

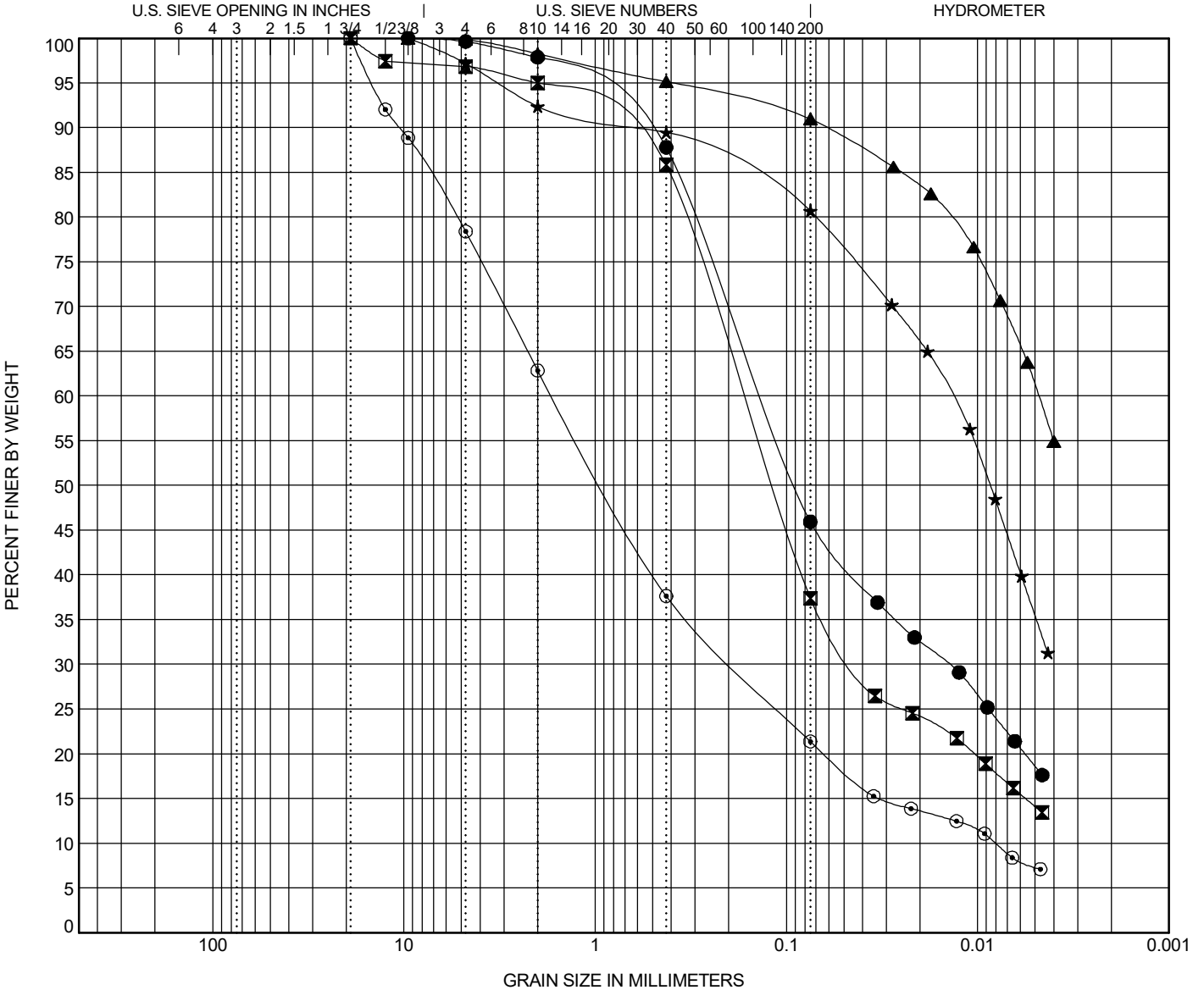


PROJECT ATH-144-12.08

PID 116165

OGE NUMBER 11111

PROJECT TYPE GEOHAZARD EXPLORATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification	ODOT (Modified AASHTO) ~ USCS Classification									LL	PL	PI
● B-001-0-23 7.5	A-4a ~ CLAYEY SAND(SC)									29	19	10
■ B-001-0-23 10.0	A-4a ~ SILTY SAND(SM)									NP	NP	NP
▲ B-001-0-23 17.5	A-7-6 ~ FAT CLAY(CH)									63	27	36
★ B-001-0-23 20.0	A-7-6 ~ LEAN CLAY with SAND(CL)									42	25	17
◎ B-002-0-23 1.5	A-1-b ~ SILTY, CLAYEY SAND with GRAVEL(SC-SM)									19	14	5
Specimen Identification	D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu	
● B-001-0-23 7.5	0.596	0.089	0.014		2	10	42	27	19			
■ B-001-0-23 10.0	0.859	0.118	0.044		6	9	48	23	14			
▲ B-001-0-23 17.5	0.063				2	3	4	30	61			
★ B-001-0-23 20.0	0.565	0.009			7	3	9	46	35			
◎ B-002-0-23 1.5	10.486	0.909	0.188	0.008	38	25	16	14	7	2.62	207.98	

GRAIN SIZE - OH DOT.GDT - 2/9/23 12:06 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\ATH-144-12.08 (HDR)\GINT FILES\20230118 ATH-144-12.08 - 10-Y. BORING LOGS. - TO NEAS.GPJ

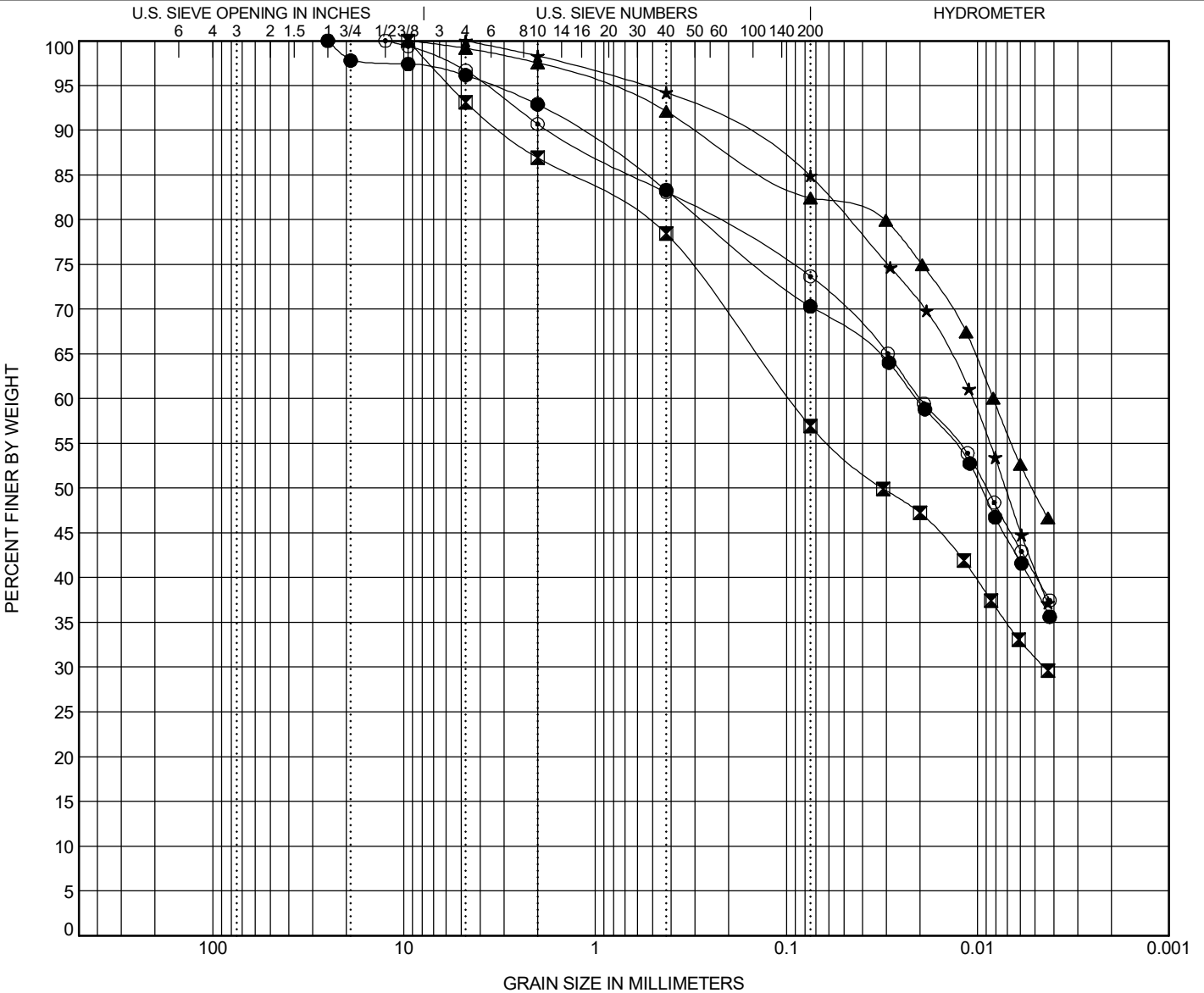


PROJECT ATH-144-12.08

PID 116165

OGE NUMBER 11111

PROJECT TYPE GEOHAZARD EXPLORATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification	ODOT (Modified AASHTO) ~ USCS Classification					LL	PL	PI
● B-002-0-23 7.5	A-7-6 ~ LEAN CLAY with SAND(CL)					48	23	25
☒ B-002-0-23 12.0	A-7-6 ~ SANDY LEAN CLAY(CL)					42	20	22
▲ B-002-0-23 16.5	~							
★ B-002-0-23 19.5	A-7-6 ~ LEAN CLAY with SAND(CL)					41	24	17
◎ B-003-0-23 5.0	A-7-6 ~ FAT CLAY with SAND(CH)					50	23	27

Specimen Identification	D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
● B-002-0-23 7.5	1.253	0.01			7	10	13	31	39		
☒ B-002-0-23 12.0	3.073	0.031	0.004		13	8	22	26	31		
▲ B-002-0-23 16.5	0.291	0.005			3	5	10	33	49		
★ B-002-0-23 19.5	0.194	0.007			2	4	9	44	41		
◎ B-003-0-23 5.0	1.736	0.009			9	8	9	34	40		

GRAIN SIZE - OH.DOT.GDT - 2/9/23 12:06 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\ATH-144-12.08 (HDR)\GINT FILES\20230118 ATH-144-12.08 - 10-Y. BORING LOGS. - TO NEAS.GPJ



OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

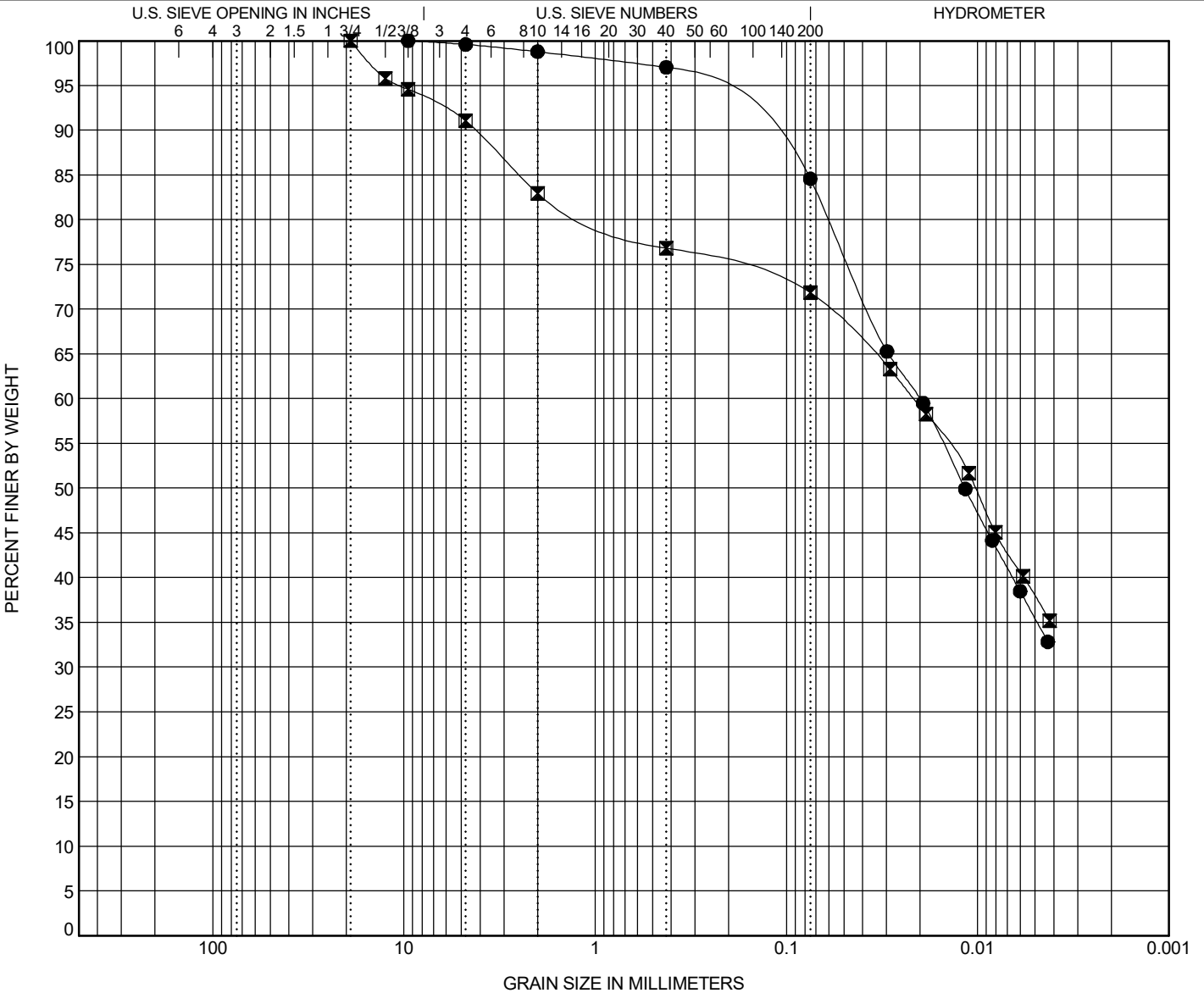
GRAIN SIZE DISTRIBUTION

PROJECT ATH-144-12.08

PID 116165

OGE NUMBER 11111

PROJECT TYPE GEOHAZARD EXPLORATION



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

Specimen Identification	ODOT (Modified AASHTO) ~ USCS Classification					LL	PL	PI
● B-003-0-23 12.5	A-6b ~ LEAN CLAY with SAND(CL)					40	20	20
☒ B-003-0-23 20.0	A-7-6 ~ LEAN CLAY with SAND(CL)					42	20	22

Specimen Identification	D90	D50	D30	D10	%G	%CS	%FS	%M	%C	Cc	Cu
● B-003-0-23 12.5	0.16	0.012			1	2	12	50	35		
☒ B-003-0-23 20.0	4.248	0.01			17	6	5	34	38		

GRAIN SIZE - OH.DOT.GDT - 2/9/23 12:06 - X:\ACTIVE PROJECTS\ACTIVE SOIL PROJECTS\ATH-144-12.08 (HDR)\GINT FILES\20230118 ATH-144-12.08 -10-Y-BORING LOGS- TO NEAS.GPJ

Unconfined Compressive Strength of Cohesive Soil (ASTM D2166)

(Project: ATH-144-12.08 (10-Y), Boring Location: B-001-0-23, ST-8, Depth: 20.7 - 21.2ft)

Tested Date: 2/1/2023

Specimen Properties

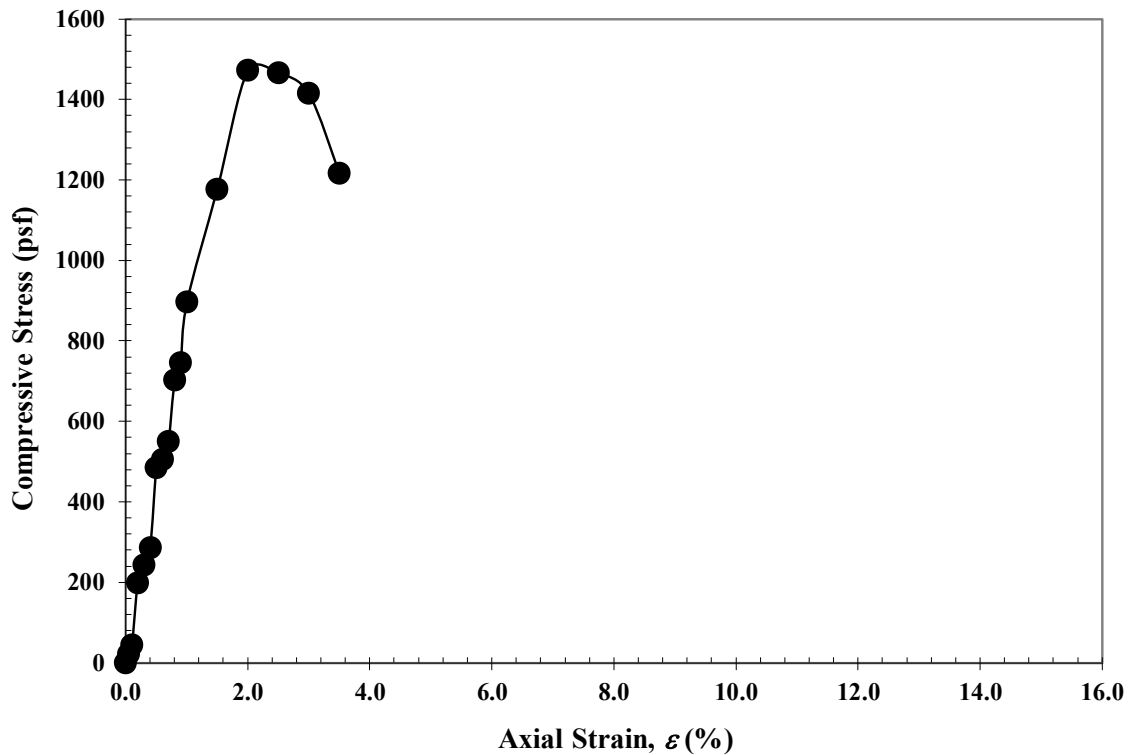
Average Dia., D_{avg} (in):	2.88
Average Height, H_{avg} (in):	5.75
Area, A (in ²):	6.51
Volume, V (in ³):	37.44
Wet Mass of Specimen (lb):	2.8
Moisture Content (%):	22.2
Dry Mass of Specimen (lb):	2.3
Wet Unit Weight, γ (lb/ft ³):	127.5
Dry Unit Weight, γ_d (lb/ft ³):	104.3

Final Specimen Figure



Results

Unconfined Compressive Strength (psf):	1473
Strain (%):	2.0



Notes: Medium stiff, brownish gray, CLAY, "and" silt, little sand, trace gravel, damp.

Unconfined Compressive Strength of Cohesive Soil (ASTM D2166)

(Project: ATH-144-12.08 (10-Y), Boring Location: B-002-0-23, ST-5, Depth: 8.0 - 8.5ft)

Tested Date: 2/2/2023

Specimen Properties

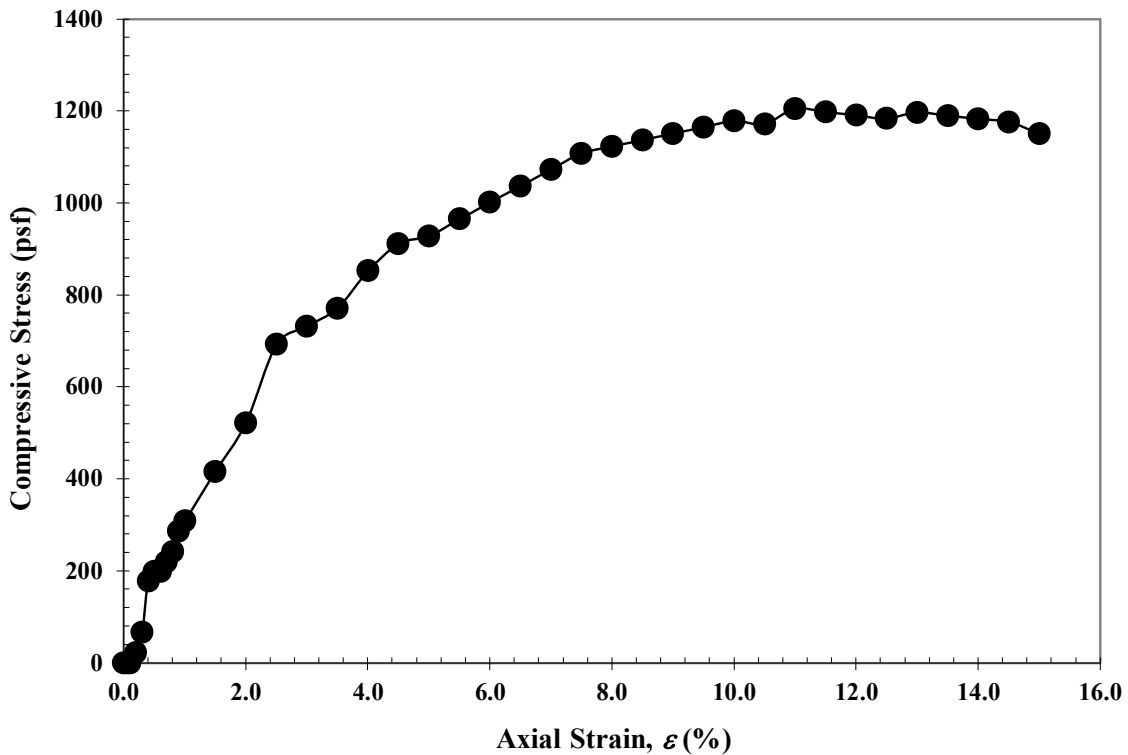
Average Dia., D_{avg} (in):	2.87
Average Height, H_{avg} (in):	5.72
Area, A (in ²):	6.49
Volume, V (in ³):	37.14
Wet Mass of Specimen (lb):	2.6
Moisture Content (%):	29.6
Dry Mass of Specimen (lb):	2.0
Wet Unit Weight, γ (lb/ft ³):	122.4
Dry Unit Weight, γ_d (lb/ft ³):	94.4

Final Specimen Figure



Results

Unconfined Compressive Strength (psf):	1205
Strain (%):	11.0



Notes: Medium stiff, brown, CLAY, some silt, some sand, trace gravel, moist. Specimen contains gravel >1/6 specimen diameter. Results reported may differ from a specimen that meets the maximum particle size allowance of D2166.

Unconfined Compressive Strength of Cohesive Soil (ASTM D2166)

(Project: ATH-144-12.08 (10-Y), Boring Location: B-003-0-23, ST-5, Depth: 13.7 - 14.2ft)

Tested Date: 2/3/2023

Specimen Properties

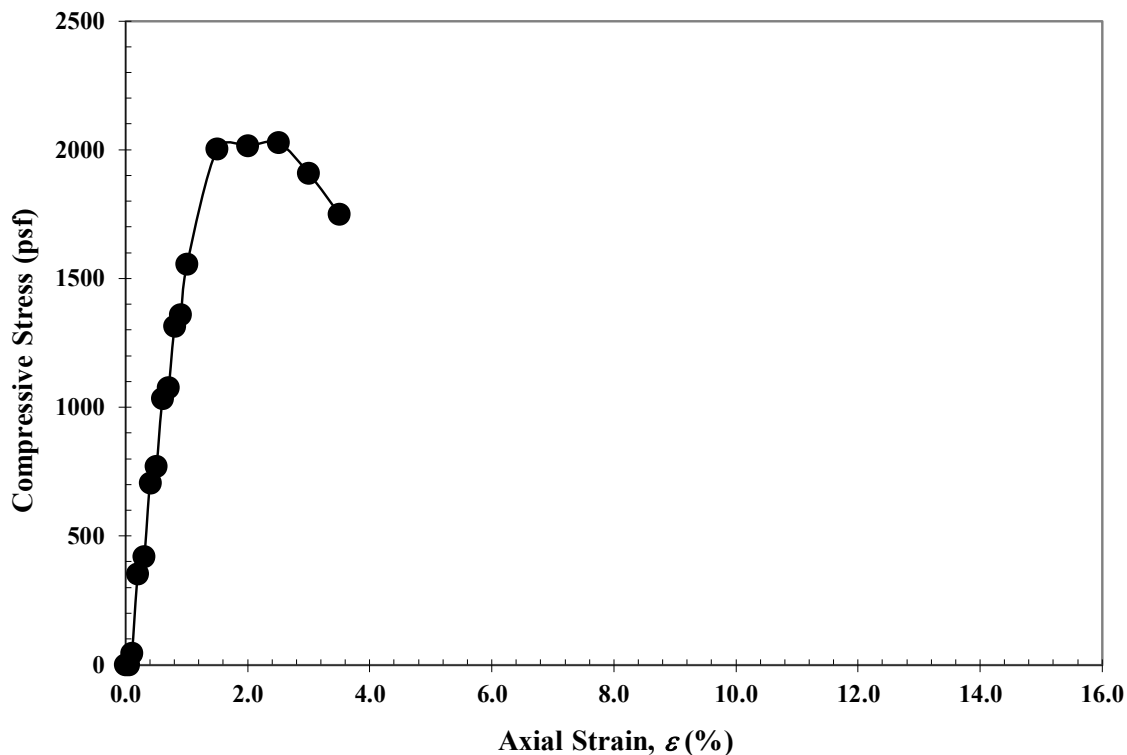
Average Dia., D_{avg} (in):	2.88
Average Height, H_{avg} (in):	5.73
Area, A (in ²):	6.52
Volume, V (in ³):	37.36
Wet Mass of Specimen (lb):	2.7
Moisture Content (%):	23.6
Dry Mass of Specimen (lb):	2.2
Wet Unit Weight, γ (lb/ft ³):	126.6
Dry Unit Weight, γ_d (lb/ft ³):	102.4

Final Specimen Figure



Results

Unconfined Compressive Strength (psf):	2026
Strain (%):	2.5



Notes: Stiff, reddish brown, SILTY CLAY, little sand, trace gravel, moist. Specimen contains gravel >1/6 specimen diameter. Results reported may differ from a specimen that meets the maximum particle size allowance of D2166.

Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

(Project: ATH-144-12.08 (10-Y), Boring Location: B-001-0-23, NQ2-2, Depth: 45.3 - 45.7ft)

Tested Date: 1/31/2023

Specimen Properties

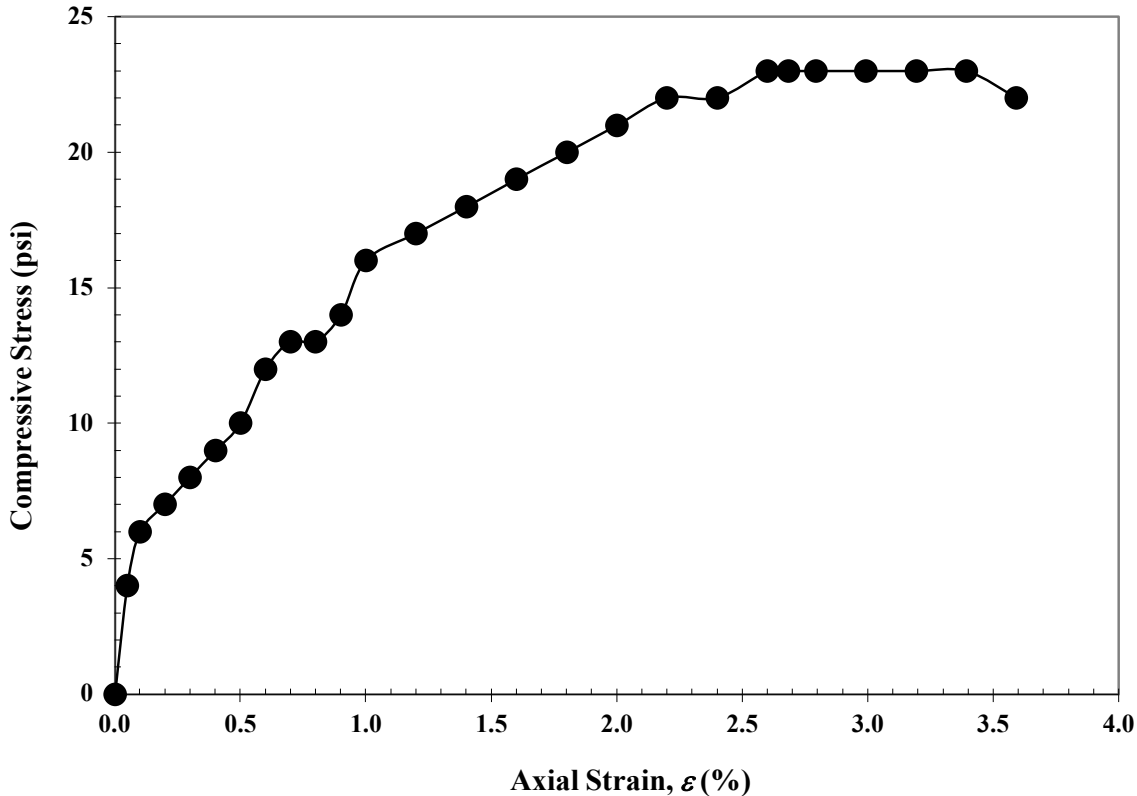
Average Dia., D_{avg} (in):	2.01
Average Height, H_{avg} (in):	4.51
Length to Diameter Ratio:	2.25
Area, A (in ²):	3.16
Volume, V (in ³):	14.26
Wet Mass of Specimen (lb):	1.1
Moisture Content (%):	13.9
Dry Mass of Specimen (lb):	1.0
Wet Unit Weight, γ (lb/ft ³):	137.1
Dry Unit Weight, γ_d (lb/ft ³):	120.4

Final Specimen Figure



Results

Unconfined Compressive Strength (psi):	23		
Strain (%):	2.6	0.2	(MPa)



Notes: SHALE, gray, highly weathered, extremely weak, fissile, slickensided (after testing).

Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

(Project: ATH-144-12.08 (10-Y), Boring Location: B-002-0-23, NQ2-1, Depth: 24.2 - 24.6ft)

Tested Date: 1/31/2023

Specimen Properties

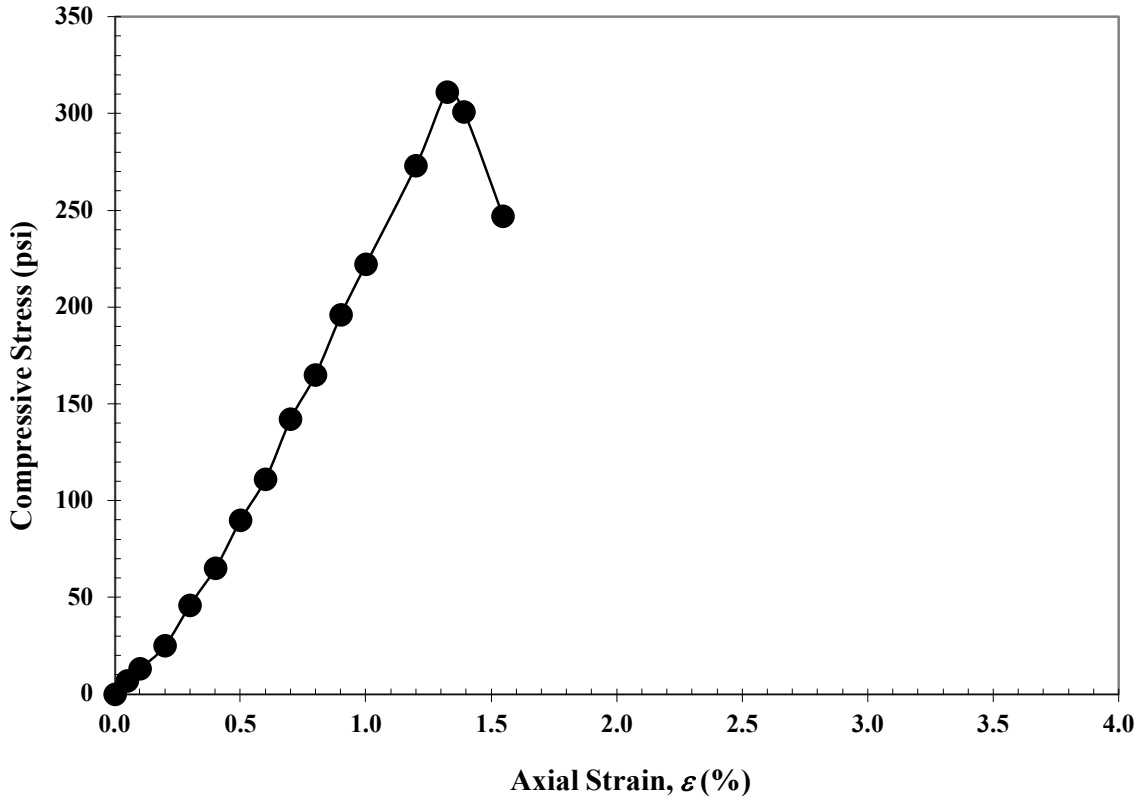
Average Dia., D_{avg} (in):	1.98
Average Height, H_{avg} (in):	4.53
Length to Diameter Ratio:	2.29
Area, A (in ²):	3.08
Volume, V (in ³):	13.93
Wet Mass of Specimen (lb):	1.3
Moisture Content (%):	5.4
Dry Mass of Specimen (lb):	1.2
Wet Unit Weight, γ (lb/ft ³):	157.5
Dry Unit Weight, γ_d (lb/ft ³):	149.5

Final Specimen Figure



Results

Unconfined Compressive Strength (psi):	311	
Strain (%):	1.3	2 (MPa)



Notes: SHALE, gray, moderately weathered, very weak, silty.

Unconfined Compressive Strength of Rock Core (ASTM D7012 Method C)

(Project: ATH-144-12.08 (10-Y), Boring Location: B-003-0-23, NQ2-1, Depth: 31.2 - 31.6ft)

Tested Date: 1/31/2023

Specimen Properties

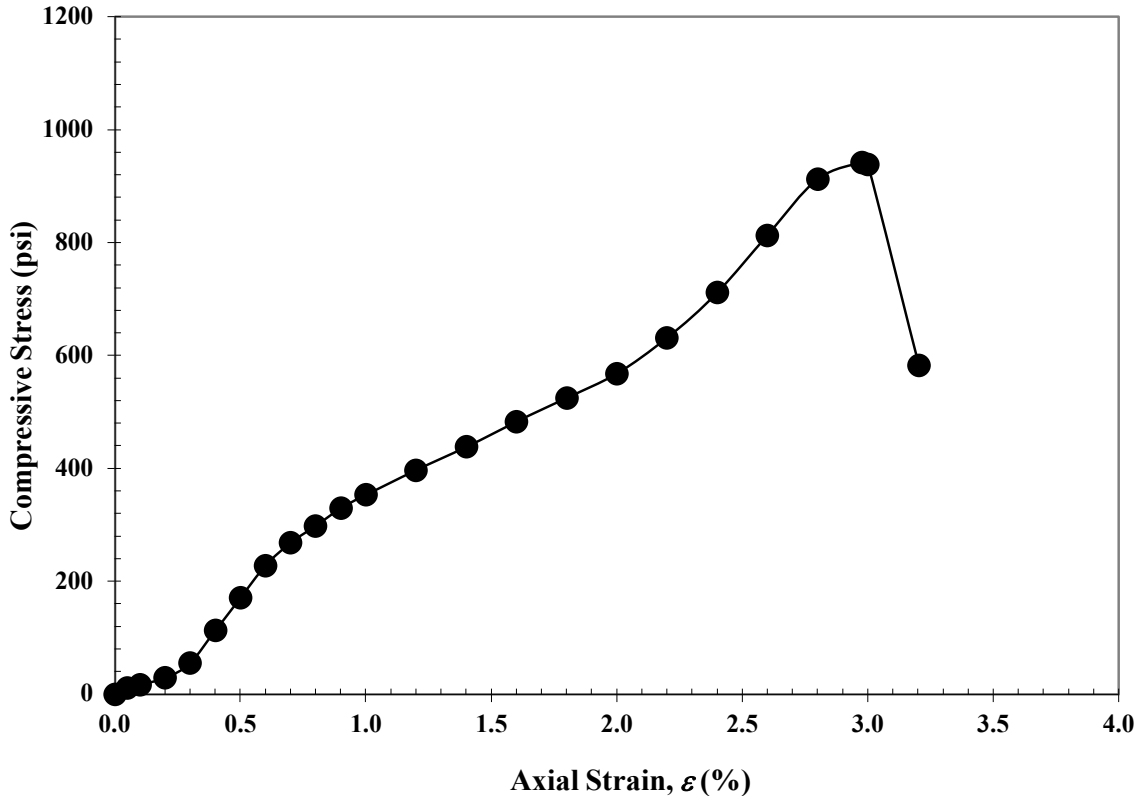
Average Dia., D_{avg} (in):	1.97
Average Height, H_{avg} (in):	4.43
Length to Diameter Ratio:	2.25
Area, A (in ²):	3.05
Volume, V (in ³):	13.55
Wet Mass of Specimen (lb):	1.3
Moisture Content (%):	3.6
Dry Mass of Specimen (lb):	1.2
Wet Unit Weight, γ (lb/ft ³):	161.2
Dry Unit Weight, γ_d (lb/ft ³):	155.5

Final Specimen Figure



Results

Unconfined Compressive Strength (psi):	942		
Strain (%):	3.0	6	(MPa)



Notes: SHALE, gray, slightly weathered, weak, silty.