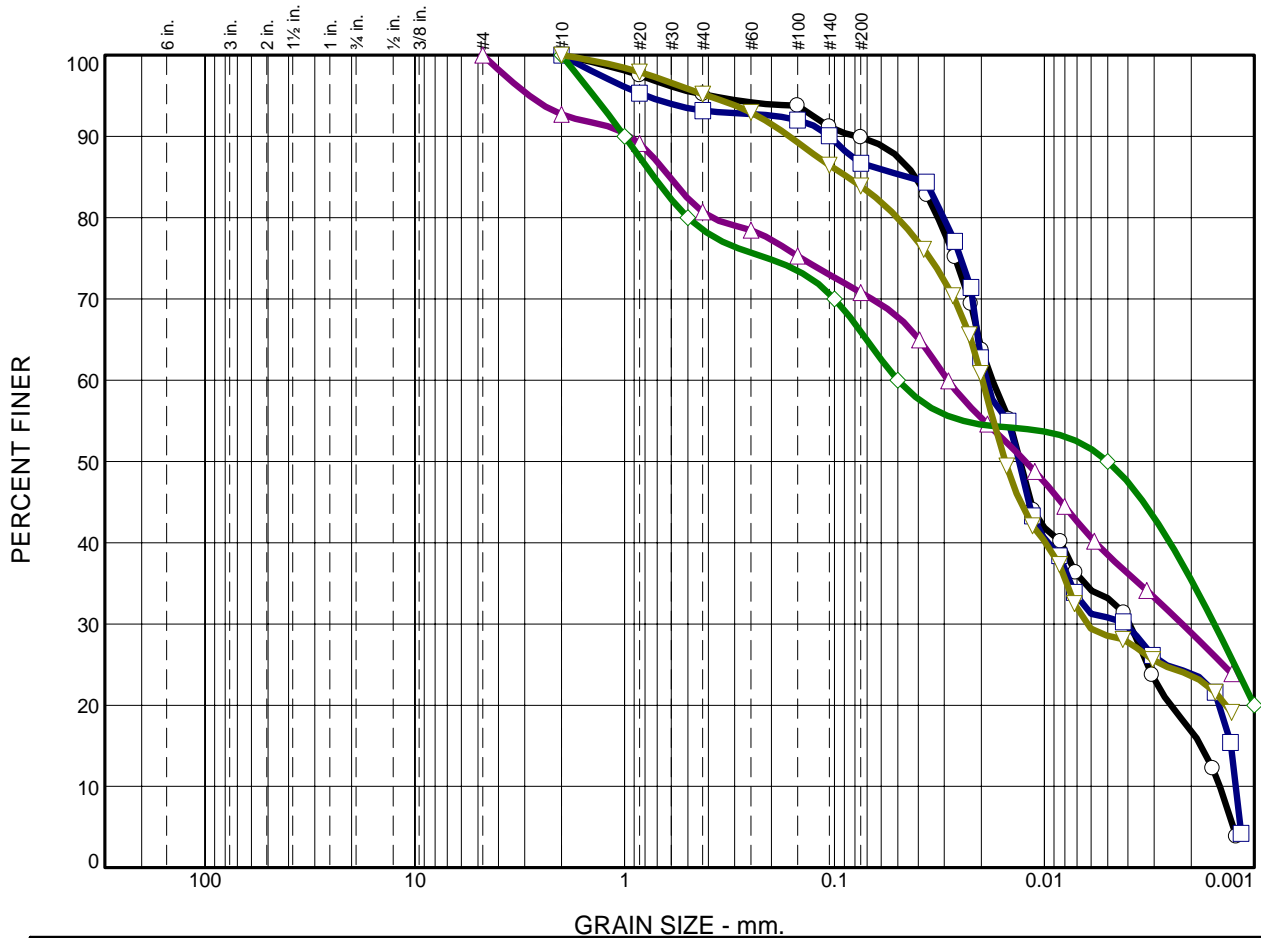


Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	4.8	5.3	56.7	33.2
□	0.0	0.0	0.0	0.0	6.8	6.5	55.9	30.8
△	0.0	0.0	0.0	7.3	12.0	9.9	32.3	38.5
◇	0.0	0.0	0.0	0.0	21.5	12.6	15.9	50.0
▽	0.0	0.0	0.0	0.0	4.8	11.3	55.3	28.6

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	Boring B-2	S-1	0-5'	Dark Brown Sandy Lean Clay w/ Organics & Rubble	CL
□	Boring B-2	S-2	5-10'	Dark Gray Sandy Clay Loam Trace Gravel (Till)	CL
△	Boring B-2	S-3	10-15'	Grayish Brown Sandy Loam (Alluvium)	CL
◇	TP-2	S-1	0-2.5'	Gray Brown Sandy Clay (Topsoil)	CL
▽	Boring B-4	S-2	5-10'	Dark Brown Silty Lean Clay	CL

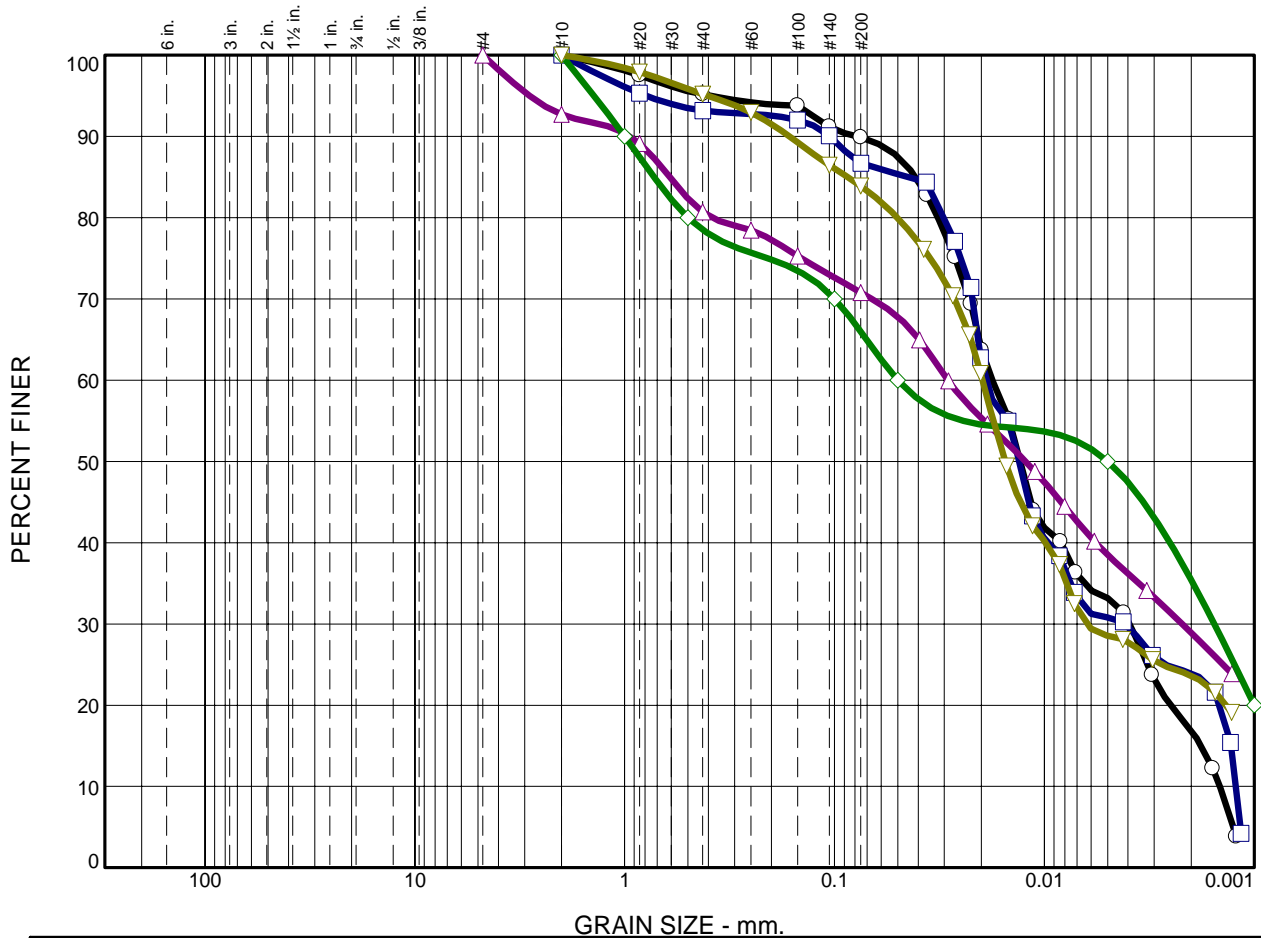
ACME MATERIALS
TESTING
LAB, INC.

Client: County of Berthoud
Project: Berthoud County Landfill Expansion

Project No.: P91003-24

Figure F-21

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	4.8	5.3	56.7	33.2
□	0.0	0.0	0.0	0.0	6.8	6.5	55.9	30.8
△	0.0	0.0	0.0	7.3	12.0	9.9	32.3	38.5
◇	0.0	0.0	0.0	0.0	21.5	12.6	15.9	50.0
▽	0.0	0.0	0.0	0.0	4.8	11.3	55.3	28.6

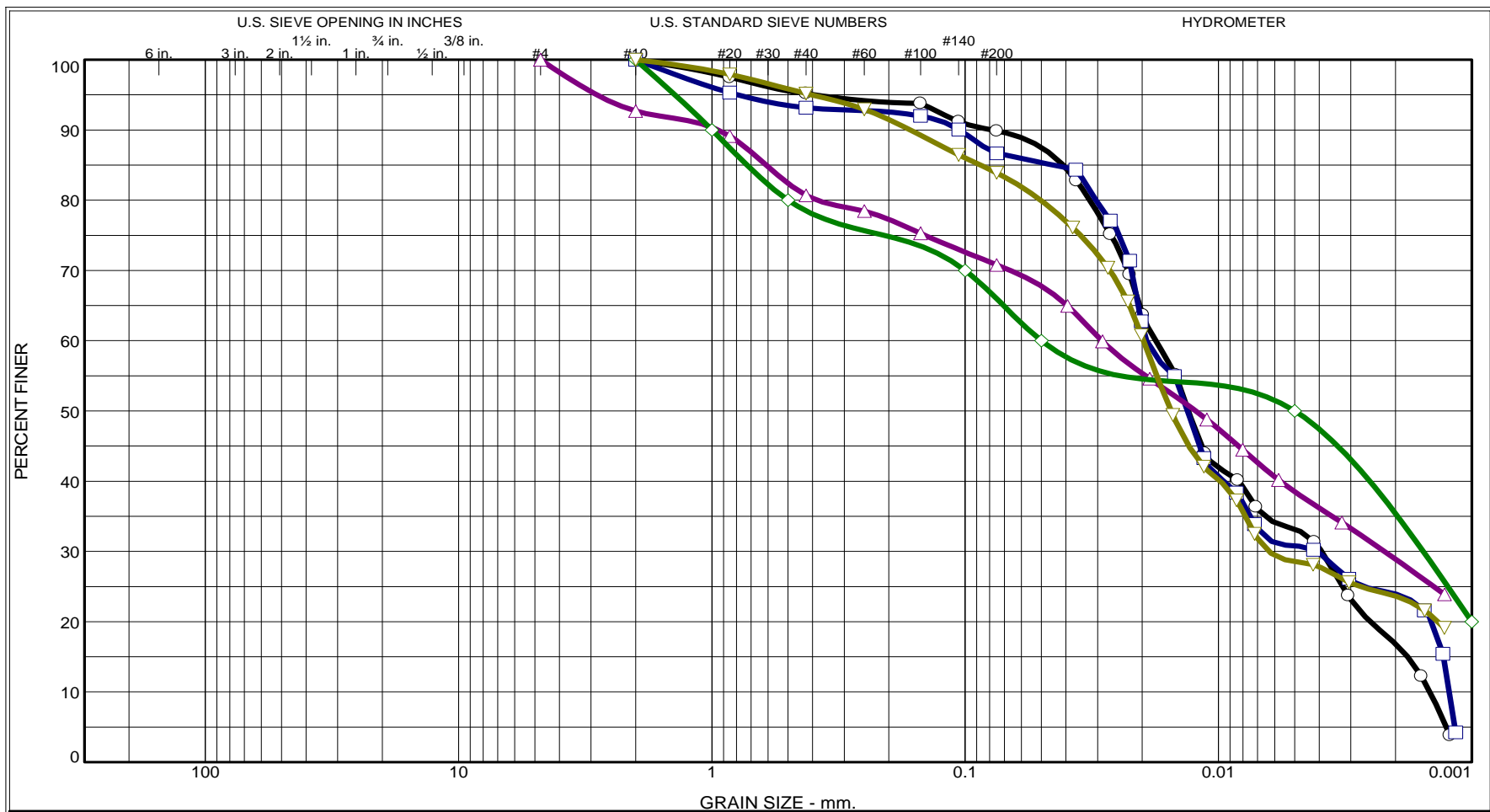
SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	AASHTO
○	Boring B-2	S-1	0-5'	Dark Brown Sandy Lean Clay w/ Organics & Rubble	A-7-6(31)
□	Boring B-2	S-2	5-10'	Dark Gray Sandy Clay Loam Trace Gravel (Till)	A-6(21)
△	Boring B-2	S-3	10-15'	Grayish Brown Sandy Loam (Alluvium)	A-4(0)
◇	TP-2	S-1	0-2.5'	Gray Brown Sandy Clay (Topsoil)	A-6(11)
▽	Boring B-4	S-2	5-10'	Dark Brown Silty Lean Clay	A-7-6(14)

**ACME MATERIALS
TESTING
LAB, INC.**

Client: County of Berthoud
Project: Berthoud County Landfill Expansion

Project No.: P91003-24

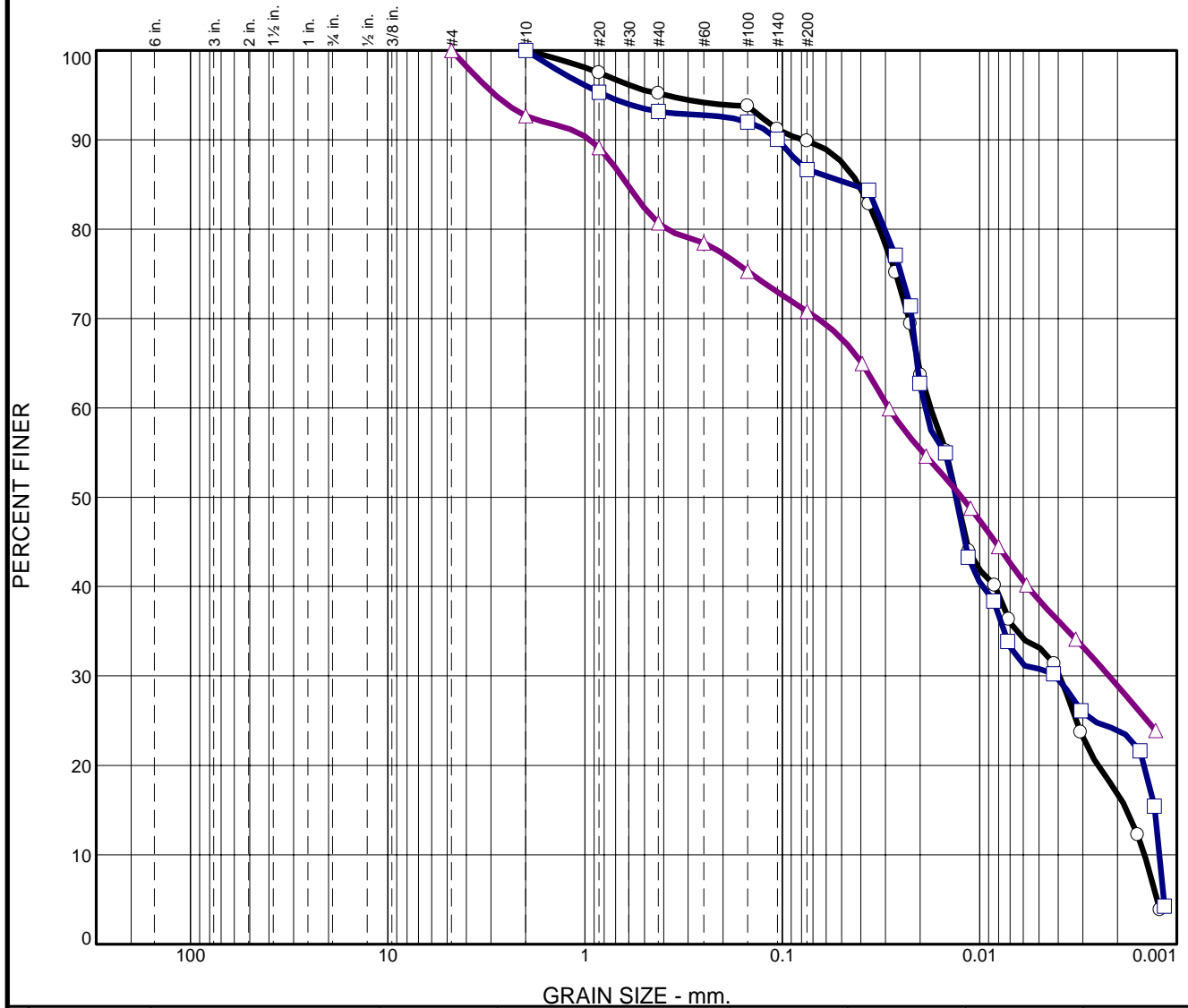
Figure F-21



% +3"	% Gravel		% Sand			% Fines			
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay		
○	S-1	0-5'	Dark Brown Sandy Lean Clay w/ Organics & Rubble	Nat w%	LL	PL	PI	Project Berthoud County Landfill Expansion Area Boring No. Boring B-2	
□	S-2	5-10'	Dark Gray Sandy Clay Loam Trace Gravel (Till)	5.7	40	15	25		
△	S-3	10-15'	Grayish Brown Sandy Loam (Alluvium)	5.3	NV	NP	NP		
Particle Size Distribution Report								Date:	ACME

ENG FORM 1 MAY 63 2087

Particle Size Distribution Report



	C _u	C _u spec.	D ₁₀	D ₁₀ spec.	C _u	D ₁₀	D ₆₀	% - #30
○	12.16		0.0015				0.0178	
□	15.72		0.0012				0.0192	
△							0.0289	

Material and Supplier

-
-
- △

Project No. P91003-24 **Client:** County of Berthoud
Project: Berthoud County Landfill Expansion

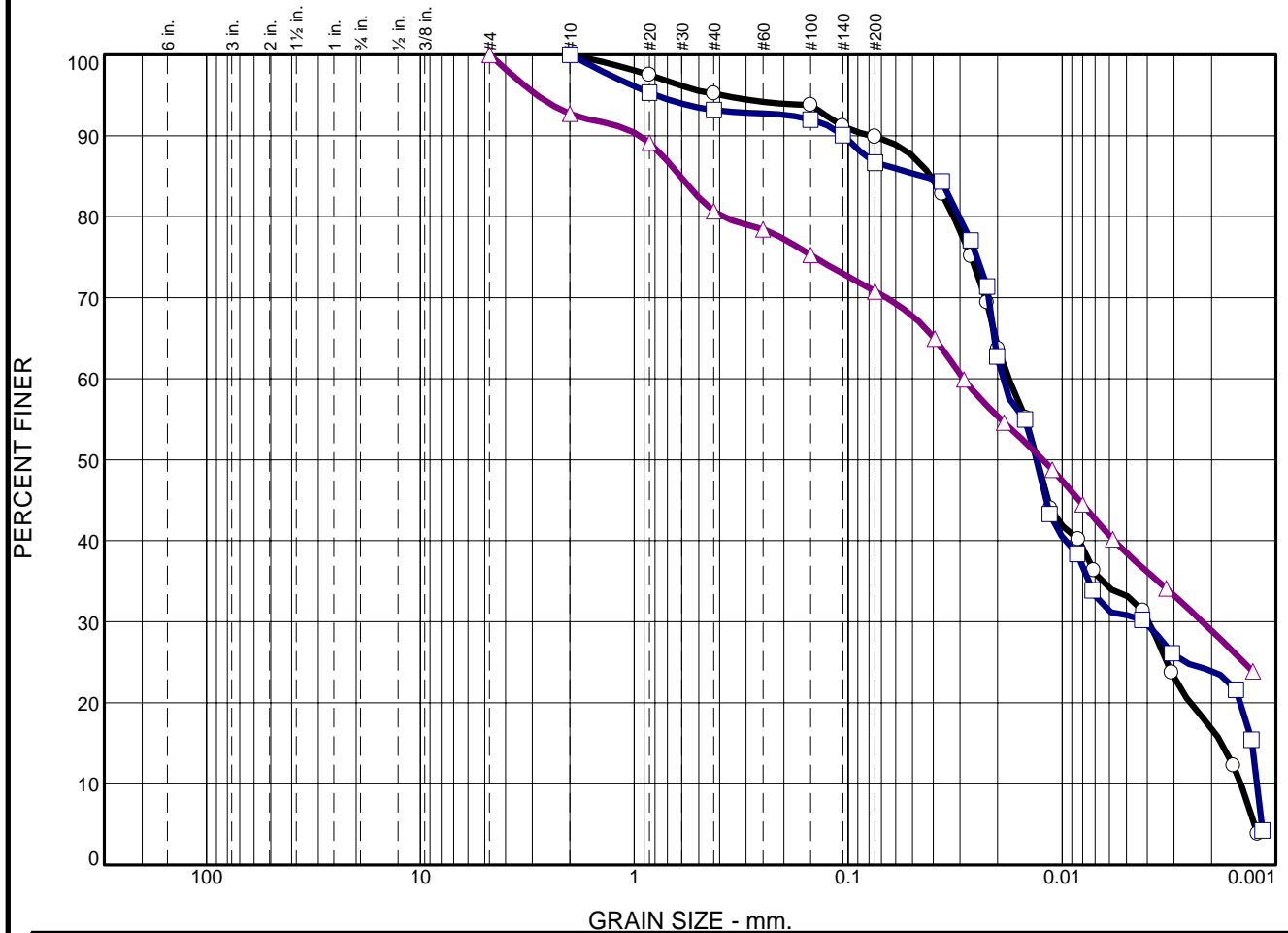
○ **Source of Sample:** Boring B-2 **Depth:** 0-5'
 □ **Source of Sample:** Boring B-2 **Depth:** 5-10'
 △ **Source of Sample:** Boring B-2 **Depth:** 10-15'

Remarks:
 ○ Sample has strong organic odor

**ACME
 MATERIALS
 TESTING**

Figure F-21

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	4.8	5.3	56.7	33.2
□	0.0	0.0	0.0	0.0	6.8	6.5	55.9	30.8
△	0.0	0.0	0.0	7.3	12.0	9.9	32.3	38.5

	LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
○	52	20	0.0410	0.0178	0.0131	0.0039	0.0018	0.0015	0.59	12.16
□	40	15	0.0447	0.0192	0.0132	0.0041	0.0013	0.0012	0.72	15.72
△	NV	NP	0.6101	0.0289	0.0123	0.0022				

Material Description	USCS	AASHTO
○ Dark Brown Sandy Lean Clay w/ Organics & Rubble	CL	A-7-6(31)
□ Dark Gray Sandy Clay Loam Trace Gravel (Till)	CL	A-6(21)
△ Grayish Brown Sandy Loam (Alluvium)	CL	A-4(0)

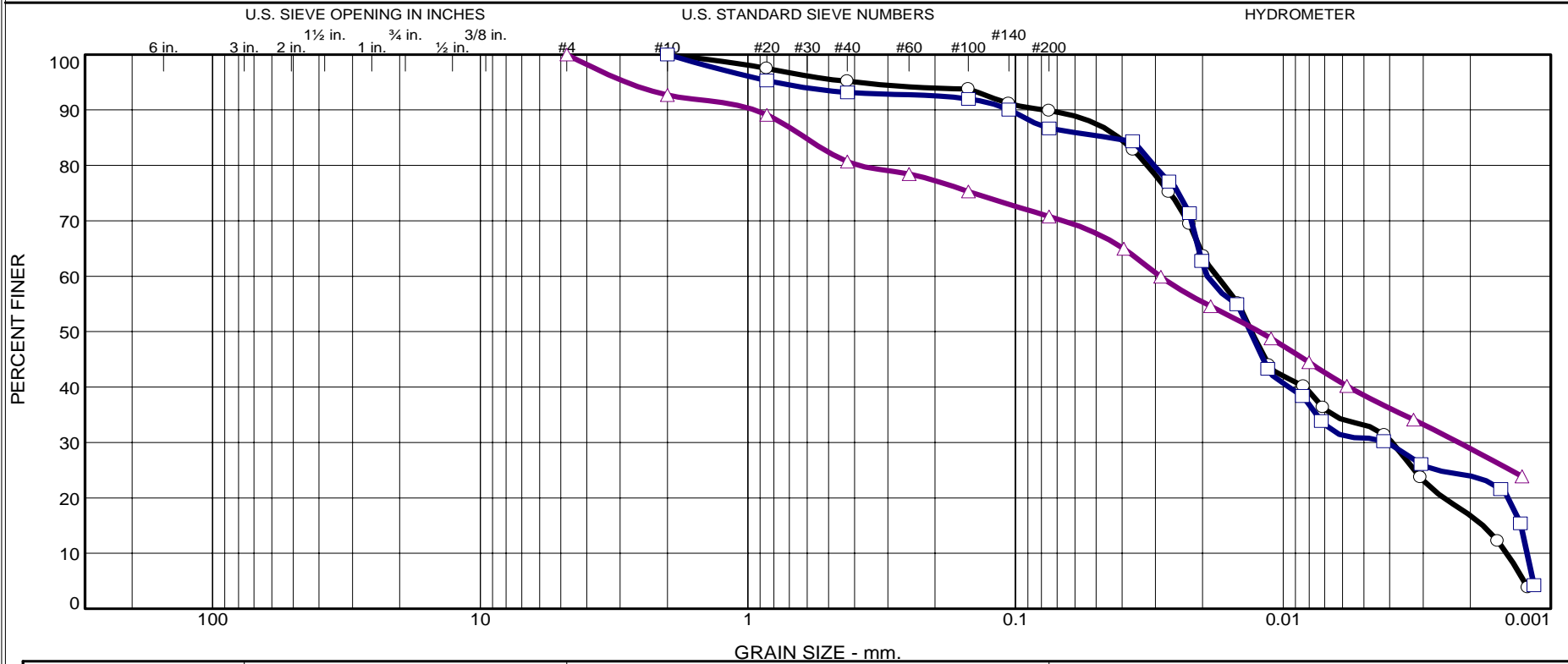
Project No. P91003-24 Client: County of Berthoud Project: Berthoud County Landfill Expansion ○ Source of Sample: Boring B-2 Depth: 0-5' □ Source of Sample: Boring B-2 Depth: 5-10' △ Source of Sample: Boring B-2 Depth: 10-15' Date: ○ 4.June.2003 □ 6.June.2003 △ 6.June.2003	Remarks: ○ Sample has strong organic odor
---	---

ACME MATERIALS TESTING

Figure F-21

[3 tests] Similar to GSGEOSYS (COE Report), includes date (GSGEODAT)

Particle Size Distribution Report



Particle Size Distribution Report

Project: Berthoud County Landfill Expansion

Project No.: P91003-24

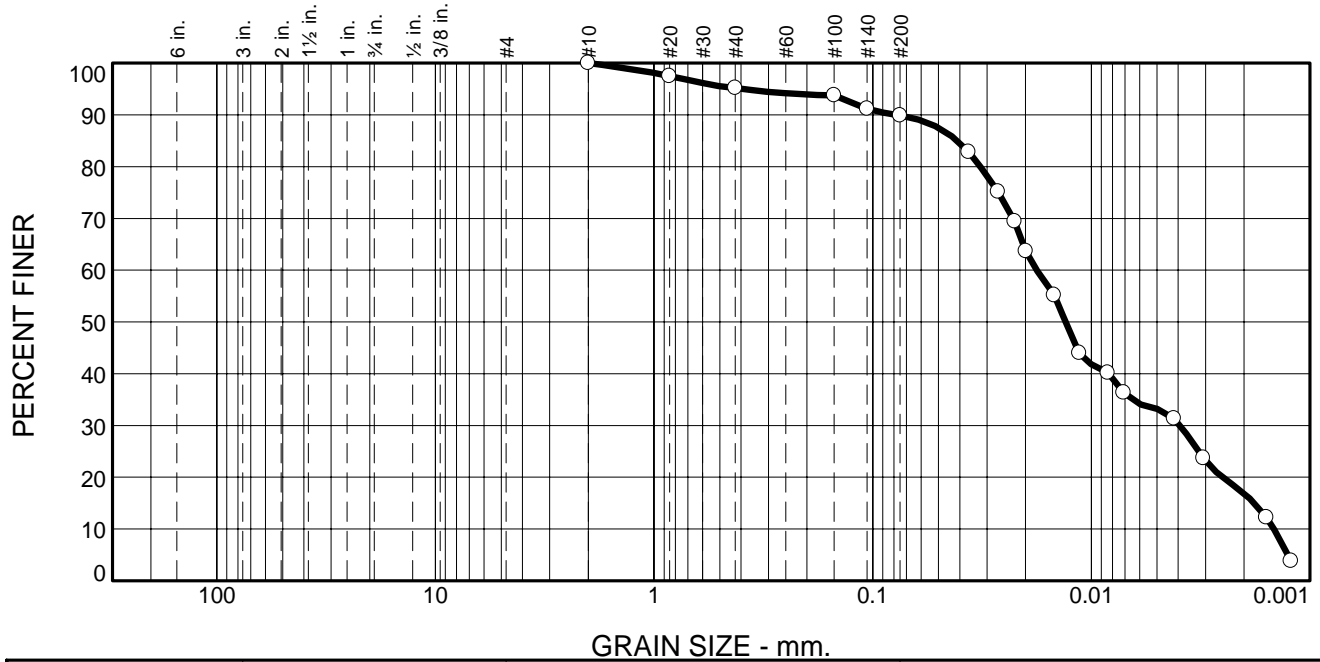
Client: County of Berthoud

Sample Number: S-1

Source of Sample: Boring B-2

Depth: 0-5'

Date: 4.June.2003



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.8	5.3	56.7	33.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	97.5		
#40	95.2		
#100	93.8		
#140	91.2		
#200	89.9		

Material Description

Dark Brown Sandy Lean Clay w/ Organics & Rubble

Atterberg Limits

PL= 20 LL= 52 PI= 22

Coefficients

D₈₅=0.0410 D₆₀=0.0178 D₅₀=0.0131
D₃₀=0.0039 D₁₅=0.0018 D₁₀=0.0015
C_u= 12.16 C_c= 0.59

Classification

USCS= CL AASHTO= A-7-6(31)

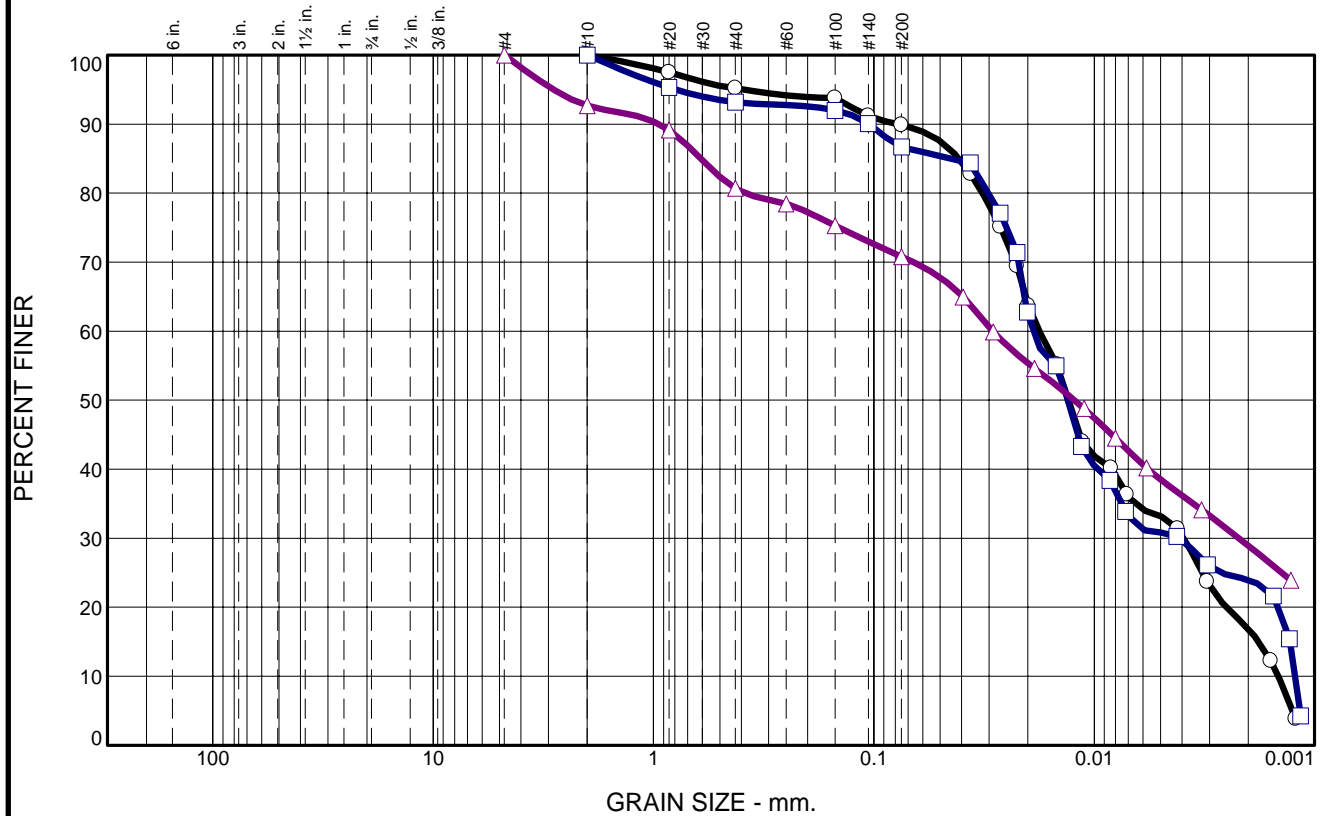
Remarks

Sample has strong organic odor

* (no specification provided)

Figure F-21

Particle Size Distribution Report



	+3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.0	0.0	10.1	56.7	33.2	CL	A-7-6(31)	20	52
□	0.0	0.0	13.3	55.9	30.8	CL	A-6(21)	15	40
△	0.0	0.0	29.2	32.3	38.5	CL	A-4(0)	NP	NV

SIEVE inches size	PERCENT FINER		
	○	□	△
X	GRAIN SIZE		
D ₆₀	0.0178	0.0192	0.0289
D ₃₀	0.0039	0.0041	0.0022
D ₁₀	0.0015	0.0012	
X	COEFFICIENTS		
C _c	0.59	0.72	
C _u	12.16	15.72	

SIEVE number size	PERCENT FINER		
	○	□	△
#4			100.0
#10	100.0	100.0	92.7
#20	97.5	95.3	89.1
#40	95.2	93.2	80.7
#60			78.4
#100	93.8	92.0	75.3
#140	91.2	90.1	
#200	89.9	86.7	70.8

Material Description

- Dark Brown Sandy Lean Clay w/ Organics & Rubble
- Dark Gray Sandy Clay Loam Trace Gravel (Till)
- △ Grayish Brown Sandy Loam (Alluvium)

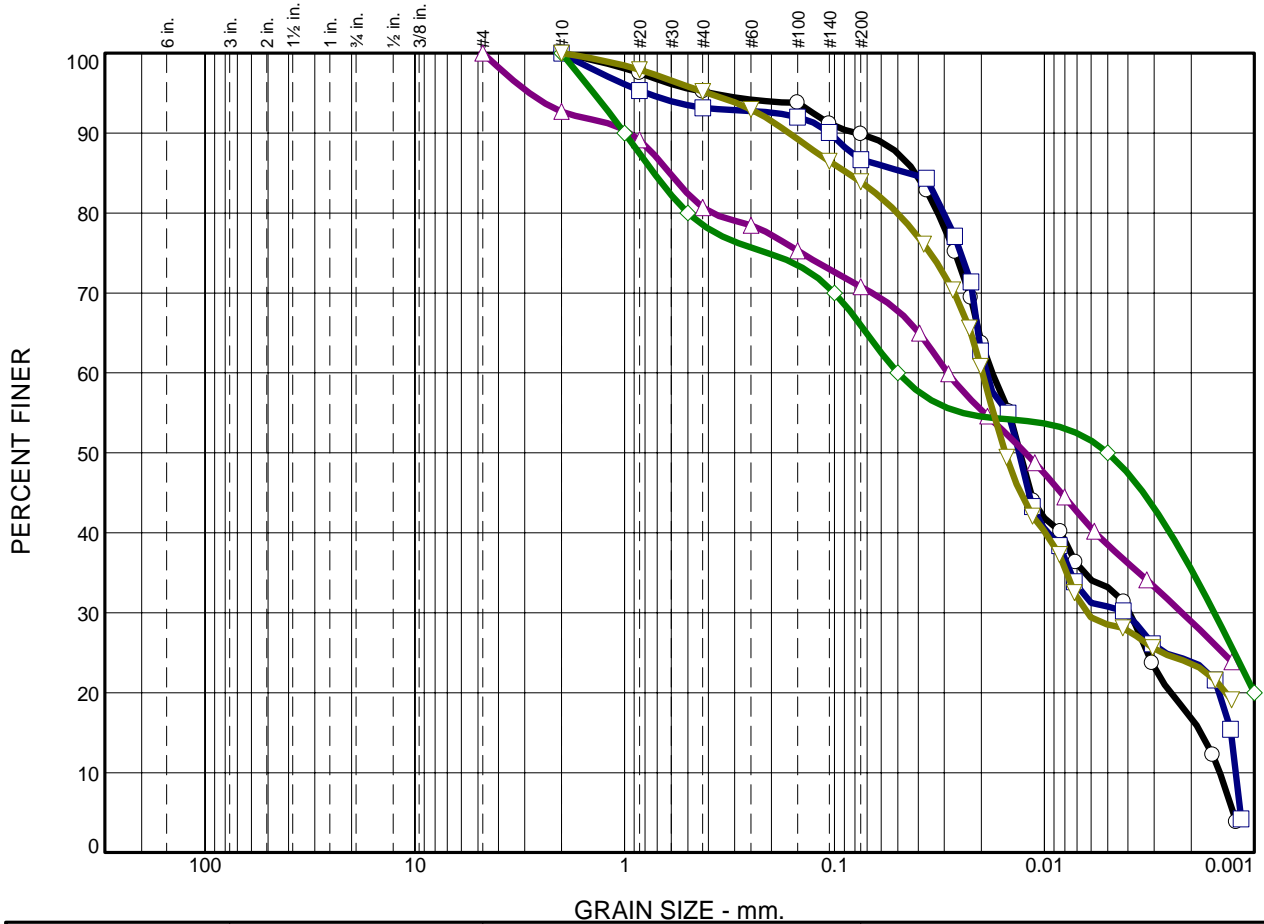
REMARKS:

- Sample has strong organic odor
-
- △

○ Source of Sample: Boring B-2 Depth: 0-5' Sample Number: S-1
 □ Source of Sample: Boring B-2 Depth: 5-10' Sample Number: S-2
 △ Source of Sample: Boring B-2 Depth: 10-15' Sample Number: S-3

ACME MATERIALS TESTING LAB, INC.	Client: County of Berthoud Project: Berthoud County Landfill Expansion Project No.: P91003-24
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Particle Size Distribution Report



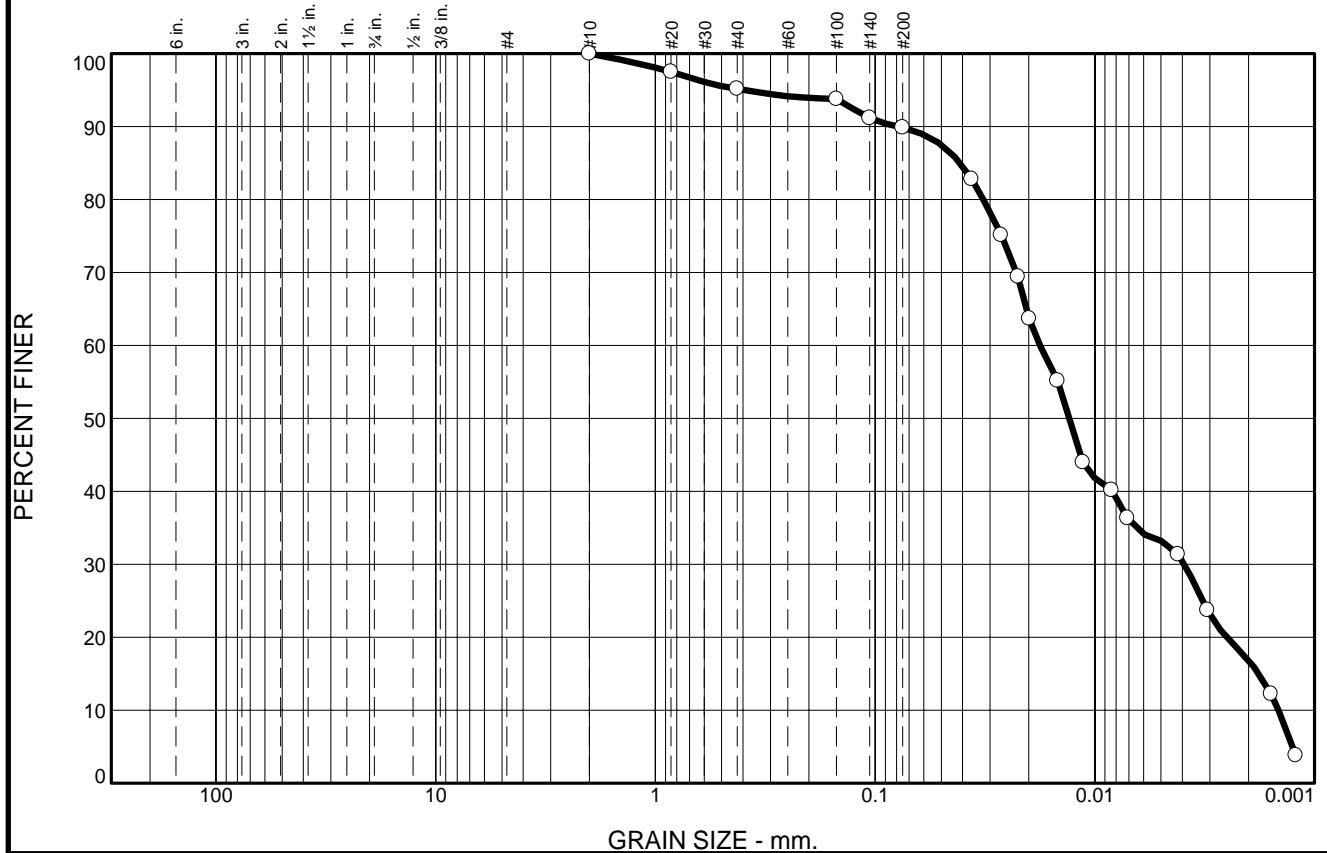
% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay

MATERIAL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	Boring B-2	S-1	0-5'	Dark Brown Sandy Lean Clay w/ Organics & Rubble	CL
□	Boring B-2	S-2	5-10'	Dark Gray Sandy Clay Loam Trace Gravel (Till)	CL
△	Boring B-2	S-3	10-15'	Grayish Brown Sandy Loam (Alluvium)	CL
◇	TP-2	S-1	0-2.5'	Gray Brown Sandy Clay (Topsoil)	CL
▽	Boring B-4	S-2	5-10'	Dark Brown Silty Lean Clay	CL

ACME MATERIALS TESTING LAB, INC.	Client: County of Berthoud Project: Berthoud County Landfill Expansion Project No.: P91003-24	Figure F-21
---	--	--------------------

[5 tests] 5 curve report, no % finer data, includes USCS (GSSIMPL5)

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	4.8	5.3	56.7	33.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	97.5		
#40	95.2		
#100	93.8		
#140	91.2		
#200	89.9		

Material Description

Dark Brown Sandy Lean Clay w/ Organics & Rubble

Atterberg Limits

PL= 20 LL= 52 PI= 22

Coefficients

D₈₅= 0.0410 D₆₀= 0.0178 D₅₀= 0.0131
D₃₀= 0.0039 D₁₅= 0.0018 D₁₀= 0.0015
C_u= 12.16 C_c= 0.59

Classification

USCS= CL AASHTO= A-7-6(31)

Remarks

Sample has strong organic odor

* (no specification provided)

Sample Number: S-1 Source of Sample: Boring B-2 Depth: 0-5' Date: 4.June.2003

ACME MATERIALS TESTING LAB, INC.	Client: County of Berthoud Project: Berthoud County Landfill Expansion Project No: P91003-24
	Figure F-21

GRAIN SIZE DISTRIBUTION TEST DATA

Client: County of Berthoud

Project: Berthoud County Landfill Expansion

Project Number: P91003-24

Location: Boring B-4

Depth: 5-10'

Sample Number: S-2

USCS Classification: CL

AASHTO Classification: A-7-6(20)

Testing Remarks: Tested by ERK

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer	Lower Spec. Limit, %	Upper Spec. Limit, %	Deviation From Spec., %
277.60	89.42	89.42	#10	89.42	100.0			
			#20	93.34	97.9			
			#40	98.47	95.2			
			#60	102.70	92.9			
			#140	114.90	86.5			
			#200	119.73	83.9			

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 51.71

Table of composite correction values:

Temp., deg. C:	-6.0	-5.6	-4.7
Comp. corr.:	20.0	22.0	25.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.7

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
1.00	25.0	44.5	39.8	0.0127	45.5	8.8	0.0376	76.1
2.00	25.0	41.5	36.8	0.0127	42.5	9.3	0.0273	70.4
3.00	25.0	39.0	34.3	0.0127	40.0	9.7	0.0228	65.6
4.00	25.0	36.5	31.8	0.0127	37.5	10.1	0.0202	60.8
8.00	23.5	31.0	25.9	0.0129	32.0	11.0	0.0151	49.4
16.00	20.0	28.0	22.0	0.0134	29.0	11.5	0.0114	42.1
30.00	20.0	25.5	19.5	0.0134	26.5	11.9	0.0085	37.3
43.00	20.0	23.0	17.0	0.0134	24.0	12.4	0.0072	32.5
123.00	22.0	20.3	14.7	0.0131	21.3	12.8	0.0042	28.1
240.00	22.0	19.0	13.4	0.0131	20.0	13.0	0.0031	25.6
975.00	22.0	16.9	11.3	0.0131	17.9	13.4	0.0015	21.6
1485.00	20.0	16.0	10.0	0.0134	17.0	13.5	0.0013	19.1