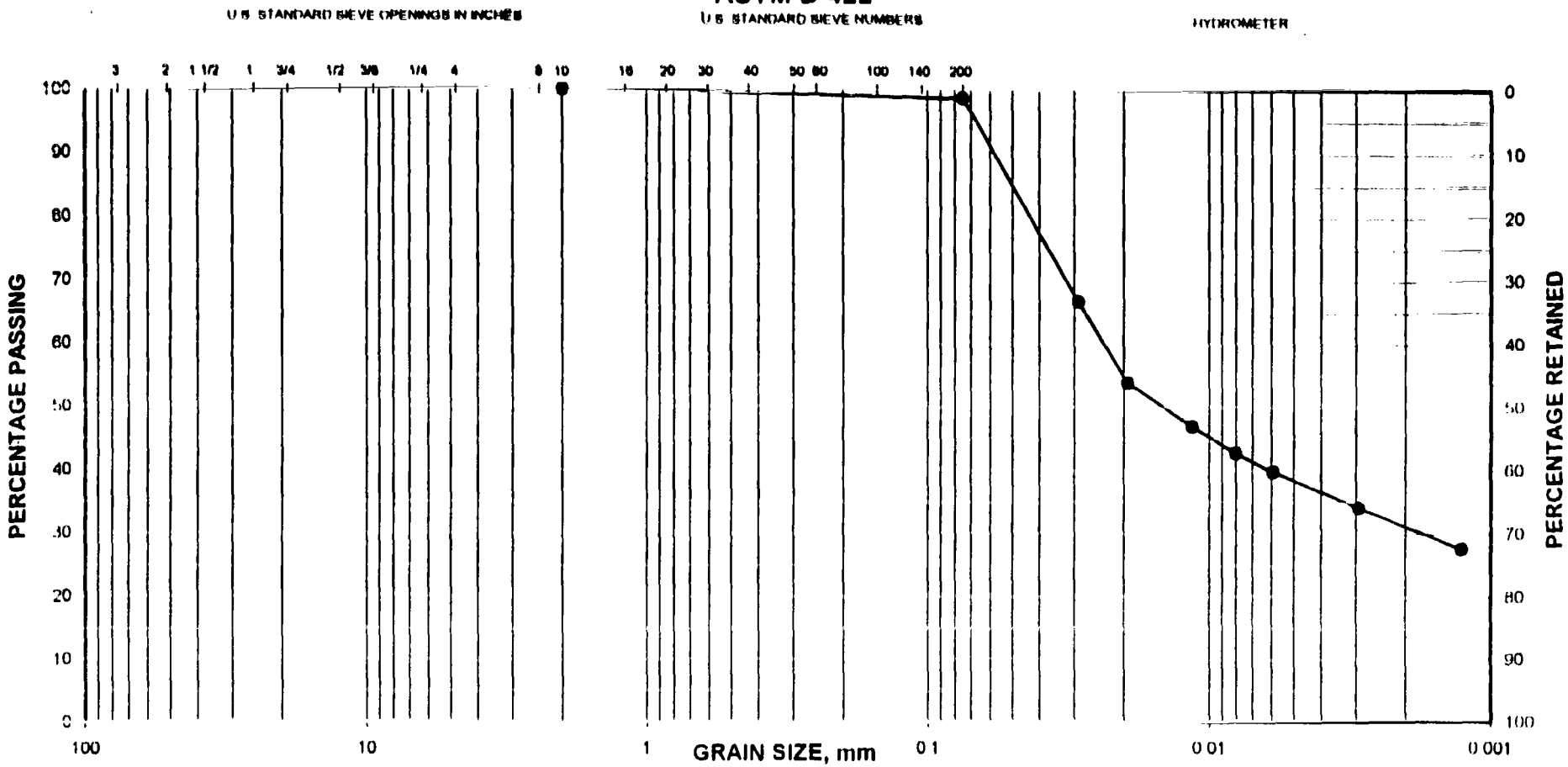
PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#11	MP-47 MAIN	--	16.0 - 18.0	Gray-Brown Lean CLAY, Trace Sand, CL

Natural Moisture Content, % = 36.1
Organic Content, % = 3.4

PHILIP ENVIRONMENTAL

E:\Gs#11.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#11 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/19/04 | Boring No.: MP-47 MAIN | Sample No.: -- | Depth : 16.0 - 18.0

Total Sample Wt.: 50.12

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	0.73	1.5	98.5	98.5	0.0750

Wt.of Sample at Start of Hydrometer: 50.12

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	38.5	22.5	33.8	66.7	66.7	0.0292
Portion	5	32.0	22.5	27.3	53.8	53.8	0.0194
	15	28.5	22.5	23.8	46.9	46.9	0.0115
	32	26.5	22.0	21.6	42.7	42.7	0.0080
	60	25.0	22.0	20.1	39.7	39.7	0.0059
	250	22.0	22.5	17.3	34.1	34.1	0.0029
	1440	19.0	21.5	14.0	27.6	27.6	0.0013

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 1 | Silt: 60 | Clay(<0.005): 39

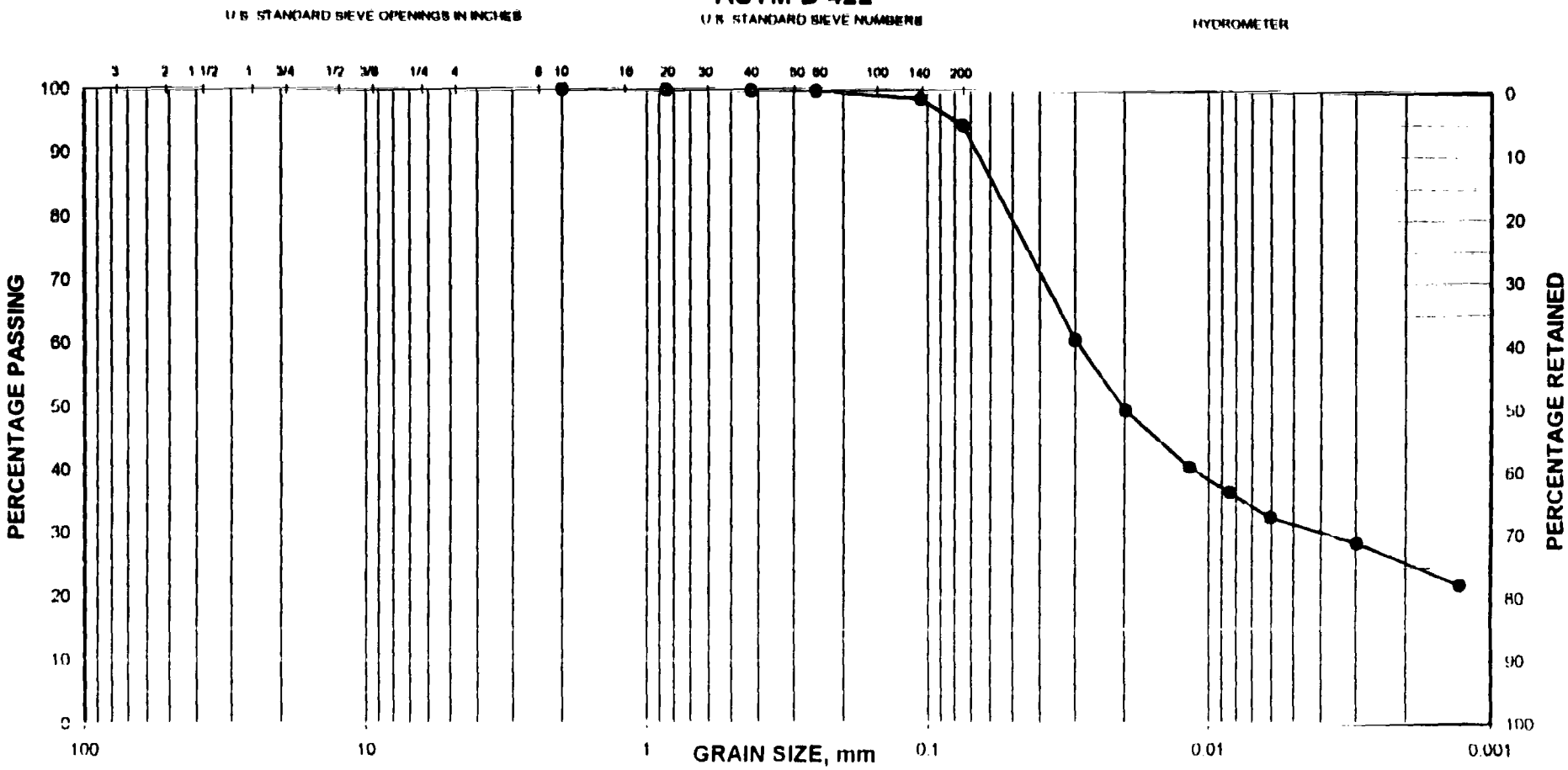
D10: <0.001 | D30: 0.002 | D60: 0.024

Cu: N/A | Cc: N/A

Unified Classification: Gray-Brown Lean CLAY, Trace SAND, CL

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#12	MP-47 MAIN	--	20.0 - 22.0	Gray-Brown Lean SILT, Trace Sand, ML

Natural Moisture Content, % = 37.7
Organic Content, % = 3.3

PHILIP ENVIRONMENTAL

E:\Gs#12.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#12 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/19/04 Boring No.: MP-47 MAIN Sample No.: -- Depth : 20.0 - 22.0

Total Sample Wt.: 49.22

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.03	0.1	99.9	99.9	0.8500
Sieve Portion	#40	0.08	0.2	99.8	99.8	0.4250
	#60	0.11	0.2	99.8	99.8	0.2500
	#140	0.69	1.4	98.6	98.6	0.1060
	#200	2.72	5.5	94.5	94.5	0.0750

Wt.of Sample at Start of Hydrometer: 49.22

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	35.0	22.5	30.3	60.9	60.9	0.0300
Portion	5	29.5	22.5	24.8	49.8	49.8	0.0198
	15	25.0	22.5	20.3	40.8	40.8	0.0118
	30	23.0	22.5	18.3	36.7	36.7	0.0084
	60	21.0	22.5	16.3	32.7	32.7	0.0060
	250	19.0	22.5	14.3	28.7	28.7	0.0030
	1440	16.0	21.5	11.0	22.1	22.1	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 6 Silt: 63 Clay(<0.005): 32

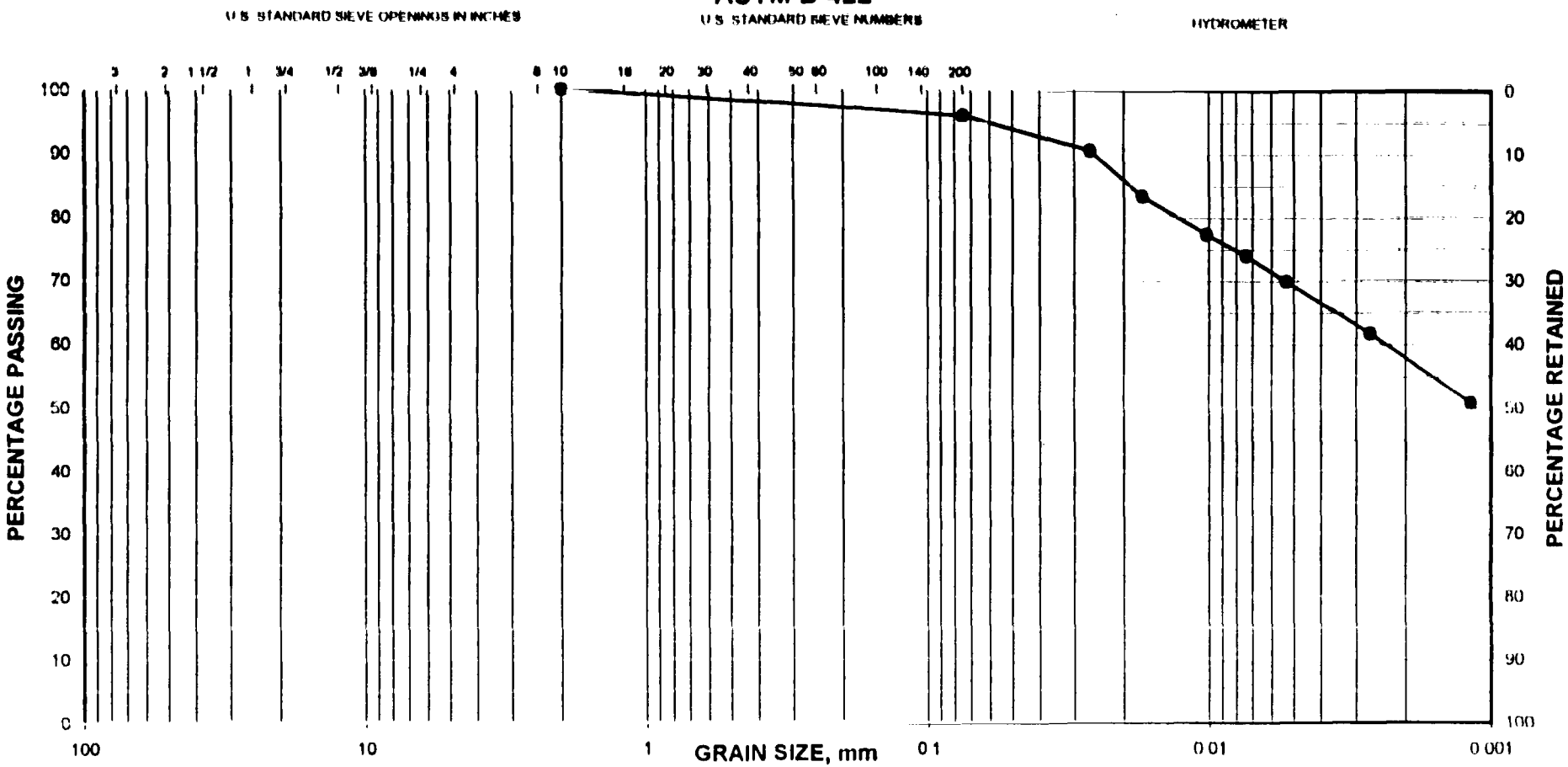
D10: <0.001 D30: 0.004 D60: 0.029

Cu: N/A Cc: N/A

Unified Classification: Gray-Brown Lean SILT, Trace Sand, ML

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#13	MP-47 MAIN	--	24.0 - 26.0	Gray-Brown Fat CLAY, Trace Sand, CH

Natural Moisture Content, % = 40.3
Organic Content, % = 4.2

PHILIP ENVIRONMENTAL

E:\Gs#13.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#13 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/19/04 Boring No.: MP-47 MAIN Sample No.: -- Depth : 24.0 - 26.0

Total Sample Wt.: 48.62

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	2.00	4.1	95.9	95.9	0.0750

Wt.of Sample at Start of Hydrometer: 48.62

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	49.0	23.0	44.4	90.4	90.4	0.0264
Portion	5	45.5	23.0	40.9	83.3	83.3	0.0173
	15	42.5	23.0	37.9	77.2	77.2	0.0102
	30	41.0	22.5	36.3	73.8	73.8	0.0074
	60	39.0	22.5	34.3	69.7	69.7	0.0053
	250	35.0	22.5	30.3	61.6	61.6	0.0027
	1440	30.0	21.5	25.0	50.9	50.9	0.0012

LL: PL: PI: Organic: No

Gravel: 0 Sand: 4 Silt: 27 Clay(<0.005): 69

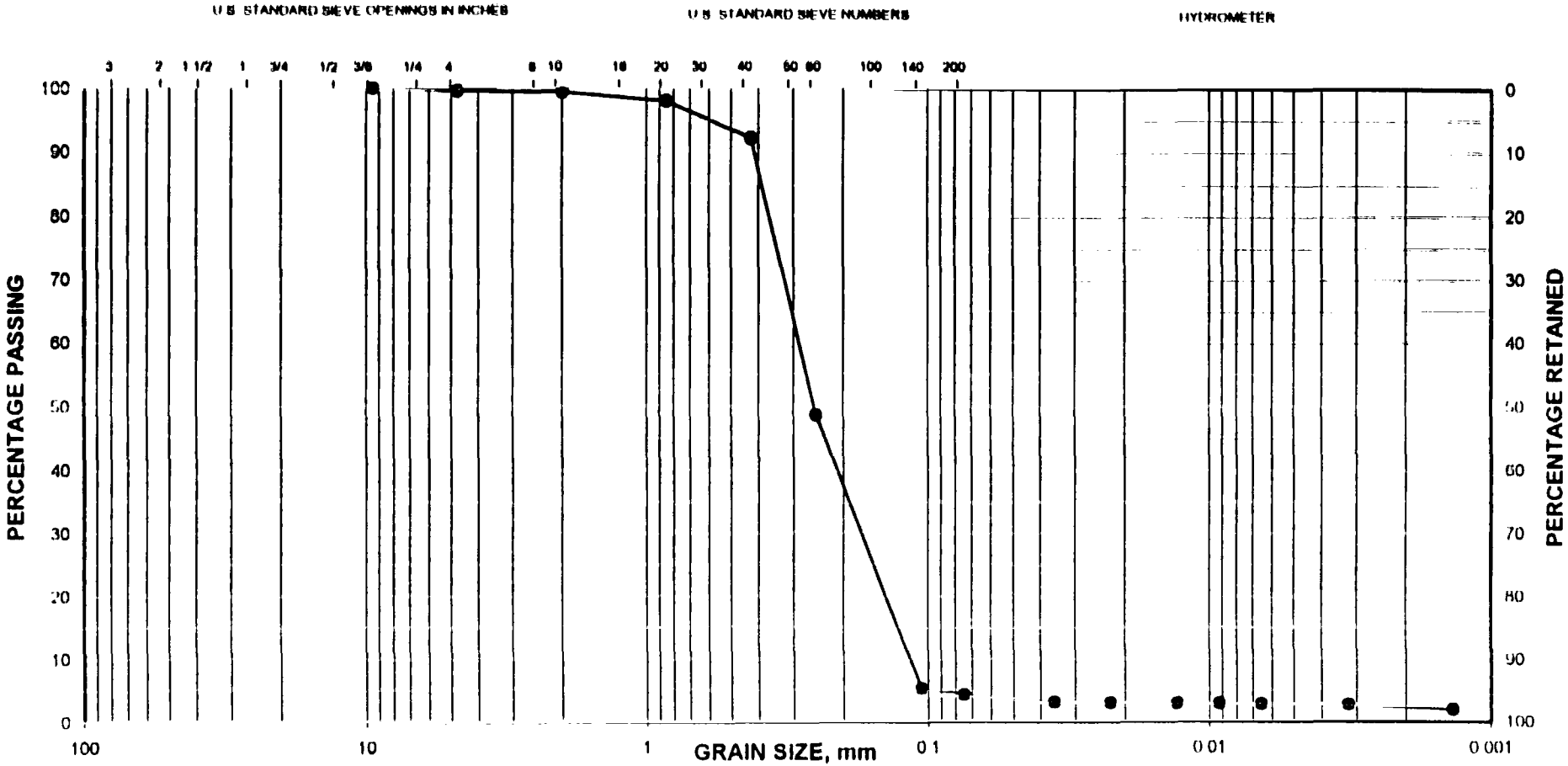
D10: <0.001 D30: <0.001 D60: 0.003

Cu: N/A Cc: N/A

Unified Classification: Gray-Brown Fat CLAY, Trace SAND, CH

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#14	MP-47 MAIN	--	30.0 - 32.0	Brown Fine SAND, Trace Gravel,Silt, SP

Natural Moisture Content, % = 21.1
Organic Content, % = 1.0

PHILIP ENVIRONMENTAL

E:\Gs#14.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#14 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/19/04 Boring No.: MP-47 MAIN Sample No.: -- Depth : 30.0 - 32.0

Total Sample Wt.: 339.41

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	1.47	0.4	99.6	99.6	4.7500
	#10	2.39	0.7	99.3	99.3	2.0000
-#10	#20	1.33	1.3	98.7	98.0	0.8500
Sieve Portion	#40	7.47	7.4	92.6	92.0	0.4250
	#60	51.59	51.1	48.9	48.6	0.2500
	#140	95.67	94.7	5.3	5.3	0.1060
	#200	96.61	95.6	4.4	4.4	0.0750

Wt.of Sample at Start of Hydrometer: 101.04

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	8.0	22.5	3.3	3.2	3.2	0.0357
Portion	5	7.9	22.5	3.2	3.1	3.1	0.0226
	15	7.8	22.5	3.1	3.0	3.0	0.0131
	30	7.7	22.5	3.0	2.9	2.9	0.0092
	60	7.6	22.5	2.9	2.8	2.8	0.0065
	250	7.5	22.5	2.8	2.7	2.7	0.0032
	1440	7.0	21.5	2.0	2.0	1.9	0.0014

LL: PL: PI: Organic: No

Gravel: 0 Sand: 95 Silt: 2 Clay(<0.005): 3

D10: 0.12 D30: 0.18 D60: 0.290

Cu: 2.4 Cc: 0.9

Unified Classification: Brown Fine SAND, Trace Gravel,Silt, SP

LABORATORY TEST ASSIGNMENTS

PROJECT Clayton - Hartford
CONTRACT NUMBER 62402462

DATE ASSIGNED 07/16/04
PROJECT ENGINEER CM²

BORING NUMBER	SAMPLE NUMBER	SAMPLE TYPE	VISUAL CLASSIFICATION	MOISTURE CONTENT	PENETROMETER	DRY DENSITY	RIMAC	UNCONFINED COMPRESSION	ORGANIC HOT OVEN	SHRINKAGE LIMITS	ATTERBERG LIMITS, 1 PT or 3 PT	SIEVE ANALYSIS	PERCENT PASSING #200	HYDROMETER ANALYSIS	CONSOLIDATION	SWELL PRESSURE	SPECIFIC GRAVITY	MOISTURE DENSITY STANDARD	MOISTURE DENSITY MODIFIED	RELATIVE DENSITY	CBR or IBR	PERMEABILITY K-620	PERMEABILITY BACK PRES.	DIRECT SHEAR	TRIAXIAL SHEAR	SPECIAL INSTRUCTIONS
APARTMEN	10-12'	Bag		X					X					X												
	16-18'			X					X					X												
	20-22'			X					X					X												
	24-26'			X					X					X												
	30-32'			X					X					X												
✓	8-10'	↓		X					X					X												

PHILIP

CHAIN OF CUSTODY pg. 1 of 1 Work Order #

TEKLAB, INC.

5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Clayton Group Services
Address: 3140 Finley Rd
City / State / Zip: Downers Grove 60515
Contact: Ken Comire Phone: 630 795 3200
E-Mail: kcomire@claytongrp.com Fax: 630 795 1130

Are the samples chilled? ☒ NO ☐ YES (Ice or Blue Ice)
Cooler Temperature: _____ °C
Preserved in: ☐ Lab ☐ Field
Comments: Geotechnical Samples

Project Name / Number: NWG / 15-03095.13-002
Sample Collector's Name: Joe Thomas
Requested Due Date: NTAT
Billing Instructions: PO# Ken Comire 15.03095.13.002

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	Other	Water	Drinking Water	Soil	Sludge	Sp. Waste	Grain Size w/ Hydrometer	TOC	Moisture
	MP-47 Main 10-12'	040716/1010AM	X							X						X	X	X
	MP-47 Main 16-18'	040716/1025AM	↓							↓						↓	↓	↓
	MP-47 Main 20-22'	040716/1035AM	↓							↓						↓	↓	↓
	MP-47 Main 24-26'	040716/1050AM	↓							↓						↓	↓	↓
	MP-47 Main 30-32'	040716/11AM	↓							↓						↓	↓	↓
	MP-47 Main 8-10'	040716 10AM	↓							↓						↓	↓	↓

Relinquished By	Date / Time	Received By	Date / Time
[signature]	07/16/04 1500P.M.	[signature]	07/16/04 1600

PARTICLE-SIZE ANALYSIS of SOILS (9)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-47 MAIN
SAMPLE NO.: --
DEPTH, ft.: 8-10'
DESCRIPTION: Brown Lean SILT, ML

TESTED BY: CWB
DATE: 07/19/04
MC = 30.5
OC = 2.2
LL: —
PL: —

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.38

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO. 92
WET WT + TARE 4568
DRY WT + TARE 4349
WT TARE 1120

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:20	0	—	—
9:22	2	22.6	36.0
9:25	5	22.0	27.0
9:35	15	22.0	20.5
9:50	30	22.0	18.0
10:20	60	22.0	16.0
1:30	250	22.0	14.0
9:20	1440	21.5	12.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.		NO. 16	
2 in.		NO. 20	
1½ in		NO 30	
1 in.		NO. 40	
¾ in.		NO. 50	
⅜ in.		NO. 60	
NO. 4		NO. 100	
NO. 8		NO. 140	
NO. 10		NO. 200	

NO. 200 WASH

TARE NO. 15

WT. TARE + DRY MATL. (+200) 43.20

WT. TARE 41.96

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (10)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-47 MAIN
SAMPLE NO.: --
DEPTH, ft.: 10-12'
DESCRIPTION: Brown Lean SILT, ML

TESTED BY: CWB
DATE: 07/19/04
MC = 34.5
OC = 2.2
LL: ___
PL: ___

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.46

HYGROSCOPIC MOISTURE

TARE NO.: 71-A
WET WT + TARE: 4111
DRY WT + TARE: 3924
WT TARE: 1117

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:27	0	—	—
9:29	2	22.5	33.0
9:32	5	22.5	23.5
9:42	15	22.5	18.0
9:57	30	22.5	16.0
10:27	60	22.5	15.0
1:37	250	22.5	14.0
9:27	1440	21.5	13.0

DESIRED READING INTERVALS	
SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.	_____	NO. 16	_____
2 in	_____	NO. 20	_____
1½ in	_____	NO. 30	_____
1 in.	_____	NO. 40	_____
¾ in.	_____	NO. 50	_____
⅜ in.	_____	NO. 60	_____
NO. 4	_____	NO. 100	_____
NO. 8	_____	NO. 140	_____
NO. 10	_____	NO. 200	_____

NO. 200 WASH

TARE NO. AC-5

WT. TARE + DRY MATL. (+200) 43.27

WT. TARE 42.08

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (11)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-47 Main
SAMPLE NO.: — —
DEPTH, ft.: 16-18'
DESCRIPTION: Gray-Brown Lean CLAY, CL

TESTED BY: CMB
DATE: 07/19/04
MC = 36.1
OC = 3.4
LL: —
PL: —

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.64

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	51
WET WT + TARE	42.99
DRY WT + TARE	41.47
WT TARE	11.26

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:34	0	—	—
9:36	2	22.5	38.5
9:39	5	22.5	32.0
9:49	15	22.5	28.5
10:06	32	22.0	26.5
10:34	60	22.0	25.0
1:44	250	22.5	22.0
9:34	1440	21.5	19.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.		NO. 16	
2 in.		NO. 20	
1½ in		NO. 30	
1 in.		NO. 40	
¾ in.		NO. 50	
⅜ in.		NO. 60	
NO. 4		NO. 100	
NO. 8		NO. 140	
NO. 10		NO. 200	

NO. 200 WASH

TARE NO. F-15

WT. TARE + DRY MATL. (+200) 42.76

WT. TARE 42.03

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (12)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-47 MAIN
SAMPLE NO.: --
DEPTH, ft.: 20-22'
DESCRIPTION: Gray-Brown Lean SILT, ML

TESTED BY: CMB
DATE: 02/19/04
MC = 37.7
OC = 3.3
LL: ____
PL: ____

HYDROMETER ☒ SIEVE ☒ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.26

HYGROSCOPIC MOISTURE

TARE NO.	110
WET WT + TARE	52.62
DRY WT + TARE	50.98
WT TARE	11.45

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:59	0	—	—
10:01	2	22.5	35.0
10:04	5	22.5	29.5
10:14	15	22.5	25.0
10:29	30	22.5	23.0
10:59	60	22.5	21.0
2:09	250	22.5	19.0
9:59	1440	21.5	16.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. + Sieve	Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	403.98	403.95
1½ in		NO 30	—	—
1 in.		NO. 40	572.93	572.88
¾ in.		NO. 50	—	—
⅜ in.		NO. 60	370.05	370.02
NO. 4		NO. 100	—	—
NO. 8		NO. 140	344.66	344.08
NO. 10		NO. 200	309.59	307.56
		Pan	392.33	389.70

NO. 200 WASH

TARE NO. 18

WT. TARE + DRY MATL. (+200) 44.39

WT. TARE 39.09

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (13)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-47 MAIN
SAMPLE NO.: --
DEPTH, ft.: 24-26'
DESCRIPTION: Gray-Brown FAT CLAY, CH

TESTED BY: CMB
DATE: 07/16/04
MC = 40.3
OC = 4.2
LL: ___
PL: ___

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.67

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYGROSCOPIC MOISTURE

TARE NO.	207
WET WT + TARE	40.28
DRY WT + TARE	38.58
WT TARE	1152

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:03	0	—	—
10:05	2	23.0	49.0
10:08	5	23.0	45.5
10:18	15	23.0	42.5
10:33	30	22.5	41.0
11:03	60	22.5	39.0
2:13	250	22.5	35.0
10:03	1440	21.5	30.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.	_____	NO. 16	_____
2 in.	_____	NO. 20	_____
1½ in	_____	NO. 30	_____
1 in.	_____	NO. 40	_____
¾ in.	_____	NO. 50	_____
⅜ in.	_____	NO. 60	_____
NO. 4	_____	NO. 100	_____
NO. 8	_____	NO. 140	_____
NO. 10	_____	NO. 200	_____

NO. 200 WASH

TARE NO. BBQ

WT. TARE + DRY MATL. (+200) 43.19

WT. TARE 41.19

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(14)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-47 MAIN
SAMPLE NO.: --
DEPTH, ft.: 30-32'
DESCRIPTION: Brown

TESTED BY: CWB
DATE: 07/19/04
MC=21.1
OC=1.0
LL: ___
PL: ___

HYDROMETER ☒ SIEVE ☒ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 101.39

HYGROSCOPIC MOISTURE

TARE NO.: 212
WET WT + TARE: 63.91
DRY WT + TARE: 63.73
WT TARE: 115.9

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:17	0	—	—
10:19	2	22.5	8.0
10:22	5	22.5	7.9
10:32	15	22.5	7.8
10:47	30	22.5	7.7
11:17	60	22.0	7.6
2:27	250	22.5	7.5
10:17	1440	21.5	7.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm.		351.95-11.38
OVEN DRIED WT. of + NO. 10 MATERIAL, gm.		
AIR DRIED WT. of − NO. 10 MATERIAL, gm.		
HYGROSCOPIC MOISTURE CONTENT, %		
OVEN DRY WT. − NO. 10 MATERIAL, gm.		
TOTAL WT. OVEN DRIED SAMPLE		

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. + Sieve	Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	405.28	403.95
1½ in		NO. 30	—	—
1 in.		NO. 40	579.03	572.89
¾ in.		NO. 50	—	—
⅜ in.		NO. 60	414.14	370.02
NO. 4	1.47	NO. 100	—	—
NO. 8	—	NO. 140	388.15	344.07
NO. 10	2.39	NO. 200	308.51	307.57
		Pan	389.84	389.67

NO. 200 WASH

TARE NO.	20
WT. TARE + DRY MATL. (+200)	150.87
WT. TARE	54.13
WT. DRY MATERIAL (+200)	

NO. 10 WASH

TARE NO.	241
WT. TARE + DRY MATL. (+10)	13.72
WT. TARE	11.38
WT. DRY MATERIAL (+10)	

NOTES & CALCULATIONS

MOISTURE & ORGANIC CONTENT DETERMINATION

Job No.: 62402462 Date: 07/19/04

MP47 MAIN →

Boring/Sample	10-12'	16-18'	8-10'	20-22'	24-26'
Tare Number	19 (125)	89 (3)	65 (1)	79 (5-5)	236 (4)
Wt. Wet Soil + Tare	222.26	203.23	219.43	213.06	212.24
Wt. Dry Soil + Tare, Lab Oven	186.76	170.14	187.04	177.48	175.26
Wt. Dry Soil + Tare, Hot Oven	184.49	167.05	184.72	174.33	171.36
Tare Wt.	83.89	88.48	80.92	83.03	83.49
Moisture Content, %	34.5	36.1	30.5	37.7	40.3
Organic Content, %	2.2	3.4	2.2	3.3	4.2
Penetrometer Reading, (Qp)					

Boring/Sample	MP47 MAIN 30-32'	MP-29 (32-34')			
Tare Number	255 (2)	278			
Wt. Wet Soil + Tare	221.41	209.59			
Wt. Dry Soil + Tare, Lab Oven	194.56	187.06			
Wt. Dry Soil + Tare, Hot Oven	193.28	185.96			
Tare Wt.	67.17	72.13			
Moisture Content, %	21.1	19.6			
Organic Content, %	1.0	1.0			
Penetrometer Reading, (Qp)					

Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					

Tested By: CMB Computed By: PC Checked By: CMB

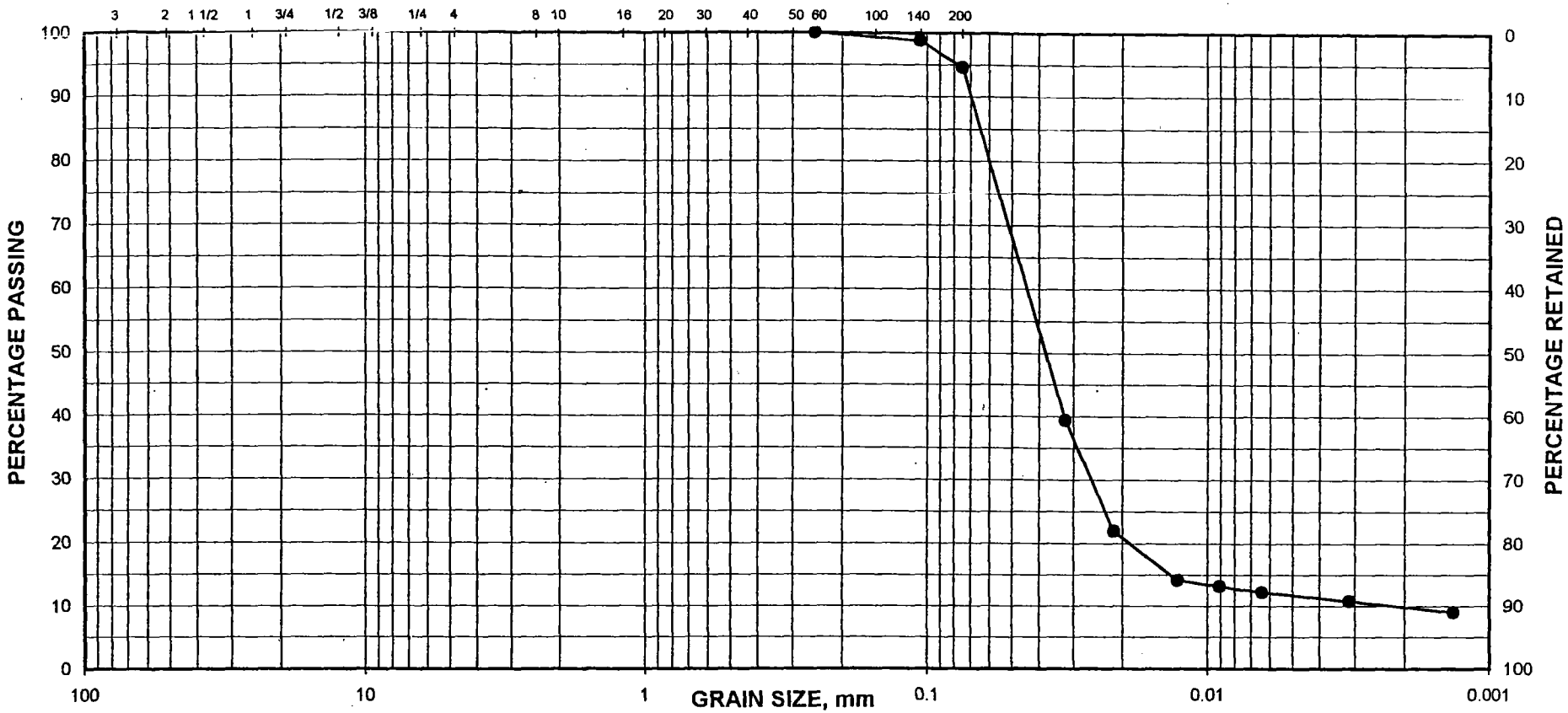
PHILIP ENVIRONMENTAL

236	65	255	278
10:30 ⇒ 170.79	184.23	193.12	185.80

19	79	89
184.20	173.99	166.89

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#15	MP-55	--	10.0 - 12.0	Gray Lean SILT, Trace Sand, ML

Natural Moisture Content, % = 28.8
Organic Content, % = 1.7

PHILIP ENVIRONMENTAL

E:\Gs#15.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No. GS#15 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/21/04 | Boring No.: MP-55 | Sample No.: – | Depth: 10.0 - 12.0

Total Sample Wt. 50.91

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.00	0.0	100.0	100.0	0.8500
Sieve Portion	#40	0.00	0.0	100.0	100.0	0.4250
	#60	0.00	0.0	100.0	100.0	0.2500
	#140	0.61	1.2	98.8	98.8	0.1060
	#200	2.77	5.4	94.6	94.6	0.0750

Wt.of Sample at Start of Hydrometer: 50.91

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	25.0	22.5	20.3	39.4	39.4	0.0322
Portion	5	16.0	22.5	11.3	21.9	21.9	0.0216
	15	12.0	22.5	7.3	14.2	14.2	0.0128
	30	11.5	22.5	6.8	13.2	13.2	0.0091
	60	11.0	22.5	6.3	12.2	12.2	0.0064
	250	10.3	22.5	5.5	10.8	10.8	0.0032
	1440	9.8	21.0	4.6	8.9	8.9	0.0013

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 5 | Silt: 83 | Clay(<0.005): 12

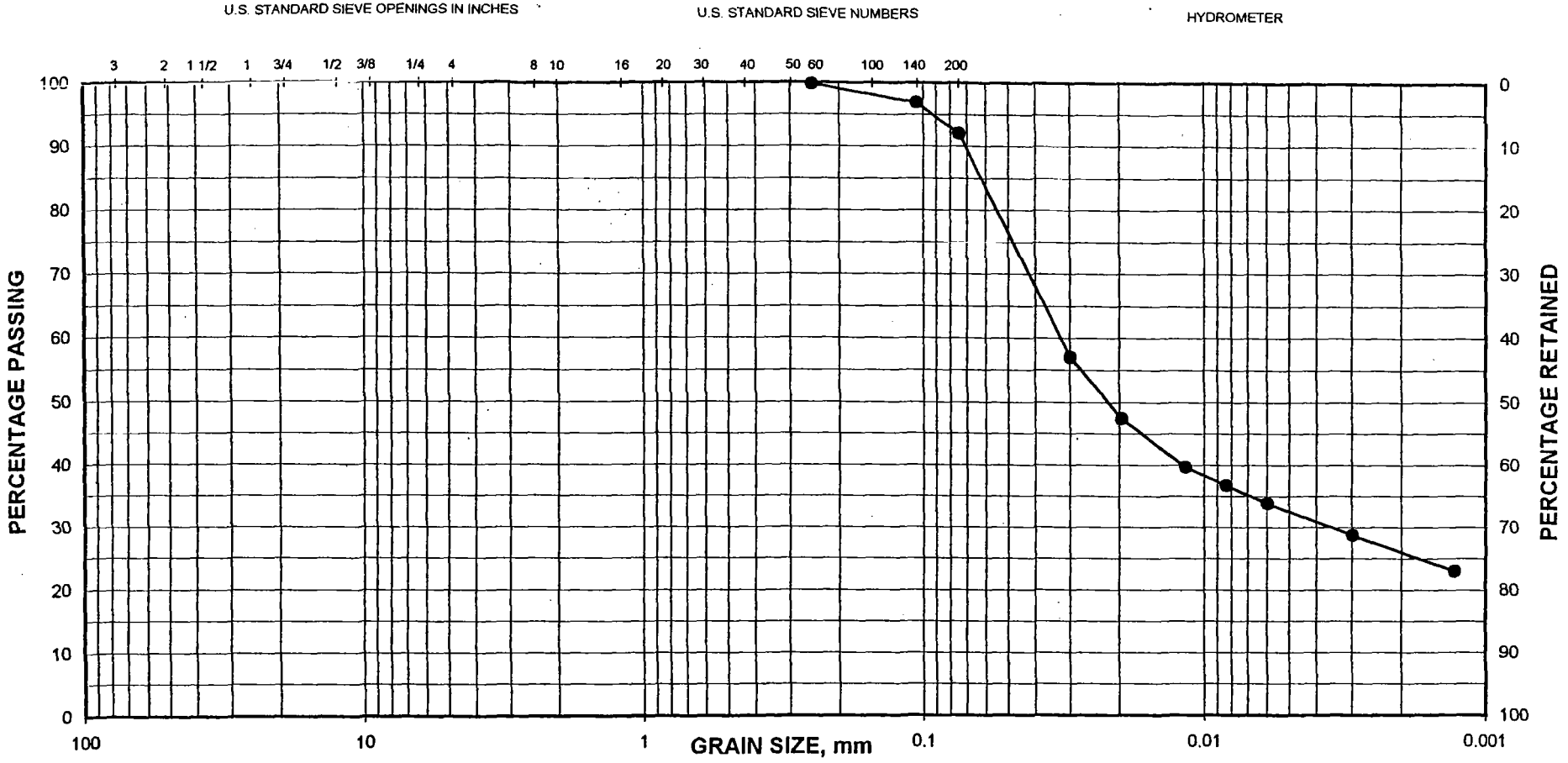
D10: 0.0025 | D30: 0.027 | D60: 0.045

Cu: 18.0 | Cc: 6.5

Unified Classification: Gray Lean SILT Trace Sand, ML

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#16	MP-55	--	17.0 - 19.0	Gray-Brown Fat CLAY, Trace Sand, CH

Natural Moisture Content, % = 33.1
Organic Content, % = 3.0

PHILIP ENVIRONMENTAL

E:\Gs#16.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No GS#16 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/21/04 | Boring No.: MP-55 | Sample No.: -- | Depth: 17.0 - 19.0

Total Sample Wt. 50.98

	Sieve Size	Cum. Wt. Ret	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.07	0.1	99.9	99.9	0.8500
Sieve Portion	#40	0.10	0.2	99.8	99.8	0.4250
	#60	0.15	0.3	99.7	99.7	0.2500
	#140	1.61	3.2	96.8	96.8	0.1060
	#200	4.09	8.0	92.0	92.0	0.0750

Wt.of Sample at Start of Hydrometer: 50.98

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	34.0	23.0	29.4	57.1	57.1	0.0301
Portion	5	29.0	23.0	24.4	47.4	47.4	0.0197
	15	25.0	23.0	20.4	39.6	39.6	0.0117
	30	23.5	23.0	18.9	36.7	36.7	0.0084
	60	22.0	23.0	17.4	33.8	33.8	0.0060
	250	19.5	22.5	14.8	28.7	28.7	0.0030
	1440	17.0	21.0	11.9	23.0	23.0	0.0013

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 8 | Silt: 59 | Clay(<0.005): 33

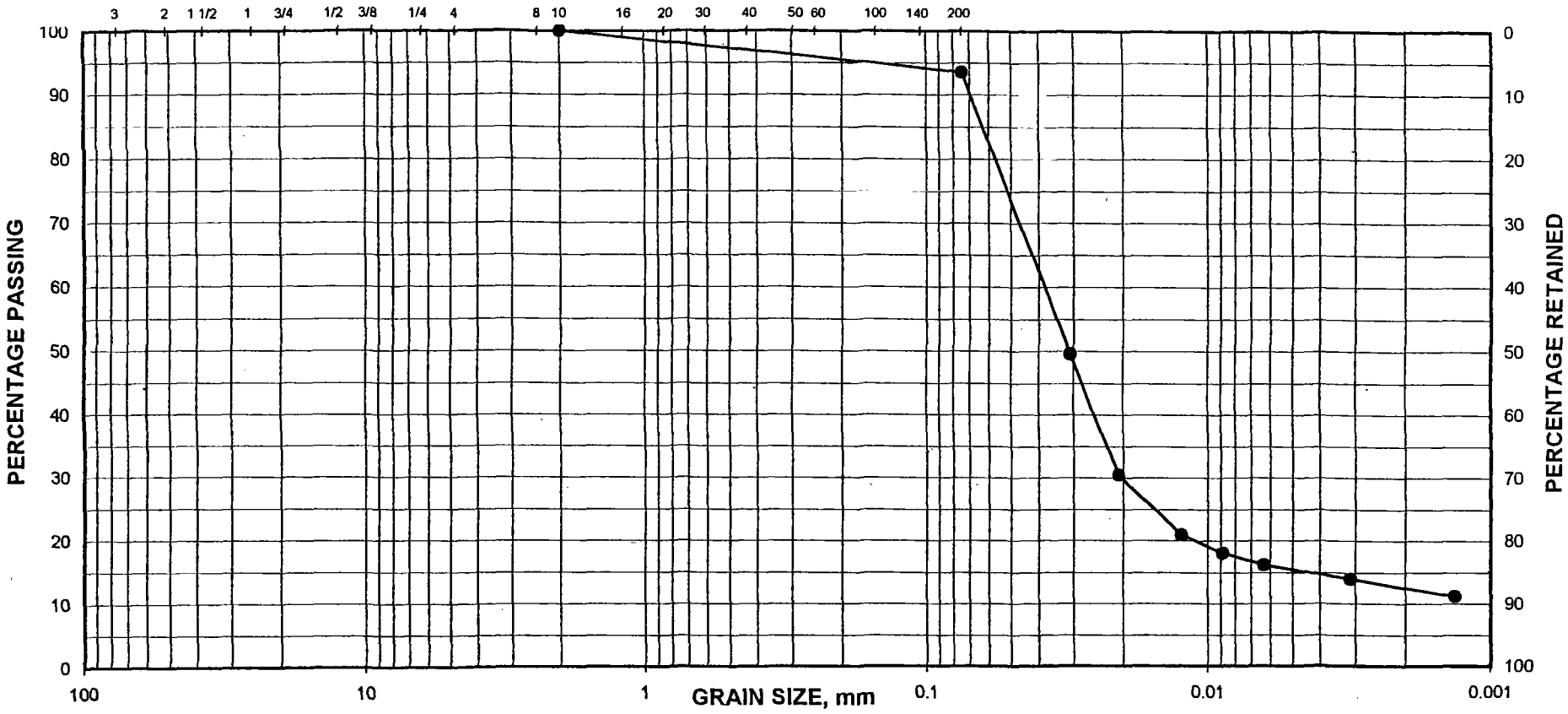
D10: <0.001 | D30: 0.004 | D60: 0.034

Cu: N/A | Cc: N/A

Unified Classification: Gray-Brown Fat CLAY, Trace Sand: CH

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#17	MP-55	--	20.0 - 22.0	Gray Lean SILT, Trace SAND, ML

Natural Moisture Content, % = 35.9
Organic Content, % = 2.3

PHILIP ENVIRONMENTAL

E:\Gs#17.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#17 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/21/04 | Boring No.: MP-55 | Sample No.: -- | Depth: 20.0 - 22.0

Total Sample Wt: 51.71

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	3.35	6.5	93.5	93.5	0.0750

Wt. of Sample at Start of Hydrometer: 51.71

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	30.5	23.0	25.9	49.6	49.6	0.0308
Portion	5	20.5	23.0	15.9	30.5	30.5	0.0209
	15	15.5	23.0	10.9	20.9	20.9	0.0124
	30	14.0	23.0	9.4	18.0	18.0	0.0089
	250	12.0	22.5	7.3	13.9	13.9	0.0031
	1440	11.0	21.0	5.9	11.2	11.2	0.0013

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 6 | Silt: 78 | Clay(<0.005): 16

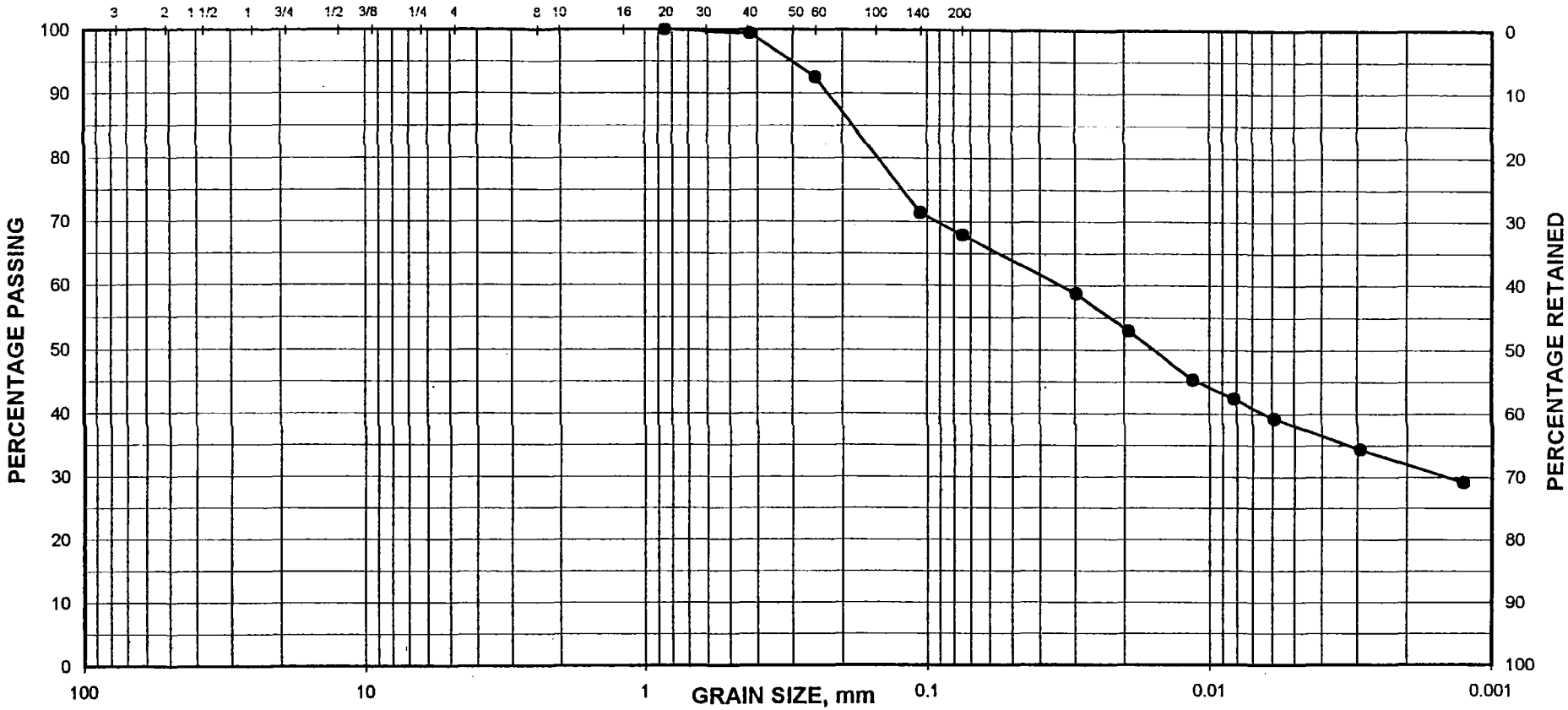
D10: <0.001 | D30: 0.021 | D60: 0.039

Cu: N/A | Cc: N/A

Unified Classification: Gray Lean SILT, Trace SAND, ML

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#18	MP-55	--	26.0 - 28.0	Gray-Brown Sandy Fat CLAY, CH

Natural Moisture Content, % = 24.8
Organic Content, % = 2.3

PHILIP ENVIRONMENTAL

E:\Gs#18.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No GS#18 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/21/04 | Boring No.: MP-55 | Sample No.: -- | Depth: 26.0 - 28.0

Total Sample Wt. 51.23

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.01	0.0	100.0	100.0	0.8500
Sieve Portion	#40	0.29	0.6	99.4	99.4	0.4250
	#60	3.83	7.5	92.5	92.5	0.2500
	#140	14.65	28.6	71.4	71.4	0.1060
	#200	16.47	32.1	67.9	67.9	0.0750

Wt.of Sample at Start of Hydrometer 51.23

Specific Gravity 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	35.0	23.0	30.4	58.7	58.7	0.0298
Portion	5	32.0	23.0	27.4	52.9	52.9	0.0193
	15	28.0	23.0	23.4	45.2	45.2	0.0115
	30	26.5	23.0	21.9	42.3	42.3	0.0082
	60	25.0	22.5	20.3	39.2	39.2	0.0059
	250	22.5	22.5	17.8	34.3	34.3	0.0029
	1440	20.3	21.0	15.1	29.2	29.2	0.0013

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 32 | Silt: 30 | Clay(<0.005): 38

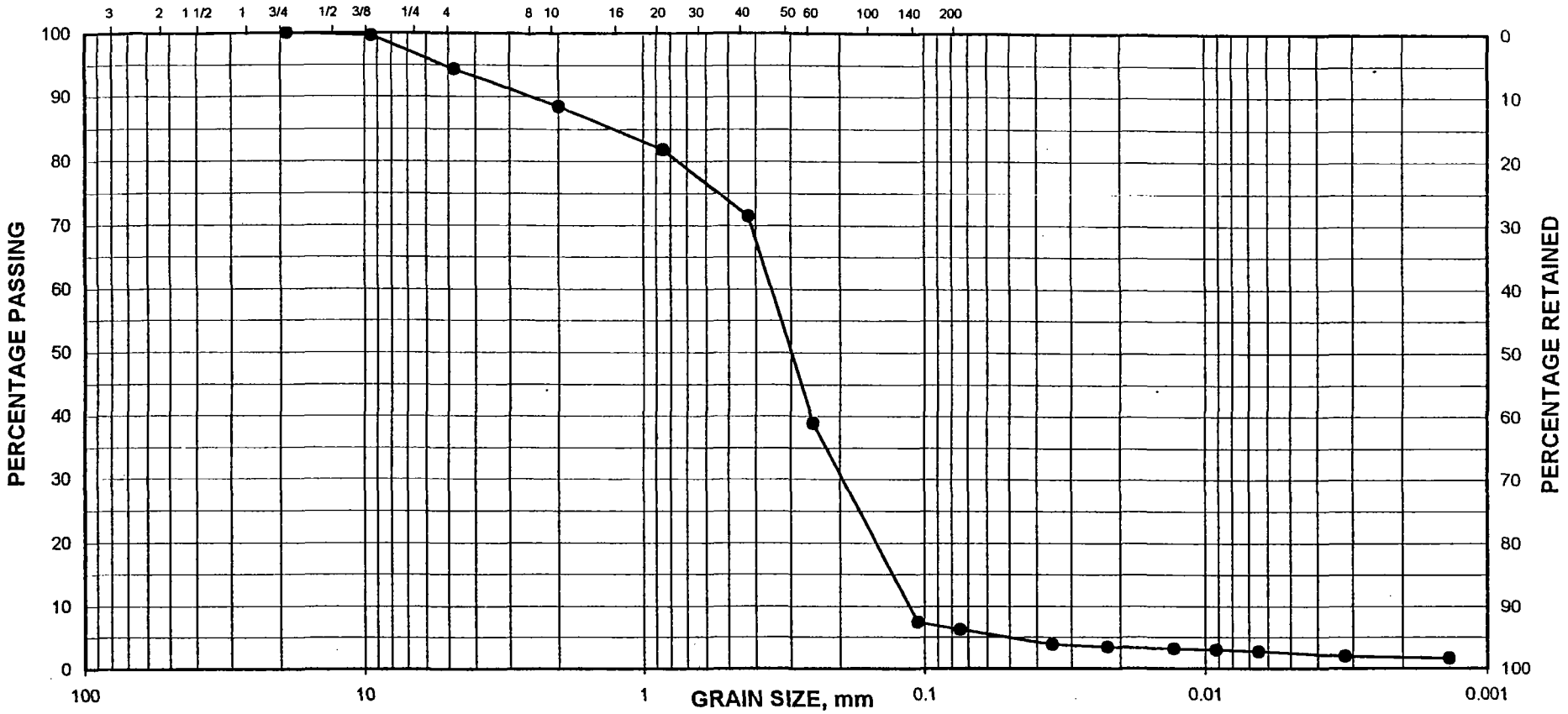
D10: <0.001 | D30: 0.001 | D60: 0.034

Cu: N/A | Cc: N/A

Unified Classification: Gray-Brown Sandy Fat CLAY, CH

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#19	MP-55	--	34.0 - 36.0	Brown Fine-Medium SAND, Trace Gravel,Silt, SP

Natural Moisture Content, % = 16.1
Organic Content, % = 1.0

PHILIP ENVIRONMENTAL

E:\Gs#19.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#19 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/21/04 | Boring No.: MP-55 | Sample No.: – | Depth : 34.0 - 36.0

Total Sample Wt: 383.39

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	1.77	0.5	99.5	99.5	9.5000
	#4	21.95	5.7	94.3	94.3	4.7500
	#10	44.10	11.5	88.5	88.5	2.0000
-#10	#20	7.55	7.5	92.5	81.9	0.8500
Sieve Portion	#40	19.40	19.3	80.7	71.5	0.4250
	#60	56.43	56.0	44.0	38.9	0.2500
	#140	92.34	91.6	8.4	7.4	0.1060
	#200	93.66	93.0	7.0	6.2	0.0750

Wt.of Sample at Start of Hydrometer: 100.75

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	9.0	23.0	4.4	4.3	3.8	0.0353
Portion	5	8.5	23.0	3.9	3.9	3.4	0.0224
	15	8.3	23.0	3.7	3.6	3.2	0.0130
	30	8.0	23.0	3.4	3.4	3.0	0.0092
	60	7.8	23.0	3.2	3.1	2.8	0.0065
	250	7.0	22.5	2.3	2.2	2.0	0.0032
	1440	7.0	21.0	1.9	1.8	1.6	0.0014

LL: | PL: | PI: | Organic: No

Gravel: 6 | Sand: 88 | Silt: 4 | Clay(<0.005): 3

D10: 0.120 | D30: 0.199 | D60: 0.350

Cu: 2.9 | Cc: 0.9

Unified Classification: Brown Fine-Medium SAND, Trace Gravel,Silt: SP

LABORATORY TEST ASSIGNMENTS

PROJECT Clayton-Hartford
CONTRACT NUMBER 62402462

DATE ASSIGNED 02/20/04
PROJECT ENGINEER CM²

BORING NUMBER	SAMPLE NUMBER	SAMPLE TYPE	VISUAL CLASSIFICATION	MOISTURE CONTENT	PENETROMETER	DRY DENSITY	RIMAC	UNCONFINED COMPRESSION	ORGANIC HOT OVEN	SHRINKAGE LIMITS	ATTERBERG LIMITS, 1 PT or 3 PT	SIEVE ANALYSIS	PERCENT PASSING #200	HYDROMETER ANALYSIS	CONSOLIDATION	SWELL PRESSURE	SPECIFIC GRAVITY	MOISTURE DENSITY STANDARD	MOISTURE DENSITY MODIFIED	RELATIVE DENSITY	CBR or IBR	PERMEABILITY K-620	PERMEABILITY BACK PRES.	DIRECT SHEAR	TRIAXIAL SHEAR	SPECIAL INSTRUCTIONS
MP-55	10-12'	Bag		X					X					X												
	17-19'			X					X					X												
	20-22'			X					X					X												
	26-28'			X					X					X												
	34-36'			X					X					X												

PHILIP ENVIRONMENTAL

Pg. 1 of 1 Work Order # _____

TEKLAB, INC.

5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Clayton Group Services
Address: 3140 Finley Road
City / State / Zip: Downers Grove / IL / 60515
Contact: Ken Comino Phone: 630-795-3200
E-Mail: kcomino@claytongp.com Fax: 630-795-1130

Are the samples chilled? ☒ NO ☐ YES (Ice or Blue Ice)
Cooler Temperature: _____ °C
Preserved in: ☐ Lab ☐ Field
Comments:

Project Name / Number: Hartford Working Group 15-03095.13-002
Sample Collector's Name: A. Schultz
Requested Due Date: Standard
Billing Instructions PO#:

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	Other	Water	Drinking Water	Soil	Sludge	Sp. Waste	Grain Size w/ Hydrometer	TOC	Moisture
	MP-55 10-12ft/040720	07/20/04 1401								X			X			X	X	X
	MP-55 17-19ft/040720	07/20/04 1412								X			X			X	X	X
	MP-55 20-22ft/040720	07/20/04 1427								X			X			X	X	X
	MP-55 26-28ft/040720	07/20/04 1442								X			X			X	X	X
	MP-55 34-36ft/040720	07/20/04 1451								X			X			X	X	X

Relinquished By	Date / Time	Received By	Date / Time
[illegible]	7/20/04	Craig Burks	07/21/04 08:00 AM

PARTICLE-SIZE ANALYSIS of SOILS

(15)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-55
SAMPLE NO.: --
DEPTH, ft.: 10-12'
DESCRIPTION: Gr ML

TESTED BY: CWB
DATE: 07/21/04
MC = 28.8
OC = 1.7
LL: ___
PL: ___

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.57

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYGROSCOPIC MOISTURE

TARE NO.	92
WET WT + TARE	47.41
DRY WT + TARE	46.95
WT TARE	1122

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:37	0	—	—
9:39	2	22.5	25.0
9:42	5	22.5	16.0
9:52	15	22.5	12.0
10:07	30	22.5	11.5
10:37	60	22.5	11.0
1:47	250	22.5	10.25
9:37	1440	21.0	9.75

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	~~CUM.~~ WT. RET. + Sieve	Sieve
3 in.		NO. 16		
2 in.		NO. 20	Ø	403.97
1½ in.		NO. 30		
1 in.		NO. 40	Ø	372.94
¾ in.		NO. 50		
⅜ in.		NO. 60	Ø	320.07
NO. 4		NO. 100		
NO. 8		NO. 140	344.71	344.60
NO. 10		NO. 200	309.73	307.57
		Pan	393.24	389.65

NO. 200 WASH

TARE NO. AGS

WT. TARE + DRY MATL. (+200) 48.46

WT. TARE 42.10

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(16)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-55
SAMPLE NO.: --
DEPTH, ft.: 17-19'
DESCRIPTION: Gr-Br CH

TESTED BY: CMB
DATE: 07/21/04
MC = 33.1
OC = 3.0
LL: ___
PL: ___

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.44

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	241
WET WT + TARE	49.42
DRY WT + TARE	48.36
WT TARE	11.37

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:41	0	—	—
9:43	2	23.0	34.0
9:46	5	23.0	29.0
9:56	15	23.0	25.0
10:11	30	23.0	23.5
10:41	60	23.0	22.0
1:51	250	22.5	19.5
9:41	1440	21.0	17.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. + Sieve	Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	404.08	403.98
1½ in		NO. 30	—	—
1 in.		NO. 40	572.97	572.94
¾ in.		NO. 50	—	—
⅜ in.		NO. 60	~~370~~.12	370.07
NO. 4		NO. 100	—	—
NO. 8		NO. 140	345.55	344.09
NO. 10		NO. 200	310.04	307.56
		Pan	392.57	389.69

NO. 200 WASH

TARE NO. BCQ

WT. TARE + DRY MATL. (+200) 48.08

WT. TARE 41.21

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (17)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-55
SAMPLE NO.: — —
DEPTH, ft.: 20-22'
DESCRIPTION: Gr ML

TESTED BY: CWB
DATE: 07/21/04
MC = 35.9
OC = 2.3
LL: —
PL: —

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.68

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYGROSCOPIC MOISTURE

TARE NO.	207
WET WT + TARE	4342
DRY WT + TARE	4283
WT TARE	1154

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:49	0	—	—
9:51	2	23.0	30.5
9:54	5	23.0	20.5
10:04	15	23.0	15.5
10:19	30	23.0	14.0
10:49	60	23.0	13.0
1:59	250	22.5	12.0
9:49	1440	21.0	11.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.	_____	NO. 16	_____
2 in.	_____	NO. 20	_____
1½ in	_____	NO 30	_____
1 in.	_____	NO. 40	_____
¾ in.	_____	NO. 50	_____
⅜ in.	_____	NO. 60	_____
NO. 4	_____	NO. 100	_____
NO. 8	_____	NO. 140	_____
NO. 10	_____	NO. 200	_____

NO. 200 WASH

TARE NO. F15

WT. TARE + DRY MATL. (+200) 45.39

WT. TARE 42.04

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (18)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-55
SAMPLE NO.: --
DEPTH, ft.: 26-28'
DESCRIPTION: Gr CH / Br SP

TESTED BY: CWB
DATE: 07/21/04
MC = 24.8
OC = 2.3
LL: ___
PL: ___

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.61

HYGROSCOPIC MOISTURE

TARE NO.: 71-A
WET WT + TARE: 48.25
DRY WT + TARE: 47.28
WT TARE: 11.19

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:00	0	—	—
10:02	2	23.0	35.0
10:05	5	23.0	32.0
10:15	15	23.0	28.0
10:30	30	23.0	26.5
11:00	60	22.5	25.0
2:10	250	22.5	22.5
10:00	1440	21.0	20.25

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. + Sieve	Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	403.97	403.96
1½ in		NO. 30	—	—
1 in.		NO. 40	573.19	572.91
¾ in.		NO. 50	—	—
⅜ in.		NO. 60	373.59	370.05
NO. 4		NO. 100	—	—
NO. 8		NO. 140	354.87	344.07
NO. 10		NO. 200	309.38	307.56
		Pan	390.13	389.69

NO. 200 WASH

TARE NO. 4

WT. TARE + DRY MATL. (+200) 5844

WT. TARE 4169

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (19)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-55
SAMPLE NO.: — —
DEPTH, ft.: 34-36'
DESCRIPTION: Brown F-M SP

TESTED BY: CWB
DATE: 07/21/04
MC = 16.1
OC = 1.0
LL: —
PL: —

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 100.95

HYGROSCOPIC MOISTURE

TARE NO. 110
WET WT + TARE 58.06
DRY WT + TARE 57.99
WT TARE 1145

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:13	0	—	—
10:15	2	23.0	9.0
10:18	5	23.0	8.5
10:28	15	23.0	8.25
10:43	30	23.0	8.0
11:13	60	23.0	7.75
2:13	250	22.5	7.0
10:13	1440	21.0	7.0

DESIRED READING INTERVALS	
SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. 384.05 - 39.67

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	~~CUM.~~ WT. RET. + Sieve	Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	411.51	403.96
1½ in		NO. 30	—	—
1 in.		NO. 40	584.76	572.91
¾ in.		NO. 50	—	—
⅜ in.	1.77	NO. 60	407.09	370.06
NO. 4	21.95	NO. 100	—	—
NO. 8	—	NO. 140	380.02	344.11
NO. 10	44.10	NO. 200	308.90	307.58
Pan	44.60	Pan	390.03	389.68

NO. 200 WASH

TARE NO. 5

WT. TARE + DRY MATL. (+200) 135.54

WT. TARE 41.60

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. AC-8

WT. TARE + DRY MATL. (+10) 84.34

WT. TARE 39.67

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

MOISTURE & ORGANIC CONTENT DETERMINATION

Job No.: 62402462 Date: 07/21/04

MP-55 →

Boring/Sample	10-12'	17-19'	20-22'	26-28'	34-36'
Tare Number	65 (125)	278 (1)	255 (25)	236 (2)	219 (4)
Wt. Wet Soil + Tare	206.38	204.91	211.26	214.24	225.74
Wt. Dry Soil + Tare, Lab Oven	178.34	171.90	173.23	189.86	205.94
Wt. Dry Soil + Tare, Hot Oven	176.65	168.93	170.79	187.41	204.66
Tare Wt.	80.91	72.12	67.16	83.49	83.00
Moisture Content, %	28.8	33.1	35.9	24.8	16.1
Organic Content, %	1.7	3.0	2.3	2.3	1.0
Penetrometer Reading, (Qp)					
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					

Tested By: CMB Computed By: PC Checked By: CMB

PHILIP ENVIRONMENTAL

Flat → Round

2 → 4

SC-S → B354

B5 → S-2

1 → R

4 → 1

7.22

FLAT → Round

4 → 5

B5 → 2

2 → BS-2

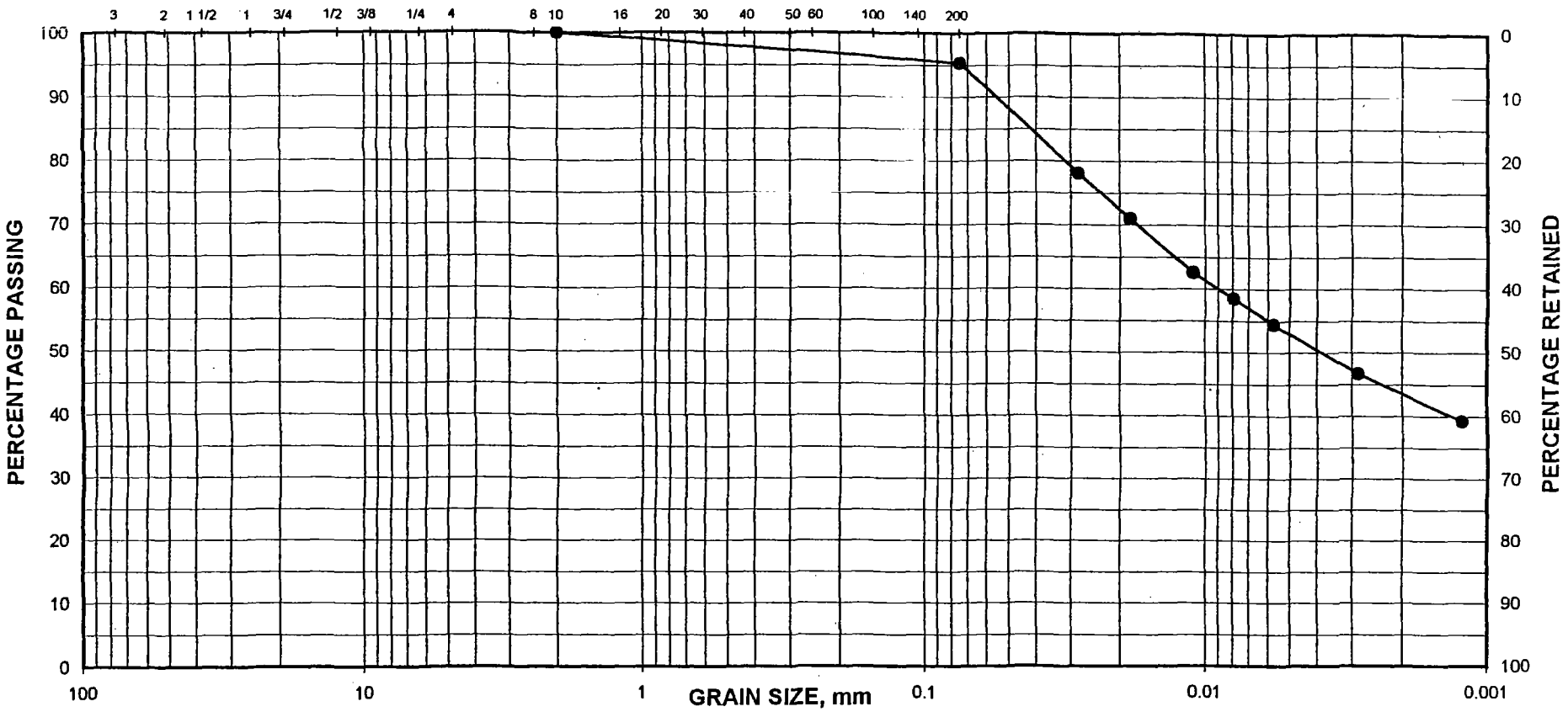
SC-S → 18

1 → Home

10:45	6S	23G	27B
	176.49	187.14	168.70
11:55 →	.34	6.96	.45

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#20	MP-53	--	12.0 - 14.0	Gray Fat CLAY, Trace SAND, CH

Natural Moisture Content, % = 27.3
Organic Content, % = 3.4

PHILIP ENVIRONMENTAL

E:\Gs#20.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No GS#20 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/23/04 | Boring No.: MP-53 | Sample No.: – | Depth : 12.0 - 14.0

Total Sample Wt 48.78

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	2.31	4.7	95.3	95.3	0.0750

Wt.of Sample at Start of Hydrometer: 48.78

Specific Gravity: 2.700 (Assumed)

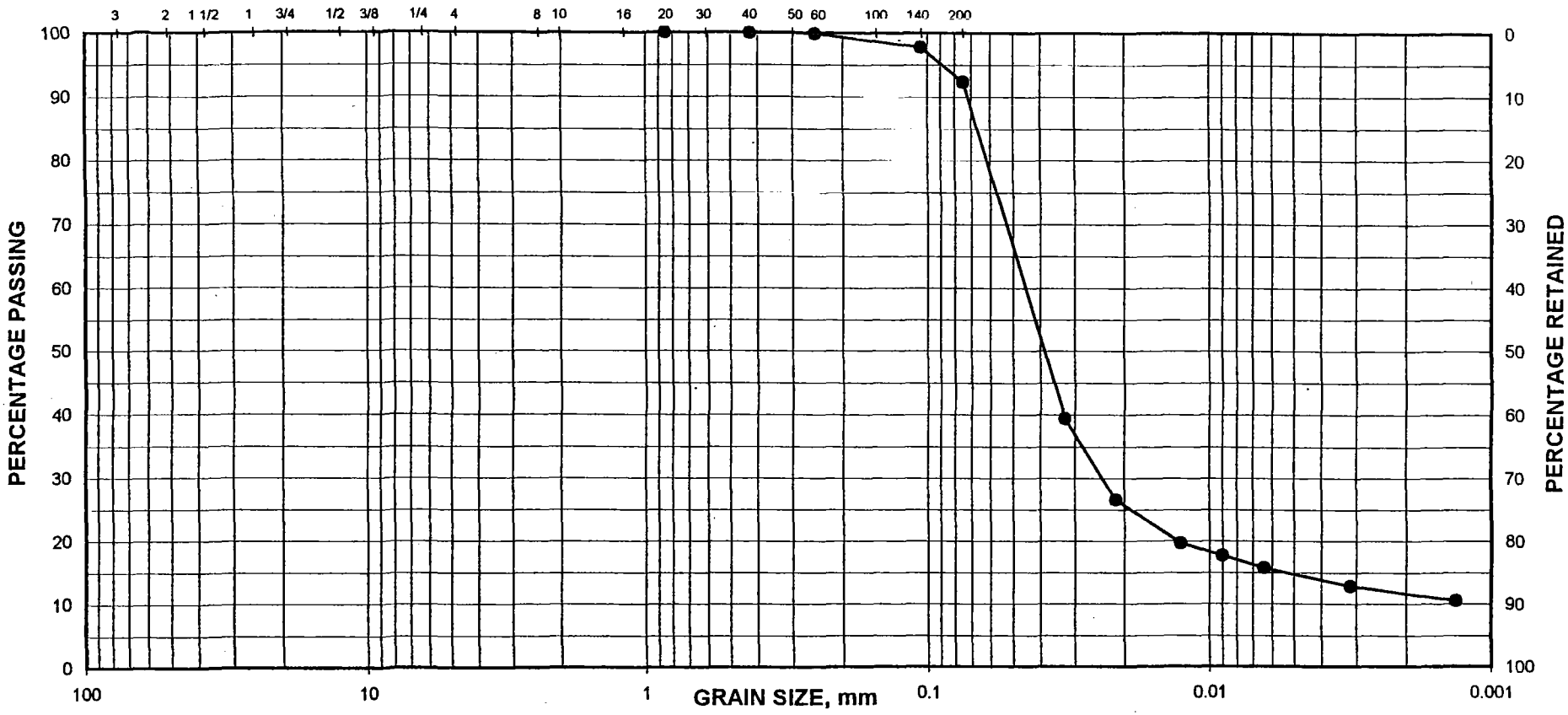
	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	43.5	21.5	38.5	78.0	78.0	0.0283
Portion	5	40.0	21.5	35.0	71.0	71.0	0.0184
	15	36.0	21.0	30.9	62.6	62.6	0.0111
	30	34.0	21.0	28.9	58.5	58.5	0.0079
	60	32.0	21.0	26.9	54.4	54.4	0.0057
	250	28.0	21.5	23.0	46.6	46.6	0.0029
	1440	24.5	21.0	19.4	39.2	39.2	0.0012

LL:	PL:	PI:	Organic: No
Gravel: 0	Sand: 5	Silt: 42	Clay(<0.005): 53
D10: <0.001	D30: <0.001	D60: 0.009	
Cu: N/A	Cc: N/A		

Unified Classification: Gray Fat CLAY, Trace SAND, CH

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#21	MP-53	--	22.0 - 24.0	Gray-Brown Lean SILT, Trace Silt, ML

Natural Moisture Content, % = 35.3
Organic Content, % = 4.3

PHILIP ENVIRONMENTAL

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HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#21 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/23/04 | Boring No.: MP-53 | Sample No.: -- | Depth: 22.0 - 24.0

Total Sample Wt: 50.23

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.02	0.0	100.0	100.0	0.8500
Sieve Portion	#40	0.06	0.1	99.9	99.9	0.4250
	#60	0.10	0.2	99.8	99.8	0.2500
	#140	1.11	2.2	97.8	97.8	0.1060
	#200	3.88	7.7	92.3	92.3	0.0750

Wt.of Sample at Start of Hydrometer: 50.23

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	25.0	21.5	20.0	39.4	39.4	0.0326
Portion	5	18.5	21.5	13.5	26.6	26.6	0.0215
	15	15.0	21.5	10.0	19.7	19.7	0.0127
	30	14.0	21.5	9.0	17.7	17.7	0.0090
	60	13.0	21.5	8.0	15.7	15.7	0.0064
	250	11.5	21.5	6.5	12.8	12.8	0.0032
	1440	10.5	21.0	5.4	10.5	10.5	0.0013

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 8 | Silt: 78 | Clay(<0.005): 15

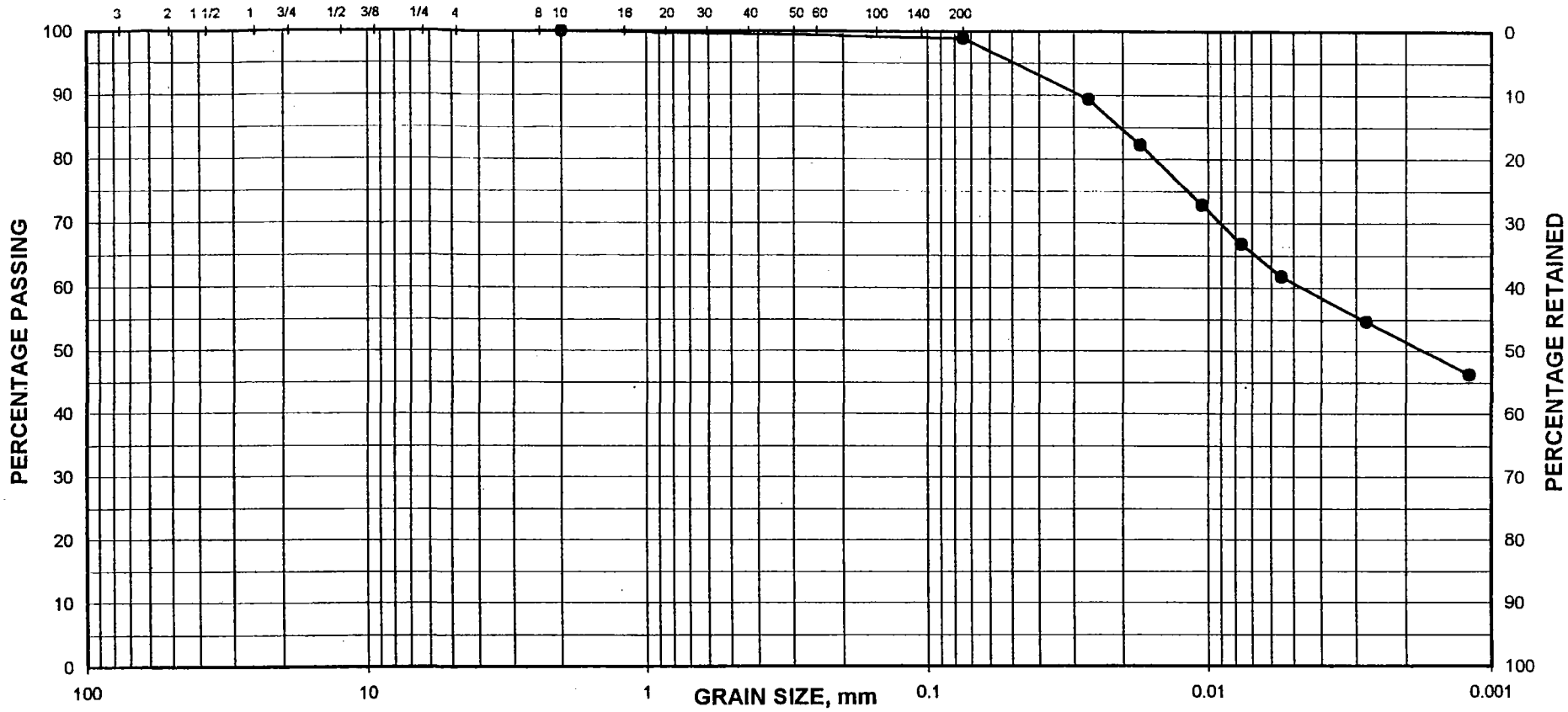
D10: 0.001 | D30: 0.025 | D60: 0.045

Cu: 45.0 | Cc: 13.3

Unified Classification: Gray-Brown Lean SILT, Trace Silt. ML

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#22	MP-53	--	26.0 - 28.0	Gray-Brown Fat CLAY, Trace SAND, CH

Natural Moisture Content, % = 33.9
Organic Content, % = 3.9

PHILIP ENVIRONMENTAL

E:\Gs#22.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No: GS#22 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/23/04 | Boring No.: MP-53 | Sample No.: – | Depth: 26.0 - 28.0

Total Sample Wt. 48.86

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	0.56	1.1	98.9	98.9	0.0750

Wt.of Sample at Start of Hydrometer: 48.86

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	49.0	22.0	44.1	89.3	89.3	0.0267
Portion	5	45.5	22.0	40.6	82.3	82.3	0.0175
	15	41.0	21.5	36.0	72.9	72.9	0.0106
	30	38.0	21.5	33.0	66.8	66.8	0.0077
	60	35.5	21.5	30.5	61.7	61.7	0.0055
	250	32.0	21.5	27.0	54.6	54.6	0.0028
	1440	28.0	21.0	22.9	46.3	46.3	0.0012

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 1 | Silt: 38 | Clay(<0.005): 61

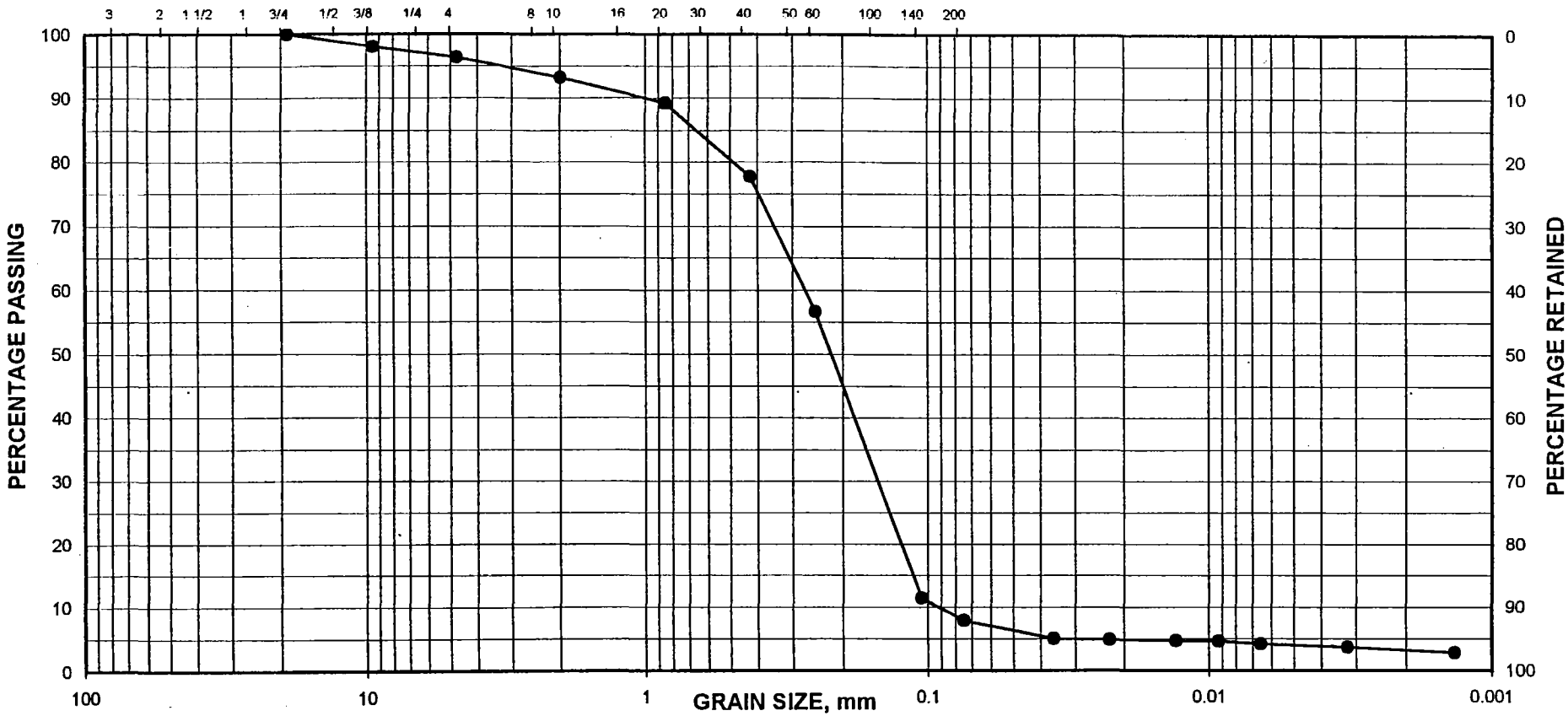
D10: <0.001 | D30: <0.001 | D60: 0.005

Cu: N/A | Cc: N/A

Unified Classification: Gray-Brown Fat CLAY, Trace SAND, CH

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#23	MP-53	--	36.0 - 38.0	Brown Fine SAND, Trace Gravel,Silt, SP

Natural Moisture Content, % = 19.2
Organic Content, % = 1.7

PHILIP ENVIRONMENTAL

E:\Gs#23.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No : GS#23 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/23/04 | Boring No : MP-53 | Sample No : -- | Depth : 36.0 - 38.0

Total Sample Wt.: 250.70

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	4.83	1.9	98.1	98.1	9.5000
	#4	9.20	3.7	96.3	96.3	4.7500
	#10	17.09	6.8	93.2	93.2	2.0000
-#10	#20	4.19	4.2	95.8	89.3	0.8500
Sieve Portion	#40	16.59	16.6	83.4	77.8	0.4250
	#60	39.32	39.2	60.6	56.6	0.2500
	#140	87.88	87.7	12.3	11.4	0.1060
	#200	91.71	91.5	8.5	7.9	0.0750

Wt.of Sample at Start of Hydrometer: 100.19

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	10.5	21.5	5.5	5.4	5.1	0.0359
Portion	5	10.3	21.5	5.2	5.2	4.8	0.0227
	15	10.1	21.5	5.1	5.0	4.7	0.0131
	30	10.0	21.5	5.0	4.9	4.6	0.0093
	60	9.5	21.5	4.5	4.4	4.1	0.0066
	250	9.0	21.5	4.0	3.9	3.7	0.0032
	1440	8.3	21.0	3.1	3.1	2.9	0.0014

LL: | PL: | PI: | Organic: No

Gravel: 4 | Sand: 88 | Silt: 4 | Clay(<0.005): 4

D10: 0.092 | D30: 0.155 | D60: 0.275

Cu: 3.0 | Cc: 0.9

Unified Classification: Brown Fine SAND, Trace Gravel,Silt, SP

LABORATORY TEST ASSIGNMENTS

PROJECT Clayton - Hartford
CONTRACT NUMBER 62402462

DATE ASSIGNED 07/21/04
PROJECT ENGINEER CMC

BORING NUMBER	SAMPLE NUMBER	SAMPLE TYPE	VISUAL CLASSIFICATION	MOISTURE CONTENT	PENETROMETER	DRY DENSITY	RIMAC	UNCONFINED COMPRESSION	ORGANIC HOT OVEN	SHRINKAGE LIMITS	ATTERBERG LIMITS, 1 PT or 3 PT	SIEVE ANALYSIS	PERCENT PASSING #200	HYDROMETER ANALYSIS	CONSOLIDATION	SWELL PRESSURE	SPECIFIC GRAVITY	MOISTURE DENSITY STANDARD	MOISTURE DENSITY MODIFIED	RELATIVE DENSITY	CBR or IBR	PERMEABILITY K-620	PERMEABILITY BACK PRES.	DIRECT SHEAR	TRIAXIAL SHEAR	SPECIAL INSTRUCTIONS
MP53	12-14'	Bag		X					X					X												
	22-24'			X					X					X												
	26-28'			X					X					X												
	36-38'			X					X					X												

PHILIP

Pg. 1 of 1 Work Order # _____

TEKLAB, INC.

5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Clayton Group Services
Address: 3140 Finley RD
City / State / Zip: Downers Grove, IL
Contact: K Comine Phone: 630-795-3200
E-Mail: kcomine@claytongp.com Fax: 630-795-1130

Are the samples chilled? ☒ NO ☐ YES (Ice or Blue Ice)
Cooler Temperature: _____ °C
Preserved in: ☐ Lab ☐ Field
Comments:

Project Name / Number: Hartford Working Group 15-03095-13.002
Sample Collector's Name: Gerald G. Tiernan
Requested Due Date: Standard
Billing Instructions PO#:

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	Other	Water	Drinking Water	Soil	Sludge	Sp. Waste	Grain Size w/ hydrometer	Moisture	FOC
	MP-53(0-14ft)040721	7/21/04 9:57am								X			X			X	X	X
	MP-53(20-24ft)040721	7/21/04 10:10am								X			X			X	X	X
	MP-53(26-28ft)040721	7/21/04 10:15am								X			X			X	X	X
	MP-53(36-38ft)040721	7/21/04 10:25am								X			X			X	X	X

Relinquished By	Date / Time	Received By	Date / Time
[signature]	7/21/04	Craig Brooks	07/22/04 0800

PARTICLE-SIZE ANALYSIS of SOILS (20)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-53
SAMPLE NO.: — —
DEPTH, ft.: 12-14'
DESCRIPTION: Gray CH

TESTED BY: CMB
DATE: 07/23/04
MC= 27.3
OC= 3.4
LL: —
PL: —

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.23

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYGROSCOPIC MOISTURE

TARE NO.	51
WET WT + TARE	42.44
DRY WT + TARE	46.95
WT TARE	11.28

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:13	0	—	—
9:15	2	21.5	43.5
9:18	5	21.5	40.0
9:28	15	21.0	36.0
9:43	30	21.0	34.0
10:13	60	21.0	32.0
1:23	250	21.5	28.0
9:13	1440	21.0	24.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.	_____	NO. 16	_____
2 in.	_____	NO. 20	_____
1½ in	_____	NO 30	_____
1 in.	_____	NO 40	_____
¾ in.	_____	NO. 50	_____
⅜ in.	_____	NO. 60	_____
NO. 4	_____	NO. 100	_____
NO. 8	_____	NO. 140	_____
NO. 10	_____	NO. 200	_____

NO. 200 WASH

TARE NO. 15

WT. TARE + DRY MATL. (+200) 4426

WT. TARE 4195

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(21)

PROJECT NAME: Clayton – Hartford
JOB NO.: 62402462
BORING NO.: MP-53
SAMPLE NO.: --
DEPTH, ft.: 22-24'
DESCRIPTION: Gr-Br ML

TESTED BY: CMB
DATE: 07/23/04
MC = 85.3
OC = 4.3
LL: ____
PL: ____

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.35

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO. 85
WET WT + TARE 43.47
DRY WT + TARE 42.78
WT TARE 11.74

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:17	0	~~[illegible]~~	~~[illegible]~~
9:19	2	21.5	25.0
9:22	5	21.5	18.5
9:32	15	21.5	15.0
9:47	30	21.5	14.0
10:17	60	21.5	13.0
1:27	250	21.5	11.5
9:17	1440	21.0	10.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	WT. RET. + Sieve	Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	403.98	403.96
1½ in		NO 30	—	—
1 in.		NO. 40	572.95	572.91
¾ in.		NO. 50	—	—
⅜ in.		NO. 60	370.06	370.02
NO. 4		NO. 100	—	—
NO. 8		NO. 140	345.07	344.06
NO. 10		NO. 200	310.33	307.56
		Pan	392.16	389.66

NO. 200 WASH

TARE NO. F-15

WT. TARE + DRY MATL. (+200) 48.17

WT. TARE 42.03

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(22)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-53
SAMPLE NO.: — —
DEPTH, ft.: 26-28'
DESCRIPTION: Gr-Br CH

TESTED BY: CMB
DATE: 07/23/04
MC = 33.9
OC = 3.9
LL: ____
PL: ____

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.53

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYGROSCOPIC MOISTURE

TARE NO.	110
WET WT + TARE	42.94
DRY WT + TARE	41.31
WT TARE	11.46

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:24	0	—	—
9:26	2	22.0	49.0
9:29	5	22.0	45.5
9:39	15	21.5	41.0
9:54	30	21.5	38.0
10:24	60	21.5	35.5
1:34	250	21.5	32.0
9:24	1440	21.0	28.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.	_____	NO. 16	_____
2 in.	_____	NO. 20	_____
1½ in	_____	NO. 30	_____
1 in.	_____	NO. 40	_____
¾ in.	_____	NO. 50	_____
⅜ in.	_____	NO. 60	_____
NO. 4	_____	NO. 100	_____
NO. 8	_____	NO. 140	_____
NO. 10	_____	NO. 200	_____

NO. 200 WASH

TARE NO. AC-8

WT. TARE + DRY MATL. (+200) 40.21

WT. TARE 39.65

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (23)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-53
SAMPLE NO.: — —
DEPTH, ft.: 36-38'
DESCRIPTION: Br Fine SP Tr Gr, silt

TESTED BY: CMB
DATE: 07/23/04
MC = 19.2
OC = 1.7
LL: —
PL: —

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 100.61

HYGROSCOPIC MOISTURE

TARE NO.: 212
WET WT + TARE: 59.55
DRY WT + TARE: 59.35
WT TARE: 1160

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:31	0	—	—
9:33	2	21.5	10.5
9:36	5	21.5	10.25
9:46	15	21.5	10.1
10:01	30	21.5	10.0
10:31	60	21.5	9.5
1:41	250	21.5	9.0
9:31	1440	21.0	8.25

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm.	293.65-41.97
OVEN DRIED WT. of + NO. 10 MATERIAL, gm.	
AIR DRIED WT. of − NO. 10 MATERIAL, gm.	
HYGROSCOPIC MOISTURE CONTENT, %	
OVEN DRY WT. − NO. 10 MATERIAL, gm.	
TOTAL WT. OVEN DRIED SAMPLE	

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. + Sieve	Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	407.79	403.96
1½ in		NO 30	—	—
1 in.		NO 40	585.32	572.92
¾ in.		NO. 50	—	—
⅜ in.	4.83	NO. 60	392.80	370.07
NO. 4	9.20	NO. 100	—	—
NO. 8	—	NO. 140	392.66	344.10
NO. 10	17.09	NO. 200	311.45	307.62
Pan	17.30	Pan	390.65	389.72

NO. 200 WASH

TARE NO.	4
WT. TARE + DRY MATL. (+200)	133.92
WT. TARE	41.68
WT. DRY MATERIAL (+200)	

NO. 10 WASH

TARE NO.	15
WT. TARE + DRY MATL. (+10)	59.28
WT. TARE	41.97
WT DRY MATERIAL (+10)	

NOTES & CALCULATIONS

MOISTURE & ORGANIC CONTENT DETERMINATION

Job No.: 62402462 Date: 07/22/04

MP-53 →

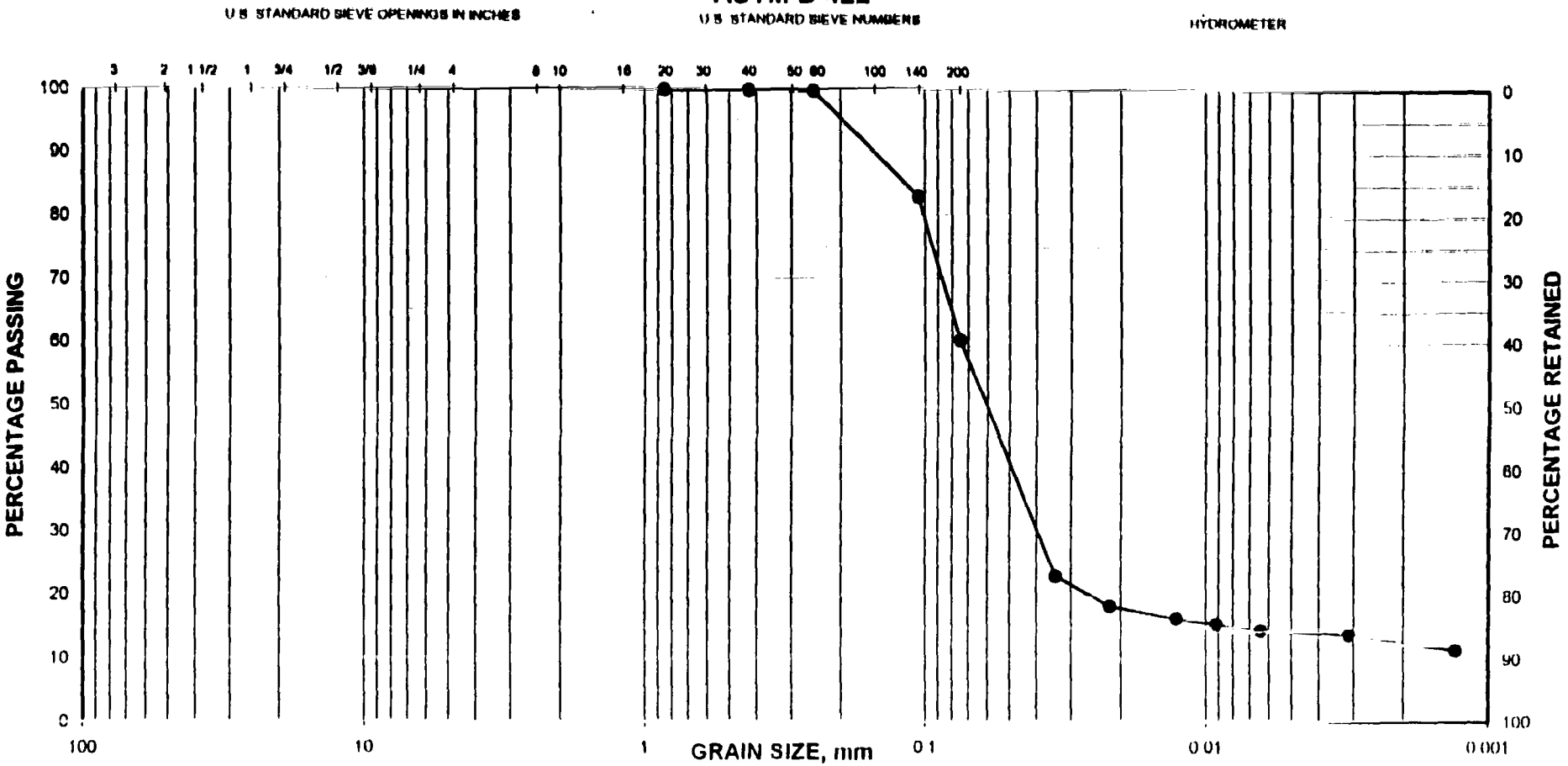
Boring/Sample	12-14'	22-24'	26-28'	36-38'	
Tare Number	79 (1)	89 (SC-5)	19 (2)	65 (125)	
Wt. Wet Soil + Tare	203.64	201.61	215.08	207.96	
Wt. Dry Soil + Tare, Lab Oven	177.77	169.50	181.87	187.49	
Wt. Dry Soil + Tare, Hot Oven	174.55	165.59	178.00	185.71	
Tare Wt.	83.01	78.47	83.89	80.89	
Moisture Content, %	27.3	35.3	33.9	19.2	
Organic Content, %	3.4	4.3	3.9	1.7	
Penetrometer Reading, (Qp)					
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					

Tested By: CMB Computed By: PC Checked By: CMB

PHILIP ENVIRONMENTAL

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#24	MP-29 Olive	--	10.0 - 12.0	Gray Sandy Lean SILT, ML

Natural Moisture Content, % = 29.1
Organic Content, % = 2.2

PHILIP ENVIRONMENTAL

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HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#24 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/30/04 Boring No.: MP-29 Oilve Sample No.: -- Depth : 10.0 - 12.0

Total Sample Wt.: 51.96

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.09	0.2	99.8	99.8	0.8500
Sieve Portion	#40	0.13	0.3	99.7	99.7	0.4250
	#60	0.17	0.3	99.7	99.7	0.2500
	#140	8.84	17.0	83.0	83.0	0.1060
	#200	20.60	39.6	60.4	60.4	0.0750

Wt.of Sample at Start of Hydrometer: 51.96

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	17.0	22.0	12.1	23.1	23.1	0.0341
Portion	5	14.5	22.0	9.6	18.4	18.4	0.0219
	15	13.5	22.0	8.6	16.5	16.5	0.0127
	29	13.0	22.0	8.1	15.5	15.5	0.0092
	60	12.5	22.0	7.6	14.5	14.5	0.0064
	250	12.0	22.5	7.3	13.9	13.9	0.0031
	1464	11.0	21.5	6.0	11.4	11.4	0.0013

LL: PL: PI: Organic: No

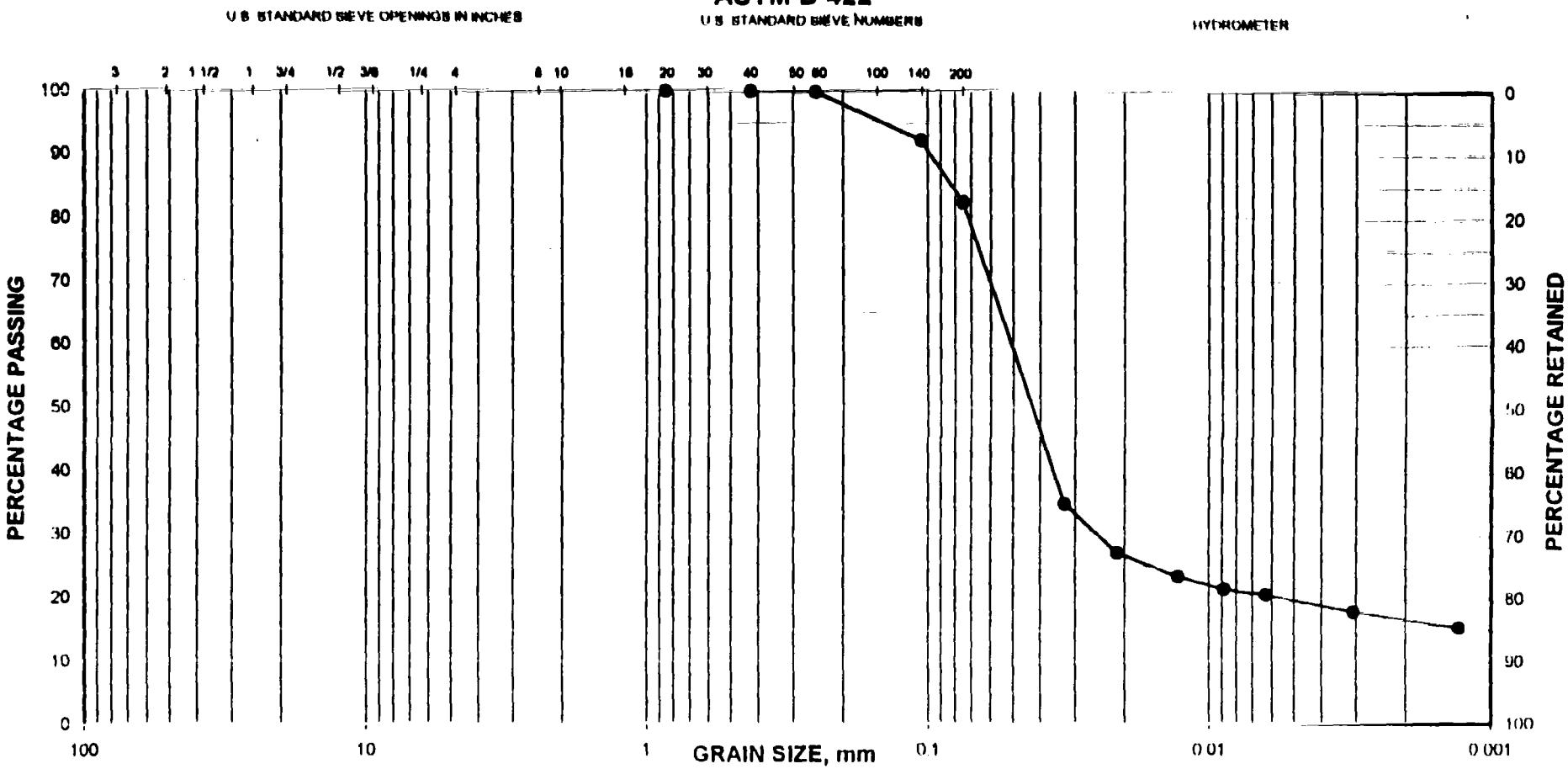
Gravel: 0 Sand: 40 Silt: 46 Clay(<0.005): 14

D10: <0.001 D30: 0.040 D60: 0.074

Cu: N/A Cc: N/A

Unified Classification: Gray Sandy Lean SILT, ML

PARTICLE SIZE ANALYSIS
ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#25	MP-29 RAND	--	18.0 - 20.0	Gray Lean SILT with Sand, ML

Natural Moisture Content, % = 30.1
Organic Content, % = 2.1

PHILIP ENVIRONMENTAL

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HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#25 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/30/04 Boring No.: MP-29 RAND Sample No.: -- Depth : 18.0 - 20.0

Total Sample Wt.: 51.34

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.05	0.1	99.9	99.9	0.8500
Sieve Portion	#40	0.09	0.2	99.8	99.8	0.4250
	#60	0.11	0.2	99.8	99.8	0.2500
	#140	4.06	7.9	92.1	92.1	0.1060
	#200	9.01	17.6	82.4	82.4	0.0750

Wt.of Sample at Start of Hydrometer: 51.34

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	23.0	22.0	18.1	34.9	34.9	0.0329
Portion	5	19.0	22.0	14.1	27.2	27.2	0.0213
	14	17.0	22.0	12.1	23.4	23.4	0.0129
	30	16.0	22.0	11.1	21.5	21.5	0.0089
	60	15.5	22.0	10.6	20.5	20.5	0.0063
	250	14.0	22.5	9.3	17.9	17.9	0.0031
	1461	13.0	21.5	8.0	15.4	15.4	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 18 Silt: 63 Clay(<0.005): 20

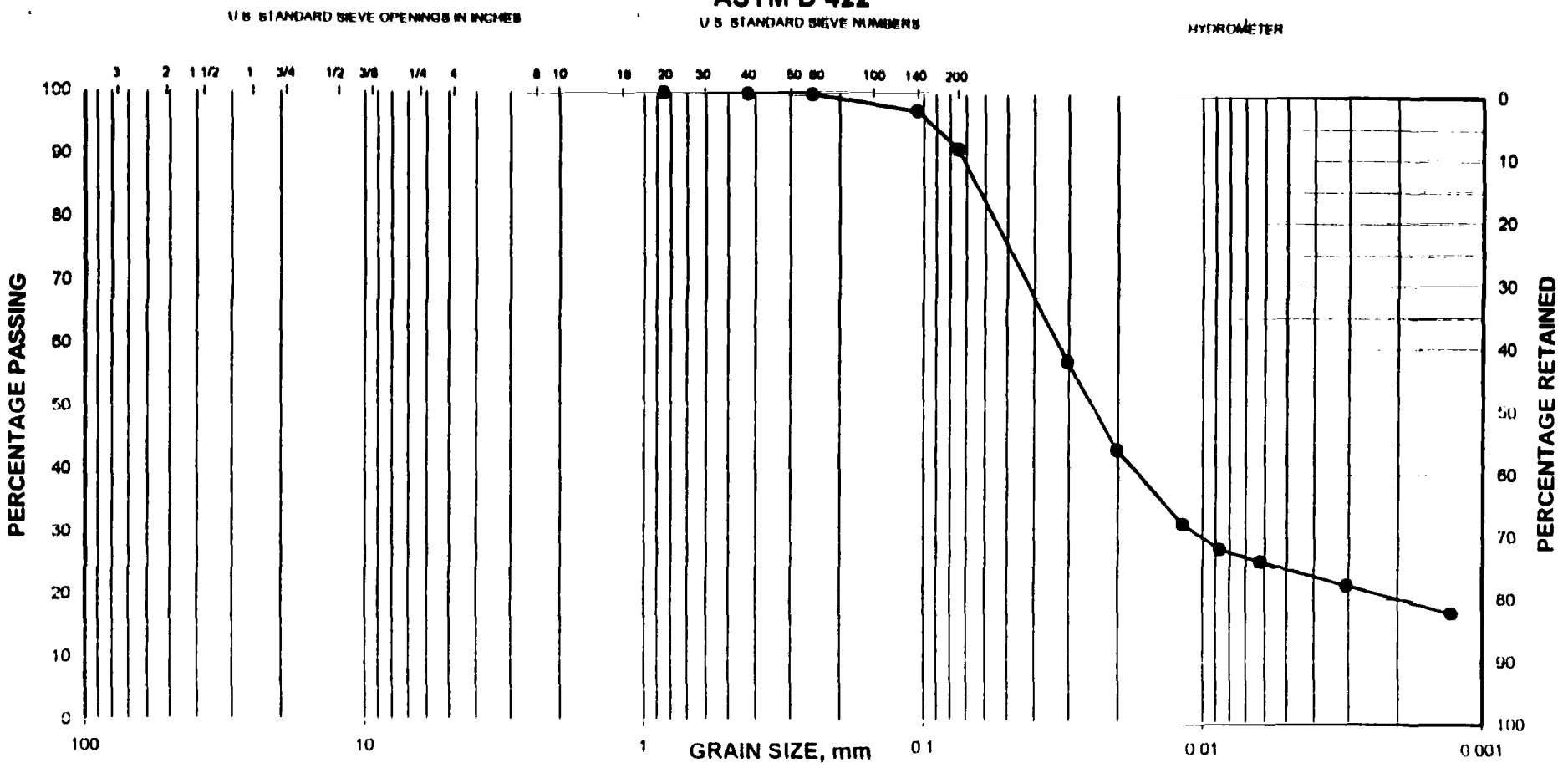
D10: <0.001 D30: 0.026 D60: 0.051

Cu: N/A Cc: N/A

Unified Classification: Gray Lean SILT with Sand, ML

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#26	MP-29 EPA	--	22.0 - 24.0	Gray Lean SILT, Trace Sand, ML

Natural Moisture Content, % = 32.5
Organic Content, % = 3.0

PHILIP ENVIRONMENTAL

E:\Gs#26.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#26 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/30/04 Boring No.: MP-29 EPA Sample No.: -- Depth : 22.0 - 24.0

Total Sample Wt.: 50.13

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.03	0.1	99.9	99.9	0.8500
Sieve Portion	#40	0.11	0.2	99.8	99.8	0.4250
	#60	0.17	0.3	99.7	99.7	0.2500
	#140	1.41	2.8	97.2	97.2	0.1060
	#200	4.44	8.9	91.1	91.1	0.0750

Wt.of Sample at Start of Hydrometer: 50.13

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	34.0	22.0	29.1	57.5	57.5	0.0304
Portion	5	27.0	22.0	22.1	43.7	43.7	0.0202
	16	21.0	22.0	16.1	31.8	31.8	0.0118
	30	19.0	22.0	14.1	27.9	27.9	0.0087
	59	18.0	22.0	13.1	25.9	25.9	0.0062
	250	16.0	22.5	11.3	22.3	22.3	0.0031
	1458	14.0	21.5	9.0	17.8	17.8	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 9 Silt: 66 Clay(<0.005): 25

D10: <0.001 D30: 0.010 D60: 0.033

Cu: N/A Cc: N/A

Unified Classification: Gray Lean SILT, Trace Sand, ML

LABORATORY TEST ASSIGNMENTS

PROJECT Clayton - Hartford
CONTRACT NUMBER 62402462

DATE ASSIGNED 07/28/04
PROJECT ENGINEER Cuy²

	BORING NUMBER	SAMPLE NUMBER	SAMPLE TYPE	VISUAL CLASSIFICATION	MOISTURE CONTENT	PENETROMETER	DRY DENSITY	RIMAC	UNCONFINED COMPRESSION	ORGANIC HOT OVEN	SHRINKAGE LIMITS	ATTERBERG LIMITS, 1 PT or 3 PT	SIEVE ANALYSIS	PERCENT PASSING #200	HYDROMETER ANALYSIS	CONSOLIDATION	SWELL PRESSURE	SPECIFIC GRAVITY	MOISTURE DENSITY STANDARD	MOISTURE DENSITY MODIFIED	RELATIVE DENSITY	CBR or IBR	PERMEABILITY K-620	PERMEABILITY BACK PRES.	DIRECT SHEAR	TRIAXIAL SHEAR	SPECIAL INSTRUCTIONS
MP-1A	FM	22-24'	Bag		X					X					X												
	Oly	10-12'																									
	Rend	18-20'																									
MP-34		10-12'																									
		14-16'																									
		16-18'																									
		20-22'																									
		26-28'																									
		34-36'			X					X					X												

PHILIP

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Clayton Group Services
Address: 3140 Finley Road
City / State / Zip: Downers Grove, IL 60515
Contact: Heidi Mendygral Phone: 630 795-3200
E-Mail: hmendygral@claytongrp.com Fax: 630 795-1130

Are the samples chilled? ☑ NO ☐ YES (Ice or Blue Ice)
Cooler Temperature: _____ °C
Preserved in: ☐ Lab ☐ Field
Comments:

Are these samples known to be involved in litigation? ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?
☐ Yes ☐ No If yes please provide limits in comment section.

Project Name / Number: HWL/15-03095.13-002
Sample Collector's Name: Joe Thomas
Requested Due Date: NTAT
Billing Instructions PO#: 15-03095.13-002

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO_3	NaOH	H_2SO_4	HCL	MeOH	$NaHSO_4$	Other	Water	Drinking Water	Soil	Sludge	Sp. Water	FOC	Moisture	Grain Size (Hydrometer)
	MP-29 EPA/040728	7/28/04 8:45AM	X										X			X	X	X
	MP-29 disc/040728	7/28/04 10:30AM	X										X			X	X	X
	MP-29 Rand/040728	7/28/04 11AM	X										X			X	X	X

Relinquished By	Date / Time	Received By	Date / Time
[signature]	07/28/04 1600P.M.	Amy Bruce	07/29/04 0800 AM

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

PARTICLE-SIZE ANALYSIS of SOILS (24)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-29 Olive
SAMPLE NO.: —
DEPTH, ft.: 10-12'
DESCRIPTION: Gr Sa ML

TESTED BY: CMB
DATE: 07/30/04
MC=29.1
OC=2.2
LL: —
PL: —

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.96

HYGROSCOPIC MOISTURE

TARE NO.: 110
WET WT + TARE: 53.08
DRY WT + TARE: 52.29
WT TARE: 1143

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
8:54	0	—	—
8:56	2	22.0	17.0
8:59	5	22.0	14.5
9:09	15	22.0	13.5
9:29	~~30~~ 29	22.0	13.0
9:54	60	22.0	12.5
1:04	250	22.5	12.0
9:18	1464	21.5	10.0

DESIRED READING INTERVALS	
SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	Sieve + CUM. WT. RET.	Sieve
3 in.		~~NO. 16~~		
2 in.		NO. 20	404.00	403.91
1½ in		~~NO. 30~~		
1 in.		NO. 40	572.92	572.88
¾ in.		~~NO. 50~~		
⅜ in.		NO. 60	370.08	370.04
NO. 4		~~NO. 100~~		
NO. 8		NO. 140	352.73	344.06
NO. 10		NO. 200	319.34	307.58
		Pan	401.14	389.65

NO. 200 WASH

TARE NO. 5

WT. TARE + DRY MATL. (+200) 73.55

WT. TARE 41.58

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (25)

PROJECT NAME: Clayton – Hartford
JOB NO.: 02402462
BORING NO.: MP-29-RAND
SAMPLE NO.: – –
DEPTH, ft.: 18-20'
DESCRIPTION: Gr ML

TESTED BY: [redacted]B
DATE: 07/30/04
MC= 30.1
OC= 2.1
LL: ____
PL: ____

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.54

TEMP., °C	MENISC[redacted] CORRN.
21.0	6[redacted]
23.0	5[redacted]
25.0	5[redacted]

HYGROSCOPIC MOISTURE

TARE NO.	241
WET WT + TARE	4021
DRY WT + TARE	3955
WT TARE	1138

HYDROMETER 152[redacted]

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
8:58	0	—	—
9:00	2	22.0	23.0
9:03	5	22.0	19.0
9:13	15	22.0	17.0
9:28	30	22.0	16.0
9:58	60	22.0	15.5
1:08	250	22.5	14.0
9:19	1461	21.5	13.0

DESIRED READ[redacted] INTERVALS

SANDS	[redacted]S & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	Sieve + CUM. WT. RET.	Sieve
3 in.		~~NO. 16~~		
2 in.		NO. 20	403.96	403.91
1½ in		~~NO 30~~		
1 in.		NO 40	572.92	572.88
¾ in.		~~NO. 50~~		
⅜ in.		NO. 60	370.07	370.05
NO. 4		~~NO 100~~		
NO. 8		NO. 140	348.02	344.67
NO. 10		NO. 200	312.54	307.59
		Pan	393.16	389.68

NO. 200 WASH

TARE NO. 15

WT. TARE + DRY MATL. (+200) 54.36

WT. TARE 41.95

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

26

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-29 EPA
SAMPLE NO.: — —
DEPTH, ft.: 22-24'
DESCRIPTION: Gr ML

TESTED BY: CMB
DATE: 07/30/04
NC = 32.5
OC = 3.0
LL: ___
PL: ___

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.53

HYGROSCOPIC MOISTURE

TARE NO.	51
WET WT + TARE	4590
DRY WT + TARE	4496
WT TARE	1127

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:02	0	—	—
9:04	2	22.0	34.0
9:07	5	22.0	27.0
9:18	16	22.0	21.0
9:32	30	22.0	19.0
10:02	59	22.0	18.0
1:12	250	22.5	16.0
9:20	1458	21.5	14.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.	Sieve
3 in.		NO. 16		
2 in.		NO. 20	403.96	403.93
1½ in		~~NO 30~~		
1 in.		NO 40	572.94	572.86
¾ in.		~~NO 50~~		
⅜ in.		NO. 60	370.09	370.05
NO. 4		~~NO. 100~~		
NO. 8		NO. 140	345.28	344.04
NO. 10		NO. 200	310.59	307.56
		Pan	390.98	389.66

NO. 200 WASH

TARE NO. ACS

WT. TARE + DRY MATL. (+200) 47.60

WT. TARE 47.09

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

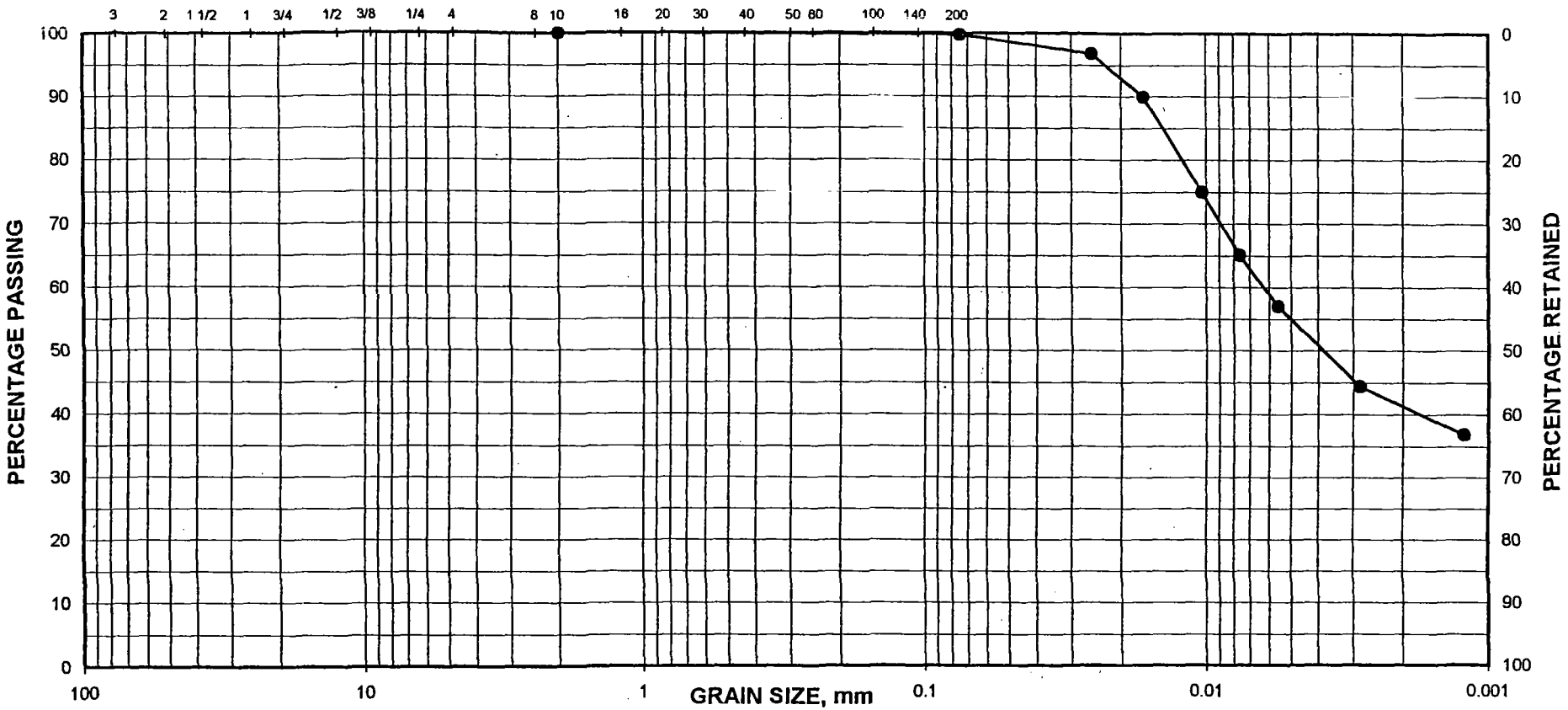
WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#27	MP-34	--	10.0 - 12.0	Gray-Brown Fat CLAY, Trace SAND, CH

Natural Moisture Content, % = 34.1
Organic Content, % = 4.3

PHILIP ENVIRONMENTAL

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HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No GS#27 | Project Name: Clayton - Hartford Illinois | Project Number: 62402462

Date: 7/30/04 | Boring No.: MP-34 | Sample No.: -- | Depth: 10.0 - 12.0

Total Sample Wt: 49.66

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	0.14	0.3	99.7	99.7	0.0750

Wt.of Sample at Start of Hydrometer: 49.66

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	53.5	22.0	48.6	96.9	96.9	0.0255
Portion	5	50.0	22.0	45.1	89.9	89.9	0.0167
	15	42.5	22.0	37.6	75.0	75.0	0.0104
	30	37.5	22.0	32.6	65.0	65.0	0.0076
	60	33.5	22.0	28.6	57.0	57.0	0.0056
	250	27.0	22.5	22.3	44.4	44.4	0.0028
	1450	23.5	21.5	18.5	36.8	36.8	0.0012

LL: | PL: | PI: | Organic: No

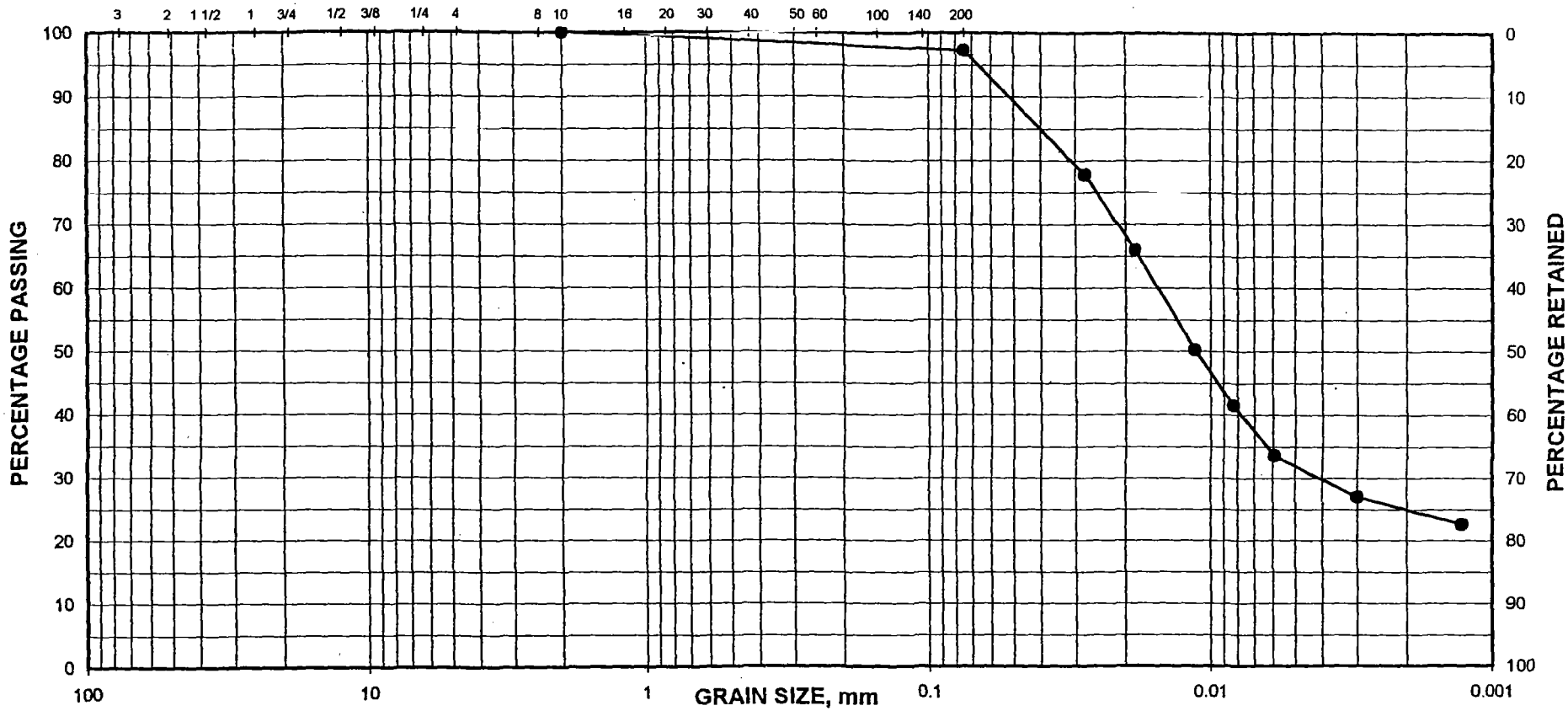
Gravel: 0 | Sand: 0 | Silt: 45 | Clay(<0.005): 55

D10: <0.001 | D30: <0.001 | D60: 0.006

Cu: N/A | Cc: N/A

Unified Classification: Gray-Brown Fat CLAY, Trace SAND, CH

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#28	MP-34	--	14.0 - 16.0	Gray-Brown Lean CLAY, Trace SAND, CL

Natural Moisture Content, % = 32.2
Organic Content, % = 3.6

PHILIP ENVIRONMENTAL

E:\Gs#28.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No GS#28 | Project Name Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/30/04 | Boring No.: MP-34 | Sample No.: – | Depth : 14.0 - 16.0

Total Sample Wt. 50.43

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	1.37	2.7	97.3	97.3	0.0750

Wt.of Sample at Start of Hydrometer: 50.43

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	44.5	22.0	39.6	77.7	77.7	0.0279
Portion	5	38.5	22.0	33.6	66.0	66.0	0.0186
	15	30.5	22.0	25.6	50.3	50.3	0.0114
	30	25.0	22.0	21.1	41.5	41.5	0.0083
	62	22.0	22.0	17.1	33.6	33.6	0.0059
	250	18.5	22.5	13.8	27.0	27.0	0.0030
	1447	16.5	21.5	11.5	22.6	22.6	0.0013

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 3 | Silt: 66 | Clay(<0.005): 32

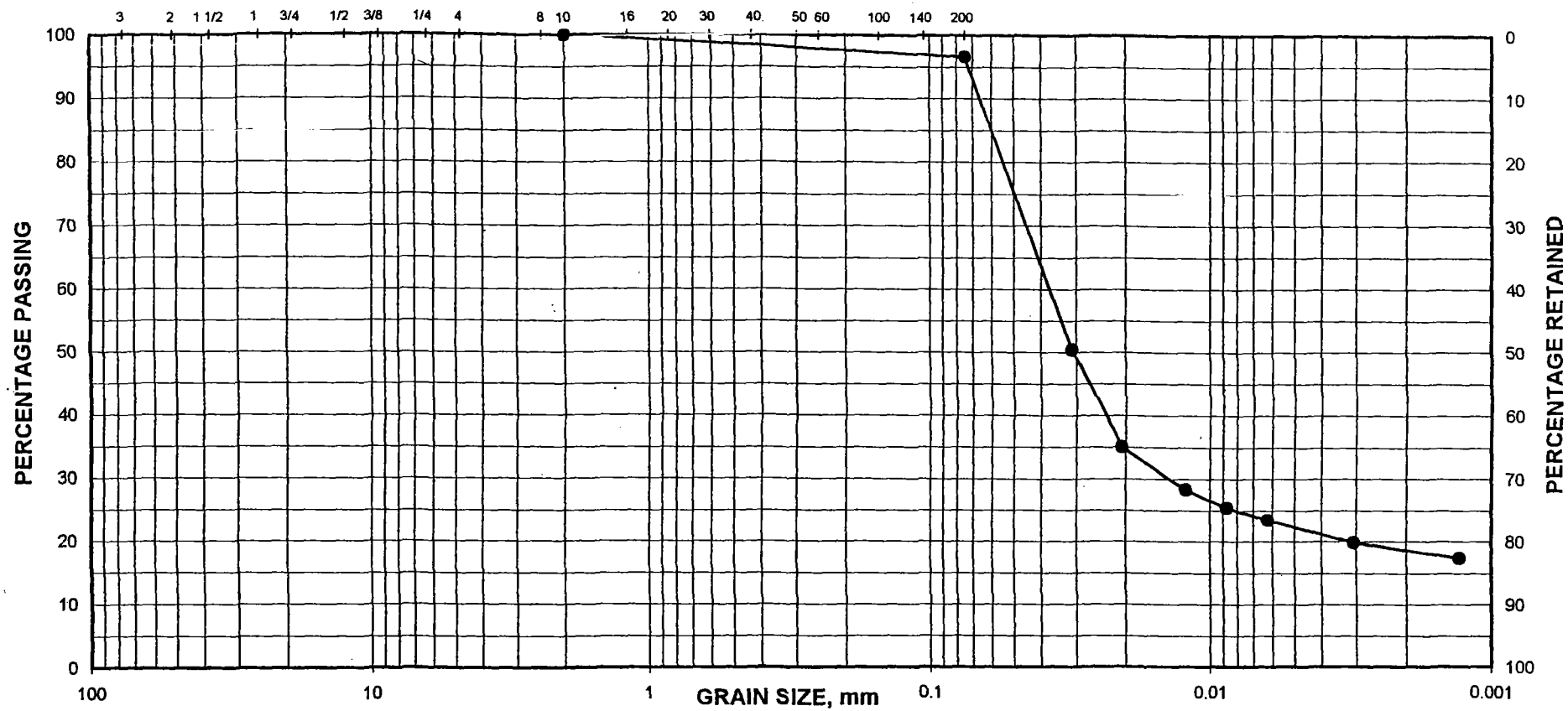
D10: <0.001 | D30: 0.0042 | D60: 0.016

Cu: N/A | Cc: N/A

Unified Classification: Gray-Brown Lean CLAY, Trace SAND, CL

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#29	MP-34	--	16.0 - 18.0	Gray-Brown Lean CLAY, Trace SAND, CL

Natural Moisture Content, % = 29.2
Organic Content, % = 2.2

PHILIP ENVIRONMENTAL

E:\Gs#29.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#29 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/30/04 | Boring No.: MP-34 | Sample No.: -- | Depth: 16.0 - 18.0

Total Sample Wt. 51.23

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	1.77	3.5	96.5	96.5	0.0750

Wt.of Sample at Start of Hydrometer: 51.23

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	31.0	22.0	26.1	50.5	50.5	0.0311
Portion	5	23.0	22.0	18.1	35.0	35.0	0.0208
	15	19.5	22.0	14.6	28.3	28.3	0.0123
	30	18.0	22.0	13.1	25.4	25.4	0.0088
	60	17.0	22.0	12.1	23.4	23.4	0.0062
	250	15.0	22.5	10.3	19.9	19.9	0.0031
	1441	14.0	21.5	9.0	17.4	17.4	0.0013

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 3 | Silt: 75 | Clay(<0.005): 22

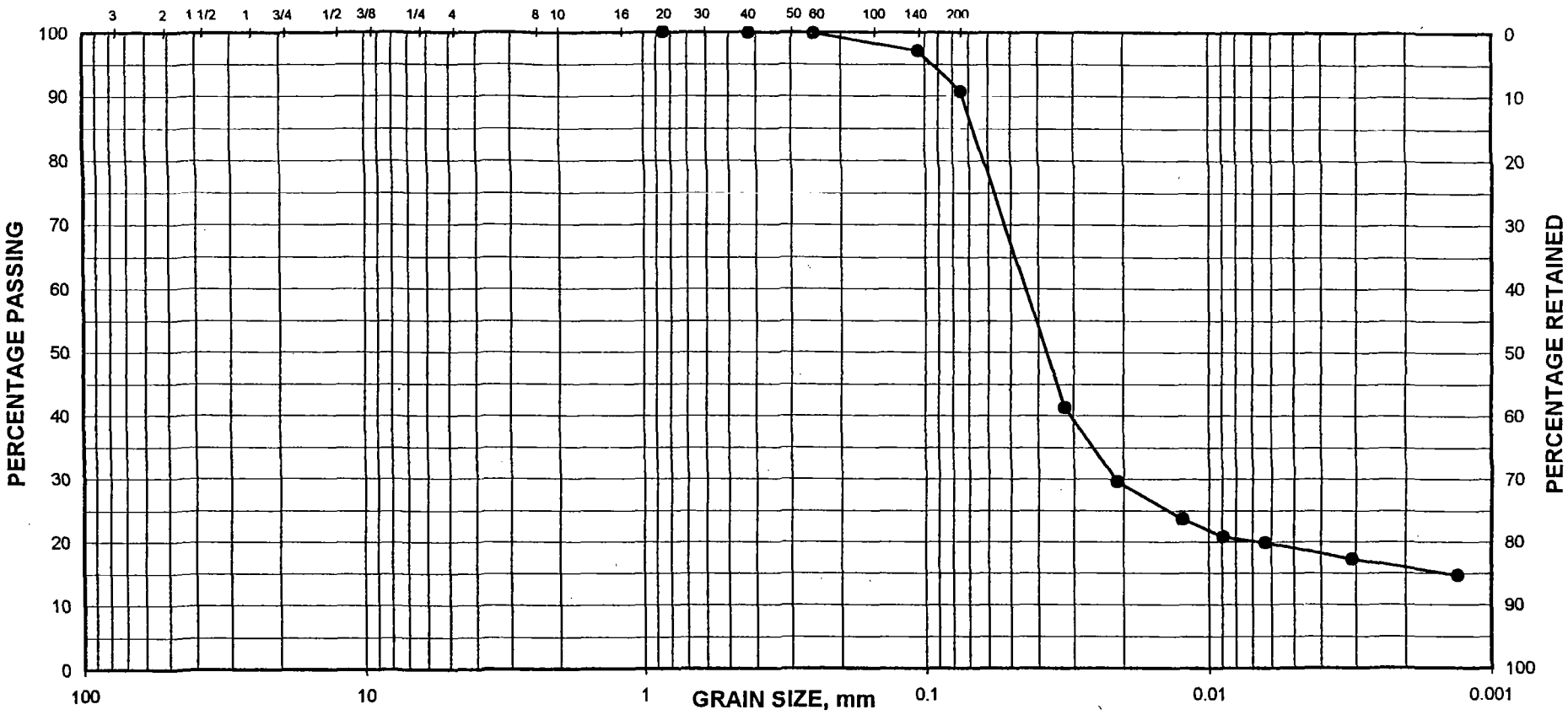
D10: <0.001 | D30: 0.0141 | D60: 0.038

Cu: N/A | Cc: N/A

Unified Classification: Gray-Brown Lean CLAY, Trace SAND, CL

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#30	MP-34	--	20.0 - 22.0	Gray-Brown Lean SILT, Trace Sand, ML

Natural Moisture Content, % = 26.3
Organic Content, % = 2.3

PHILIP ENVIRONMENTAL

E:\Gs#30.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No : GS#30 | Project Name Clayton - Hartford Illinois | Project Number: 62402462

Date: 7/30/04 | Boring No : MP-34 | Sample No.: – | Depth : 20.0 - 22.0

Total Sample Wt. 50.65

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.01	0.0	100.0	100.0	0.8500
Sieve Portion	#40	0.05	0.1	99.9	99.9	0.4250
	#60	0.08	0.2	99.8	99.8	0.2500
	#140	1.47	2.9	97.1	97.1	0.1060
	#200	4.73	9.3	90.7	90.7	0.0750

Wt.of Sample at Start of Hydrometer 50.65

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. /C:	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	26.0	22.0	21.1	41.3	41.3	0.0322
Portion	5	20.0	22.0	15.1	29.6	29.6	0.0212
	15	17.0	22.0	12.1	23.7	23.7	0.0125
	30	15.5	22.0	10.6	20.8	20.8	0.0089
	60	15.0	22.0	10.1	19.8	19.8	0.0063
	250	13.5	22.5	8.8	17.2	17.2	0.0031
	1440	12.5	21.5	7.5	14.6	14.6	0.0013

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 9 | Silt: 72 | Clay(<0.005): 19

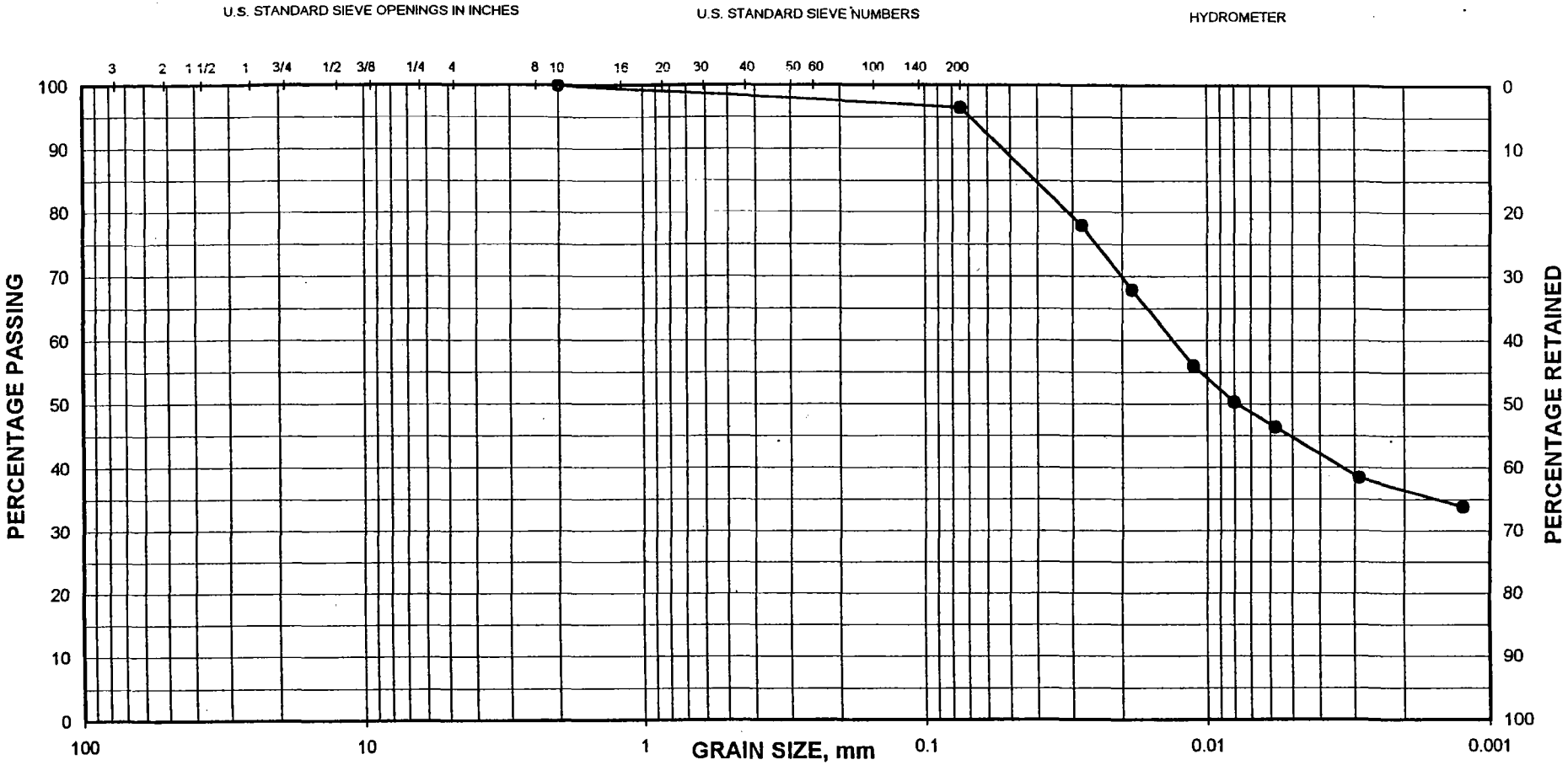
D10: <0.001 | D30: 0.022 | D60: 0.045

Cu: N/A | Cc: N/A

Unified Classification: Gray-Brown Lean SILT, Trace Sand, ML

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#31	MP-34	--	26.0 - 28.0	Gray-Brown Fat CLAY, Trace SAND, CH

Natural Moisture Content, % = 27.2
Organic Content, % = 2.3

PHILIP ENVIRONMENTAL

E:\Gs#31.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No: GS#31 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/30/04 | Boring No.: MP-34 | Sample No.: -- | Depth: 26.0 - 28.0

Total Sample Wt.: 49.73

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	1.77	3.6	96.4	96.4	0.0750

Wt.of Sample at Start of Hydrometer: 49.73

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	44.0	22.0	39.1	77.8	77.8	0.0280
Portion	5	39.0	22.0	34.1	67.9	67.9	0.0185
	15	33.0	22.0	28.1	56.0	56.0	0.0112
	30	30.0	22.5	25.3	50.3	50.3	0.0080
	60	28.0	22.5	23.3	46.3	46.3	0.0058
	250	24.0	22.5	19.3	38.3	38.3	0.0029
	1436	22.0	21.5	17.0	33.8	33.8	0.0012

LL: | PL: | PI: | Organic: No

Gravel: 0 | Sand: 4 | Silt: 52 | Clay(<0.005): 45

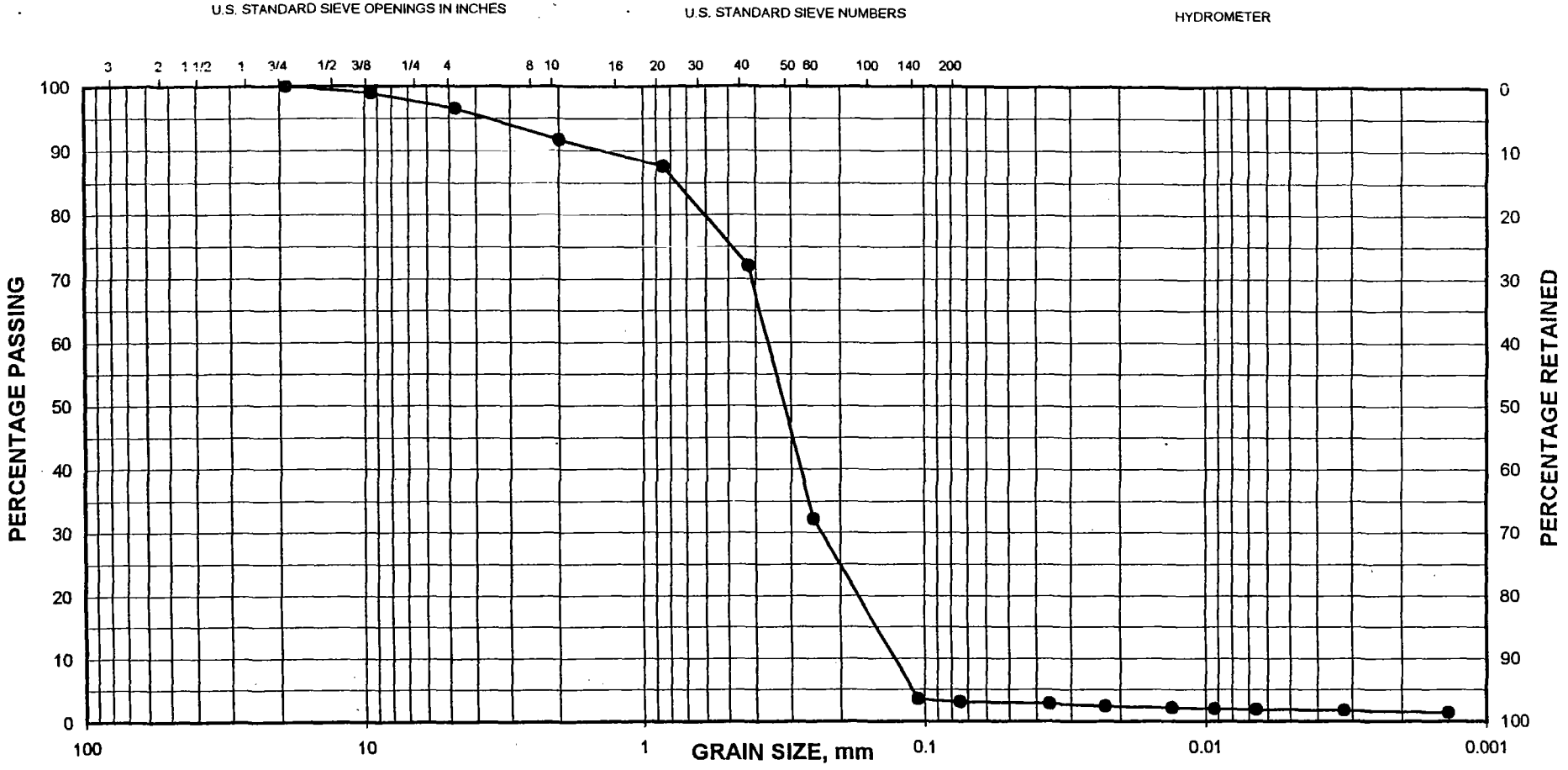
D10: <0.001 | D30: <0.001 | D60: 0.014

Cu: N/A | Cc: N/A

Unified Classification: Gray-Brown Fat CLAY, Trace SAND, CH

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#32	MP-34	--	34.0 - 36.0	Brown Fine SAND, Trace Gravel,Silt, SP

Natural Moisture Content, % = 18.8
Organic Content, % = 1.9

PHILIP ENVIRONMENTAL

E:\Gs#32.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No : GS#32 | Project Name: Clayton - Hartford, Illinois | Project Number: 62402462

Date: 7/23/04 | Boring No : MP-34 | Sample No.: -- | Depth : 34.0 - 36.0

Total Sample Wt 327.13

	Sieve Size	Cum. Wt. Ret	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	3.55	1.1	98.9	98.9	9.5000
	#4	11.47	3.5	96.5	96.5	4.7500
	#10	27.42	8.4	91.6	91.6	2.0000
-#10	#20	4.36	4.3	95.7	87.6	0.8500
Sieve Portion	#40	21.50	21.4	78.6	72.0	0.4250
	#60	65.25	64.9	35.1	32.1	0.2500
	#140	96.64	96.2	3.8	3.5	0.1060
	#200	97.10	96.6	3.4	3.1	0.0750

Wt.of Sample at Start of Hydrometer 100.48

Specific Gravity 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	8.0	22.0	3.1	3.1	2.8	0.0359
Portion	5	7.5	22.0	2.6	2.6	2.4	0.0228
	15	7.3	22.0	2.4	2.4	2.2	0.0132
	30	7.0	22.0	2.1	2.1	1.9	0.0093
	60	6.9	22.0	2.0	2.0	1.8	0.0066
	250	6.6	22.5	1.9	1.9	1.7	0.0032
	1430	6.5	21.5	1.5	1.5	1.4	0.0014

LL: | PL: | PI: | Organic: No

Gravel: 4 | Sand: 93 | Silt: 1 | Clay(<0.005): 2

D10: 0.135 | D30: 0.235 | D60: 0.360

Cu: 2.7 | Cc: 1.1

Unified Classification: Brown Fine SAND, Trace Gravel,Silt, SP

LABORATORY TEST ASSIGNMENTS

PROJECT Clayton - Hartford
CONTRACT NUMBER 62402462

DATE ASSIGNED 07/28/04
PROJECT ENGINEER CW²

BORING NUMBER	SAMPLE NUMBER	SAMPLE TYPE	VISUAL CLASSIFICATION	MOISTURE CONTENT	PENETROMETER	DRY DENSITY	RIMAC	UNCONFINED COMPRESSION	ORGANIC HOT OVEN	SHRINKAGE LIMITS	ATTERBERG LIMITS, 1 PT or 3 PT	SIEVE ANALYSIS	PERCENT PASSING #200	HYDROMETER ANALYSIS	CONSOLIDATION	SWELL PRESSURE	SPECIFIC GRAVITY	MOISTURE DENSITY STANDARD	MOISTURE DENSITY MODIFIED	RELATIVE DENSITY	CBR or IBR	PERMEABILITY K-620	PERMEABILITY BACK PRES.	DIRECT SHEAR	TRIAXIAL SHEAR	SPECIAL INSTRUCTIONS
EB4	22-24'	Bag		X					X					X												
Olive Rand	10-12'																									
	18-20'																									
	10-12'																									
	14-16'																									
	17'																									
	20-22'																									
	22-24'																									
	24-26'			X					X					X												

COPY

PHILIP

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Clayton Group Services
Address: 5140 Finley Rd Downers Grove
City / State / Zip: Downers Grove, IL
Contact: K. Comine Phone: 630-795-3200
E-Mail: kcomine@claytongroup.com Fax: 630-795-1130

Are the samples chilled? ☐ NO ☐ YES (Ice or Blue Ice)
Cooler Temperature: _____ °C
Preserved In: ☐ Lab ☐ Field
Comments:

Project Name / Number:
Requested Due Date:
Billing Instructions PO#:
Sample Collector's Name: Gerald G. Tiernan

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	Other	Water	Drinking Water	Soil	Sludge	Sp. Waste	Grain Size w/ Hydrometer	Moisture	foc
	MP-34 (10-12') 040728	7/28/04 11:25								X			X			X	X	X
	MP-34 (14-16') 040728	11:35								X			X			X	X	X
	MP-34 (16-18') 040728	11:40								X			X			X	X	X
	MP-34 (20-22') 040728	11:43								X			X			X	X	X
	MP-34 (26-28') 040728	12:46								X			X			X	X	X
	MP-34 (34-36') 040728	12:58								X			X			X	X	X

Relinquished By	Date / Time	Received By	Date / Time
Kleio Merrill	7/28/04	Anj Brooks	07/29/04 0800AM

PARTICLE-SIZE ANALYSIS of SOILS

(27)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-34
SAMPLE NO.: --
DEPTH, ft.: 10-12'
DESCRIPTION: Gr-Br CH

TESTED BY: CMB
DATE: 07/30/04
MC = 34.1
OC = 4.3
LL: ___
PL: ___

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 57.12

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	7-A
WET WT + TARE	45.07
DRY WT + TARE	43.47
WT TARE	11.17

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:11	0	—	—
9:13	2	22.0	53.5
9:16	5	22.0	50.0
9:26	15	22.0	42.5
9:41	30	22.0	37.5
10:11	60	22.0	33.5
1:21	250	22.5	27.0
9:21	1450	21.5	23.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.		NO. 16	
2 in.		NO. 20	
1½ in		NO 30	
1 in.		NO. 40	
¾ in.		NO. 50	
⅜ in.		NO. 60	
NO. 4		NO. 100	
NO. 8		NO. 140	
NO. 10		NO. 200	

NO. 200 WASH

TARE NO. 4

WT. TARE + DRY MATL. (+200) 41.82

WT. TARE 41.68

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

28

PROJECT NAME: Clayton – Hartford
JOB NO.: 62402462
BORING NO.: MP-34
SAMPLE NO.: – –
DEPTH, ft.: 14-16'
DESCRIPTION: Gr-Br CL

TESTED BY: CMB
DATE: 07/30/04
MC = 32.2
OC = 3.6
LL: ___
PL: ___

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.21

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	85
WET WT + TARE	45.16
DRY WT + TARE	44.02
WT TARE	11.75

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:15	0	—	—
9:17	2	22.0	44.5
9:20	5	22.0	38.5
9:30	15	22.0	30.5
9:45	30	22.0	26.0
10:15	60	22.0	22.0
1:25	250	22.5	18.5
9:22	1447	21.5	16.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.		NO. 16	
2 in.		NO. 20	
1½ in		NO 30	
1 in.		NO. 40	
¾ in.		NO. 50	
⅜ in.		NO. 60	
NO. 4		NO. 100	
NO. 8		NO. 140	
NO. 10		NO. 200	

NO. 200 WASH

TARE NO. 20

WT. TARE + DRY MATL. (+200) 55 50

WT. TARE 54 13

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(29)

PROJECT NAME: Clayton - Hartford

JOB NO.: 62402462

BORING NO.: MP-34

SAMPLE NO.: —

DEPTH, ft.: 16-18'

DESCRIPTION: Gr-Br CL

TESTED BY: CMB

DATE: 07/30/04

MC= 29.2

OC= 22

LL: —

PL: —

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.55

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	212
WET WT + TARE	45.79
DRY WT + TARE	44.93
WT TARE	11.58

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:22	0	—	—
9:24	2	22.0	31.0
9:27	5	22.0	23.0
9:37	15	22.0	19.5
9:52	30	22.0	18.0
10:22	60	22.0	17.0
1:32	250	22.5	15.0
9:23	1441	21.5	14.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.		NO. 16	
2 in.		NO. 20	
1½ in		NO 30	
1 in.		NO 40	
¾ in.		NO. 50	
⅜ in.		NO. 60	
NO. 4		NO. 100	
NO. 8		NO. 140	
NO. 10		NO. 200	

NO. 200 WASH

TARE NO. AC-8

WT. TARE + DRY MATL. (+200) 4142

WT. TARE 3965

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(30)

PROJECT NAME: Clayton – Hartford
JOB NO.: 62402462
BORING NO.: MP-34
SAMPLE NO.: – –
DEPTH, ft.: 20-22'
DESCRIPTION: Gr-Br ML

TESTED BY: CMB
DATE: 07/30/04
MC = 26.3
OC = 2.3
LL: ___
PL: ___

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.96

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	92
WET WT + TARE	4885
DRY WT + TARE	4790
WT TARE	1120

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:34	0	—	—
9:36	2	22.0	26.0
9:39	5	22.0	20.0
9:49	15	22.0	17.0
10:04	30	22.0	15.5
10:34	60	22.0	15.0
1:44	250	22.5	13.5
9:34	1440	21.5	12.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.	Sieve
3 in.		~~NO. 16~~		
2 in.		NO. 20	403.94	403.93
1½ in		~~NO. 30~~		
1 in.		NO. 40	572.90	572.86
¾ in.		~~NO. 50~~		
⅜ in.		NO. 60	370.09	370.06
NO. 4		~~NO. 100~~		
NO. 8		NO. 140	345.43	344.04
NO. 10		NO. 200	310.82	307.56
		Pan	398.80	389.66

NO. 200 WASH

TARE NO. 18

WT. TARE + DRY MATL. (+200) 52.85

WT. TARE 39.09

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(31)

PROJECT NAME: Clayton - Hartford

JOB NO.: 62402462

BORING NO.: MP-34

SAMPLE NO.: - -

DEPTH, ft.: 26-28'

DESCRIPTION: Gr-Br CH

TESTED BY: CMB

DATE: 07/30/4

MC = 27.2

OC = 2.3

LL: ____

PL: ____

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.71

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	111
WET WT + TARE	4581
DRY WT + TARE	4448
WT TARE	1100

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:48	0	—	—
9:50	2	22.0	44.0
9:53	5	22.0	39.0
10:03	15	22.0	33.0
10:18	30	22.5	30.0
10:48	60	22.5	28.0
1:58	250	22.5	24.0
5:44	1436	21.5	22.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.		NO. 16	
2 in.		NO. 20	
1½ in		NO 30	
1 in.		NO. 40	
¾ in.		NO. 50	
⅜ in.		NO. 60	
NO. 4		NO. 100	
NO. 8		NO. 140	
NO. 10		NO. 200	

Sieve
403.93
572.86
370.06
344.04
307.56
389.66

NO. 200 WASH

TARE NO. 6BQ

WT. TARE + DRY MATL. (+200) 4221

WT. TARE 4119

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (32)

PROJECT NAME: Clayton – Hartford
JOB NO.: 62402462
BORING NO.: MP-34
SAMPLE NO.: — —
DEPTH, ft.: 34-36'
DESCRIPTION: Br SP

TESTED BY: CMB
DATE: 07/30/04

MC = 18.8
OC = 1.9

LL: ____
PL: ____

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 100.67

HYGROSCOPIC MOISTURE

TARE NO.	84
WET WT + TARE	59.88
DRY WT + TARE	59.79
WT TARE	1143

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:00	0	—	—
10:02	2	22.0	8.0
10:05	5	22.0	7.5
10:15	15	22.0	7.25
10:30	30	22.0	7.0
11:00	60	22.0	6.9
2:10	250	22.5	6.6
9:50	1430	21.5	6.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm.		369.73 − 42.04
OVEN DRIED WT. of + NO. 10 MATERIAL, gm.		
AIR DRIED WT. of − NO. 10 MATERIAL, gm.		
HYGROSCOPIC MOISTURE CONTENT, %		
OVEN DRY WT. − NO. 10 MATERIAL, gm.		
TOTAL WT. OVEN DRIED SAMPLE		

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	Sieve ~~CUM.~~ WT. RET.	Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	408.31	403.95
1½ in		NO 30	—	—
1 in.		NO 40	590.04	872.90
¾ in.		NO. 50	—	—
⅜ in.	3.55	NO. 60	413.81	870.06
NO. 4	11.47	NO. 100	—	—
NO. 8	—	NO. 140	375.45	344.06
NO. 10	27.42	NO. 200	308.05	307.59
Pan	27.98	Pan	389.75	389.64

NO. 200 WASH

TARE NO. F-5

WT. TARE + DRY MATL. (+200) 139.42

WT. TARE 42.06

WT. DRY MATERIAL (+200)

NO. 10 WASH

TARE NO. F-15

WT. TARE + DRY MATL. (+10) 70.02

WT. TARE 42.04

WT DRY MATERIAL (+10)

NOTES & CALCULATIONS

MOISTURE & ORGANIC CONTENT DETERMINATION

Job No.: 62402462 Date: 07/29/04

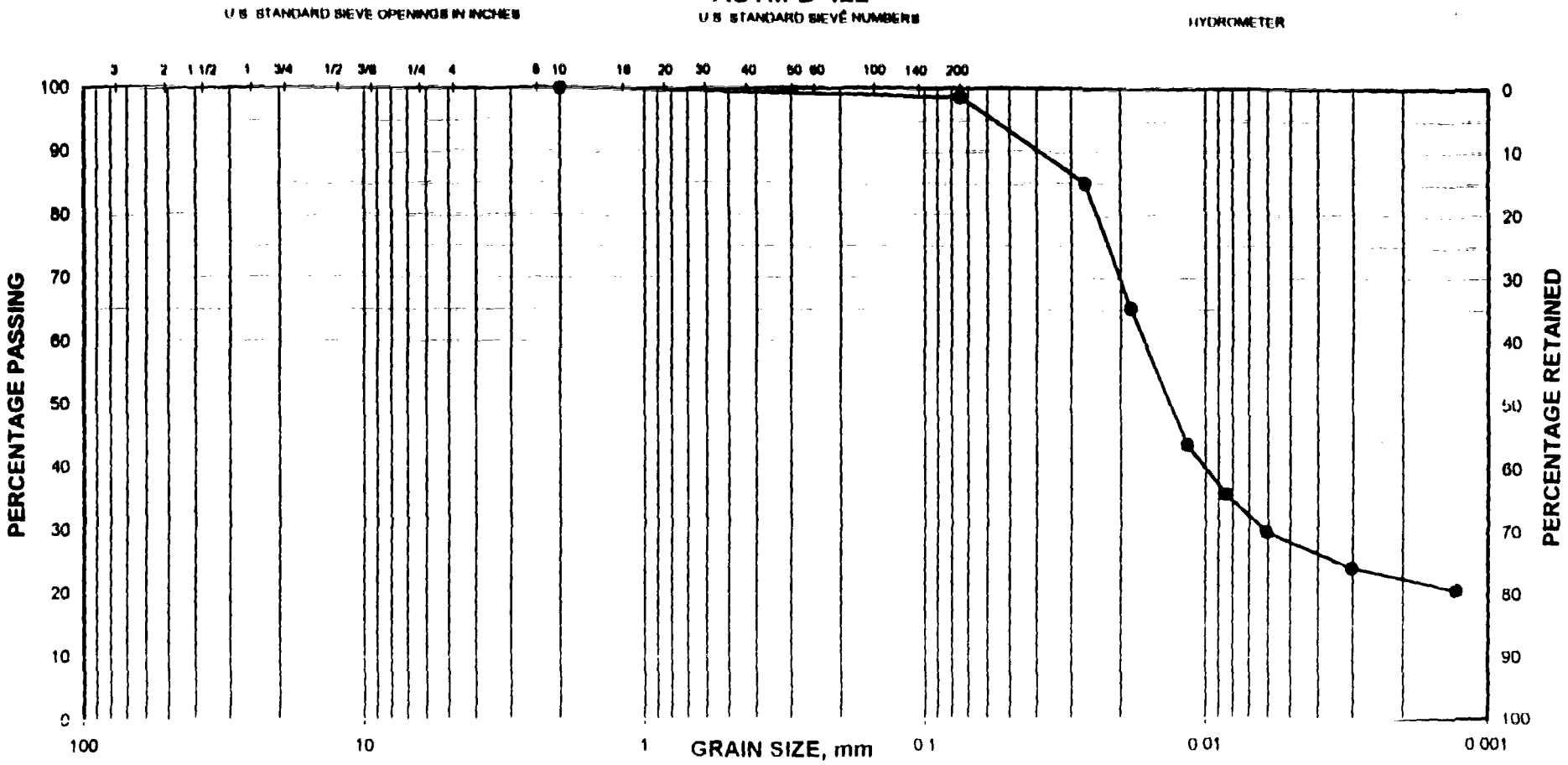
	MP-29 →			MP-34 →	
Boring/Sample	EPA/22-24'	Olive/10-12'	RAND/16-20	10-12'	14-16'
Tare Number	219 (49)	255 (69)	278 (1)	79 (4)	19 (74)
Wt. Wet Soil + Tare	203.84	209.14	201.41	206.00	201.19
Wt. Dry Soil + Tare, Lab Oven	174.19	177.12	171.50	174.75	172.61
Wt. Dry Soil + Tare, Hot Oven	171.49	174.71	169.41	170.82	169.40
Tare Wt.	83.00	67.15	72.12	83.01	83.88
Moisture Content, %	32.5	29.1	30.1	34.1	32.2
Organic Content, %	3.0	2.2	2.1	4.3	3.6
Penetrometer Reading, (Qp)	Gr ML	Gr Sa ML	Gr ML	Gr-Br CH	Gr-Br CL
Boring/Sample	MP-34/16-18'	MP-34/20-22'	MP-34/26-28	MP-34/34-36	
Tare Number	236 (3)	89 (125)	4/89 (56-3)	15/19 (2)	
Wt. Wet Soil + Tare	204.32	209.97	206.33	222.88	
Wt. Dry Soil + Tare, Lab Oven	177.03	182.62	171.14/182.87	194.20/207.21	
Wt. Dry Soil + Tare, Hot Oven	174.94	180.18	185.33	204.84	
Tare Wt.	83.48	78.52	41.68/78.47	41.95/83.88	
Moisture Content, %	29.2	26.3	27.2	18.8	
Organic Content, %	2.2	2.3	2.3	1.9	
Penetrometer Reading, (Qp)	Gr-Br CL	Gr-Br ML	Gr-Br CH	Br SP	
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					

Tested By: CMB Computed By: PC Checked By: CMB

PHILIP ENVIRONMENTAL

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402482 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#33	MP-31	--	10.0 - 12.0	Gray-Brown Lean CLAY, Trace SAND, CL

Natural Moisture Content, % = 29.1
Organic Content, % = 5.3

PHILIP ENVIRONMENTAL

E:\Gs#33.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#33 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/30/04 Boring No.: MP-31 Sample No.: -- Depth : 10.0 - 12.0

Total Sample Wt.: 50.32

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	0.72	1.4	98.6	98.6	0.0750

Wt.of Sample at Start of Hydrometer: 50.32

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	48.0	22.5	43.3	85.1	85.1	0.0268
Portion	5	38.0	22.5	33.3	65.4	65.4	0.0185
	15	27.0	22.5	22.3	43.8	43.8	0.0116
	30	23.0	22.5	18.3	35.9	35.9	0.0084
	60	20.0	22.5	15.3	30.0	30.0	0.0061
	250	17.0	22.5	12.3	24.1	24.1	0.0030
	1426	15.5	21.5	10.5	20.6	20.6	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 1 Silt: 70 Clay(<0.005): 28

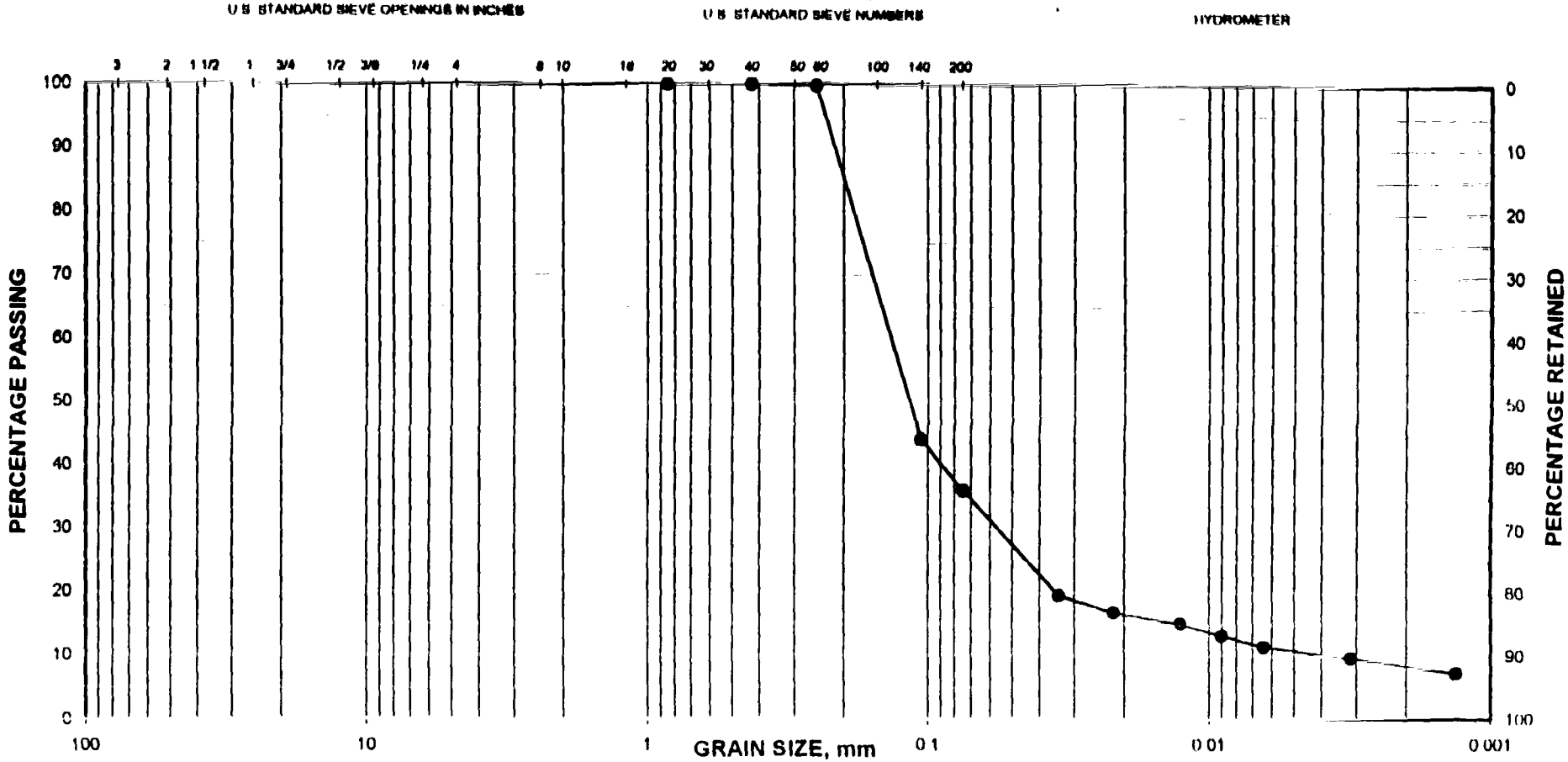
D10: <0.001 D30: 0.0061 D60: 0.017

Cu: N/A Cc: N/A

Unified Classification: Gray-Brown Lean CLAY, Trace SAND, CL

PARTICLE SIZE ANALYSIS

ASTM D 422



GRAVEL		SAND			SILT or CLAY
Coarse	Fine	Coarse	Medium	Fine	

JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#34	MP-31	--	14.0 - 16.0	Brown Sandy Lean SILT, ML

Natural Moisture Content, % = 26.4
Organic Content, % = 2.5

PHILIP ENVIRONMENTAL

E:\Gs#34.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#34 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/30/04 Boring No.: MP-31 Sample No.: -- Depth : 14.0 - 16.0

Total Sample Wt.: 54.74

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.00	0.0	100.0	100.0	0.8500
Sieve Portion	#40	0.02	0.0	100.0	100.0	0.4250
	#60	0.14	0.3	99.7	99.7	0.2500
	#140	30.54	55.8	44.2	44.2	0.1060
	#200	34.97	63.9	36.1	36.1	0.0750

Wt.of Sample at Start of Hydrometer: 54.74

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	15.5	22.5	10.8	19.5	19.5	0.0342
Portion	5	14.0	22.5	9.3	16.8	16.8	0.0219
	15	13.0	22.5	8.3	15.0	15.0	0.0127
	30	12.0	22.5	7.3	13.2	13.2	0.0090
	60	11.0	22.5	6.3	11.4	11.4	0.0064
	250	10.0	22.5	5.3	9.5	9.5	0.0032
	1451	9.0	21.5	4.0	7.2	7.2	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 64 Silt: 25 Clay(<0.005): 11

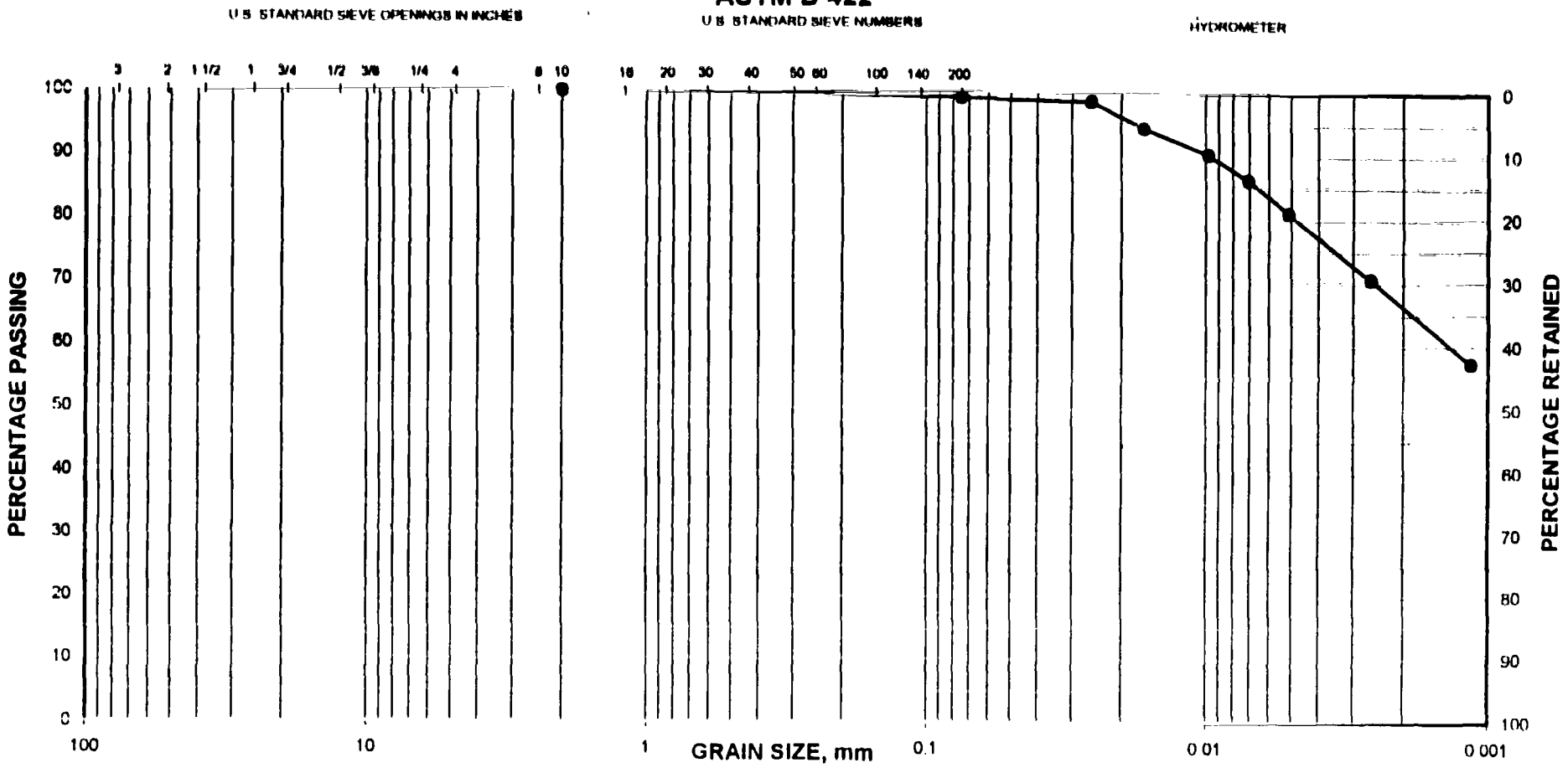
D10: 0.004 D30: 0.057 D60: 0.140

Cu: 38.9 Cc: 6.4

Unified Classification: Brown Sandy Lean SILT, ML

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#35	MP-31	--	18.0 - 20.0	Gray-Brown Fat CLAY, Trace SAND, CH

Natural Moisture Content, % = 44.2
Organic Content, % = 6.8

PHILIP ENVIRONMENTAL

E:\Gs#35.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#35 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/30/04 Boring No.: MP-31 Sample No.: -- Depth : 18.0 - 20.0

Total Sample Wt.: 47.45

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	0.36	0.8	99.2	99.2	0.0750

Wt.of Sample at Start of Hydrometer: 47.45

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer.	2	52.0	22.5	47.3	98.5	98.5	0.0257
Portion	5	50.0	22.5	45.3	94.4	94.4	0.0166
	15	48.0	22.5	43.3	90.2	90.2	0.0098
	30	46.0	22.5	41.3	86.0	86.0	0.0071
	60	43.5	22.5	38.8	80.8	80.8	0.0051
	250	38.5	22.5	33.8	70.4	70.4	0.0026
	1441	32.5	21.5	27.5	57.3	57.3	0.0012

LL: PL: PI: Organic: No

Gravel: 0 Sand: 1 Silt: 19 Clay(<0.005): 81

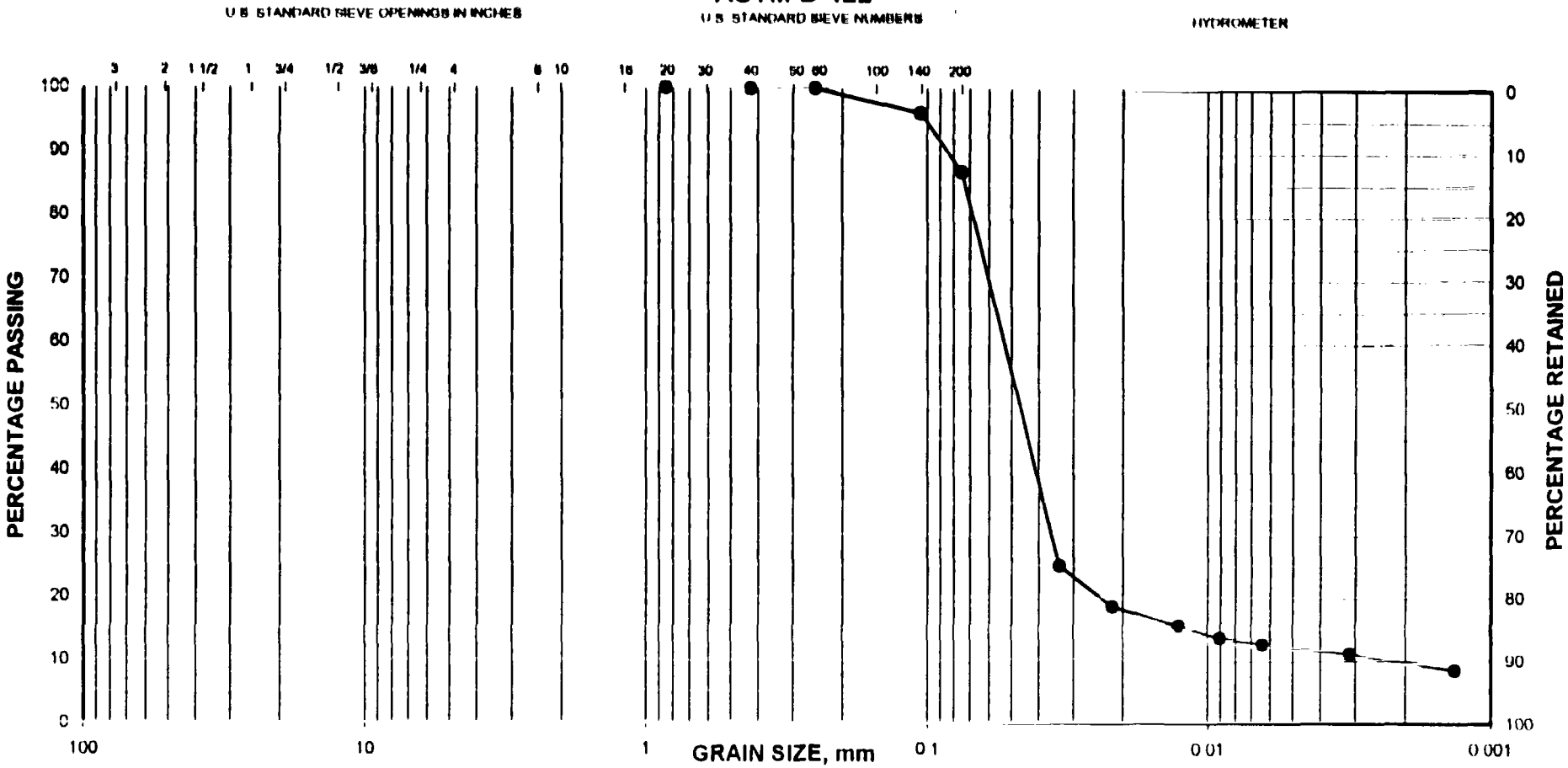
D10: <0.001 D30: <0.001 D60: 0.001

Cu: N/A Cc: N/A

Unified Classification: Gray-Brown Fat CLAY, Trace SAND, CH

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#36	MP-31	--	30.0 - 32.0	Gray Lean SILT, Trace Sand, ML

Natural Moisture Content, % = 34.8
Organic Content, % = 5.7

PHILIP ENVIRONMENTAL

E:\Gs#36.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#36 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 7/30/04 Boring No.: MP-31 Sample No.: -- Depth : 30.0 - 32.0

Total Sample Wt.: 49.75

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.02	0.0	100.0	100.0	0.8500
Sieve Portion	#40	0.04	0.1	99.9	99.9	0.4250
	#60	0.06	0.1	99.9	99.9	0.2500
	#140	1.95	3.9	96.1	96.1	0.1060
	#200	6.56	13.2	86.8	86.8	0.0750

Wt.of Sample at Start of Hydrometer: 49.75

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	17.3	22.5	12.5	24.9	24.9	0.0339
Portion	5	14.0	22.5	9.3	18.5	18.5	0.0219
	15	12.5	22.5	7.8	15.5	15.5	0.0127
	30	11.5	22.5	6.8	13.5	13.5	0.0091
	60	11.0	22.5	6.3	12.5	12.5	0.0064
	250	10.3	22.5	5.5	11.0	11.0	0.0032
	1435	9.3	21.5	4.2	8.4	8.4	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 13 Silt: 75 Clay(<0.005): 12

D10: 0.002 D30: 0.037 D60: 0.053

Cu: 24.1 Cc: 11.4

Unified Classification: Gray Lean SILT, Trace Sand, ML

LABORATORY TEST ASSIGNMENTS

PROJECT Clayton Hartford
CONTRACT NUMBER 62402462

DATE ASSIGNED 07/29/04
PROJECT ENGINEER Cim

BORING NUMBER	SAMPLE NUMBER	SAMPLE TYPE	VISUAL CLASSIFICATION	MOISTURE CONTENT	PENETROMETER	DRY DENSITY	RIMAC	UNCONFINED COMPRESSION	ORGANIC HOT OVEN	SHRINKAGE LIMITS	ATTERBERG LIMITS, 1 PT or 3 PT	SIEVE ANALYSIS	PERCENT PASSING #200	HYDROMETER ANALYSIS	CONSOLIDATION	SWELL PRESSURE	SPECIFIC GRAVITY	MOISTURE DENSITY STANDARD	MOISTURE DENSITY MODIFIED	RELATIVE DENSITY	CBR or IBR	PERMEABILITY K-620	PERMEABILITY BACK PRES.	DIRECT SHEAR	TRIAXIAL SHEAR	SPECIAL INSTRUCTIONS
MP-31	10-12	Bag		X					X					X												
	14-16																									
	18-20																									
	30-32																									

PHILIP

TEKLAB, INC. 5445 Horseshoe Lake Road ~ Collinsville, IL 62234 ~ Phone: (618) 344-1004 ~ Fax: (618) 344-1005

Client: Clayton Group Services
Address: 3140 Finley RD
City / State / Zip: Downers Grove IL
Contact: Ken Cumine Phone: 630-795-3200
E-Mail: kcumine@claytongp.com Fax: 630-795-1130

Are the samples chilled? ☐ NO ☐ YES (Ice or Blue Ice)
Cooler Temperature: _____ °C
Preserved in: ☐Lab ☐ Field

Comments:

Are these samples known to be involved in litigation? ☐Yes ☐No
Are these samples known to be hazardous? ☐Yes ☐No
Are there any required reporting limits to be met on the requested analysis?
☐Yes ☐No If yes please provide limits in comment section.

Project Name / Number: Hartford working Group
Sample Collector's Name: Gerald G. Tiernan
Requested Due Date: Standard
Billing Instructions PO#: 15-03095, 13-002

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO_3	NaOH	H_2SO_4	HCL	MeOH	$NaHSO_4$	Other	Water	Drinking Water	Soil	Sludge	Sp. Water	Hydrometer Grain Size	Moisture	FOC
	MP-31(10-14ft)040729	7/29/04 13:28								X			X			X	X	X
	MP-31(14-16ft)040729	13:36								X			X			X	X	X
	MP-31(18-20ft)040729	13:43								X			X			X	X	X
	MP-31(30-32ft)040729	13:55								X			X			X	X	X

Relinquished By	Date / Time	Received By	Date / Time
[signature]	7/29/04	Amy Bruchs	07/30/04 0800AM

The individual signing this agreement on behalf of client acknowledges that he/she has read and understands the terms and conditions of this agreement, on the reverse side, and that he/she has the authority to sign on behalf of client.

PARTICLE-SIZE ANALYSIS of SOILS

(33)

PROJECT NAME: Clayton – Hartford

TESTED BY: CMB

JOB NO.: 62402462

DATE: 07/30/04

BORING NO.: MP-31

MC=29.1

SAMPLE NO.: — —

OC= 5.3

DEPTH, ft.: 10-12'

LL: ____

DESCRIPTION: Gr-Br CL

PL: ____

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.10

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	2
WET WT + TARE	4435
DRY WT + TARE	4322
WT TARE	1135

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:08	0	—	—
10:10	2	22.5	48.0
10:13	5	22.5	38.0
10:23	15	22.5	27.0
10:38	30	22.5	23.0
11:08	60	22.5	20.0
2:18	250	22.5	17.0
9:54	1426	21.5	15.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.	_____	NO. 16	_____
2 in.	_____	NO. 20	_____
1½ in	_____	NO 30	_____
1 in.	_____	NO. 40	_____
¾ in.	_____	NO. 50	_____
⅜ in.	_____	NO. 60	_____
NO. 4	_____	NO. 100	_____
NO. 8	_____	NO. 140	_____
NO. 10	_____	NO. 200	_____

NO. 200 WASH

TARE NO. AC-3

WT. TARE + DRY MATL. (+200) 4218

WT. TARE 4146

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(84)

PROJECT NAME: Clayton – Hartford
JOB NO.: 62402462
BORING NO.: MP-31
SAMPLE NO.: — —
DEPTH, ft.: 14-16'
DESCRIPTION: BR SM

TESTED BY: CMB
DATE: 07/30/04
MC 26.4
OC = 2.5
LL: —
PL: —

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 55.55

TEMP., °C	MENISCUS CORRN.
21.0	6.[illegible]
23.0	5.[illegible]
25.0	5.[illegible]

HYGROSCOPIC MOISTURE

TARE NO. 53
WET WT + TARE 5475
DRY WT + TARE 5412
WT TARE 1163

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:14	0	—	—
10:16	2	22.5	15.5
10:19	5	22.5	14.0
10:29	15	22.5	13.0
10:44	30	22.5	12.0
11:14	60	22.5	11.0
2:24	250	22.5	10.0
10:25	1451	21.5	9.0

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. (+Sieve)	(Sieve)
3 in.		NO. 16	—	—
2 in.		NO. 20	403.97	403.97
1½ in		NO 30	—	—
1 in.		NO 40	572.92	572.90
¾ in.		NO. 50	—	—
⅜ in.		NO. 60	370.16	370.04
NO. 4		NO. 100	—	—
NO. 8		NO. 140	374.47	344.07
NO. 10		NO. 200	312.03	307.60
		Pan	391.59	389.65

NO. 200 WASH

TARE NO. 6

WT. TARE + DRY MATL. (+200) 7862

WT. TARE 4178

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (55)

PROJECT NAME: Clayton – Hartford
JOB NO.: 62402462
BORING NO.: MP-31
SAMPLE NO.: ~
DEPTH, ft.: 18-20'
DESCRIPTION: Gr-Br CH

TESTED BY: CMB
DATE: 07/30/04
MC = 44.2
OC = 6.8
LL: —
PL: —

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.44

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO. 138
WET WT + TARE 4208
DRY WT + TARE 3970
WT TARE 1137

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:25	0	—	—
10:27	2	22.5	52.0
10:30	5	22.5	50.0
10:40	15	22.5	48.0
10:55	30	22.5	46.0
11:25	60	22.5	43.5
2:35	250	22.5	38.5
10:26	1441	21.5	32.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.		NO. 16	
2 in.		NO. 20	
1½ in		NO 30	
1 in.		NO. 40	
¾ in.		NO. 50	
⅜ in.		NO. 60	
NO. 4		NO. 100	
NO. 8		NO. 140	
NO. 10		NO. 200	

NO. 200 WASH

TARE NO. ST-3

WT. TARE + DRY MATL. (+200) 4230

WT. TARE 4194

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS (36)

PROJECT NAME: Clayton – Hartford
JOB NO.: G2402462
BORING NO.: HP-31
SAMPLE NO.: — —
DEPTH, ft.: 30-32'
DESCRIPTION: Gr ML

TESTED BY: CMB
DATE: 02/30/04
MC = 34.8
OC = 5.7
LL: —
PL: —

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.69

HYGROSCOPIC MOISTURE

TARE NO. 13
WET WT + TARE 4156
DRY WT + TARE 4043
WT TARE 1149

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:39	0	—	—
10:39	2	22.5	17.25
10:42	5	22.5	14.0
10:52	15	22.5	12.5
11:07	30	22.5	11.5
11:37	60	22.5	11.0
2:47	250	22.5	10.25
10:32	1435	21.5	9.25

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	+ Sieve CUM. WT. RET.	+ Sieve
3 in.		NO. 16	—	—
2 in.		NO. 20	403.98	403.96
1½ in		NO 30	—	—
1 in.		NO 40	572.95	572.93
¾ in.		NO. 50	—	—
⅜ in.		NO. 60	370.09	370.07
NO. 4		NO. 100	—	—
NO. 8		NO. 140	345.97	344.08
NO. 10		NO. 200	312.18	307.57
		Pan	405.49	389.68

NO. 200 WASH

TARE NO. ST-9

WT. TARE + DRY MATL. (+200) 7471

WT. TARE 5240

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

MOISTURE & ORGANIC CONTENT DETERMINATION

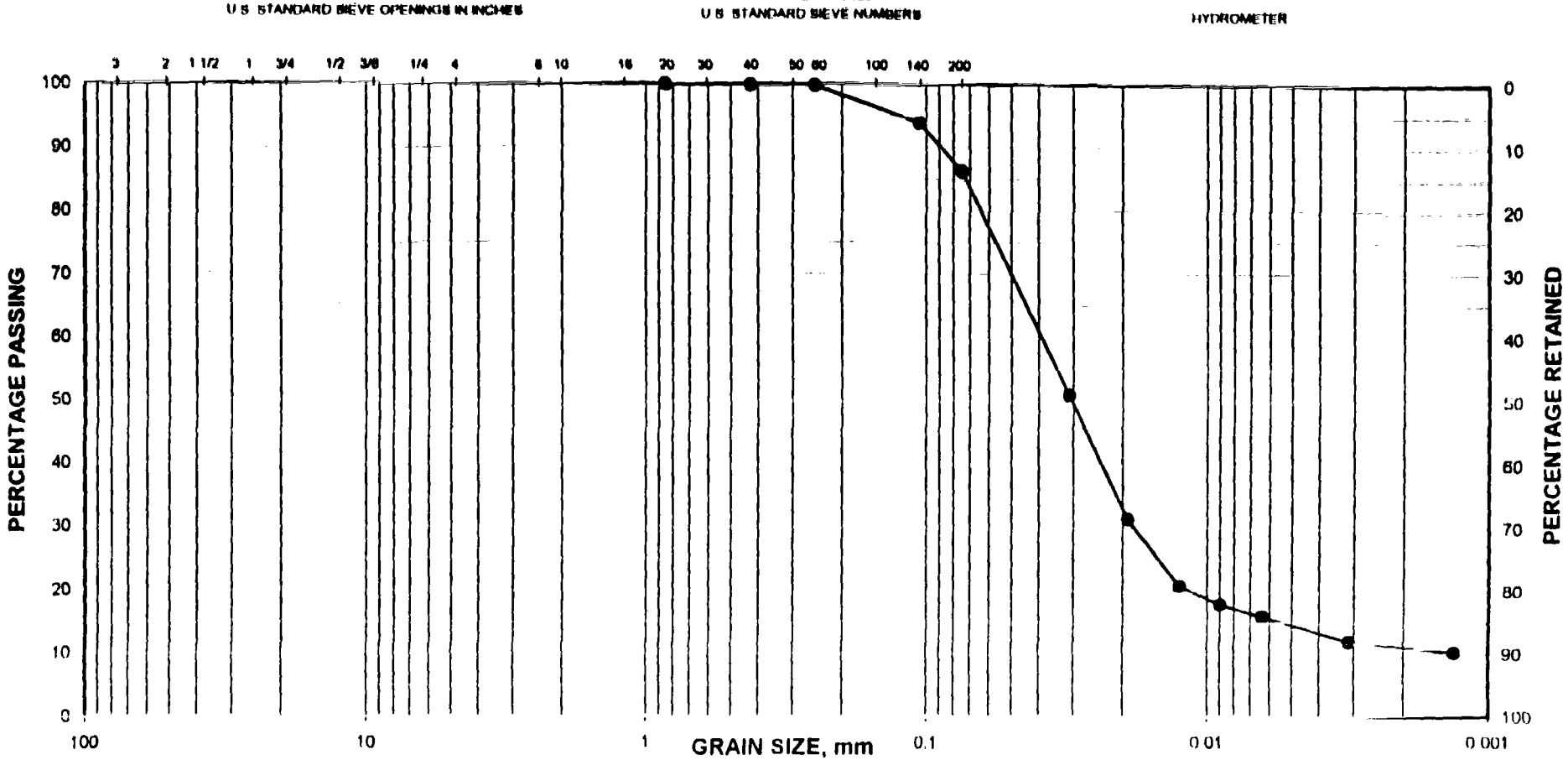
Job No.: 62402462 Date: 07/30/04

Boring/Sample	MP-31 10-12'	MP-31 14-16'	MP-31 18-20'	MP-31 30-32'	
Tare Number	255 (4)	278 (C-5)	219 (C9)	R36 (1)	
Wt. Wet Soil + Tare	203.51	208.43	202.57	200.82	
Wt. Dry Soil + Tare, Lab Oven	172.75	179.97	165.94	170.50	
Wt. Dry Soil + Tare, Hot Oven	167.12	177.31	160.29	165.55	
Tare Wt.	67.16	72.15	83.0[illegible]	83.49	
Moisture Content, %	29.1	26.4	44.2	34.8	
Organic Content, %	5.3	2.5	6.8	5.7	
Penetrometer Reading, (Qp)	Gr Br-CL	Br SM	Gr-Br CH	Gr ML	
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					

Tested By: GMD Computed By: PC Checked By: GMJ

PHILIP ENVIRONMENTAL

PARTICLE SIZE ANALYSIS
ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#37	MP-48	--	16.0 - 18.0	Gray-Brown Lean SILT, Trace Sand, ML

Natural Moisture Content, % = 27.6
Organic Content, % = 4.2

PHILIP ENVIRONMENTAL

E:\Gs#37.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#37 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 8/4/04 Boring No.: MP-48 Sample No.: -- Depth : 16.0 - 18.0

Total Sample Wt.: 50.70

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.05	0.1	99.9	99.9	0.8500
Sieve Portion	#40	0.09	0.2	99.8	99.8	0.4250
	#60	0.14	0.3	99.7	99.7	0.2500
	#140	3.09	6.1	93.9	93.9	0.1060
	#200	6.94	13.7	86.3	86.3	0.0750

Wt.of Sample at Start of Hydrometer: 50.70

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	31.0	22.0	26.1	51.0	51.0	0.0311
Portion	6	21.0	22.0	16.1	31.5	31.5	0.0192
	15	15.5	22.0	10.6	20.8	20.8	0.0126
	30	14.0	22.0	9.1	17.8	17.8	0.0090
	60	13.0	22.0	8.1	15.9	15.9	0.0064
	254	11.0	22.0	6.1	12.0	12.0	0.0031
	1461	10.3	21.5	5.2	10.2	10.2	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 14 Silt: 72 Clay(<0.005): 15

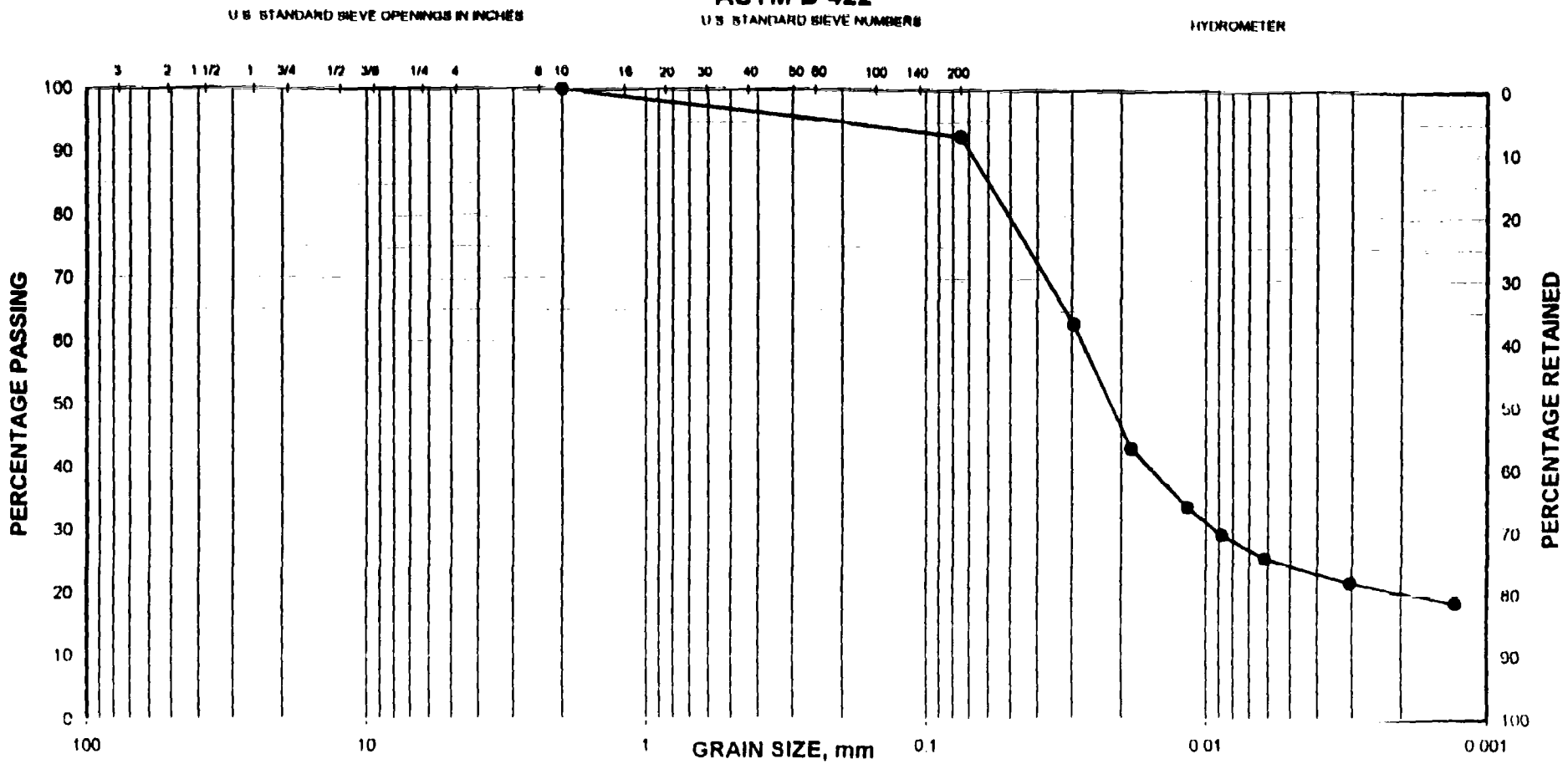
D10: 0.001 D30: 0.018 D60: 0.039

Cu: 32.5 Cc: 7.1

Unified Classification: Gray-Brown Lean SILT, Trace Sand, ML

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#38	MP-48	--	20.0 - 22.0	Gray-Brown Lean CLAY, Trace SAND, CL

Natural Moisture Content, % = 34.2
Organic Content, % = 5.7

PHILIP ENVIRONMENTAL

E:\Gs#38.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#38 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 8/4/04 Boring No.: MP-48 Sample No.: -- Depth : 20.0 - 22.0

Total Sample Wt.: 50.42

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20		No Sieving Performed			0.8500
Sieve Portion	#40		No Sieving Performed			0.4250
	#60		No Sieving Performed			0.2500
	#140		No Sieving Performed			0.1060
	#200	3.77	7.5	92.5	92.5	0.0750

Wt.of Sample at Start of Hydrometer: 50.42

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	37.0	22.0	32.1	63.0	63.0	0.0297
Portion	6	27.0	22.0	22.1	43.4	43.4	0.0185
	16	22.3	22.0	17.4	34.1	34.1	0.0117
	29	20.0	22.0	15.1	29.7	29.7	0.0088
	60	18.0	22.0	13.1	25.8	25.8	0.0062
	252	16.0	22.0	11.1	21.9	21.9	0.0031
	1454	14.5	21.5	9.5	18.6	18.6	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 7 Silt: 68 Clay(<0.005): 25

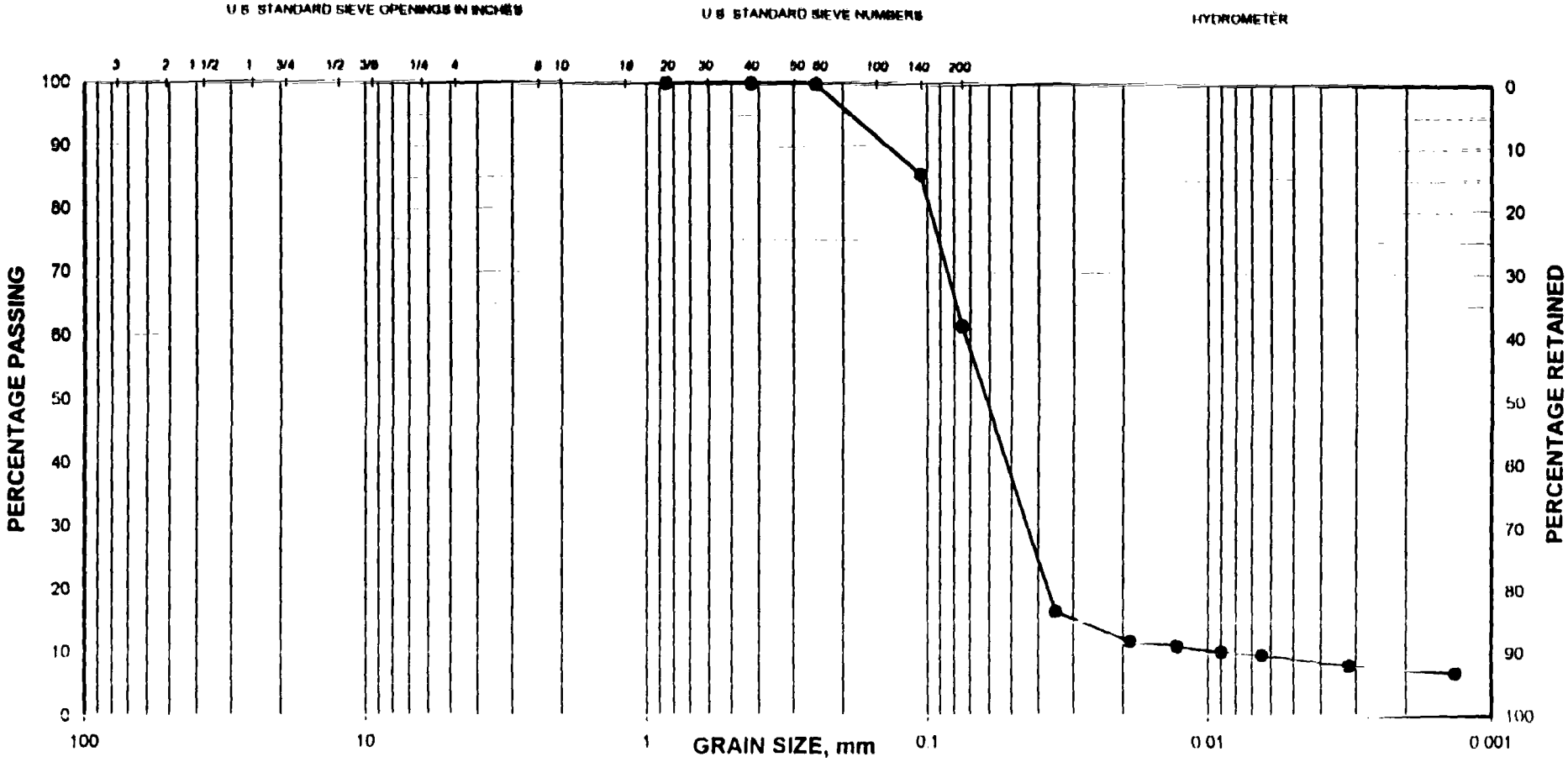
D10: <0.001 D30: 0.009 D60: 0.028

Cu: N/A Cc: N/A

Unified Classification: Gray-Brown Lean CLAY, Trace SAND, CL

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#39	MP-48	--	24.0 - 26.0	Brown Sandy Lean SILT, ML

Natural Moisture Content, % = 13.1
Organic Content, % = 3.6

PHILIP ENVIRONMENTAL

E:\Gs#39.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#39 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 8/4/04 Boring No.: MP-48 Sample No.: -- Depth : 24.0 - 26.0

Total Sample Wt.: 51.54

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.00	0.0	100.0	100.0	2.0000
-#10	#20	0.04	0.1	99.9	99.9	0.8500
Sieve Portion	#40	0.11	0.2	99.8	99.8	0.4250
	#60	0.12	0.2	99.8	99.8	0.2500
	#140	7.43	14.4	85.6	85.6	0.1060
	#200	19.70	38.2	61.8	61.8	0.0750

Wt.of Sample at Start of Hydrometer: 51.54

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	13.5	22.0	8.6	16.6	16.6	0.0349
Portion	7	11.0	22.0	6.1	11.8	11.8	0.0189
	15	10.5	22.5	5.8	11.1	11.1	0.0129
	31	10.0	22.5	5.3	10.1	10.1	0.0090
	60	9.8	22.5	5.0	9.7	9.7	0.0065
	252	9.0	22.0	4.1	7.9	7.9	0.0032
	1447	8.5	21.5	3.5	6.7	6.7	0.0013

LL: PL: PI: Organic: No

Gravel: 0 Sand: 38 Silt: 53 Clay(<0.005): 9

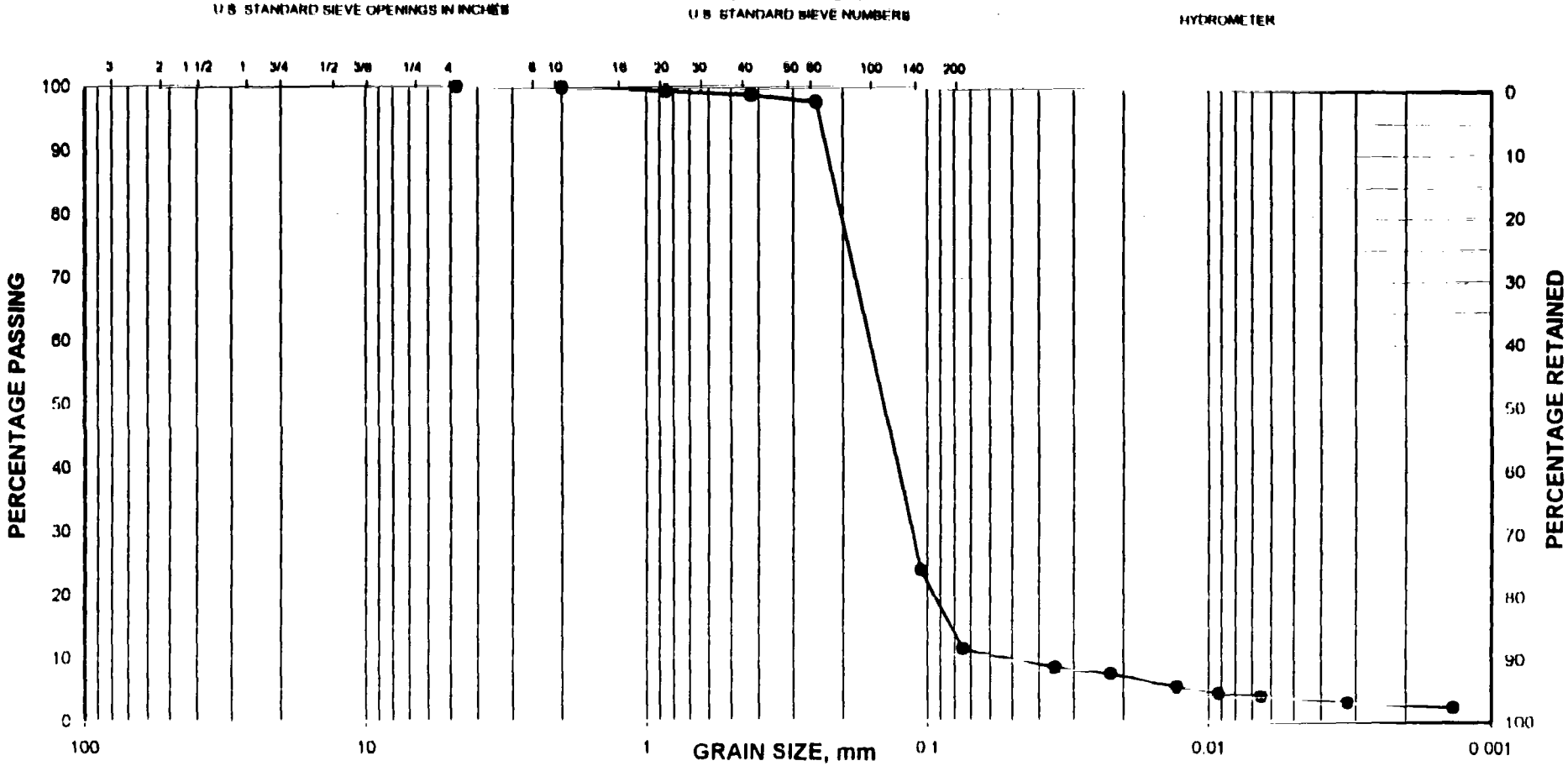
D10: 0.009 D30: 0.045 D60: 0.072

Cu: 8.2 Cc: 3.2

Unified Classification: Brown Sandy Lean SILT, ML

PARTICLE SIZE ANALYSIS

ASTM D 422



JOB NO. 62402462 PROJECT Clayton - Hartford, Illinois

CURVE	BORING	SAMPLE	DEPTH, Ft.	DESCRIPTION
GS#40	MP-48	--	38.0 - 40.0	Gray Fine SAND with Silt, Trace Gravel, SP-SM

Natural Moisture Content, % = 24.2
Organic Content, % = 2.3

PHILIP ENVIRONMENTAL

E:\Gs#40.xls

HYDROMETER/COMBINED ANALYSIS

Grain Size Curve No.: GS#40 Project Name: Clayton - Hartford, Illinois Project Number: 62402462

Date: 8/4/04 Boring No.: MP-48 Sample No.: -- Depth : 38.0 - 40.0

Total Sample Wt.: 130.99

	Sieve Size	Cum. Wt. Ret.	% Retaining	% Passing	Total Passing %	Dia. (mm)
+#10	1	0.00	0.0	100.0	100.0	25.0000
Sieve Portion	3/4	0.00	0.0	100.0	100.0	19.0000
	1/2	0.00	0.0	100.0	100.0	12.5000
	3/8	0.00	0.0	100.0	100.0	9.5000
	#4	0.00	0.0	100.0	100.0	4.7500
	#10	0.12	0.1	99.9	99.9	2.0000
-#10	#20	0.25	0.5	99.5	99.4	0.8500
Sieve Portion	#40	0.60	1.1	98.9	98.8	0.4250
	#60	1.13	2.1	97.9	97.8	0.2500
	#140	39.80	75.7	24.3	24.3	0.1060
	#200	46.47	88.4	11.6	11.6	0.0750

Wt.of Sample at Start of Hydrometer: 52.57

Specific Gravity: 2.700 (Assumed)

	Elaps. Time (Min)	Uncorrected	Temp. (C)	Corrected	% Passing	Total Passing %	Dia. (mm)
Hydrometer	2	9.0	23.5	4.6	8.6	8.6	0.0351
Portion	5	8.5	23.5	4.1	7.7	7.7	0.0223
	15	7.5	23.0	2.9	5.5	5.5	0.0130
	30	7.0	23.0	2.4	4.6	4.6	0.0092
	60	6.8	23.0	2.2	4.1	4.1	0.0065
	252	6.5	22.0	1.6	3.1	3.1	0.0032
	1441	6.3	21.5	1.2	2.4	2.3	0.0014

LL: PL: PI: Organic: No

Gravel: 0 Sand: 88 Silt: 8 Clay(<0.005): 4

D10: 0.051 D30: 0.115 D60: 0.160

Cu: 3.1 Cc: 1.6

Unified Classification: Gray Fine SAND with Silt, Trace Gravel, SP-SM

LABORATORY TEST ASSIGNMENTS

PROJECT Clayton - Hartford
CONTRACT NUMBER 62402462

DATE ASSIGNED 08/03/04
PROJECT ENGINEER CMe

BORING NUMBER	SAMPLE NUMBER	SAMPLE TYPE	VISUAL CLASSIFICATION	MOISTURE CONTENT	PENETROMETER	DRY DENSITY	RIMAC	UNCONFINED COMPRESSION	ORGANIC HOT OVEN	SHRINKAGE LIMITS	ATTERBERG LIMITS, 1 PT or 3 PT	SIEVE ANALYSIS	PERCENT PASSING #200	HYDROMETER ANALYSIS	CONSOLIDATION	SWELL PRESSURE	SPECIFIC GRAVITY	MOISTURE DENSITY STANDARD	MOISTURE DENSITY MODIFIED	RELATIVE DENSITY	CBR or IBR	PERMEABILITY K-620	PERMEABILITY BACK PRES.	DIRECT SHEAR	TRIAXIAL SHEAR	SPECIAL INSTRUCTIONS
MP-49	16-18'	Bag		X					X					X												
↓	20-22'	↓		X					X					X												
	24-26			X					X					X												
	38-40			X					X					X												

PHILIP

Clayton GROUP SERVICES

REQUEST FOR GEOTECHNICAL LABORATORY SERVICES

IMPORTANT
Date Results Requested Standard Turnaround
Rush Charges Authorized? ☐ Yes ☒ No
☐ Phone or ☒ Fax Results

Laboratory Project No.

REPORT RESULTS TO

Name: Ken Comire
Client Job No.: 15-03045.13-002
Company: Clayton Group Services, Inc.
Dept.: Environmental Services
Mailing Address: 3140 Finley Road
City, State, Zip: Downers Grove, Illinois 60515
Telephone No.: (630) 795-3200
Fax No.: (630) 795-1130

SEND INVOICE TO

Purchase Order No.:
Name: Ken Comire
Company: Clayton Group Services, Inc.
Dept.: Environ. Services
Address: 3140 Finley Road
City, State, Zip: Downers Grove, Illinois 60515

GEOTECHNICAL LABORATORY INFORMATION

PHILIP ENVIRONMENTAL SERVICES CORPORATION
Contact Person: Mr. Craig M. Maxeiner
210 West Sand Bank Road
Columbia, Illinois 62236
Phone: (618) 281-7173 Fax: (618) 281-5120

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX / MEDIA	Number of Containers	Fraction of Organic Carbon ASTM D 2974	Grain Size Analysis ASTM D 422	Moisture Content ASTM D 2216					FOR LAB USE ONLY
MP-48 16-18'/040802	08/02/04	1610 P.M.	Soil	1	X	X	X					
MP-48 20-22'/040802	08/02/04	1620 P.M	Soil	1	X	X	X					
MP-48 24-26'/040802	08/02/04	1630 P.M.	Soil	1	X	X	X					
MP-48 38-40'/040803	08/03/04	0735 AM.	Soil	1	X	X	X					

CHAIN OF CUSTODY

Collected by: Joseph S. Thomas (Print)
Collector's Signature:
Relinquished by: Date/Time: 08/03/04 11AM
Received by: Date/Time:
Relinquished by: Date/Time:
Received by: Date/Time: 8-3-04 11:05AM
Method of Shipment: Ground
Received at Lab by: Date/Time: 08/04/04 0800
Authorized by: Date: 08/03/04
(Client Signature Must Accompany Request)
Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)

DISTRIBUTION:
White - Geotechnical Laboratory
Yellow - Clayton Copy

PARTICLE-SIZE ANALYSIS of SOILS

(37)

PROJECT NAME: Clayton – Hartford

JOB NO.: 62402462

BORING NO.: MB-48

SAMPLE NO.: – –

DEPTH, ft.: 16-18'

DESCRIPTION: GrBr ML

TESTED BY: CMB

DATE: 08/04/04

MC = 27.6
OC = 4.2

LL: ——

PL: ——

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.68

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	13
WET WT + TARE	4834
DRY WT + TARE	4764
WT TARE	1150

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:39	0	—	—
9:41	2	22.6	31.0
9:45	6	22.0	21.0
9:55	15	22.0	15.5
10:09	30	22.0	14.0
10:39	60	22.0	13.0
2:53	254	22.0	11.00
10:00	1461	21.5	10.25

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. Sieve	Sieve
3 in.		~~NO. 16~~		
2 in.		NO. 20	403.98	403.98
1½ in		~~NO. 30~~		
1 in.		NO 40	572.91	572.89
¾ in.		~~NO. 50~~		
⅜ in.		NO. 60	370.09	370.04
NO. 4		~~NO. 100~~		
NO. 8		NO. 140	347.00	344.05
NO. 10	0	NO. 200	311.42	307.51
		Pan	392.38	389.63

NO. 200 WASH

TARE NO. 6

WT. TARE + DRY MATL. (+200) 51.29

WT. TARE 41.79

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(38)

PROJECT NAME: Clayton – Hartford
JOB NO.: 62402462
BORING NO.: MP-48
SAMPLE NO.: --
DEPTH, ft.: 20-22'
DESCRIPTION: Gr-D, S: CL

TESTED BY: CMB
DATE: 08/04/04
MC= 34.2
OC= 5.7
LL: ____
PL: ____

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 51.94

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYGROSCOPIC MOISTURE

TARE NO. 84
WET WT + TARE 44.71
DRY WT + TARE 43.74
WT TARE 11.47

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:47	0	—	—
9:49	2	22.0	37.0
9:53	6	22.0	27.0
10:03	16	22.0	22.25
10:16	29	22.0	20.0
10:47	60	22.0	18.0
1:59	252	22.0	16.0
10:01	1454	21.5	14.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET.
3 in.	_____	NO. 16	_____
2 in.	_____	NO. 20	_____
1½ in	_____	NO. 30	_____
1 in.	_____	NO 40	_____
¾ in.	_____	NO. 50	_____
⅜ in.	_____	NO. 60	_____
NO. 4	_____	NO. 100	_____
NO. 8	_____	NO. 140	_____
NO. 10	_____	NO. 200	_____

NO. 200 WASH

TARE NO. 17

WT. TARE + DRY MATL. (+200) 58.07

WT. TARE 54.30

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(39)

PROJECT NAME: Clayton - Hartford
JOB NO.: 62402462
BORING NO.: MP-48
SAMPLE NO.: --
DEPTH, ft.: 24-26
DESCRIPTION: Br S. ML

TESTED BY: CMB
DATE: 06/04/04
MC = 13.1
OC = 3.6
LL: ____
PL: ____

HYDROMETER [X] SIEVE [ ] (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 62.22

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

HYGROSCOPIC MOISTURE

TARE NO.	2
WET WT + TARE	5074
DRY WT + TARE	5023
WT TARE	1134

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
9:55	0	—	—
9:57	2	22.0	13.5
10:02	7	22.0	11.0
10:10	15	22.5	10.5
10:25	30	22.5	10.0
10:55	60	22.5	9.75
2:07	252	22.0	9.0
10:02	1447	21.5	8.5

DESIRED READING INTERVALS

SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. _____

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. +sieve	Sieve
3 in.		~~NO. 16~~		
2 in.		NO. 20	403.98	403.94
1½ in		~~NO. 30~~		
1 in.		NO. 40	572.94	572.87
¾ in.		~~NO. 50~~		
⅜ in.		NO. 60	370.06	370.05
NO. 4		~~NO. 100~~		
NO. 8		NO. 140	351.38	344.07
NO. 10		NO. 200	319.84	307.60
			399.42	389.66

NO. 200 WASH

TARE NO. ST-9

WT. TARE + DRY MATL. (+200) 81.67

WT. TARE 52.40

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. _____

WT. TARE + DRY MATL. (+10) _____

WT. TARE _____

WT DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

PARTICLE-SIZE ANALYSIS of SOILS

(4W)

PROJECT NAME: Clayton – Hartford
JOB NO.: 62402462
BORING NO.: MP-48
SAMPLE NO.: —
DEPTH, ft.: 38-40'
DESCRIPTION: Gr SM

TESTED BY: CMB
DATE: 08/04/04
MC 24.2
OC = 2.3
LL: —
PL: —

HYDROMETER ☒ SIEVE ☐ (reverse side)

HYDROMETER ANALYSIS

SPECIFIC GRAVITY: 2.70 (Assumed)

WT. AIR DRIED SOIL USED FOR HYDROMETER TEST: 52.86

HYGROSCOPIC MOISTURE

TARE NO.: 71-A
WET WT + TARE: 56.72
DRY WT + TARE: 56.47
WT TARE: 11.18

TEMP., °C	MENISCUS CORRN.
21.0	6.44
23.0	5.75
25.0	5.06

HYDROMETER 152 H

CLOCK TIME	ELAPSED TIME, min	TEMP. °C	READING
10:02	0	—	—
10:04	2	23.5	8.0
10:07	5	23.5	8.5
10:17	15	23.0	8.0
10:32	30	23.0	7.0
11:02	60	23.0	6.75
2:14	252	22.0	6.50
10:03	1441	21.5	6.25

DESIRED READING INTERVALS	
SANDS	SILTS & CLAYS
1	2
2	5
5	15
15	30
60	60
250	250
1440	1440

SIEVE ANALYSIS

AIR DRIED WT. of TOTAL TEST SAMPLE, gm. 143.07 − 11.36

OVEN DRIED WT. of + NO. 10 MATERIAL, gm. _____

AIR DRIED WT. of − NO. 10 MATERIAL, gm. _____

HYGROSCOPIC MOISTURE CONTENT, % _____

OVEN DRY WT. − NO. 10 MATERIAL, gm. _____

TOTAL WT. OVEN DRIED SAMPLE [ ]

SIEVE SIZE	CUM. WT. RET.	SIEVE SIZE	CUM. WT. RET. +sieve	Sieve
3 in.	_____	~~NO. 16~~	_____	
2 in.	_____	NO. 20	404.17	403.92
1½ in	_____	~~NO. 30~~	_____	
1 in.	_____	NO 40	573.27	572.92
¾ in.	_____	~~NO. 50~~	_____	
⅜ in.	∅	NO. 60	370.56	370.03
NO. 4	∅	~~NO. 100~~	_____	
NO. 8	—	NO. 140	382.74	344.07
NO. 10	0.12	NO. 200	314.25	307.58
			390.61	389.68

NO. 200 WASH

TARE NO. 20

WT. TARE + DRY MATL. (+200) 101.38

WT. TARE 54.13

WT. DRY MATERIAL (+200) _____

NO. 10 WASH

TARE NO. 138

WT. TARE + DRY MATL. (+10) 1148

WT. TARE 1136

WT. DRY MATERIAL (+10) _____

NOTES & CALCULATIONS

MOISTURE & ORGANIC CONTENT DETERMINATION

Job No.: 62402462 Date: 08/04/04

Boring/Sample	MP-48/16-18'	MP-48/20-22	MP-48 24-26	MP-48 38-40	
Tare Number	89 (1)	219 (69)	71 (X-5)	255 (4)	
Wt. Wet Soil + Tare	200.45	199.98	203.59	208.07	
Wt. Dry Soil + Tare, Lab Oven	174.03	170.20	189.59	180.59	
Wt. Dry Soil + Tare, Hot Oven	169.98	165.24	185.75	177.98	
Tare Wt.	78.47	8300	8300	6714	
Moisture Content, %	27.6	34.2	13.1	24.2	
Organic Content, %	4.2	5.7	3.6	2.3	
Penetrometer Reading, (Qp)	Gr-Br ML	Gr-Br SiCL	Br Se ML	Gr SM	
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					
Boring/Sample					
Tare Number					
Wt. Wet Soil + Tare					
Wt. Dry Soil + Tare, Lab Oven					
Wt. Dry Soil + Tare, Hot Oven					
Tare Wt.					
Moisture Content, %					
Organic Content, %					
Penetrometer Reading, (Qp)					

Tested By: CWB Computed By: PC Checked By: CWB

PHILIP ENVIRONMENTAL