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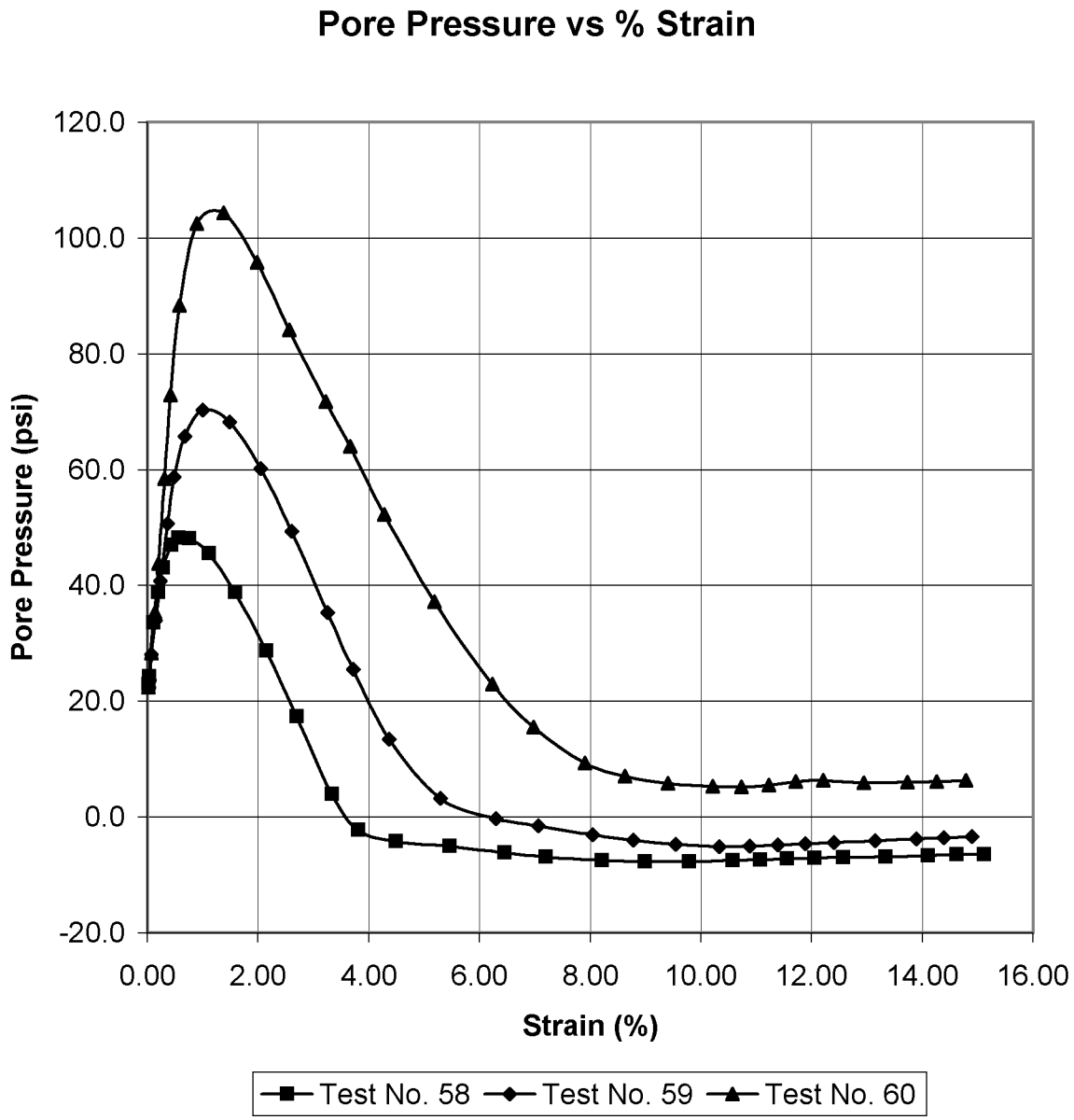
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	325.9-328.0
Project No.:	2013-465-001	Sample No.:	ST-55
Lab ID:	2013-465-001-035		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	326.6-326.9
Project No.:	2013-465-001	Sample No.:	ST-55
Lab ID:	2013-465-001-035		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	115.1	*Stage No.*	1
		Test No	59

INITIAL DIMENSIONS

Initial Sample Length (in)	4.82
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.53
Initial Sample Volume (in^3)	31.46

VOLUME CHANGE

Volume After Consolidation (in^3)	30.58
Length After Consolidation (in)	4.78
Area After Consolidation (in^2)	6.395

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	8.24	1.22	122.12	113.9	1.072	0.15	118.00	4.12
0.04	14.78	2.05	127.84	113.1	1.131	0.14	120.45	7.39
0.08	38.72	6.47	147.35	108.6	1.356	0.17	127.99	19.36
0.15	59.33	12.40	162.03	102.7	1.578	0.21	132.36	29.67
0.24	76.85	19.13	172.82	96.0	1.801	0.25	134.39	38.43
0.36	98.29	29.09	184.30	86.0	2.143	0.30	135.16	49.15
0.49	114.95	37.11	192.94	78.0	2.474	0.32	135.47	57.48
0.68	131.25	44.14	202.20	71.0	2.850	0.34	136.58	65.62
1.00	154.09	48.63	220.57	66.5	3.318	0.32	143.52	77.05
1.49	185.71	46.63	254.17	68.5	3.712	0.25	161.32	92.85
2.05	227.30	38.57	303.83	76.5	3.970	0.17	190.18	113.65
2.61	270.21	27.74	357.57	87.4	4.093	0.10	222.46	135.10
3.26	321.00	13.72	422.38	101.4	4.166	0.04	261.88	160.50
3.72	356.03	3.86	467.27	111.2	4.201	0.01	289.25	178.01
4.37	398.60	-8.20	521.89	123.3	4.233	-0.02	322.59	199.30
5.29	439.11	-18.43	572.64	133.5	4.289	-0.04	353.08	219.56
6.30	458.36	-21.90	595.35	137.0	4.346	-0.05	366.18	229.18
7.06	466.00	-23.13	604.23	138.2	4.371	-0.05	371.23	233.00
8.05	470.35	-24.67	610.12	139.8	4.365	-0.05	374.95	235.18
8.79	470.04	-25.61	610.75	140.7	4.340	-0.05	375.73	235.02
9.55	461.09	-26.31	602.50	141.4	4.261	-0.06	371.95	230.55
10.34	424.17	-26.75	566.02	141.9	3.990	-0.06	353.94	212.09
10.88	392.53	-26.66	534.29	141.8	3.769	-0.07	338.02	196.27
11.39	385.64	-26.43	527.17	141.5	3.725	-0.07	334.35	192.82
11.89	384.23	-26.20	525.53	141.3	3.719	-0.07	333.42	192.12
12.40	383.99	-25.98	525.07	141.1	3.722	-0.07	333.07	191.99
13.15	387.52	-25.70	528.32	140.8	3.752	-0.07	334.56	193.76
13.90	384.71	-25.39	525.21	140.5	3.738	-0.07	332.85	192.36
14.39	384.59	-25.22	524.90	140.3	3.741	-0.07	332.61	192.29
14.90	371.13	-25.02	511.25	140.1	3.649	-0.07	325.69	185.56

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-6-1b
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	326.6-326.9
Project No.	2013-465-001	Sample No.	ST-55
Lab ID #	2013-465-001-035	Test No.	59

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G336	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G1295	3/4/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	G1510-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	326.9-327.4
Project No.:	2013-465-001	Sample No.:	ST-55
Lab ID:	2013-465-001-035		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	60

PRESSURES (psi)

Cell Pressure (psi)	245.0
Back Pressure (psi)	21.5
Eff. Conf. Pressure (psi)	223.5
Pore Pressure Response (%)	99

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	444.28
Q	=	263.24

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.800	Diameter 1:	2.879
Length 2:	5.811	Diameter 2:	2.882
Length 3:	5.801	Diameter 3:	2.874
Avg. Length:	5.804	*Avg. Diam.:*	2.878

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	24.1
Final Change (ml)	23.9

Initial Dial Reading (mil)	54
Dial Reading After Saturation (mil)	56
Dial Reading After Consolidation (mil)	100

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
57.4	0.000	21.5
121.4	0.001	22.4
173.9	0.002	23.4
403.5	0.004	28.3
633.6	0.008	35.3
849.9	0.012	43.8
1152.4	0.018	58.4
1411.3	0.024	72.9
1687.8	0.034	88.3
2020.0	0.052	102.4
2370.4	0.080	104.3
2724.7	0.115	95.7
3028.6	0.148	84.1
3327.7	0.185	71.7
3500.1	0.211	64.0
3723.2	0.247	52.2
3997.4	0.299	37.2
4229.1	0.359	22.9
4329.7	0.402	15.4
4411.6	0.456	9.3
4451.3	0.497	7.1
4483.0	0.542	5.8
4510.4	0.588	5.3
4516.4	0.618	5.1
4508.6	0.647	5.5
4502.1	0.675	6.1
4511.7	0.703	6.3
4516.0	0.745	5.9
4503.9	0.791	6.0
4502.2	0.821	6.1
4499.5	0.852	6.3

Tested By: JCM Date: 11/29/13 Input Checked By: KC Date: 12/4/13

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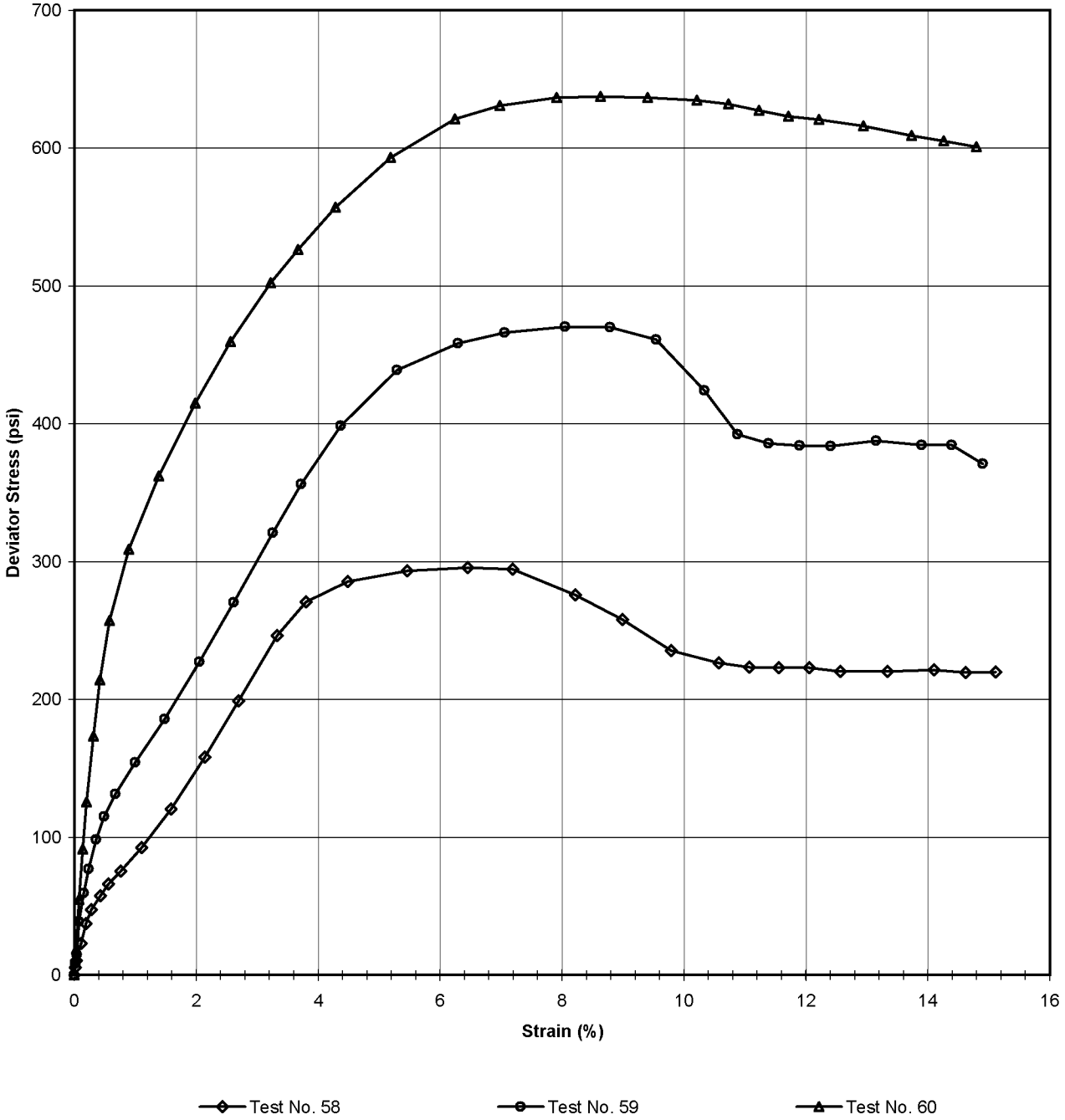
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	325.9-328.0
Project No.:	2013-465-001	Sample No.:	ST-55
Lab ID:	2013-465-001-035		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 58 7430.434 E50 Test No. 59 10950.26 E50 Test No. 60 42572.59

Tested By: JCM Date: 11/29/13 Approved By: DB Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	326.9-327.4
Project No.:	2013-465-001	Sample No.:	ST-55
Lab ID:	2013-465-001-035		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	223.5	*Stage No.*	1
		Test No	60

INITIAL DIMENSIONS

Initial Sample Length (in)	5.80
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	37.77

VOLUME CHANGE

Volume After Consolidation (in^3)	36.27
Length After Consolidation (in)	5.76
Area After Consolidation (in^2)	6.299

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	10.16	0.94	232.71	222.6	1.046	0.09	227.63	5.08
0.03	18.49	1.85	240.14	221.6	1.083	0.10	230.89	9.24
0.08	54.91	6.82	271.59	216.7	1.253	0.13	244.14	27.46
0.14	91.35	13.77	301.08	209.7	1.436	0.15	255.41	45.68
0.20	125.55	22.28	326.77	201.2	1.624	0.18	263.99	62.78
0.31	173.30	36.92	359.87	186.6	1.929	0.22	273.23	86.65
0.42	214.05	51.39	386.16	172.1	2.244	0.24	279.14	107.02
0.58	257.33	66.84	414.00	156.7	2.643	0.26	285.33	128.67
0.90	308.78	80.93	451.35	142.6	3.166	0.26	296.96	154.39
1.39	362.13	82.77	502.85	140.7	3.573	0.23	321.79	181.06
1.99	415.03	74.21	564.33	149.3	3.780	0.18	356.81	207.52
2.57	459.61	62.57	620.55	160.9	3.856	0.14	390.74	229.81
3.22	502.47	50.24	675.73	173.3	3.900	0.10	424.50	251.23
3.67	526.49	42.46	707.52	181.0	3.908	0.08	444.28	263.24
4.29	557.04	30.74	749.80	192.8	3.890	0.06	471.28	278.52
5.19	593.05	15.68	800.87	207.8	3.854	0.03	504.34	296.52
6.24	620.97	1.44	843.03	222.1	3.796	0.00	532.55	310.48
6.98	630.91	-6.05	860.47	229.6	3.748	-0.01	545.01	315.46
7.91	636.59	-12.16	872.25	235.7	3.701	-0.02	553.96	318.30
8.63	637.35	-14.45	875.30	237.9	3.679	-0.02	556.63	318.68
9.41	636.53	-15.69	875.72	239.2	3.661	-0.02	557.45	318.26
10.22	634.74	-16.23	874.48	239.7	3.648	-0.03	557.10	317.37
10.73	631.92	-16.35	871.77	239.9	3.635	-0.03	555.81	315.96
11.23	627.29	-16.00	866.79	239.5	3.619	-0.03	553.14	313.64
11.72	622.97	-15.41	861.89	238.9	3.608	-0.02	550.40	311.49
12.21	620.81	-15.16	859.47	238.7	3.601	-0.02	549.07	310.40
12.94	616.22	-15.59	855.31	239.1	3.577	-0.03	547.20	308.11
13.74	608.97	-15.51	847.98	239.0	3.548	-0.03	543.50	304.49
14.26	605.05	-15.40	843.95	238.9	3.533	-0.03	541.43	302.52
14.80	600.89	-15.24	839.63	238.7	3.517	-0.03	539.19	300.45

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-6-1b
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	326.9-327.4
Project No.	2013-465-001	Sample No.	ST-55
Lab ID #	2013-465-001-035	Test No.	60

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G330	INITIAL ONLY
Load Cell	G1131	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G041	2/22/14
Timing Device	G489	5/13/14
Flow Pump	G1511-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-035	Specific Gravity (assumed)	2.62

Visual Description: Greenish Gray Silty Sand (Undisturbed)

SAMPLE CONDITION SUMMARY

Boring No.:	R-6-1b	R-6-1b	R-6-1b
Depth (ft):	327.4-327.9	326.6-326.9	326.9-327.4
Sample No.:	ST-55	ST-55	ST-55
Test No.	T58	T59	T60
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	21.6	21.6	21.5
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	23.4	23.4	23.4
Total Unit Weight (pcf)	122.6	115.8	123.0
Dry Unit Weight (pcf)	99.3	93.8	99.7
Moisture Content (%) (FINAL)	25.9	25.4	26.5
Initial State Void Ratio,e	0.647	0.744	0.641
Void Ratio at Shear, e	0.619	0.695	0.576

Tested By: JCM Date: 11/29/13 Input Checked By: KC Date: 12/4/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

MOISTURE CONTENT

	T58	T59	T60
Tare Number	576	576	576
Weight of Tare & Wet Sample (g)	142.54	142.54	142.54
Weight of Tare & Dry Sample (g)	131.51	131.51	131.51
Weight of Tare (g)	84.46	84.46	84.46
Moisture Content (%) (INITIAL)	23.44	23.44	23.44
Tare Number	14	41	1614
Weight of Tare & Wet Sample (g)	1384.4	1167.5	1257.76
Weight of Tare & Dry Sample (g)	1141.33	972.87	1014.4
Weight of Tare (g)	203.87	206.04	94.96
Moisture Content (%) (FINAL)	25.93	25.38	26.47

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1641.98	1201.53	1628.53
Weight of Tube (g)	415.62	245.27	408.97
Weight of Wet Sample (g)	1226.36	956.26	1219.56
Length 1 (in)	5.829	4.853	5.8
Length 2 (in)	5.833	4.757	5.811
Length 3 (in)	5.834	4.853	5.801
Top Diameter (in)	2.886	2.88	2.879
Middle Diameter (in)	2.885	2.882	2.882
Bottom Diameter (in)	2.882	2.886	2.874
Average Length (in)	5.832	4.821	5.804
Average Area (in)	6.534	6.526	6.507
Sample Volume (cm^3)	624.45	515.60	618.87
Unit Wet Weight (g/cm^3)	1.96	1.85	1.97
Unit Wet Weight (pcf)	122.61	115.79	123.03
Unit Dry Weight (pcf)	99.32	93.80	99.66
Unit Dry Weight (g/cm^3)	1.59	1.50	1.60
Initial Burette Reading	**48**	**48**	**48**
Final Burette Reading	**37.4**	**36.1**	**24.1**
Initial Dial Reading	**66**	**51**	**54**
Dial Reading After Saturation	**66**	**59**	**56**
Dial Reading After Consolidation	**83**	**90**	**100**
Volume Change during Consolidation	10.6	11.9	23.9
Volume Change during Saturation	0.00	2.57	0.64
Volume at Shear (cm^3) *These	613.85	501.14	594.33
Volume of Solids (cm^3) measurements	379.18	295.67	377.08
Volume of Voids (cm^3) are all	234.67	205.47	217.25
Volume of Water (cm^3) at	257.59	196.62	261.49
Void Ratio, e shear	0.619	0.695	0.576

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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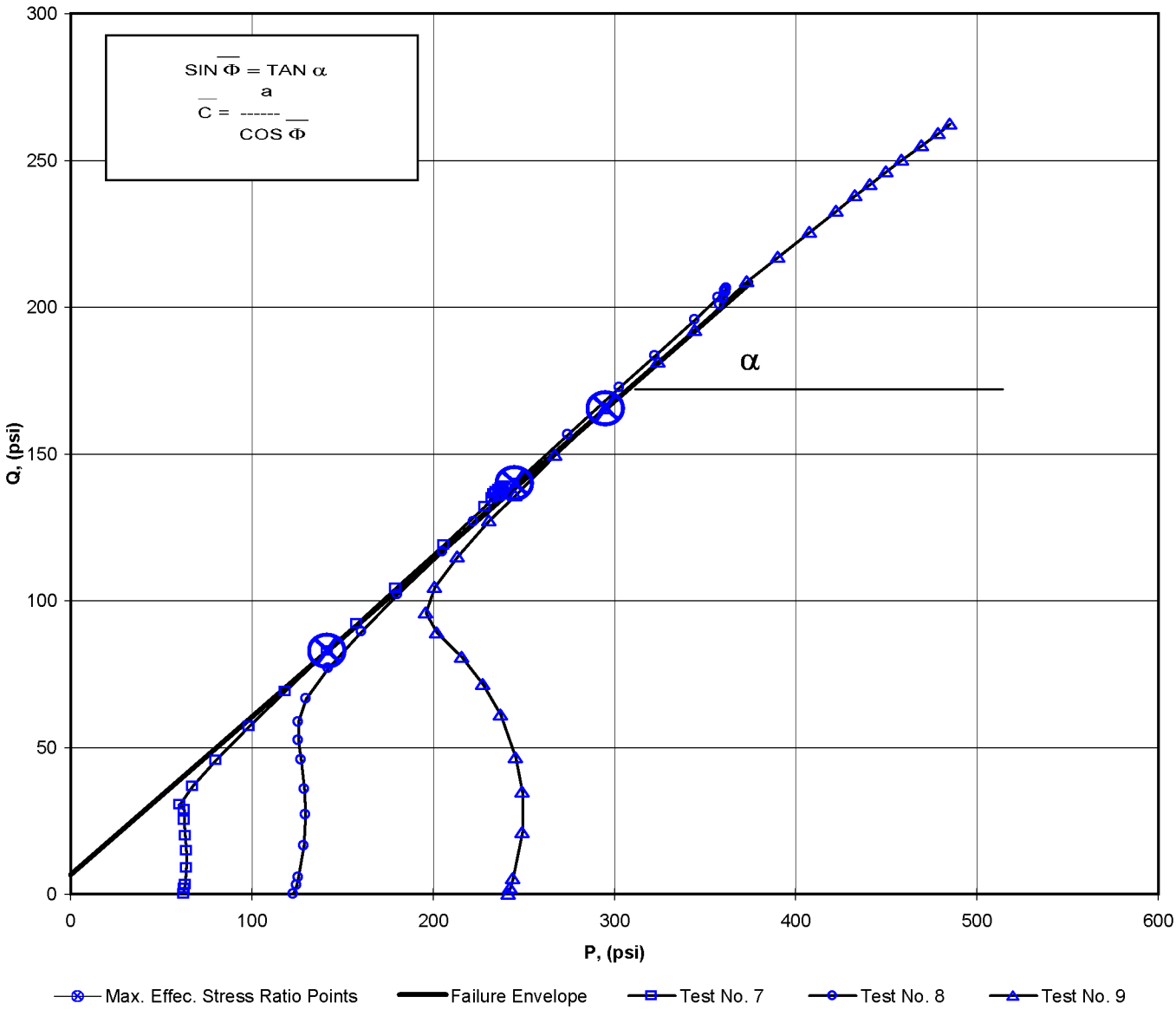
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	355.9-358.6
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	6.54	$\overline{C}$	=	7.76
α	=	28.3	$\overline{\Phi}$	=	32.54

Tested By: JCM Date: 10/21/13 Approved By: DB Date: 11/21/13

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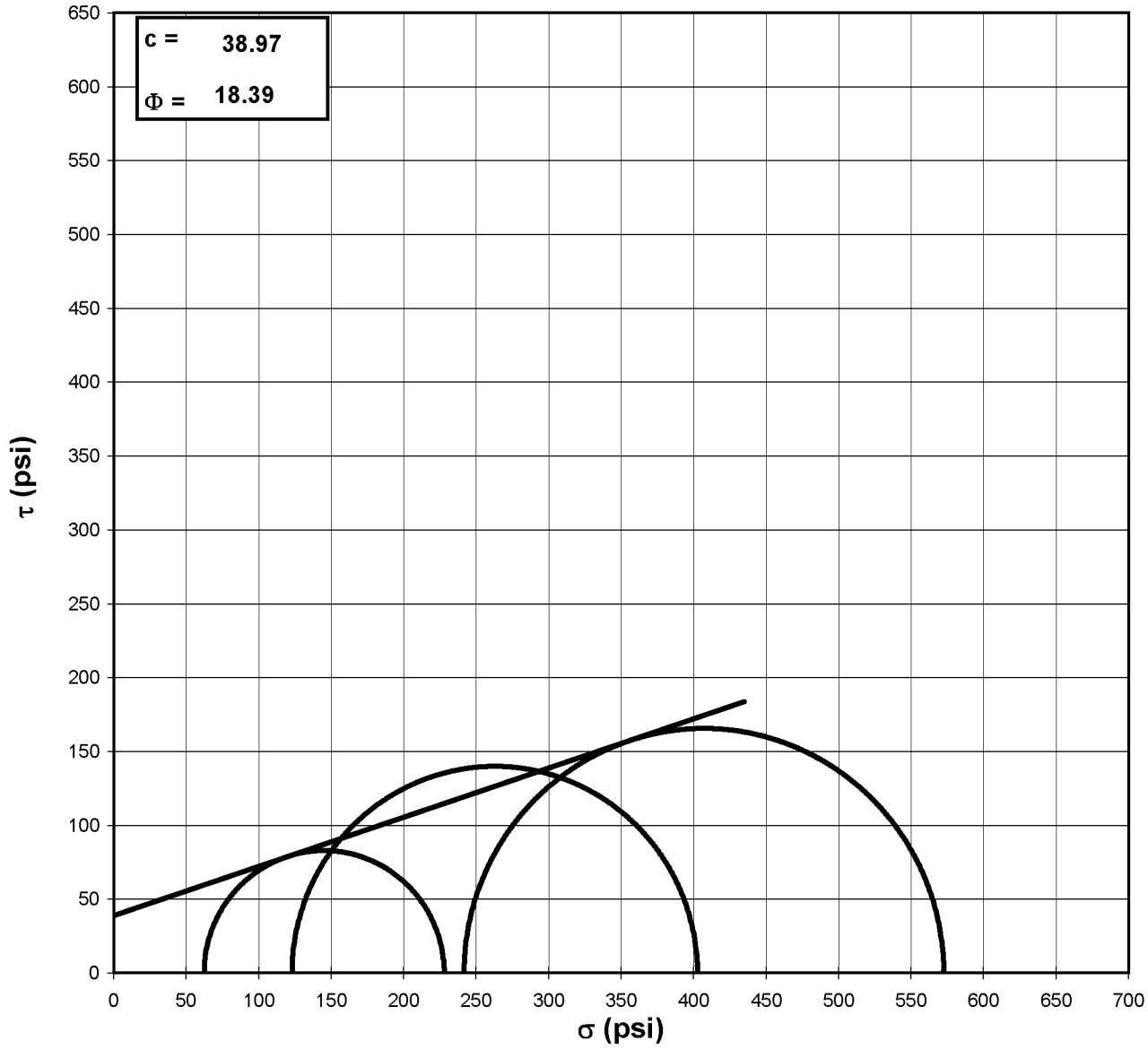
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	355.9-358.6
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 10/21/13 *Approved By:* DB *Date:* 11/21/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	358.0-358.5
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	7

PRESSURES (psi)

Cell Pressure (psi)	93.7
Back Pressure (psi)	31.3
Eff. Conf. Pressure (psi)	62.4
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	141.75
Q	=	82.79

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.983	Diameter 1:	2.888
Length 2:	5.984	Diameter 2:	2.878
Length 3:	5.983	Diameter 3:	2.876
Avg. Length:	5.983	*Avg. Diam.:*	2.881

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	13.7
Final Change (ml)	10.3

Initial Dial Reading (mil)	33
Dial Reading After Saturation (mil)	46
Dial Reading After Consolidation (mil)	53

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
15.7	0.000	31.3
39.7	0.001	32.7
56.3	0.002	33.7
130.6	0.006	38.6
203.8	0.011	44.4
269.2	0.015	50.1
339.3	0.024	56.3
385.5	0.032	59.8
408.9	0.045	64.0
489.2	0.065	63.1
608.4	0.092	59.1
762.2	0.126	52.3
922.7	0.159	44.4
1110.5	0.199	34.7
1238.8	0.228	27.8
1409.8	0.271	18.4
1624.8	0.327	6.7
1816.9	0.383	-3.0
1873.8	0.425	-3.8
1911.9	0.486	-3.5
1938.9	0.534	-4.1
1967.5	0.578	-4.7
1990.9	0.621	-5.3
2006.5	0.648	-5.7
2018.4	0.677	-6.0
2027.2	0.708	-6.3
2030.3	0.739	-6.6
2037.4	0.787	-6.9
2037.7	0.831	-7.2
2039.4	0.860	-7.3
2040.6	0.888	-7.5

Tested By: JCM Date: 10/21/13 Input Checked By: KC Date: 11/21/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	358.0-358.5
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	62.4	*Stage No.*	1
		Test No	7

INITIAL DIMENSIONS

Initial Sample Length (in)	5.98
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.52
Initial Sample Volume (in^3)	39.00

VOLUME CHANGE

Volume After Consolidation (in^3)	38.11
Length After Consolidation (in)	5.96
Area After Consolidation (in^2)	6.391

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	3.75	1.42	64.73	61.0	1.061	0.38	62.86	1.87
0.03	6.35	2.37	66.39	60.0	1.106	0.37	63.21	3.18
0.10	17.95	7.30	73.05	55.1	1.326	0.41	64.08	8.98
0.18	29.38	13.12	78.66	49.3	1.596	0.45	63.97	14.69
0.26	39.57	18.76	83.21	43.6	1.907	0.47	63.43	19.78
0.40	50.42	24.98	87.84	37.4	2.347	0.50	62.63	25.21
0.54	57.55	28.53	91.43	33.9	2.699	0.50	62.65	28.78
0.75	61.06	32.65	90.80	29.7	3.052	0.53	60.28	30.53
1.08	73.29	31.78	103.91	30.6	3.394	0.43	67.26	36.64
1.55	91.30	27.78	125.93	34.6	3.637	0.30	80.28	45.65
2.11	114.33	20.99	155.74	41.4	3.761	0.18	98.58	57.16
2.66	138.14	13.11	187.43	49.3	3.803	0.09	118.36	69.07
3.34	165.58	3.44	224.54	59.0	3.809	0.02	141.75	82.79
3.83	184.05	-3.53	249.97	65.9	3.792	-0.02	157.95	92.02
4.55	208.21	-12.85	283.46	75.3	3.767	-0.06	179.35	104.10
5.49	237.95	-24.64	324.99	87.0	3.734	-0.10	206.02	118.97
6.42	263.73	-34.27	360.40	96.7	3.728	-0.13	228.54	131.86
7.13	270.01	-35.14	367.55	97.5	3.768	-0.13	232.54	135.00
8.15	272.52	-34.82	369.73	97.2	3.803	-0.13	233.48	136.26
8.95	273.99	-35.37	371.76	97.8	3.802	-0.13	234.76	137.00
9.70	275.76	-36.03	374.19	98.4	3.802	-0.13	236.31	137.88
10.42	276.86	-36.64	375.90	99.0	3.795	-0.13	237.47	138.43
10.87	277.63	-37.01	377.05	99.4	3.793	-0.13	238.23	138.82
11.36	277.76	-37.33	377.48	99.7	3.785	-0.13	238.61	138.88
11.87	277.36	-37.63	377.39	100.0	3.773	-0.14	238.71	138.68
12.40	276.13	-37.90	376.43	100.3	3.753	-0.14	238.37	138.06
13.19	274.59	-38.23	375.22	100.6	3.729	-0.14	237.92	137.29
13.94	272.28	-38.50	373.18	100.9	3.699	-0.14	237.04	136.14
14.41	270.99	-38.64	372.03	101.0	3.682	-0.14	236.53	135.50
14.89	269.66	-38.77	370.83	101.2	3.665	-0.14	236.00	134.83

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ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-6-1b
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	358.0-358.5
Project No.	2013-465-001	Sample No.	ST-66
Lab ID #	2013-465-001-037	Test No.	7

Equipment	Equipment ID#	Calibration Due Date
Oven	G256	10/12/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G314	INITIAL ONLY
Load Cell	G1437	1/7/14
Cell Pressure Transducer	G1438	1/7/14
Pore Pressure Transducer	G1439	1/7/14
Extensometer	G1440	1/7/14
Load Frame	G1434	1/7/14
Dial Indicator	G1294	3/4/14
Timing Device	G489	5/13/14
Balance	G550	7/19/14
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	357.5-358.0
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	8

PRESSURES (psi)

Cell Pressure (psi)	154.7
Back Pressure (psi)	31.6
Eff. Conf. Pressure (psi)	123.1
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	245.13
Q	=	139.79

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.900	Diameter 1:	2.888
Length 2:	5.910	Diameter 2:	2.887
Length 3:	5.909	Diameter 3:	2.881
Avg. Length	5.906	*Avg. Diam.:*	2.885

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	30.9
Final Change (ml)	17.1

Initial Dial Reading (mil)	48
Dial Reading After Saturation (mil)	120
Dial Reading After Consolidation (mil)	150

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
36.4	0.000	31.6
74.5	0.001	33.0
107.1	0.002	34.5
242.7	0.006	42.5
373.8	0.011	51.9
483.1	0.016	61.2
607.9	0.023	73.1
692.8	0.031	81.3
771.4	0.042	87.5
874.1	0.062	91.1
1010.1	0.091	89.4
1176.3	0.126	83.4
1344.4	0.161	76.2
1542.4	0.202	66.1
1682.0	0.231	59.1
1863.8	0.271	49.4
2103.1	0.325	36.7
2338.2	0.383	24.2
2503.6	0.427	15.7
2697.5	0.485	5.9
2822.3	0.528	0.5
2878.4	0.571	-0.8
2915.2	0.616	-0.6
2928.9	0.646	-0.9
2928.5	0.676	-1.2
2947.9	0.706	-1.6
2963.6	0.735	-1.9
2961.9	0.779	-2.3
2982.1	0.823	-2.6
2968.4	0.853	-2.8
2964.6	0.882	-2.9

Tested By: JCM Date: 10/21/13 Input Checked By: KC Date: 11/21/13

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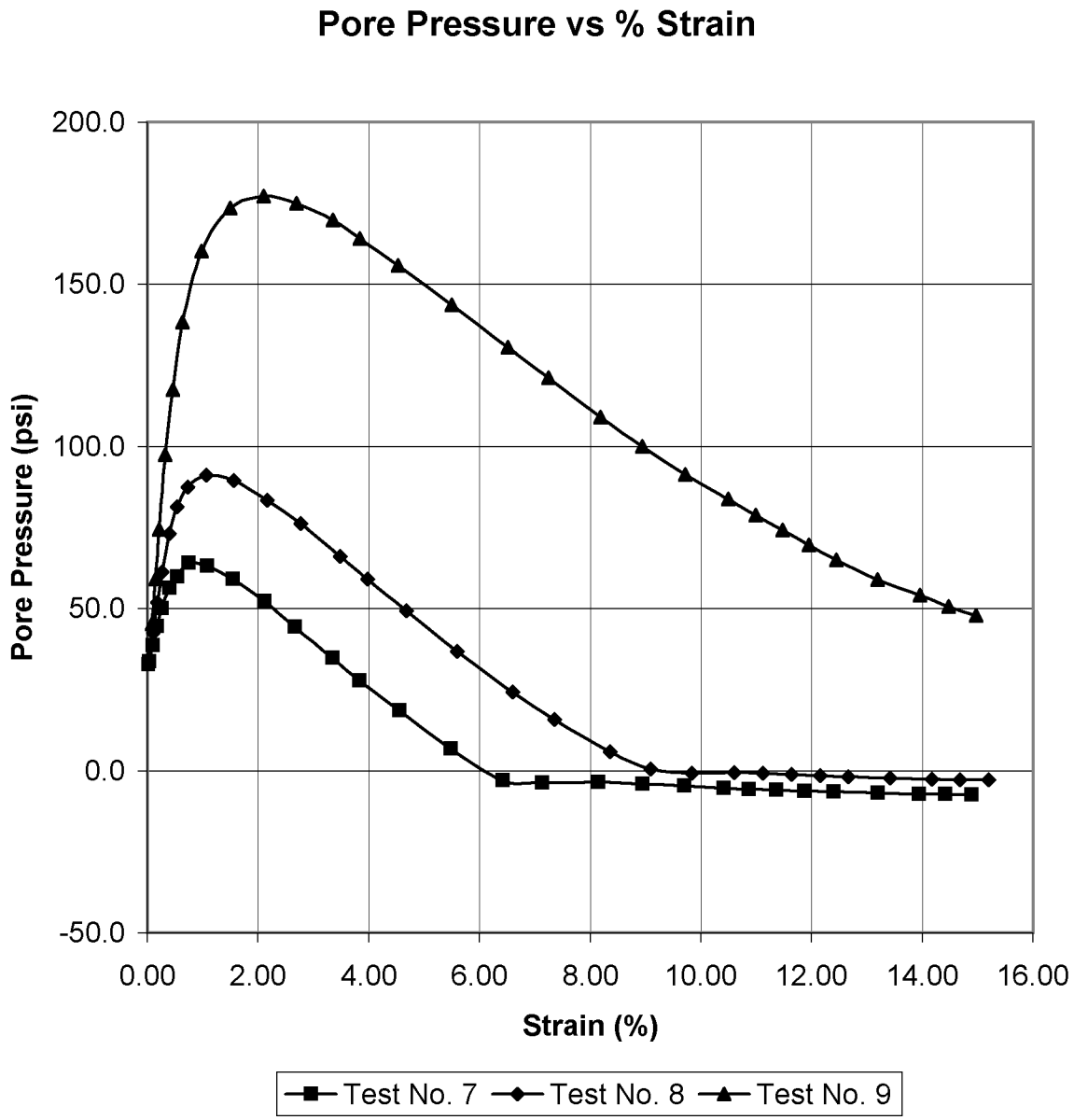
Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	355.9-358.6
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	357.5-358.0
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	123.1	*Stage No.*	1
		Test No	8

INITIAL DIMENSIONS

Initial Sample Length (in)	5.91
Initial Sample Diameter (in)	2.89
Initial Sample Area (in^2)	6.54
Initial Sample Volume (in^3)	38.62

VOLUME CHANGE

Volume After Consolidation (in^3)	36.16
Length After Consolidation (in)	5.80
Area After Consolidation (in^2)	6.230

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	6.12	1.45	127.77	121.7	1.050	0.24	124.71	3.06
0.03	11.35	2.94	131.51	120.2	1.094	0.26	125.83	5.67
0.11	33.08	10.86	145.32	112.2	1.295	0.33	128.78	16.54
0.18	54.05	20.32	156.83	102.8	1.526	0.38	129.81	27.03
0.27	71.51	29.61	165.00	93.5	1.765	0.41	129.24	35.75
0.40	91.36	41.46	172.99	81.6	2.119	0.45	127.32	45.68
0.54	104.79	49.69	178.20	73.4	2.427	0.47	125.81	52.39
0.73	117.12	55.93	184.29	67.2	2.743	0.48	125.73	58.56
1.07	133.03	59.49	196.63	63.6	3.091	0.45	130.12	66.51
1.56	153.85	57.78	219.17	65.3	3.355	0.38	142.24	76.93
2.16	179.00	51.83	250.28	71.3	3.511	0.29	160.78	89.50
2.77	204.12	44.57	282.65	78.5	3.599	0.22	180.59	102.06
3.49	233.29	34.45	321.94	88.6	3.632	0.15	205.29	116.64
3.98	253.60	27.51	349.19	95.6	3.653	0.11	222.39	126.80
4.68	279.59	17.76	384.92	105.3	3.654	0.06	245.13	139.79
5.60	313.16	5.09	431.17	118.0	3.654	0.02	274.59	156.58
6.60	345.07	-7.35	475.52	130.5	3.645	-0.02	302.99	172.53
7.36	366.85	-15.91	505.86	139.0	3.639	-0.04	322.44	183.43
8.36	391.41	-25.70	540.21	148.8	3.630	-0.07	344.51	195.70
9.10	406.48	-31.14	560.72	154.2	3.635	-0.08	357.48	203.24
9.84	411.24	-32.38	566.73	155.5	3.645	-0.08	361.11	205.62
10.61	413.03	-32.24	568.37	155.3	3.659	-0.08	361.86	206.52
11.12	412.63	-32.46	568.19	155.6	3.653	-0.08	361.87	206.31
11.64	410.16	-32.83	566.09	155.9	3.630	-0.08	361.01	205.08
12.16	410.51	-33.16	566.77	156.3	3.627	-0.08	361.52	205.25
12.67	410.32	-33.52	566.94	156.6	3.620	-0.08	361.78	205.16
13.42	406.53	-33.92	563.55	157.0	3.589	-0.08	360.29	203.26
14.18	405.77	-34.24	563.12	157.3	3.579	-0.08	360.23	202.89
14.69	401.47	-34.42	558.99	157.5	3.549	-0.09	358.25	200.74
15.20	398.54	-34.52	556.16	157.6	3.528	-0.09	356.89	199.27

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-6-1b
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	357.5-358.0
Project No.	2013-465-001	Sample No.	ST-66
Lab ID #	2013-465-001-037	Test No.	8

Equipment	Equipment ID#	Calibration Due Date
Oven	G256	10/12/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G323	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G150	2/22/14
Timing Device	G489	5/13/14
Oven	G1387	8/16/14
Flow Pump	G1509-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	357.0-357.5
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	9

PRESSURES (psi)

Cell Pressure (psi)	273.6
Back Pressure (psi)	31.9
Eff. Conf. Pressure (psi)	241.7
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	295.41
Q	=	165.45

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.949	Diameter 1:	2.882
Length 2:	5.943	Diameter 2:	2.881
Length 3:	5.957	Diameter 3:	2.883
Avg. Length:	5.950	*Avg. Diam.:*	2.882

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	21.8
Final Change (ml)	26.2

Initial Dial Reading (mil)	64
Dial Reading After Saturation (mil)	75
Dial Reading After Consolidation (mil)	224

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
48.3	0.000	31.9
74.8	0.001	33.0
117.0	0.002	34.8
317.1	0.005	45.2
493.6	0.009	59.1
644.7	0.013	74.3
830.5	0.019	97.3
966.2	0.027	117.5
1085.6	0.037	138.2
1196.7	0.057	160.2
1292.4	0.087	173.5
1413.4	0.122	177.2
1557.7	0.156	175.0
1730.3	0.194	169.8
1853.6	0.223	164.1
2051.2	0.263	155.9
2286.1	0.319	143.6
2526.8	0.377	130.5
2695.2	0.420	121.2
2953.8	0.474	109.0
3093.1	0.518	100.0
3240.1	0.563	91.3
3370.1	0.608	83.7
3465.8	0.636	78.8
3538.7	0.664	74.1
3621.3	0.692	69.6
3699.5	0.721	65.0
3801.9	0.764	58.9
3899.3	0.808	54.0
3968.2	0.838	50.7
4026.7	0.867	47.8

Tested By: JCM Date: 10/21/13 Input Checked By: KC Date: 11/21/13

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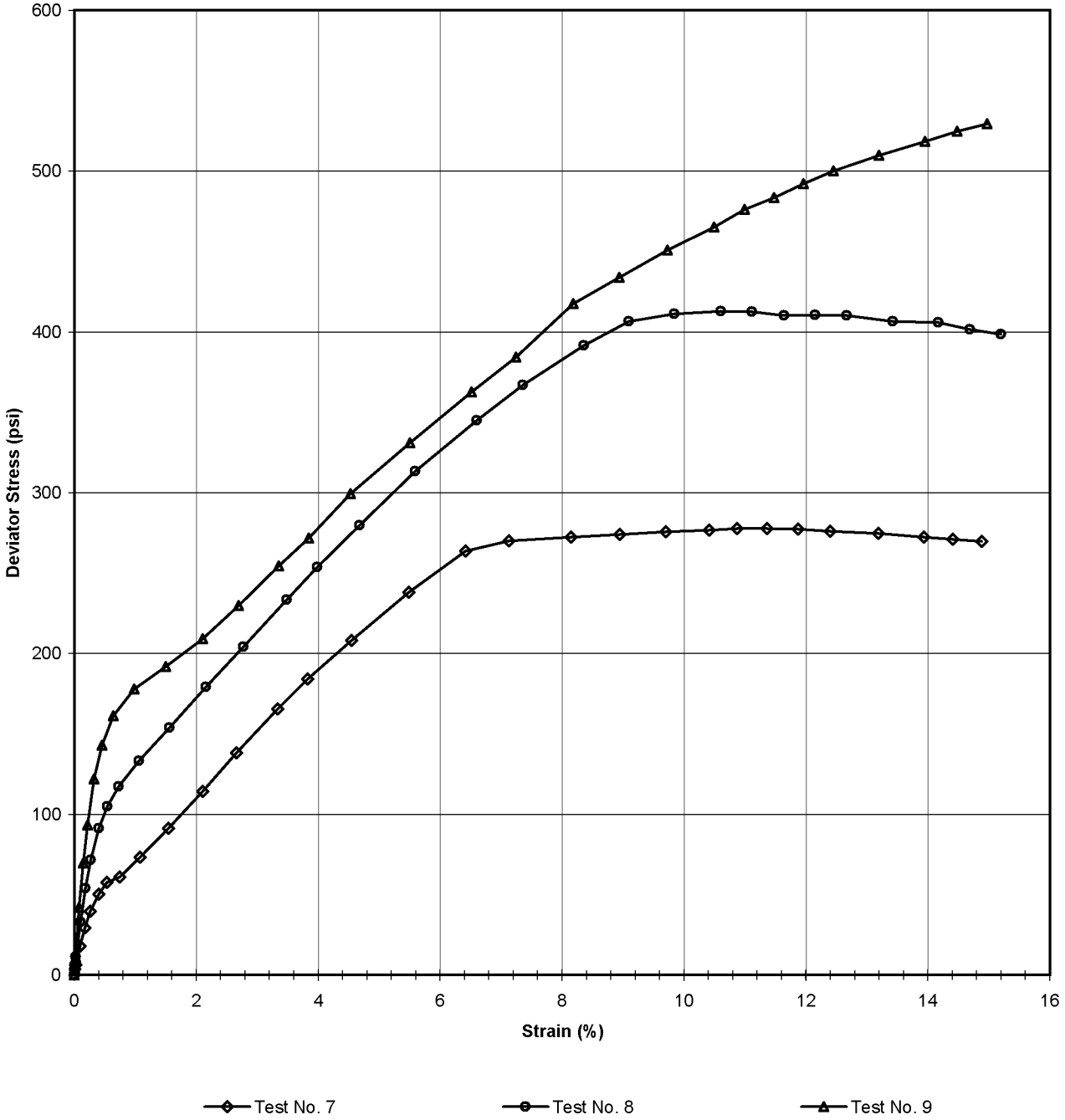
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	355.9-358.6
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 7 6234.777 E50 Test No. 8 11394.87 E50 Test No. 9 22811.78

Tested By: JCM Date: 10/21/13 Approved By: DB Date: 11/21/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	357.0-357.5
Project No.:	2013-465-001	Sample No.:	ST-66
Lab ID:	2013-465-001-037		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	241.7	*Stage No.*	1
		Test No	9

INITIAL DIMENSIONS

Initial Sample Length (in)	5.95
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.52
Initial Sample Volume (in^3)	38.81

VOLUME CHANGE

Volume After Consolidation (in^3)	37.00
Length After Consolidation (in)	5.79
Area After Consolidation (in^2)	6.390

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	4.15	1.09	244.76	240.6	1.017	0.26	242.69	2.08
0.03	10.74	2.88	249.56	238.8	1.045	0.27	244.19	5.37
0.08	42.03	13.31	270.42	228.4	1.184	0.32	249.41	21.01
0.15	69.58	27.17	284.12	214.5	1.324	0.39	249.32	34.79
0.22	93.13	42.43	292.40	199.3	1.467	0.46	245.84	46.56
0.33	122.01	65.43	298.28	176.3	1.692	0.54	237.28	61.00
0.46	142.98	85.57	299.11	156.1	1.916	0.60	227.62	71.49
0.64	161.29	106.31	296.67	135.4	2.191	0.66	216.03	80.64
0.99	177.94	128.31	291.33	113.4	2.569	0.72	202.36	88.97
1.50	191.76	141.57	291.89	100.1	2.915	0.74	196.01	95.88
2.11	209.12	145.34	305.47	96.4	3.170	0.70	200.91	104.56
2.69	229.83	143.13	328.40	98.6	3.332	0.62	213.49	114.92
3.36	254.37	137.87	358.20	103.8	3.450	0.54	231.01	127.18
3.84	271.64	132.23	381.10	109.5	3.481	0.49	245.29	135.82
4.53	299.21	123.95	416.96	117.7	3.541	0.41	267.35	149.61
5.50	330.91	111.75	460.86	130.0	3.546	0.34	295.41	165.45
6.51	362.59	98.65	505.64	143.1	3.535	0.27	324.35	181.30
7.25	384.18	89.26	536.62	152.4	3.520	0.23	344.53	192.09
8.18	417.46	77.12	582.03	164.6	3.537	0.18	373.31	208.73
8.94	433.87	68.09	607.48	173.6	3.499	0.16	390.54	216.94
9.73	450.89	59.41	633.18	182.3	3.473	0.13	407.74	225.44
10.50	465.26	51.84	655.11	189.9	3.451	0.11	422.49	232.63
10.99	476.01	46.90	670.82	194.8	3.444	0.10	432.81	238.01
11.48	483.50	42.23	682.98	199.5	3.424	0.09	441.22	241.75
11.96	492.26	37.67	696.29	204.0	3.413	0.08	450.16	246.13
12.45	500.23	33.08	708.86	208.6	3.398	0.07	458.74	250.12
13.20	509.84	27.05	724.49	214.7	3.375	0.05	469.57	254.92
13.96	518.51	22.12	738.09	219.6	3.361	0.04	478.84	259.26
14.48	524.60	18.75	747.55	222.9	3.353	0.04	485.25	262.30
14.97	529.34	15.86	755.18	225.8	3.344	0.03	490.51	264.67

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WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-6-1b
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	357.0-357.5
Project No.	2013-465-001	Sample No.	ST-66
Lab ID #	2013-465-001-037	Test No.	9

Equipment	Equipment ID#	Calibration Due Date
Oven	G256	10/12/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G334	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G721	2/22/14
Timing Device	G489	5/13/14
Oven	G1387	8/16/14
Flow Pump	G1511-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-037	Specific Gravity (measured)	2.62

Visual Description: Greenish Gray Silty Sand (Undisturbed)

SAMPLE CONDITION SUMMARY

Boring No.:	R-6-1b	R-6-1b	R-6-1b
Depth (ft):	358.0-358.5	357.5-358.0	357.0-357.5
Sample No.:	ST-66	ST-66	ST-66
Test No.	T7	T8	T9
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	31.3	31.6	31.9
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	26.3	26.3	26.3
Total Unit Weight (pcf)	121.5	121.3	119.4
Dry Unit Weight (pcf)	96.1	96.0	94.5
Moisture Content (%) (FINAL)	26.9	25.9	26.5
Initial State Void Ratio,e	0.701	0.704	0.730
Void Ratio at Shear, e	0.663	0.596	0.650

Tested By: JCM Date: 10/21/13 Input Checked By: KC Date: 11/21/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

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MOISTURE CONTENT

	T7	T8	T9
Tare Number	1122	1122	1122
Weight of Tare & Wet Sample (g)	163.46	163.46	163.46
Weight of Tare & Dry Sample (g)	146.93	146.93	146.93
Weight of Tare (g)	84.17	84.17	84.17
Moisture Content (%) (INITIAL)	26.34	26.34	26.34
Tare Number	1438	1444	46
Weight of Tare & Wet Sample (g)	1371.7	1338.89	793.61
Weight of Tare & Dry Sample (g)	1111.4	1093.48	670.36
Weight of Tare (g)	144.62	145.83	204.89
Moisture Content (%) (FINAL)	26.92	25.90	26.48

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1665.81	1646.82	1637.49
Weight of Tube (g)	422.56	417.51	420.9
Weight of Wet Sample (g)	1243.25	1229.31	1216.59
Length 1 (in)	5.983	5.9	5.949
Length 2 (in)	5.984	5.91	5.943
Length 3 (in)	5.983	5.909	5.957
Top Diameter (in)	2.888	2.888	2.882
Middle Diameter (in)	2.878	2.887	2.881
Bottom Diameter (in)	2.876	2.881	2.883
Average Length (in)	5.983333	5.906333	5.949667
Average Area (in)	6.517	6.539	6.523
Sample Volume (cm^3)	639.03	632.85	636.02
Unit Wet Weight (g/cm^3)	1.95	1.94	1.91
Unit Wet Weight (pcf)	121.46	121.27	119.42
Unit Dry Weight (pcf)	96.14	95.99	94.52
Unit Dry Weight (g/cm^3)	1.54	1.54	1.51
Initial Burette Reading	**24**	**48**	**48**
Final Burette Reading	**13.7**	**30.9**	**21.8**
Initial Dial Reading	**33**	**48**	**64**
Dial Reading After Saturation	**46**	**120**	**75**
Dial Reading After Consolidation	**53**	**150**	**224**
Volume Change during Consolidation	10.3	17.1	26.2
Volume Change during Saturation	4.17	23.14	3.53
Volume at Shear (cm^3) *These	624.56	592.61	606.29
Volume of Solids (cm^3) measurements	375.60	371.39	367.54
Volume of Voids (cm^3) are all	248.97	221.22	238.75
Volume of Water (cm^3) at	264.95	251.98	254.98
Void Ratio, e shear	0.663	0.596	0.650

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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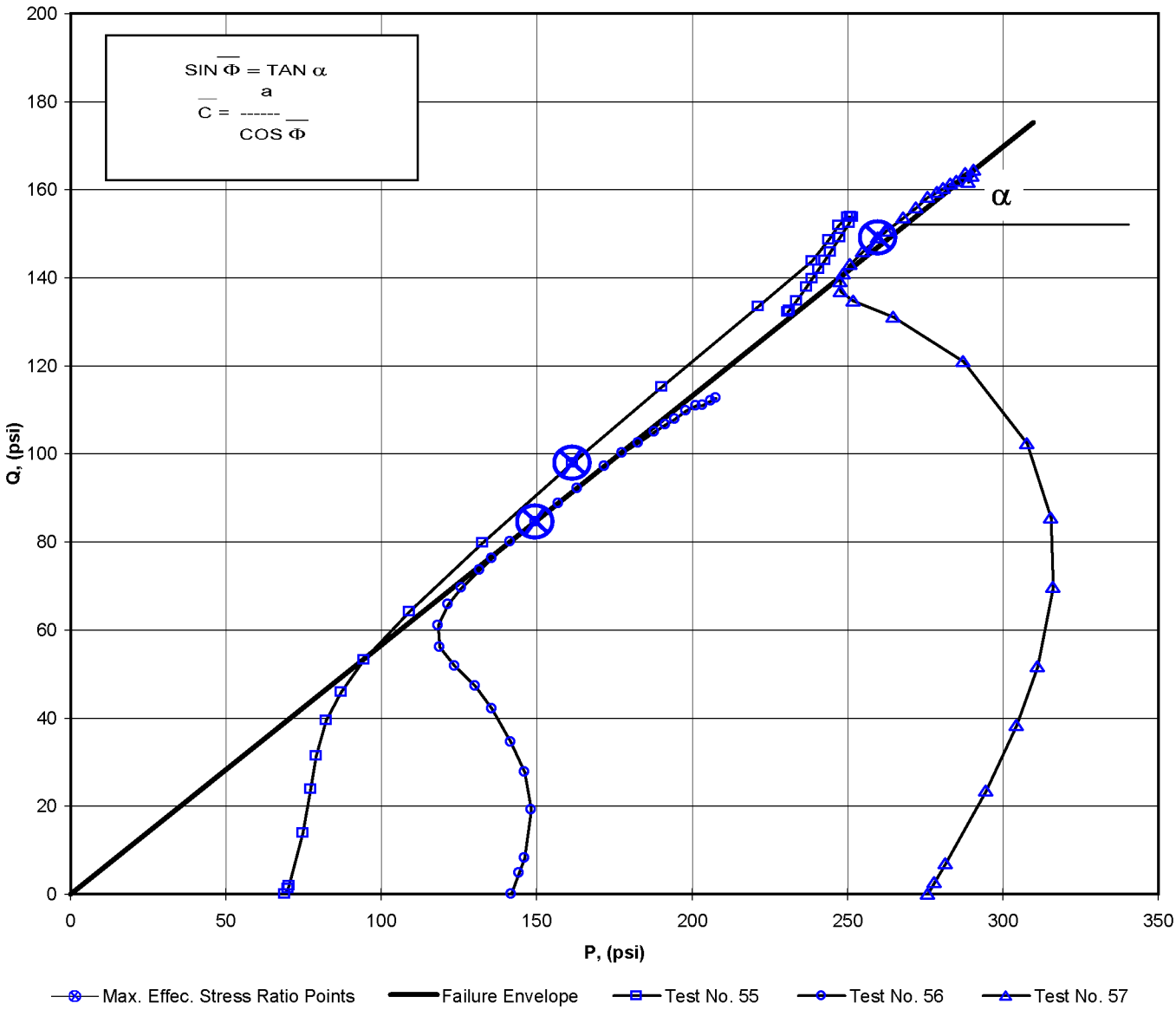
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	401.0-404.6
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	0.00	$\overline{C}$	=	0.00
α	=	29.5	$\overline{\Phi}$	=	34.46

Tested By: JCM Date: 11/26/13 Approved By: DB Date: 12/5/13

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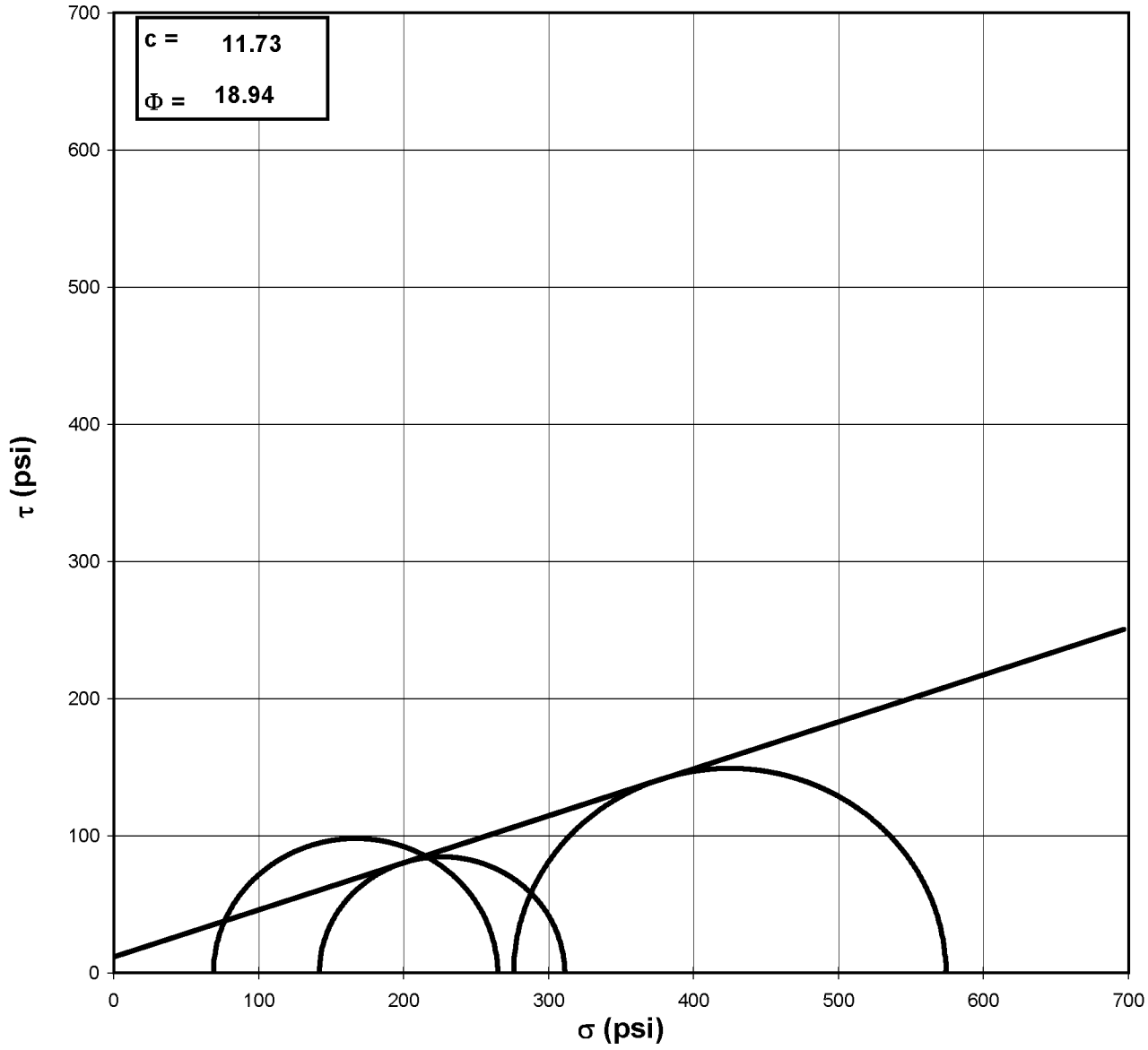
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	401.0-404.6
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 11/26/13 *Approved By:* DB *Date:* 12/5/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	403.5-404.0
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	55

PRESSURES (psi)

Cell Pressure (psi)	90.5
Back Pressure (psi)	21.6
Eff. Conf. Pressure (psi)	68.9
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	161.53
Q	=	97.95

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.947	Diameter 1:	2.880
Length 2:	5.948	Diameter 2:	2.892
Length 3:	5.933	Diameter 3:	2.882
Avg. Length:	5.943	*Avg. Diam.:*	2.885

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	36.0
Final Change (ml)	12.0

Initial Dial Reading (mil)	64
Dial Reading After Saturation (mil)	67
Dial Reading After Consolidation (mil)	81

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
17.2	0.000	21.6
33.7	0.001	21.9
42.2	0.003	22.2
194.7	0.006	29.5
323.9	0.010	37.1
420.6	0.015	42.8
525.1	0.023	47.6
609.4	0.031	49.4
704.4	0.043	49.2
850.5	0.063	45.7
1058.3	0.092	37.8
1302.2	0.125	26.9
1536.9	0.158	15.5
1789.8	0.197	2.7
1936.6	0.226	-4.4
2015.4	0.268	-5.0
2080.0	0.324	-4.9
2128.2	0.384	-5.9
2147.3	0.428	-6.6
2168.7	0.487	-7.3
2167.6	0.533	-7.8
2138.7	0.578	-8.0
2109.9	0.622	-8.2
2093.9	0.653	-8.3
2076.8	0.683	-8.4
2057.2	0.713	-8.4
2042.6	0.744	-8.4
2013.6	0.790	-8.3
1999.5	0.836	-8.2
2005.8	0.866	-8.1
2013.9	0.895	-8.0

Tested By: JCM Date: 11/26/13 Input Checked By: KC Date: 12/5/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	403.5-404.0
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	68.9	*Stage No.*	1
		Test No	55

INITIAL DIMENSIONS

Initial Sample Length (in)	5.94
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.54
Initial Sample Volume (in^3)	38.84

VOLUME CHANGE

Volume After Consolidation (in^3)	38.05
Length After Consolidation (in)	5.93
Area After Consolidation (in^2)	6.421

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.58	0.26	71.21	68.6	1.038	0.10	69.92	1.29
0.04	3.89	0.57	72.22	68.3	1.057	0.15	70.27	1.95
0.10	27.62	7.93	88.59	61.0	1.453	0.29	74.78	13.81
0.17	47.68	15.46	101.12	53.4	1.892	0.32	77.28	23.84
0.25	62.66	21.15	110.41	47.7	2.312	0.34	79.08	31.33
0.39	78.79	25.96	121.73	42.9	2.835	0.33	82.33	39.40
0.53	91.75	27.75	132.90	41.1	3.230	0.30	87.02	45.87
0.72	106.25	27.65	147.51	41.3	3.576	0.26	94.38	53.13
1.06	128.39	24.13	173.17	44.8	3.868	0.19	108.97	64.20
1.55	159.64	16.20	212.35	52.7	4.029	0.10	132.53	79.82
2.11	195.90	5.32	259.48	63.6	4.081	0.03	161.53	97.95
2.66	230.38	-6.15	305.42	75.0	4.070	-0.03	190.23	115.19
3.32	266.90	-18.92	354.72	87.8	4.039	-0.07	221.27	133.45
3.82	287.52	-26.02	382.44	94.9	4.029	-0.09	238.68	143.76
4.52	297.12	-26.60	392.62	95.5	4.111	-0.09	244.06	148.56
5.47	303.69	-26.54	399.13	95.4	4.182	-0.09	247.28	151.85
6.48	307.47	-27.47	403.84	96.4	4.191	-0.09	250.10	153.73
7.22	307.82	-28.19	404.90	97.1	4.171	-0.09	251.00	153.91
8.22	307.54	-28.93	405.37	97.8	4.144	-0.09	251.60	153.77
8.99	304.81	-29.36	403.07	98.3	4.102	-0.10	250.66	152.41
9.76	298.17	-29.64	396.71	98.5	4.026	-0.10	247.63	149.08
10.50	291.69	-29.84	390.43	98.7	3.954	-0.10	244.58	145.84
11.01	287.81	-29.94	386.65	98.8	3.912	-0.10	242.74	143.90
11.52	283.80	-29.98	382.68	98.9	3.870	-0.11	240.78	141.90
12.03	279.50	-30.02	378.42	98.9	3.826	-0.11	238.67	139.75
12.55	275.86	-29.99	374.75	98.9	3.790	-0.11	236.82	137.93
13.33	269.49	-29.92	368.30	98.8	3.727	-0.11	233.56	134.74
14.10	265.19	-29.80	363.89	98.7	3.687	-0.11	231.29	132.59
14.61	264.47	-29.73	363.09	98.6	3.681	-0.11	230.86	132.23
15.10	264.02	-29.65	362.57	98.5	3.679	-0.11	230.56	132.01

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-6-1b
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	403.5-404.0
Project No.	2013-465-001	Sample No.	ST-82
Lab ID #	2013-465-001-040	Test No.	55

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G334	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G546	2/13/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	404.0-404.5
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	56

PRESSURES (psi)

Cell Pressure (psi)	163.4
Back Pressure (psi)	21.5
Eff. Conf. Pressure (psi)	141.9
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	149.53
Q	=	84.61

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.929	Diameter 1:	2.872
Length 2:	5.904	Diameter 2:	2.881
Length 3:	5.928	Diameter 3:	2.886
Avg. Length	5.920	*Avg. Diam.:*	2.880

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	23.5
Final Change (ml)	24.5

Initial Dial Reading (mil)	31
Dial Reading After Saturation (mil)	37
Dial Reading After Consolidation (mil)	84

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
33.8	0.000	21.5
93.9	0.001	23.7
137.0	0.002	25.4
276.0	0.005	34.3
384.2	0.010	45.1
469.0	0.014	56.2
565.7	0.022	69.8
632.1	0.030	80.4
690.7	0.042	91.4
747.8	0.062	100.6
814.3	0.091	106.1
879.7	0.125	107.5
934.5	0.160	107.1
993.4	0.201	105.3
1033.2	0.231	104.0
1090.1	0.273	101.8
1162.4	0.328	98.5
1230.4	0.386	95.1
1286.5	0.430	92.4
1368.3	0.489	88.7
1421.9	0.534	86.0
1465.4	0.577	83.1
1511.8	0.620	80.5
1543.4	0.650	78.5
1569.9	0.680	76.7
1605.9	0.710	74.9
1632.5	0.740	73.1
1647.4	0.783	71.0
1676.3	0.828	69.2
1696.2	0.857	68.3
1715.7	0.886	67.5

Tested By: JCM Date: 11/26/13 Input Checked By: KC Date: 12/5/13

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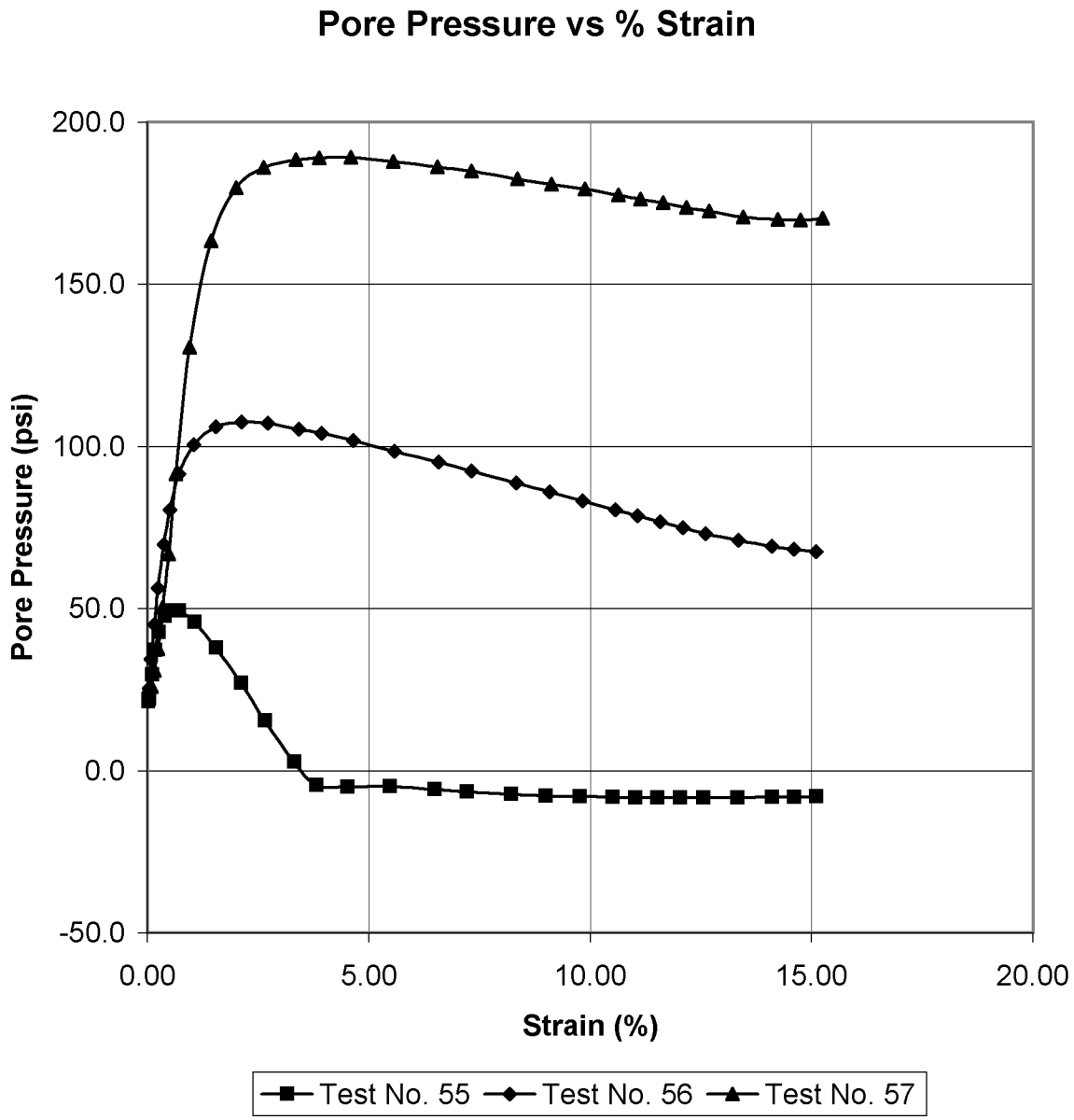
Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	401.0-404.6
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	404.0-404.5
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	141.9	*Stage No.*	1
		Test No	56

INITIAL DIMENSIONS

Initial Sample Length (in)	5.92
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	38.56

VOLUME CHANGE

Volume After Consolidation (in^3)	36.95
Length After Consolidation (in)	5.87
Area After Consolidation (in^2)	6.297

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	9.55	2.21	149.24	139.7	1.068	0.23	144.47	4.78
0.03	16.38	3.93	154.35	138.0	1.119	0.24	146.16	8.19
0.08	38.43	12.80	167.53	129.1	1.298	0.33	148.32	19.22
0.16	55.55	23.57	173.88	118.3	1.469	0.42	146.11	27.78
0.25	68.94	34.72	176.12	107.2	1.643	0.50	141.65	34.47
0.38	84.14	48.34	177.70	93.6	1.899	0.57	135.63	42.07
0.52	94.52	58.87	177.56	83.0	2.138	0.62	130.29	47.26
0.71	103.58	69.92	175.57	72.0	2.439	0.67	123.77	51.79
1.06	112.20	79.10	175.00	62.8	2.786	0.70	118.90	56.10
1.55	122.03	84.58	179.35	57.3	3.129	0.69	118.34	61.01
2.14	131.46	86.01	187.36	55.9	3.352	0.65	121.63	65.73
2.72	139.14	85.57	195.46	56.3	3.470	0.62	125.90	69.57
3.42	147.18	83.82	205.26	58.1	3.534	0.57	131.67	73.59
3.93	152.46	82.46	211.90	59.4	3.565	0.54	135.67	76.23
4.65	159.95	80.29	221.56	61.6	3.596	0.50	141.58	79.97
5.58	169.23	76.98	234.15	64.9	3.607	0.45	149.53	84.61
6.58	177.54	73.65	245.79	68.3	3.601	0.41	157.02	88.77
7.33	184.36	70.90	255.36	71.0	3.596	0.38	163.18	92.18
8.33	194.27	67.23	268.94	74.7	3.602	0.35	171.80	97.13
9.09	200.39	64.46	277.83	77.4	3.587	0.32	177.64	100.19
9.83	204.99	61.64	285.24	80.3	3.554	0.30	182.75	102.49
10.57	209.90	58.96	292.85	82.9	3.531	0.28	187.89	104.95
11.07	213.19	57.04	298.06	84.9	3.512	0.27	191.46	106.60
11.59	215.68	55.25	302.34	86.7	3.489	0.26	194.50	107.84
12.10	219.45	53.43	307.92	88.5	3.480	0.24	198.20	109.72
12.60	221.89	51.57	312.23	90.3	3.456	0.23	201.28	110.95
13.35	222.03	49.45	314.48	92.4	3.402	0.22	203.46	111.02
14.11	224.05	47.70	318.25	94.2	3.378	0.21	206.23	112.03
14.61	225.43	46.82	320.51	95.1	3.371	0.21	207.80	112.71
15.10	226.77	46.03	322.63	95.9	3.365	0.20	209.25	113.38

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-6-1b
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	404.0-404.5
Project No.	2013-465-001	Sample No.	ST-82
Lab ID #	2013-465-001-040	Test No.	56

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G331	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G1456	8/30/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	G1510-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	403.0-403.5
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	57

PRESSURES (psi)

Cell Pressure (psi)	297.0
Back Pressure (psi)	21.0
Eff. Conf. Pressure (psi)	276.0
Pore Pressure Response (%)	99

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	259.83
Q	=	149.06

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.914	Diameter 1:	2.883
Length 2:	5.915	Diameter 2:	2.888
Length 3:	5.912	Diameter 3:	2.886
Avg. Length:	5.914	*Avg. Diam.:*	2.886

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	31.3
Final Change (ml)	16.7

Initial Dial Reading (mil)	63
Dial Reading After Saturation (mil)	74
Dial Reading After Consolidation (mil)	184

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
63.1	0.000	21.0
97.3	0.001	21.6
152.8	0.002	22.2
366.5	0.005	25.9
559.7	0.009	30.9
732.7	0.014	37.5
967.1	0.021	50.4
1172.4	0.028	66.8
1394.4	0.038	91.5
1642.2	0.056	130.6
1782.9	0.083	163.3
1840.9	0.117	179.8
1879.9	0.152	185.9
1924.7	0.195	188.4
1957.2	0.225	189.0
2001.8	0.267	189.1
2060.6	0.322	187.8
2125.1	0.380	186.2
2163.0	0.424	184.9
2230.3	0.484	182.5
2281.3	0.529	180.8
2332.9	0.573	179.3
2368.4	0.616	177.4
2395.5	0.645	176.3
2423.0	0.675	175.1
2447.1	0.706	173.7
2486.9	0.735	172.6
2519.6	0.780	170.8
2521.4	0.825	169.9
2515.1	0.854	169.8
2496.9	0.884	170.3

Tested By: JCM Date: 11/26/13 Input Checked By: KC Date: 12/5/13

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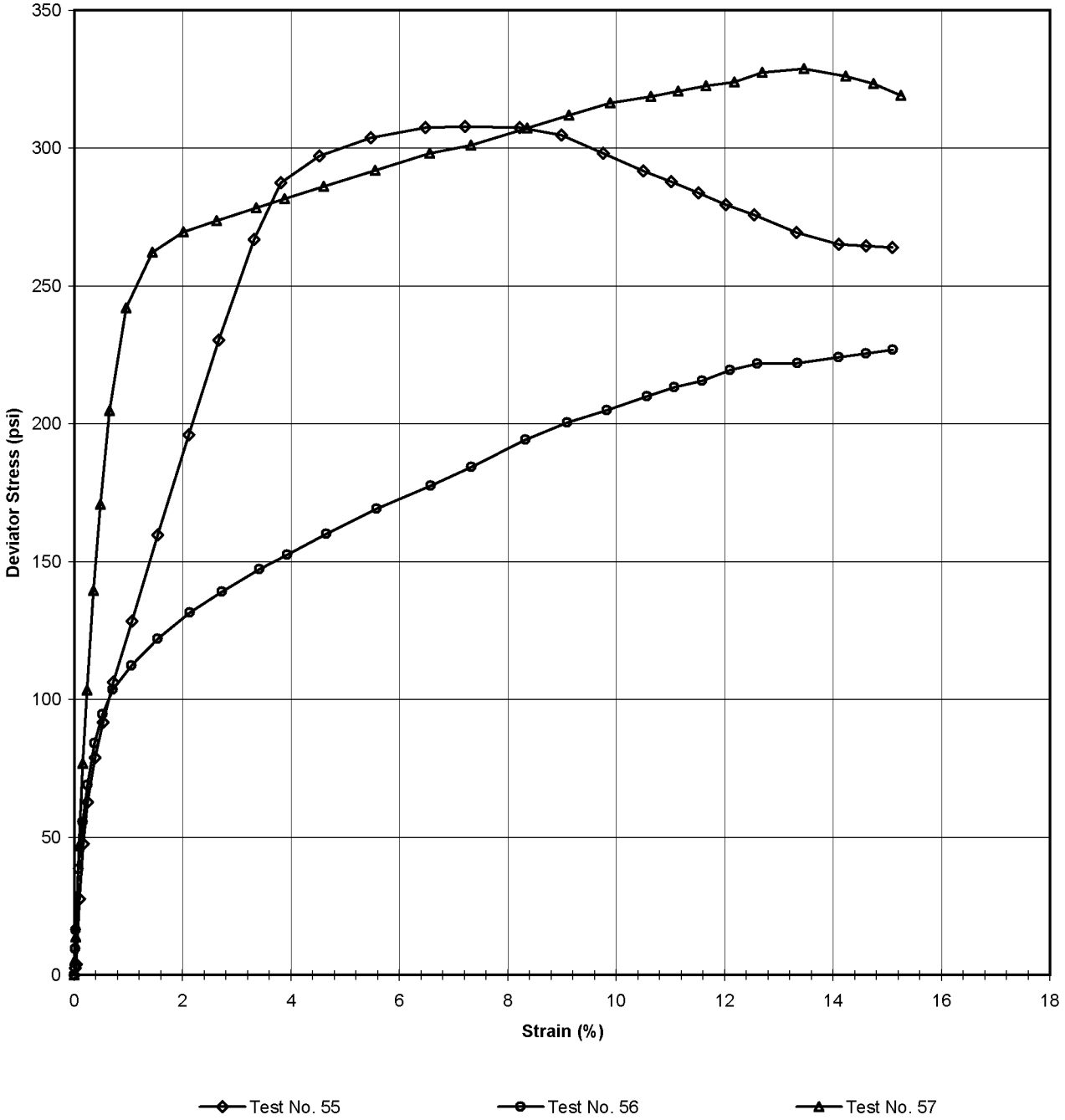
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	401.0-404.6
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 55 16006.4 E50 Test No. 56 22005.41 E50 Test No. 57 37844.07

Tested By: JCM Date: 11/26/13 Approved By: DB Date: 12/5/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-6-1b
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	403.0-403.5
Project No.:	2013-465-001	Sample No.:	ST-82
Lab ID:	2013-465-001-040		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	276.0	*Stage No.*	1
		Test No	57

INITIAL DIMENSIONS

Initial Sample Length (in)	5.91
Initial Sample Diameter (in)	2.89
Initial Sample Area (in^2)	6.54
Initial Sample Volume (in^3)	38.68

VOLUME CHANGE

Volume After Consolidation (in^3)	37.44
Length After Consolidation (in)	5.79
Area After Consolidation (in^2)	6.463

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	5.29	0.56	280.73	275.4	1.019	0.11	278.08	2.65
0.03	13.88	1.24	288.63	274.8	1.051	0.09	281.69	6.94
0.09	46.90	4.85	318.05	271.1	1.173	0.10	294.60	23.45
0.16	76.71	9.89	342.82	266.1	1.288	0.13	304.46	38.35
0.24	103.35	16.48	362.88	259.5	1.398	0.16	311.20	51.68
0.36	139.37	29.38	385.98	246.6	1.565	0.21	316.30	69.68
0.48	170.80	45.78	401.01	230.2	1.742	0.27	315.61	85.40
0.65	204.64	70.46	410.18	205.5	1.996	0.35	307.86	102.32
0.96	241.96	109.59	408.37	166.4	2.454	0.46	287.39	120.98
1.44	262.25	142.25	395.99	133.7	2.961	0.55	264.87	131.12
2.01	269.51	158.81	386.70	117.2	3.300	0.60	251.94	134.76
2.63	273.70	164.92	384.77	111.1	3.464	0.61	247.92	136.85
3.36	278.35	167.39	386.96	108.6	3.563	0.61	247.79	139.17
3.88	281.67	168.03	389.64	108.0	3.609	0.60	248.81	140.84
4.60	286.15	168.08	394.07	107.9	3.651	0.59	251.00	143.07
5.55	291.88	166.85	401.03	109.2	3.674	0.58	255.09	145.94
6.56	298.11	165.22	408.89	110.8	3.691	0.56	259.83	149.06
7.32	301.10	163.94	413.16	112.1	3.687	0.55	262.61	150.55
8.36	307.27	161.51	421.75	114.5	3.684	0.53	268.12	153.63
9.13	311.86	159.82	428.03	116.2	3.684	0.52	272.10	155.93
9.88	316.46	158.34	434.11	117.7	3.690	0.51	275.89	158.23
10.64	318.72	156.45	438.27	119.6	3.666	0.50	278.91	159.36
11.14	320.65	155.32	441.34	120.7	3.657	0.49	281.01	160.33
11.65	322.56	154.06	444.50	121.9	3.645	0.48	283.22	161.28
12.18	323.91	152.72	447.19	123.3	3.627	0.48	285.24	161.96
12.69	327.40	151.55	451.84	124.4	3.631	0.47	288.14	163.70
13.46	328.89	149.78	455.11	126.2	3.606	0.46	290.67	164.45
14.24	326.19	148.89	453.30	127.1	3.566	0.46	290.21	163.10
14.75	323.41	148.80	450.61	127.2	3.543	0.46	288.90	161.71
15.26	319.09	149.26	445.83	126.7	3.518	0.47	286.29	159.55

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-6-1b
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	403.0-403.5
Project No.	2013-465-001	Sample No.	ST-82
Lab ID #	2013-465-001-040	Test No.	57

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G323	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G456	2/13/14
Timing Device	G489	5/13/14
Flow Pump	G1509-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
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Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-040	Specific Gravity (measured)	2.6
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		

SAMPLE CONDITION SUMMARY

Boring No.:	R-6-1b	R-6-1b	R-6-1b
Depth (ft):	403.5-404.0	404.0-404.5	403.0-403.5
Sample No.:	ST-82	ST-82	ST-82
Test No.	T55	T56	T57
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	21.6	21.5	21.0
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	28.2	28.2	28.2
Total Unit Weight (pcf)	121.4	117.8	115.6
Dry Unit Weight (pcf)	94.7	91.9	90.2
Moisture Content (%) (FINAL)	26.5	27.7	29.8
Initial State Void Ratio,e	0.714	0.767	0.800
Void Ratio at Shear, e	0.679	0.693	0.743

Tested By: JCM Date: 11/26/13 Input Checked By: KC Date: 12/5/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

MOISTURE CONTENT

	T55	T56	T57
Tare Number	914	914	914
Weight of Tare & Wet Sample (g)	238.7	238.7	238.7
Weight of Tare & Dry Sample (g)	210.46	210.46	210.46
Weight of Tare (g)	110.32	110.32	110.32
Moisture Content (%) (INITIAL)	28.20	28.20	28.20
Tare Number	2485	685	607
Weight of Tare & Wet Sample (g)	1306.34	1231.05	277.01
Weight of Tare & Dry Sample (g)	1052.63	985.24	232.39
Weight of Tare (g)	95.68	97.36	82.77
Moisture Content (%) (FINAL)	26.51	27.69	29.82

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1657.58	1611.78	1590.6
Weight of Tube (g)	420.09	419.97	417.28
Weight of Wet Sample (g)	1237.49	1191.81	1173.32
Length 1 (in)	5.947	5.929	5.914
Length 2 (in)	5.948	5.904	5.915
Length 3 (in)	5.933	5.928	5.912
Top Diameter (in)	2.88	2.872	2.883
Middle Diameter (in)	2.892	2.881	2.888
Bottom Diameter (in)	2.882	2.886	2.886
Average Length (in)	5.942667	5.920333	5.913667
Average Area (in)	6.536	6.513	6.540
Sample Volume (cm^3)	636.45	631.86	633.78
Unit Wet Weight (g/cm^3)	1.94	1.89	1.85
Unit Wet Weight (pcf)	121.39	117.75	115.58
Unit Dry Weight (pcf)	94.69	91.85	90.15
Unit Dry Weight (g/cm^3)	1.52	1.47	1.44
Initial Burette Reading	**48**	**48**	**48**
Final Burette Reading	**36**	**23.5**	**31.3**
Initial Dial Reading	**64**	**31**	**63**
Dial Reading After Saturation	**67**	**37**	**74**
Dial Reading After Consolidation	**81**	**84**	**184**
Volume Change during Consolidation	12	24.5	16.7
Volume Change during Saturation	0.96	1.92	3.54
Volume at Shear (cm^3) *These	623.49	605.44	613.55
Volume of Solids (cm^3) measurements	371.26	357.56	352.01
Volume of Voids (cm^3) are all	252.22	247.88	261.54
Volume of Water (cm^3) at	255.92	257.37	272.94
Void Ratio, e shear	0.679	0.693	0.743

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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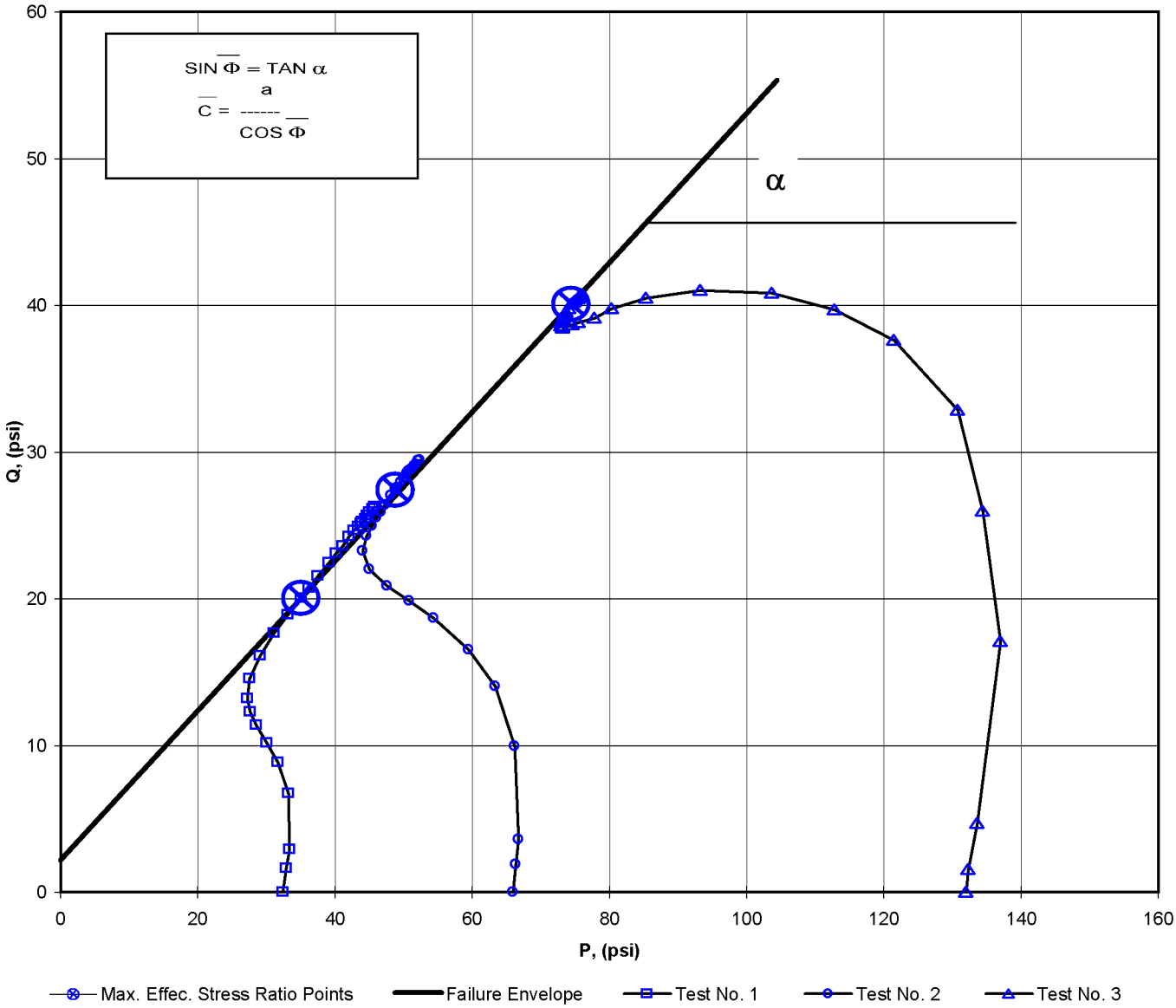
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	190.1-190.6
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		
	Gray Silty Sand (Undisturbed)		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	2.20	$\overline{C}$	=	2.56
α	=	27.0	$\overline{\Phi}$	=	30.60

Tested By: JCM Date: 10/28/13 Approved By: DB Date: 11/20/13

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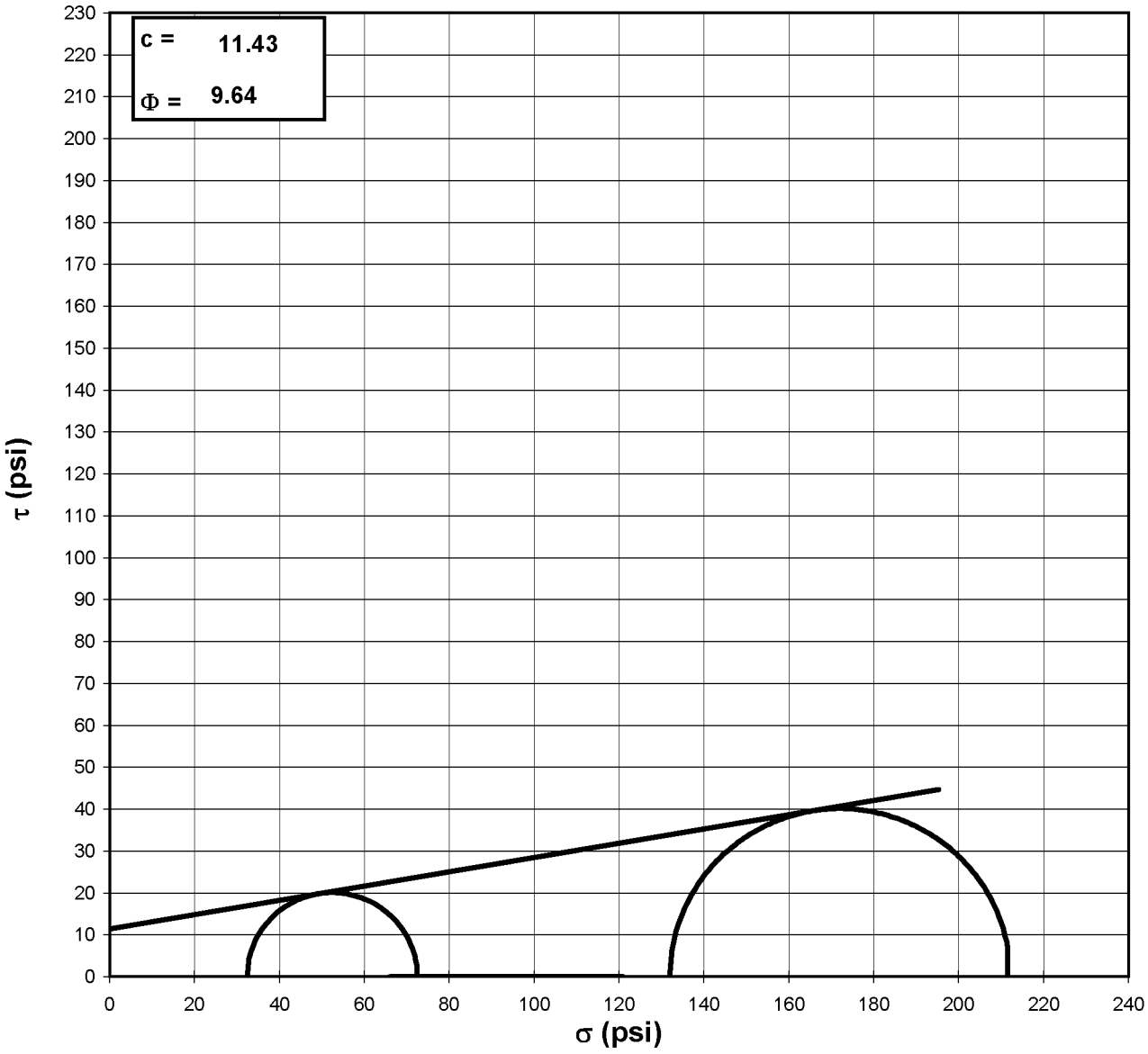
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	190.1-190.6
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		
Visual Description:	Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 10/28/13 *Approved By:* DB *Date:* 11/20/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	190.1-190.6
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		

Visual Description: Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)	64.1
Back Pressure (psi)	31.7
Eff. Conf. Pressure (psi)	32.4
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	35.07
Q	=	20.05

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.923	Diameter 1:	2.872
Length 2:	5.923	Diameter 2:	2.884
Length 3:	5.919	Diameter 3:	2.880
Avg. Length:	5.922	*Avg. Diam.:*	2.879

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	34.1
Final Change (ml)	13.9

Initial Dial Reading (mil)	63
Dial Reading After Saturation (mil)	78
Dial Reading After Consolidation (mil)	112

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
14.6	0.000	31.7
35.3	0.001	32.8
51.6	0.002	33.6
100.2	0.007	37.6
127.6	0.012	41.3
144.5	0.018	44.2
160.3	0.027	46.9
172.1	0.035	48.7
184.1	0.047	50.1
202.1	0.068	51.1
223.2	0.098	51.1
244.5	0.133	50.6
262.6	0.168	49.9
279.4	0.210	49.1
289.8	0.239	48.6
302.6	0.280	48.1
317.9	0.337	47.4
329.8	0.396	47.0
339.3	0.441	46.6
352.0	0.499	46.3
360.5	0.544	46.0
367.3	0.589	45.6
373.7	0.634	45.4
377.3	0.663	45.4
382.2	0.692	45.1
387.4	0.721	45.1
392.7	0.751	45.0
399.6	0.796	44.7
404.7	0.840	44.6
407.6	0.870	44.6
409.8	0.900	44.3

Tested By: JCM Date: 10/28/13 Input Checked By: KC Date: 11/20/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	190.1-190.6
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		

Visual Description: Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	32.4	*Stage No.*	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)	5.92
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	38.54

VOLUME CHANGE

Volume After Consolidation (in^3)	37.40
Length After Consolidation (in)	5.87
Area After Consolidation (in^2)	6.368

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	3.26	1.11	34.55	31.3	1.104	0.34	32.92	1.63
0.03	5.81	1.92	36.28	30.5	1.191	0.33	33.38	2.90
0.11	13.43	5.88	39.95	26.5	1.506	0.44	33.23	6.71
0.21	17.71	9.60	40.52	22.8	1.777	0.54	31.66	8.86
0.31	20.34	12.47	40.26	19.9	2.021	0.61	30.09	10.17
0.46	22.78	15.23	39.95	17.2	2.327	0.67	28.56	11.39
0.60	24.58	17.04	39.94	15.4	2.600	0.69	27.65	12.29
0.80	26.40	18.39	40.42	14.0	2.884	0.70	27.21	13.20
1.16	29.11	19.40	42.11	13.0	3.239	0.67	27.56	14.56
1.66	32.22	19.43	45.19	13.0	3.485	0.60	29.08	16.11
2.26	35.28	18.90	48.78	13.5	3.614	0.54	31.14	17.64
2.87	37.83	18.18	52.05	14.2	3.661	0.48	33.14	18.92
3.57	40.11	17.38	55.13	15.0	3.670	0.43	35.07	20.05
4.07	41.46	16.88	56.98	15.5	3.670	0.41	36.25	20.73
4.77	43.08	16.42	59.05	16.0	3.696	0.38	37.51	21.54
5.74	44.90	15.73	61.57	16.7	3.693	0.35	39.12	22.45
6.75	46.17	15.27	63.30	17.1	3.695	0.33	40.21	23.08
7.51	47.16	14.87	64.70	17.5	3.690	0.32	41.11	23.58
8.50	48.49	14.57	66.32	17.8	3.719	0.30	42.07	24.24
9.26	49.29	14.27	67.42	18.1	3.718	0.29	42.77	24.64
10.03	49.84	13.92	68.32	18.5	3.698	0.28	43.40	24.92
10.79	50.31	13.73	68.97	18.7	3.695	0.27	43.82	25.15
11.29	50.53	13.72	69.21	18.7	3.705	0.27	43.95	25.27
11.78	50.92	13.41	69.91	19.0	3.682	0.26	44.45	25.46
12.28	51.36	13.39	70.37	19.0	3.702	0.26	44.69	25.68
12.79	51.78	13.26	70.91	19.1	3.706	0.26	45.02	25.89
13.55	52.27	13.01	71.66	19.4	3.696	0.25	45.52	26.14
14.31	52.49	12.87	72.02	19.5	3.688	0.25	45.77	26.25
14.82	52.57	12.89	72.08	19.5	3.694	0.25	45.80	26.28
15.33	52.55	12.63	72.32	19.8	3.658	0.24	46.05	26.27

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	190.1-190.6
Project No.	2013-465-001	Sample No.	ST-4
Lab ID #	2013-465-001-003	Test No.	1

Equipment	Equipment ID#	Calibration Due Date
Oven	G256	10/12/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G332	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G836B	1/8/14
Pore Pressure Transducer	G836A	1/8/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G041	2/22/14
Timing Device	G489	5/13/14
Balance	G1395	6/4/14
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	189.6-190.1
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		

Visual Description: Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	2

PRESSURES (psi)

Cell Pressure (psi)	97.6
Back Pressure (psi)	31.6
Eff. Conf. Pressure (psi)	66.0
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	48.85
Q	=	27.42

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.946	Diameter 1:	2.878
Length 2:	5.948	Diameter 2:	2.875
Length 3:	5.944	Diameter 3:	2.875
Avg. Length	5.946	*Avg. Diam.:*	2.876

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	25.8
Final Change (ml)	22.2

Initial Dial Reading (mil)	56
Dial Reading After Saturation (mil)	63
Dial Reading After Consolidation (mil)	132

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
18.7	0.000	31.6
42.4	0.001	33.1
64.3	0.002	34.4
144.4	0.006	41.3
196.3	0.011	48.2
228.4	0.017	54.6
256.0	0.025	61.9
271.4	0.033	66.6
284.6	0.045	70.8
300.4	0.065	74.6
317.5	0.095	76.7
332.7	0.133	77.2
343.8	0.168	77.1
353.6	0.210	77.0
360.5	0.239	76.8
369.2	0.280	76.6
381.3	0.336	76.4
390.9	0.397	76.2
396.0	0.443	76.1
405.0	0.501	75.9
411.9	0.544	75.7
420.1	0.589	75.6
425.9	0.635	75.5
429.1	0.666	75.3
432.0	0.696	75.3
435.6	0.726	75.2
440.2	0.755	75.0
445.5	0.798	74.9
453.0	0.842	74.9
456.4	0.873	74.7
459.5	0.904	74.6

Tested By: JCM Date: 10/28/13 Input Checked By: KC Date: 11/20/13

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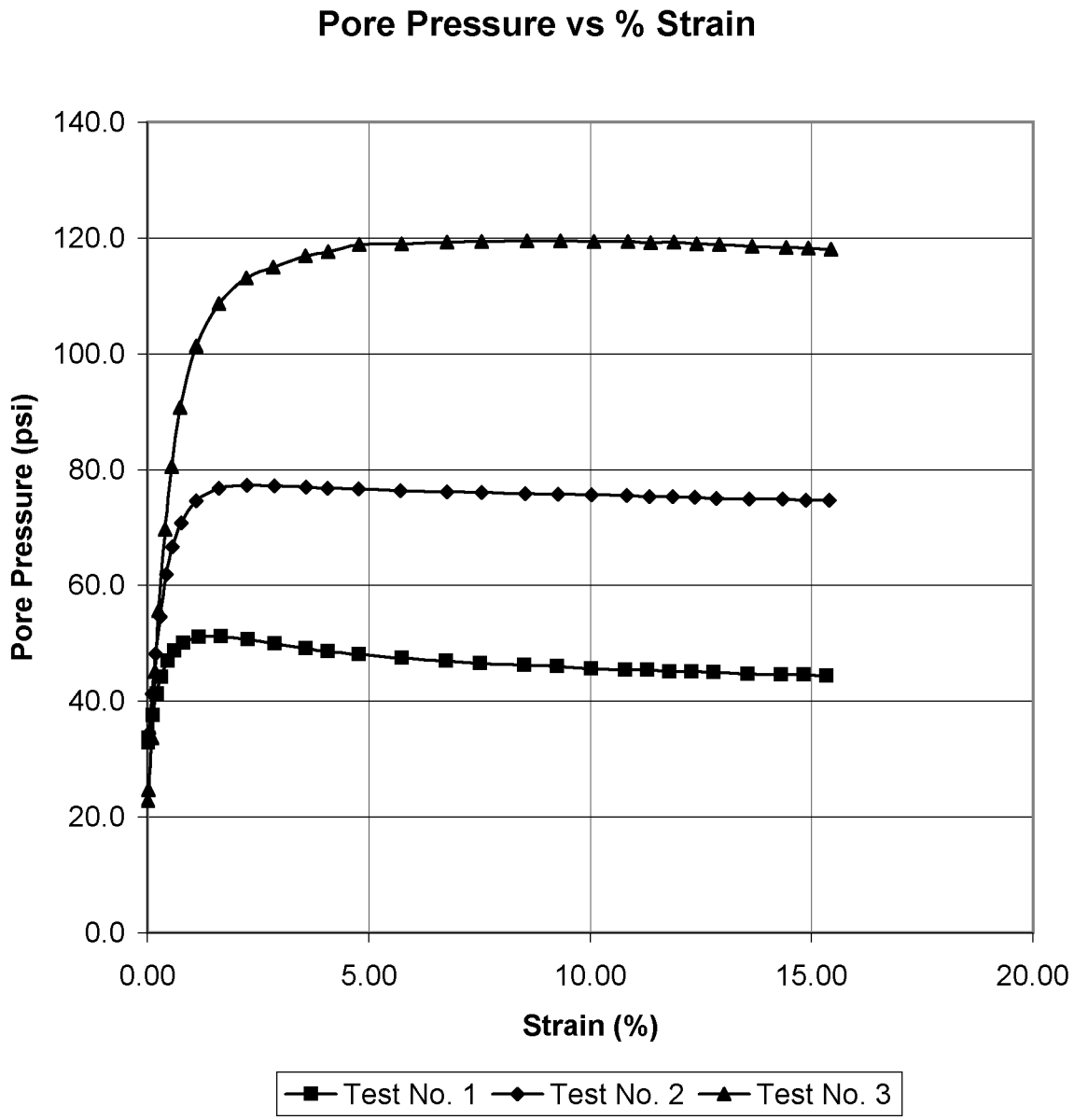
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	190.1-190.6
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	189.6-190.1
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		

Visual Description: Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	66.0	*Stage No.*	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	5.95
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.50
Initial Sample Volume (in^3)	38.63

VOLUME CHANGE

Volume After Consolidation (in^3)	37.14
Length After Consolidation (in)	5.87
Area After Consolidation (in^2)	6.326

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	3.75	1.47	68.28	64.5	1.058	0.39	66.41	1.88
0.04	7.20	2.83	70.38	63.2	1.114	0.39	66.77	3.60
0.10	19.85	9.68	76.17	56.3	1.352	0.49	66.25	9.92
0.19	28.02	16.62	77.40	49.4	1.567	0.59	63.39	14.01
0.29	33.04	23.01	76.04	43.0	1.769	0.70	59.51	16.52
0.43	37.35	30.26	73.09	35.7	2.045	0.81	54.41	18.67
0.56	39.72	35.04	70.68	31.0	2.283	0.88	50.82	19.86
0.77	41.70	39.22	68.48	26.8	2.557	0.94	47.63	20.85
1.10	44.04	43.01	67.04	23.0	2.915	0.98	45.02	22.02
1.62	46.47	45.14	67.34	20.9	3.228	0.97	44.10	23.24
2.26	48.52	45.63	68.88	20.4	3.382	0.94	44.63	24.26
2.87	49.91	45.54	70.37	20.5	3.440	0.91	45.41	24.96
3.58	51.04	45.41	71.63	20.6	3.479	0.89	46.11	25.52
4.08	51.82	45.16	72.65	20.8	3.487	0.87	46.74	25.91
4.78	52.75	45.01	73.74	21.0	3.513	0.85	47.37	26.38
5.72	54.04	44.79	75.24	21.2	3.548	0.83	48.23	27.02
6.77	54.85	44.57	76.28	21.4	3.559	0.81	48.85	27.42
7.55	55.14	44.46	76.68	21.5	3.559	0.81	49.11	27.57
8.54	55.85	44.25	77.60	21.7	3.568	0.79	49.67	27.92
9.28	56.38	44.12	78.26	21.9	3.577	0.78	50.07	28.19
10.04	57.08	44.01	79.07	22.0	3.596	0.77	50.53	28.54
10.82	57.40	43.89	79.51	22.1	3.597	0.76	50.81	28.70
11.35	57.51	43.73	79.77	22.3	3.582	0.76	51.02	28.75
11.86	57.58	43.67	79.91	22.3	3.578	0.76	51.12	28.79
12.36	57.75	43.56	80.19	22.4	3.574	0.75	51.31	28.88
12.85	58.06	43.44	80.61	22.6	3.574	0.75	51.58	29.03
13.59	58.29	43.35	80.95	22.7	3.573	0.74	51.80	29.15
14.35	58.80	43.25	81.55	22.7	3.585	0.74	52.15	29.40
14.88	58.89	43.06	81.84	22.9	3.567	0.73	52.39	29.45
15.40	58.95	43.04	81.91	23.0	3.568	0.73	52.43	29.48

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	189.6-190.1
Project No.	2013-465-001	Sample No.	ST-4
Lab ID #	2013-465-001-003	Test No.	2

Equipment	Equipment ID#	Calibration Due Date
Oven	G256	10/12/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G330	INITIAL ONLY
Load Cell	G1437	1/7/14
Cell Pressure Transducer	G1438	1/7/14
Pore Pressure Transducer	G1439	1/7/14
Extensometer	G1440	1/7/14
Load Frame	G1434	1/7/14
Dial Indicator	G1190	2/22/14
Timing Device	G489	5/13/14
Balance	G1395	6/4/14
Oven	G1387	8/16/14
Balance	G1394	5/15/14
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	188.9-189.4
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		

Visual Description: Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	3

PRESSURES (psi)

Cell Pressure (psi)	153.6
Back Pressure (psi)	21.6
Eff. Conf. Pressure (psi)	132.0
Pore Pressure Response (%)	98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	74.44
Q	=	40.09

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.921	Diameter 1:	2.882
Length 2:	5.903	Diameter 2:	2.878
Length 3:	5.923	Diameter 3:	2.879
Avg. Length:	5.916	*Avg. Diam.:*	2.880

VOLUME CHANGE

Initial Burette Reading (ml)	72.0
Final Burette Reading (ml)	43.8
Final Change (ml)	28.2

Initial Dial Reading (mil)	51
Dial Reading After Saturation (mil)	60
Dial Reading After Consolidation (mil)	142

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
27.4	0.000	21.6
47.0	0.001	22.8
86.6	0.002	24.6
242.7	0.006	33.6
354.5	0.010	45.1
441.7	0.015	55.7
502.5	0.023	69.7
529.7	0.032	80.5
544.9	0.044	90.7
549.3	0.064	101.4
544.8	0.094	108.7
539.3	0.130	113.1
534.1	0.166	114.9
533.6	0.208	116.9
534.6	0.238	117.6
535.2	0.279	118.8
541.5	0.335	118.9
548.4	0.395	119.2
555.6	0.440	119.4
564.2	0.500	119.4
571.3	0.544	119.4
578.2	0.588	119.3
585.2	0.632	119.4
591.8	0.662	119.2
599.7	0.692	119.3
605.3	0.723	118.9
609.7	0.752	118.9
616.5	0.796	118.5
623.4	0.840	118.4
629.7	0.870	118.3
630.3	0.900	118.0

Tested By: JCM Date: 10/28/13 Input Checked By: KC Date: 11/20/13

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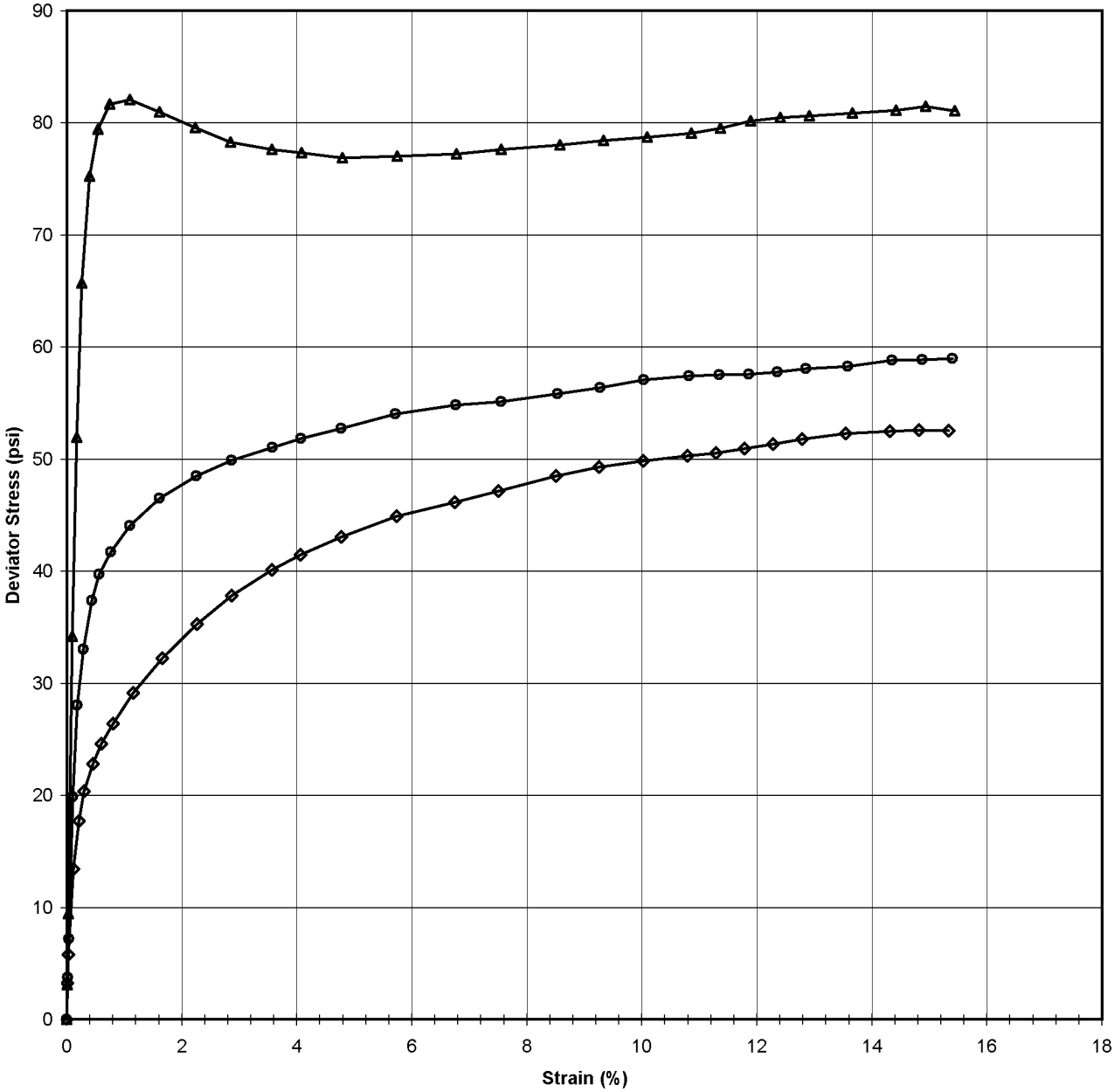
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	188.0-190.7
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		
Visual Description:	Gray Silty Sand (Undisturbed)		



E50 Test No. 1 6777.783 E50 Test No. 2 15034.48 E50 Test No. 3 31812.57

Tested By: JCM Date: 10/28/13 Approved By: DB Date: 11/20/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	188.9-189.4
Project No.:	2013-465-001	Sample No.:	ST-4
Lab ID:	2013-465-001-003		

Visual Description: Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	132.0	*Stage No.*	1
		Test No	3

INITIAL DIMENSIONS

Initial Sample Length (in)	5.92
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	38.53

VOLUME CHANGE

Volume After Consolidation (in^3)	36.63
Length After Consolidation (in)	5.82
Area After Consolidation (in^2)	6.289

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	3.11	1.22	133.89	130.8	1.024	0.40	132.33	1.56
0.03	9.40	3.04	138.37	129.0	1.073	0.33	133.67	4.70
0.10	34.19	12.03	154.17	120.0	1.285	0.36	137.07	17.10
0.17	51.92	23.48	160.44	108.5	1.478	0.46	134.48	25.96
0.26	65.70	34.05	163.65	97.9	1.671	0.53	130.80	32.85
0.40	75.25	48.07	159.18	83.9	1.897	0.65	121.55	37.62
0.55	79.43	58.86	152.56	73.1	2.086	0.76	112.85	39.71
0.75	81.67	69.08	144.59	62.9	2.298	0.86	103.75	40.84
1.10	82.08	79.76	134.31	52.2	2.571	0.99	93.28	41.04
1.62	80.95	87.08	125.87	44.9	2.802	1.10	85.40	40.47
2.23	79.58	91.46	120.11	40.5	2.963	1.17	80.33	39.79
2.85	78.27	93.31	116.97	38.7	3.023	1.22	77.83	39.14
3.57	77.62	95.29	114.33	36.7	3.115	1.25	75.52	38.81
4.09	77.34	96.03	113.31	36.0	3.150	1.27	74.64	38.67
4.79	76.87	97.22	111.65	34.8	3.210	1.29	73.22	38.43
5.75	77.04	97.31	111.73	34.7	3.221	1.29	73.21	38.52
6.77	77.23	97.62	111.61	34.4	3.247	1.29	72.99	38.62
7.55	77.64	97.77	111.86	34.2	3.268	1.29	73.05	38.82
8.58	78.04	97.82	112.22	34.2	3.283	1.28	73.20	39.02
9.34	78.41	97.84	112.57	34.2	3.295	1.27	73.37	39.20
10.09	78.75	97.73	113.02	34.3	3.298	1.27	73.65	39.37
10.86	79.06	97.78	113.28	34.2	3.310	1.26	73.75	39.53
11.37	79.54	97.61	113.93	34.4	3.313	1.25	74.16	39.77
11.89	80.18	97.65	114.53	34.3	3.335	1.24	74.44	40.09
12.40	80.49	97.34	115.14	34.7	3.322	1.23	74.90	40.24
12.92	80.63	97.27	115.37	34.7	3.321	1.23	75.05	40.32
13.67	80.87	96.92	115.95	35.1	3.306	1.22	75.51	40.44
14.42	81.10	96.76	116.34	35.2	3.301	1.22	75.79	40.55
14.93	81.47	96.66	116.81	35.3	3.306	1.21	76.07	40.74
15.44	81.06	96.43	116.63	35.6	3.279	1.21	76.10	40.53

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	188.9-189.4
Project No.	2013-465-001	Sample No.	ST-4
Lab ID #	2013-465-001-003	Test No.	3

Equipment	Equipment ID#	Calibration Due Date
Oven	G1396	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G306	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G720	3/18/14
Timing Device	G489	5/13/14
Flow Pump	G1509-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-003	Specific Gravity (measured)	2.63
Visual Description:	Gray Silty Sand (Undisturbed)		

SAMPLE CONDITION SUMMARY

Boring No.:	R-7-1	R-7-1	R-7-1
Depth (ft):	190.1-190.6	189.6-190.1	188.9-189.4
Sample No.:	ST-4	ST-4	ST-4
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	31.7	31.6	21.6
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	31.5	31.5	31.5
Total Unit Weight (pcf)	117.0	115.3	115.0
Dry Unit Weight (pcf)	89.0	87.7	87.4
Moisture Content (%) (FINAL)	31.8	31.2	29.9
Initial State Void Ratio,e	0.845	0.872	0.878
Void Ratio at Shear, e	0.791	0.800	0.786

Tested By: JCM Date: 10/28/13 Input Checked By: KC Date: 11/20/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

MOISTURE CONTENT

	T1	T2	T3
Tare Number	560	560	560
Weight of Tare & Wet Sample (g)	161.29	161.29	161.29
Weight of Tare & Dry Sample (g)	142.44	142.44	142.44
Weight of Tare (g)	82.61	82.61	82.61
Moisture Content (%) (INITIAL)	31.51	31.51	31.51
Tare Number	528	610	51
Weight of Tare & Wet Sample (g)	1228.49	317.29	1299.84
Weight of Tare & Dry Sample (g)	955.28	261.65	1047.14
Weight of Tare (g)	95.03	83.25	201.25
Moisture Content (%) (FINAL)	31.76	31.19	29.87

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1596.45	1583.7	1580.7
Weight of Tube (g)	412.68	414.3	418.13
Weight of Wet Sample (g)	1183.77	1169.4	1162.57
Length 1 (in)	5.923	5.946	5.921
Length 2 (in)	5.923	5.948	5.903
Length 3 (in)	5.919	5.944	5.923
Top Diameter (in)	2.872	2.878	2.882
Middle Diameter (in)	2.884	2.875	2.878
Bottom Diameter (in)	2.88	2.875	2.879
Average Length (in)	5.921667	5.946	5.915667
Average Area (in)	6.508	6.496	6.513
Sample Volume (cm^3)	631.56	632.99	631.36
Unit Wet Weight (g/cm^3)	1.87	1.85	1.84
Unit Wet Weight (pcf)	117.02	115.34	114.96
Unit Dry Weight (pcf)	88.98	87.70	87.42
Unit Dry Weight (g/cm^3)	1.43	1.41	1.40
Initial Burette Reading	**48**	**48**	**72**
Final Burette Reading	**34.1**	**25.8**	**43.8**
Initial Dial Reading	**63**	**56**	**51**
Dial Reading After Saturation	**78**	**63**	**60**
Dial Reading After Consolidation	**112**	**132**	**142**
Volume Change during Consolidation	13.9	22.2	28.2
Volume Change during Saturation	4.80	2.24	2.88
Volume at Shear (cm^3) *These	612.87	608.55	600.28
Volume of Solids (cm^3) measurements	342.27	338.11	336.14
Volume of Voids (cm^3) are all	270.60	270.44	264.14
Volume of Water (cm^3) at	285.89	277.34	264.10
Void Ratio, e shear	0.791	0.800	0.786

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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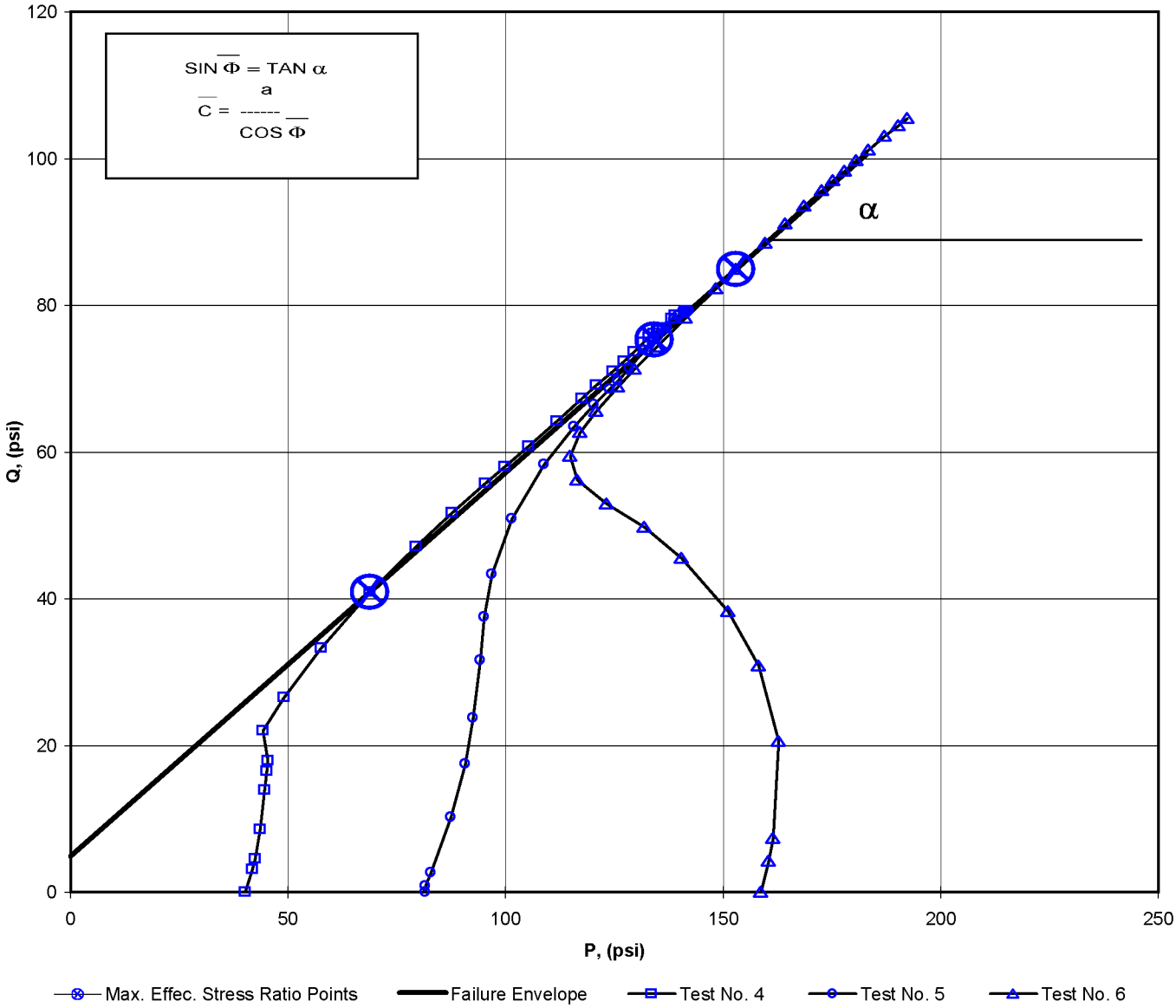
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	232.0-234.7
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	4.93	$\overline{C}$	=	5.78
α	=	27.6	$\overline{\Phi}$	=	31.51

Tested By: JCM Date: 10/29/13 Approved By: DB Date: 11/20/13

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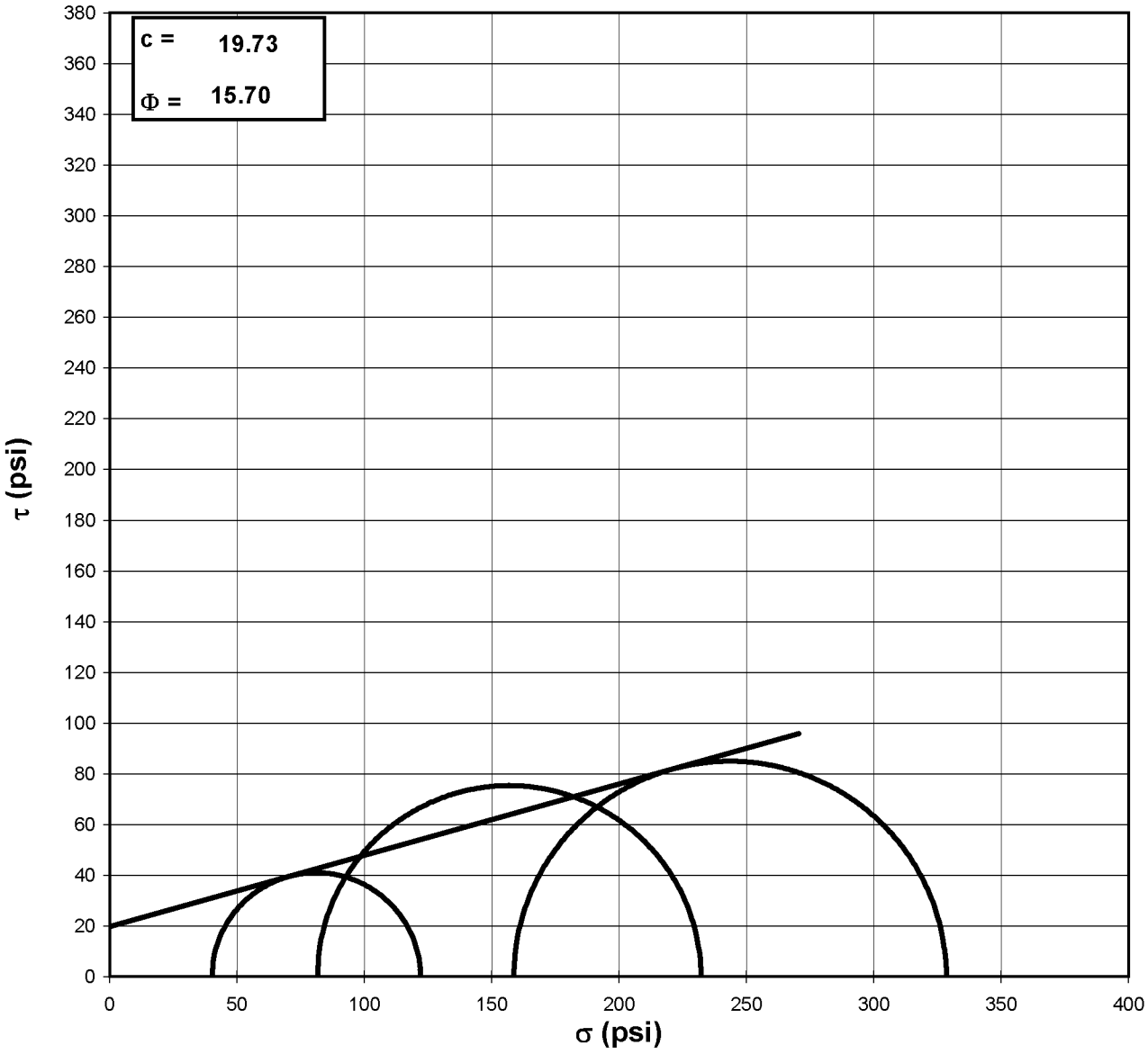
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	232.0-234.7
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 10/29/13 *Approved By:* DB *Date:* 11/20/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	233.6-234.1
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	4

PRESSURES (psi)

Cell Pressure (psi)	62.0
Back Pressure (psi)	21.8
Eff. Conf. Pressure (psi)	40.2
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	68.90
Q	=	40.95

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.887	Diameter 1:	2.881
Length 2:	5.889	Diameter 2:	2.868
Length 3:	5.884	Diameter 3:	2.877
Avg. Length:	5.887	*Avg. Diam.:*	2.875

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	37.3
Final Change (ml)	10.7

Initial Dial Reading (mil)	52
Dial Reading After Saturation (mil)	58
Dial Reading After Consolidation (mil)	82

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
14.3	0.000	21.8
54.0	0.001	23.2
72.2	0.003	24.1
123.8	0.006	26.9
192.8	0.013	31.4
226.0	0.017	33.4
244.5	0.019	34.5
297.5	0.034	39.8
356.7	0.046	39.4
444.4	0.065	37.7
546.5	0.094	34.0
630.3	0.129	29.7
694.6	0.164	26.0
752.9	0.204	22.4
786.5	0.233	20.2
830.3	0.274	17.5
884.1	0.330	14.4
936.4	0.389	11.8
968.8	0.432	10.2
1005.8	0.491	8.4
1033.1	0.534	7.2
1059.4	0.579	6.1
1086.9	0.624	5.2
1103.1	0.654	4.6
1116.8	0.683	4.1
1128.0	0.711	3.6
1135.7	0.740	3.2
1149.8	0.785	2.6
1179.3	0.830	2.0
1193.5	0.859	1.7
1202.9	0.889	1.4

Tested By: JCM Date: 10/29/13 Input Checked By: KC Date: 11/20/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	233.6-234.1
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	40.2	*Stage No.*	1
		Test No	4

INITIAL DIMENSIONS

Initial Sample Length (in)	5.89
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.49
Initial Sample Volume (in^3)	38.22

VOLUME CHANGE

Volume After Consolidation (in^3)	37.45
Length After Consolidation (in)	5.86
Area After Consolidation (in^2)	6.395

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	6.21	1.43	44.98	38.8	1.160	0.23	41.88	3.10
0.05	9.06	2.27	46.98	37.9	1.239	0.25	42.45	4.53
0.11	17.10	5.12	52.18	35.1	1.487	0.30	43.63	8.55
0.22	27.86	9.56	58.50	30.6	1.909	0.34	44.57	13.93
0.28	33.01	11.64	61.57	28.6	2.156	0.35	45.07	16.50
0.33	35.88	12.75	63.34	27.5	2.307	0.36	45.40	17.94
0.57	44.03	18.03	66.19	22.2	2.986	0.41	44.18	22.01
0.78	53.13	17.64	75.69	22.6	3.355	0.33	49.12	26.56
1.11	66.51	15.85	90.86	24.3	3.732	0.24	57.60	33.26
1.60	81.89	12.25	109.84	28.0	3.930	0.15	68.90	40.95
2.20	94.21	7.94	126.47	32.3	3.920	0.08	79.36	47.10
2.80	103.40	4.22	139.39	36.0	3.874	0.04	87.69	51.70
3.48	111.47	0.59	151.08	39.6	3.814	0.01	95.35	55.74
3.98	115.94	-1.63	157.77	41.8	3.771	-0.01	99.80	57.97
4.68	121.62	-4.33	166.16	44.5	3.731	-0.04	105.35	60.81
5.64	128.33	-7.38	175.92	47.6	3.697	-0.06	111.75	64.17
6.64	134.62	-9.99	184.81	50.2	3.682	-0.07	117.50	67.31
7.38	138.24	-11.59	190.02	51.8	3.669	-0.08	120.91	69.12
8.38	142.04	-13.40	195.64	53.6	3.650	-0.09	124.62	71.02
9.13	144.77	-14.61	199.58	54.8	3.641	-0.10	127.19	72.38
9.88	147.28	-15.68	203.16	55.9	3.636	-0.11	129.52	73.64
10.65	149.85	-16.61	206.67	56.8	3.638	-0.11	131.74	74.93
11.16	151.25	-17.17	208.63	57.4	3.636	-0.11	133.00	75.63
11.65	152.30	-17.71	210.21	57.9	3.630	-0.12	134.06	76.15
12.14	153.00	-18.21	211.41	58.4	3.619	-0.12	134.91	76.50
12.64	153.19	-18.59	211.98	58.8	3.606	-0.12	135.39	76.60
13.41	153.75	-19.22	213.17	59.4	3.588	-0.12	136.29	76.88
14.17	156.36	-19.77	216.32	60.0	3.607	-0.13	138.15	78.18
14.67	157.33	-20.09	217.62	60.3	3.610	-0.13	138.95	78.67
15.18	157.64	-20.38	218.22	60.6	3.602	-0.13	139.40	78.82

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	233.6-234.1
Project No.	2013-465-001	Sample No.	ST-7
Lab ID #	2013-465-001-005	Test No.	4

Equipment	Equipment ID#	Calibration Due Date
Oven	G256	10/12/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G318	INITIAL ONLY
Load Cell	G1310	1.8-14
Cell Pressure Transducer	G836B	1/8/14
Pore Pressure Transducer	G836A	1/8/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G1456	8/30/14
Timing Device	G489	5/13/14
Balance	G1394	5/15/14
Oven	G1387	8/16/14
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	234.1-234.6
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	5

PRESSURES (psi)

Cell Pressure (psi)	102.9
Back Pressure (psi)	21.3
Eff. Conf. Pressure (psi)	81.6
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	134.24
Q	=	75.30

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.967	Diameter 1:	2.876
Length 2:	5.964	Diameter 2:	2.870
Length 3:	5.969	Diameter 3:	2.876
Avg. Length	5.967	*Avg. Diam.:*	2.874

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	31.7
Final Change (ml)	16.3

Initial Dial Reading (mil)	66
Dial Reading After Saturation (mil)	70
Dial Reading After Consolidation (mil)	115

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
23.0	0.000	21.3
33.3	0.002	22.1
56.2	0.003	22.6
153.0	0.008	25.6
245.6	0.012	29.6
326.0	0.017	34.1
426.3	0.024	40.3
502.3	0.033	45.2
578.0	0.043	49.4
677.4	0.062	52.4
776.0	0.090	52.3
847.0	0.124	50.6
891.9	0.161	49.0
926.1	0.204	47.5
946.6	0.235	46.9
976.7	0.276	45.9
1017.9	0.331	44.9
1048.3	0.390	44.0
1062.2	0.436	43.4
1091.7	0.497	42.6
1115.1	0.541	42.2
1132.4	0.585	41.8
1150.3	0.628	41.3
1156.1	0.659	40.9
1159.5	0.690	40.8
1164.8	0.720	40.5
1177.1	0.751	40.4
1187.7	0.795	40.2
1194.9	0.838	40.0
1204.5	0.868	39.8
1210.1	0.898	39.9

Tested By: JCM Date: 10/29/13 Input Checked By: KC Date: 11/20/13

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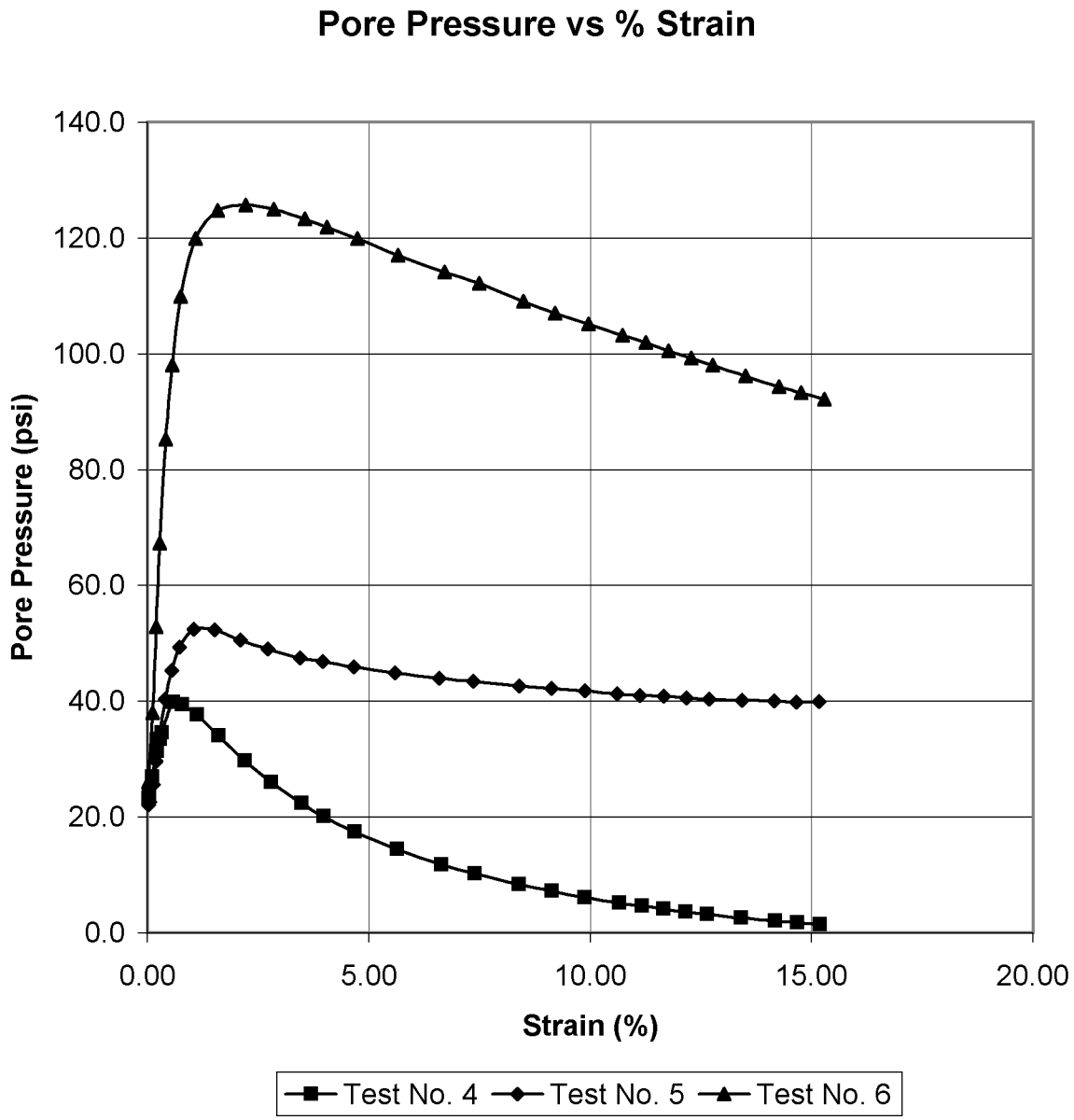
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	232.0-234.7
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	234.1-234.6
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	81.6	*Stage No.*	1
		Test No	5

INITIAL DIMENSIONS

Initial Sample Length (in)	5.97
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.49
Initial Sample Volume (in^3)	38.71

VOLUME CHANGE

Volume After Consolidation (in^3)	37.63
Length After Consolidation (in)	5.92
Area After Consolidation (in^2)	6.360

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.03	1.62	0.78	82.44	80.8	1.020	0.48	81.63	0.81
0.05	5.22	1.32	85.50	80.3	1.065	0.25	82.89	2.61
0.13	20.41	4.29	97.72	77.3	1.264	0.21	87.51	10.21
0.20	34.93	8.29	108.24	73.3	1.476	0.24	90.78	17.46
0.28	47.51	12.82	116.29	68.8	1.691	0.27	92.54	23.75
0.41	63.16	19.01	125.75	62.6	2.009	0.30	94.17	31.58
0.55	74.94	23.94	132.60	57.7	2.300	0.32	95.13	37.47
0.73	86.62	28.07	140.15	53.5	2.618	0.32	96.84	43.31
1.05	101.81	31.08	152.33	50.5	3.015	0.31	101.42	50.91
1.52	116.60	31.04	167.16	50.6	3.306	0.27	108.86	58.30
2.10	126.84	29.29	179.15	52.3	3.425	0.23	115.73	63.42
2.72	132.91	27.67	186.84	53.9	3.464	0.21	120.39	66.45
3.45	137.10	26.20	192.50	55.4	3.475	0.19	123.95	68.55
3.97	139.46	25.56	195.50	56.0	3.489	0.18	125.77	69.73
4.66	142.96	24.57	200.00	57.0	3.507	0.17	128.52	71.48
5.60	147.68	23.59	205.70	58.0	3.546	0.16	131.86	73.84
6.59	150.60	22.66	209.54	58.9	3.555	0.15	134.24	75.30
7.37	151.36	22.13	210.83	59.5	3.545	0.15	135.15	75.68
8.40	153.93	21.33	214.20	60.3	3.554	0.14	137.23	76.97
9.13	156.04	20.94	216.69	60.7	3.573	0.13	138.67	78.02
9.88	157.19	20.45	218.34	61.1	3.571	0.13	139.75	78.60
10.62	158.43	19.99	220.04	61.6	3.572	0.13	140.83	79.22
11.13	158.34	19.64	220.30	62.0	3.556	0.12	141.13	79.17
11.66	157.87	19.52	219.94	62.1	3.543	0.12	141.01	78.93
12.17	157.68	19.24	220.04	62.4	3.528	0.12	141.20	78.84
12.69	158.45	19.09	220.96	62.5	3.535	0.12	141.73	79.22
13.44	158.53	18.86	221.26	62.7	3.527	0.12	142.00	79.26
14.17	158.17	18.72	221.05	62.9	3.516	0.12	141.96	79.09
14.66	158.54	18.55	221.59	63.1	3.514	0.12	142.32	79.27
15.17	158.33	18.63	221.30	63.0	3.515	0.12	142.13	79.17

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	234.1-234.6
Project No.	2013-465-001	Sample No.	ST-7
Lab ID #	2013-465-001-005	Test No.	5

Equipment	Equipment ID#	Calibration Due Date
Oven	G256	10/12/14
Balance	G1043	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G317	INITIAL ONLY
Load Cell	G1437	1/7/14
Cell Pressure Transducer	G1438	1/7/14
Pore Pressure Transducer	G1439	1/7/14
Extensometer	G1440	1/7/14
Load Frame	G1434	1/7/14
Dial Indicator	G456	2/13/14
Timing Device	G489	5/13/14
Balance	G1395	6/4/14
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	233.1-233.6
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	6

PRESSURES (psi)

Cell Pressure (psi)	180.2
Back Pressure (psi)	21.5
Eff. Conf. Pressure (psi)	158.7
Pore Pressure Response (%)	98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	152.98
Q	=	84.89

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.803	Diameter 1:	2.891
Length 2:	5.795	Diameter 2:	2.883
Length 3:	5.800	Diameter 3:	2.882
Avg. Length:	5.799	*Avg. Diam.:*	2.885

VOLUME CHANGE

Initial Burette Reading (ml)	72.0
Final Burette Reading (ml)	51.6
Final Change (ml)	20.4

Initial Dial Reading (mil)	52
Dial Reading After Saturation (mil)	56
Dial Reading After Consolidation (mil)	129

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
34.6	0.000	21.5
89.2	0.001	23.9
128.2	0.002	26.0
297.7	0.007	37.9
429.7	0.012	52.8
525.0	0.016	67.3
619.0	0.024	85.3
674.5	0.032	98.0
716.4	0.043	109.9
761.1	0.063	119.9
806.9	0.091	124.8
854.8	0.127	125.7
898.2	0.164	124.9
948.7	0.204	123.3
985.1	0.232	121.9
1033.0	0.272	119.8
1095.6	0.324	117.0
1162.9	0.385	114.1
1208.4	0.429	112.1
1271.6	0.486	109.0
1318.0	0.527	106.9
1363.0	0.570	105.1
1404.8	0.614	103.1
1433.4	0.644	101.9
1460.0	0.674	100.5
1489.0	0.703	99.3
1518.3	0.731	98.0
1558.5	0.774	96.1
1593.1	0.816	94.3
1617.1	0.845	93.3
1641.4	0.875	92.1

Tested By: JCM Date: 10/29/13 Input Checked By: KC Date: 11/20/13

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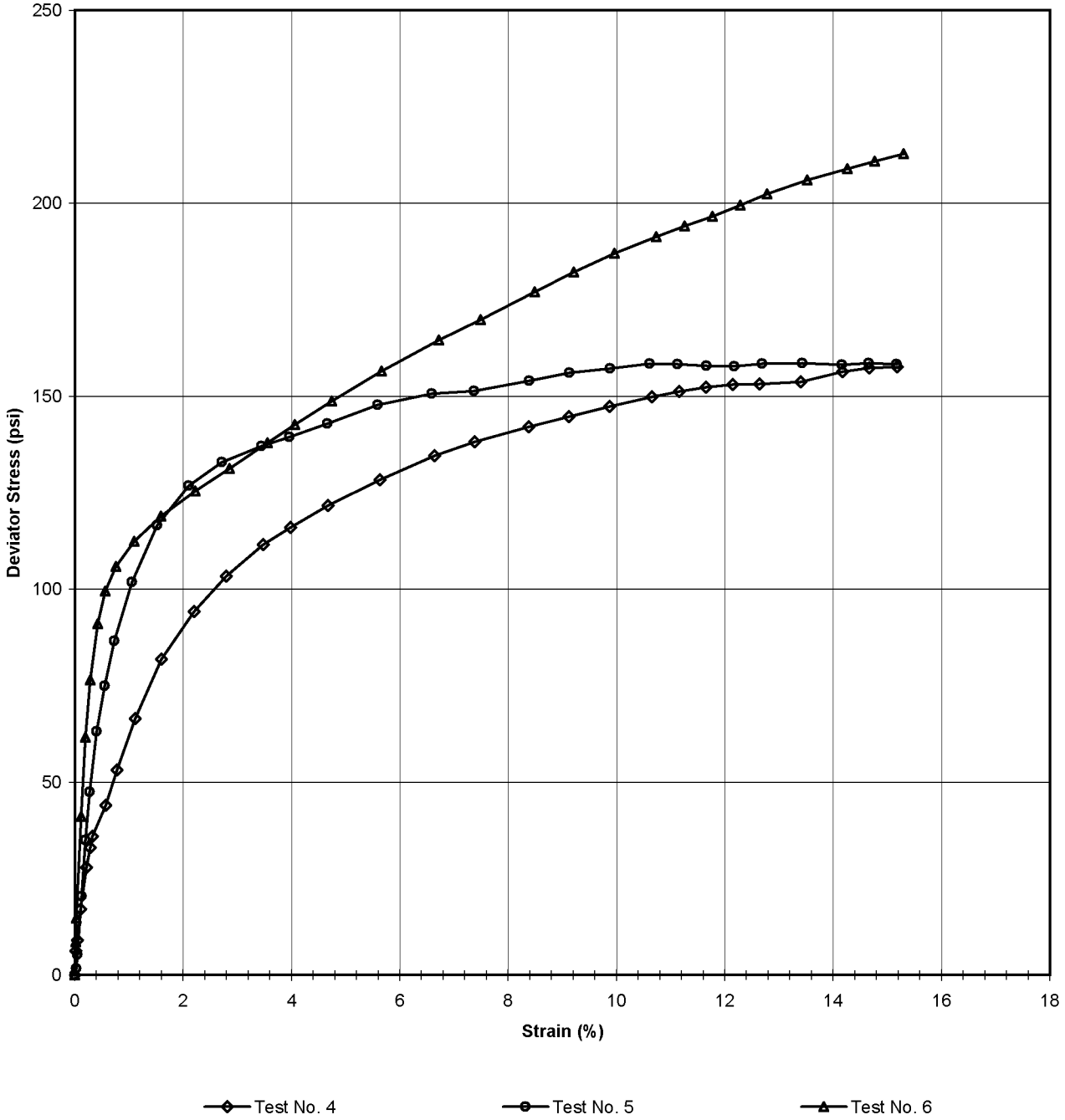
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	232.0-234.7
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 4 8508.856 E50 Test No. 5 13547.34 E50 Test No. 6 23276.7

Tested By: JCM Date: 10/29/13 Approved By: DB Date: 11/20/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	233.1-233.6
Project No.:	2013-465-001	Sample No.:	ST-7
Lab ID:	2013-465-001-005		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	158.7	*Stage No.*	1
		Test No	6

INITIAL DIMENSIONS

Initial Sample Length (in)	5.80
Initial Sample Diameter (in)	2.89
Initial Sample Area (in^2)	6.54
Initial Sample Volume (in^3)	37.92

VOLUME CHANGE

Volume After Consolidation (in^3)	36.60
Length After Consolidation (in)	5.72
Area After Consolidation (in^2)	6.395

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	8.54	2.42	164.82	156.3	1.055	0.29	160.55	4.27
0.03	14.64	4.49	168.85	154.2	1.095	0.31	161.53	7.32
0.12	41.09	16.44	183.35	142.3	1.289	0.41	162.80	20.55
0.20	61.65	31.30	189.05	127.4	1.484	0.52	158.22	30.83
0.29	76.46	45.77	189.39	112.9	1.677	0.61	151.16	38.23
0.42	90.99	63.76	185.93	94.9	1.958	0.72	140.43	45.50
0.57	99.49	76.51	181.67	82.2	2.211	0.78	131.93	49.74
0.76	105.80	88.37	176.12	70.3	2.504	0.85	123.23	52.90
1.10	112.36	98.38	172.68	60.3	2.863	0.89	116.50	56.18
1.59	118.84	103.28	174.26	55.4	3.144	0.89	114.84	59.42
2.23	125.39	104.21	179.88	54.5	3.301	0.85	117.19	62.70
2.86	131.18	103.43	186.44	55.3	3.374	0.80	120.85	65.59
3.56	137.84	101.77	194.78	56.9	3.421	0.75	125.85	68.92
4.06	142.60	100.39	200.91	58.3	3.445	0.72	129.61	71.30
4.74	148.71	98.35	209.07	60.4	3.464	0.67	134.71	74.36
5.67	156.50	95.52	219.69	63.2	3.477	0.62	141.44	78.25
6.72	164.57	92.63	230.64	66.1	3.491	0.57	148.36	82.28
7.49	169.79	90.62	237.87	68.1	3.494	0.54	152.98	84.89
8.49	176.99	87.51	248.18	71.2	3.486	0.50	159.68	88.50
9.21	182.19	85.44	255.45	73.3	3.487	0.48	164.36	91.09
9.96	187.02	83.58	262.14	75.1	3.490	0.46	168.63	93.51
10.74	191.25	81.64	268.32	77.1	3.482	0.44	172.69	95.63
11.26	194.10	80.41	272.38	78.3	3.479	0.42	175.33	97.05
11.78	196.64	79.03	276.31	79.7	3.468	0.41	177.99	98.32
12.29	199.48	77.80	280.38	80.9	3.466	0.40	180.64	99.74
12.78	202.36	76.48	284.58	82.2	3.461	0.39	183.40	101.18
13.52	206.08	74.63	290.15	84.1	3.451	0.37	187.11	103.04
14.27	208.92	72.77	294.86	85.9	3.431	0.36	190.39	104.46
14.77	210.89	71.79	297.80	86.9	3.427	0.35	192.35	105.45
15.30	212.81	70.60	300.91	88.1	3.415	0.34	194.51	106.40

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	233.1-233.6
Project No.	2013-465-001	Sample No.	ST-7
Lab ID #	2013-465-001-005	Test No.	6

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G307	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G150	2/22/14
Timing Device	G489	5/13/14
Flow Pump	G1511-1	1/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-005	Specific Gravity (measured)	2.65
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		

SAMPLE CONDITION SUMMARY

Boring No.:	R-7-1	R-7-1	R-7-1
Depth (ft):	233.6-234.1	234.1-234.6	233.1-233.6
Sample No.:	ST-7	ST-7	ST-7
Test No.	T4	T5	T6
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	21.8	21.3	21.5
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	19.7	19.7	19.7
Total Unit Weight (pcf)	121.4	122.0	119.5
Dry Unit Weight (pcf)	101.5	101.9	99.8
Moisture Content (%) (FINAL)	27.1	25.2	27.3
Initial State Void Ratio,e	0.631	0.623	0.657
Void Ratio at Shear, e	0.598	0.579	0.600

Tested By: JCM Date: 10/29/13 Input Checked By: KC Date: 11/20/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

MOISTURE CONTENT

	T4	T5	T6
Tare Number	538	538	538
Weight of Tare & Wet Sample (g)	205.89	205.89	205.89
Weight of Tare & Dry Sample (g)	185.49	185.49	185.49
Weight of Tare (g)	81.93	81.93	81.93
Moisture Content (%) (INITIAL)	19.70	19.70	19.70
Tare Number	592	631	54
Weight of Tare & Wet Sample (g)	221.82	1296.87	1357.85
Weight of Tare & Dry Sample (g)	191.91	1055.55	1110.54
Weight of Tare (g)	81.39	98.34	204.81
Moisture Content (%) (FINAL)	27.06	25.21	27.31

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1628.58	1658.93	1591.73
Weight of Tube (g)	410.19	419.73	402.45
Weight of Wet Sample (g)	1218.39	1239.2	1189.28
Length 1 (in)	5.887	5.967	5.803
Length 2 (in)	5.889	5.964	5.795
Length 3 (in)	5.884	5.969	5.8
Top Diameter (in)	2.881	2.876	2.891
Middle Diameter (in)	2.868	2.87	2.883
Bottom Diameter (in)	2.877	2.876	2.882
Average Length (in)	5.886667	5.966667	5.799333
Average Area (in)	6.493	6.487	6.539
Sample Volume (cm^3)	626.38	634.30	621.39
Unit Wet Weight (g/cm^3)	1.95	1.95	1.91
Unit Wet Weight (pcf)	121.43	121.97	119.49
Unit Dry Weight (pcf)	101.45	101.89	99.82
Unit Dry Weight (g/cm^3)	1.63	1.63	1.60
Initial Burette Reading	**48**	**48**	**72**
Final Burette Reading	**37.3**	**31.7**	**51.6**
Initial Dial Reading	**52**	**66**	**52**
Dial Reading After Saturation	**58**	**70**	**56**
Dial Reading After Consolidation	**82**	**115**	**129**
Volume Change during Consolidation	10.7	16.3	20.4
Volume Change during Saturation	1.92	1.28	1.29
Volume at Shear (cm^3) *These	613.76	616.73	599.70
Volume of Solids (cm^3) measurements	384.11	390.67	374.93
Volume of Voids (cm^3) are all	229.66	226.06	224.77
Volume of Water (cm^3) at	275.47	261.00	271.29
Void Ratio, e shear	0.598	0.579	0.600

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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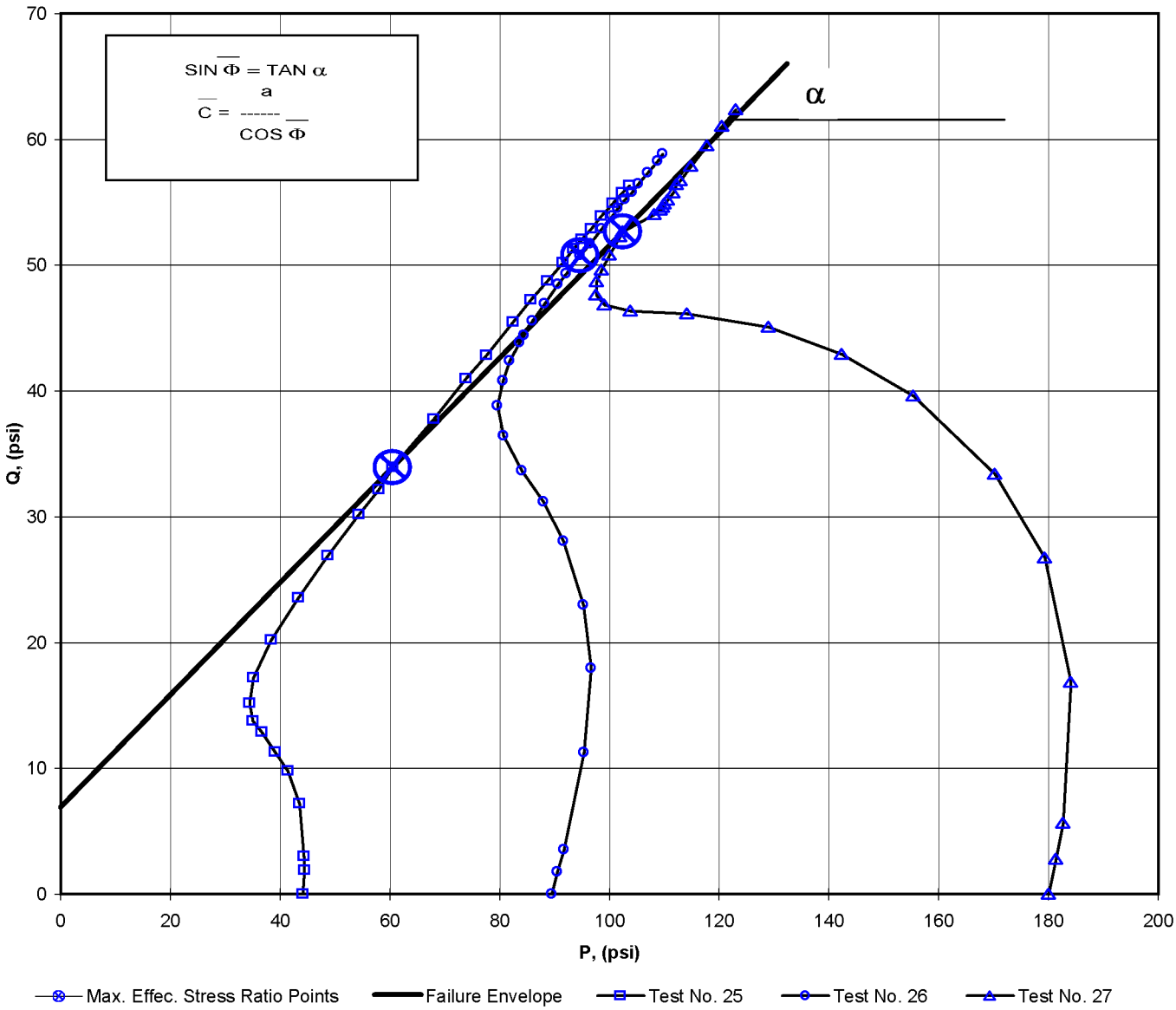
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	255.0-257.5
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	6.91	$\overline{C}$	=	7.72
α	=	24.1	$\overline{\Phi}$	=	26.52

Tested By: JCM Date: 11/10/13 Approved By: DB Date: 12/3/13

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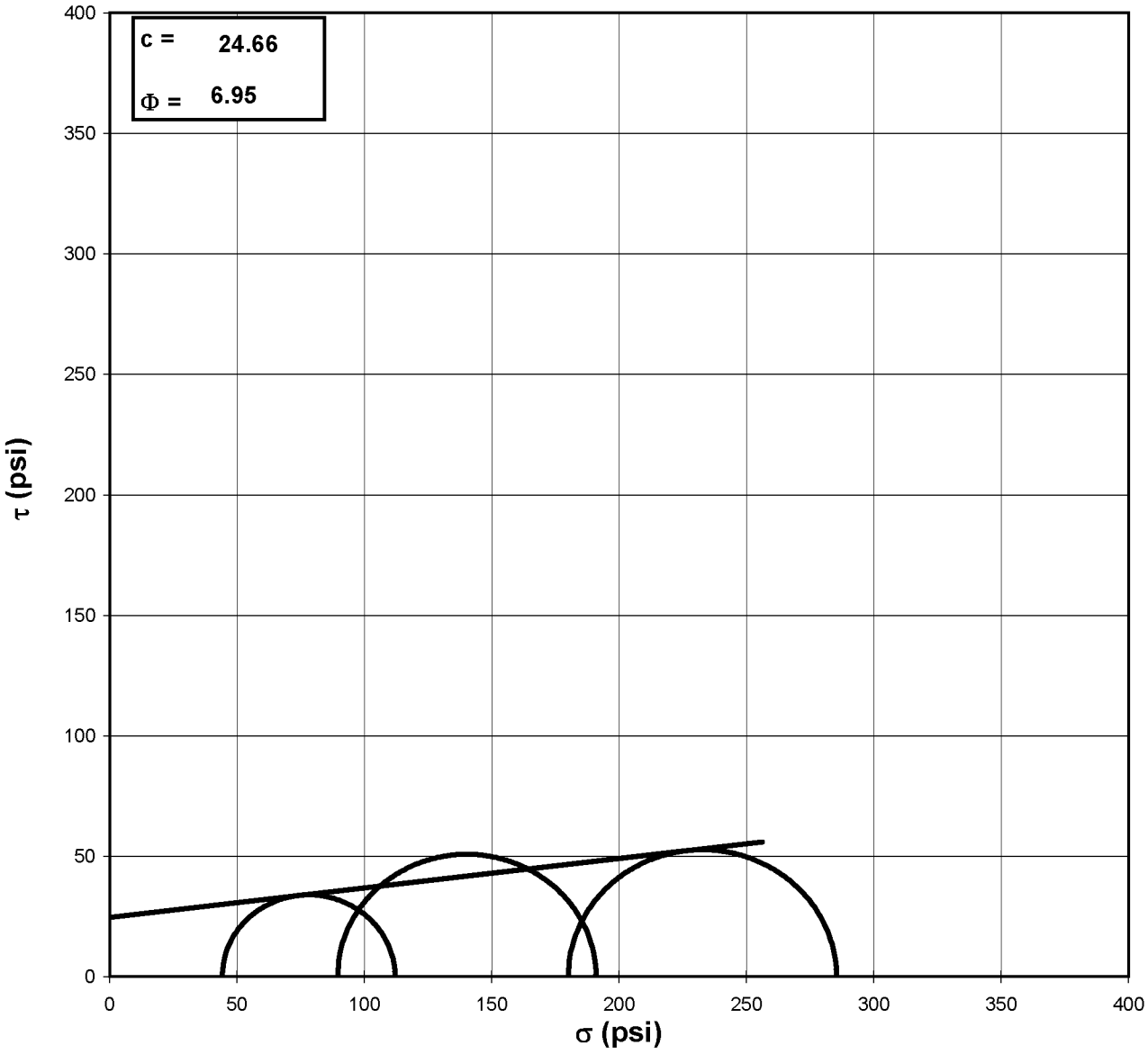
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	255.0-257.5
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 11/10/13 *Approved By:* DB *Date:* 12/3/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	256.4-256.9
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	25

PRESSURES (psi)

Cell Pressure (psi)	66.2
Back Pressure (psi)	22.0
Eff. Conf. Pressure (psi)	44.2
Pore Pressure Response (%)	99

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	60.53
Q	=	33.93

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.926	Diameter 1:	2.881
Length 2:	5.927	Diameter 2:	2.878
Length 3:	5.928	Diameter 3:	2.883
Avg. Length:	5.927	*Avg. Diam.:*	2.881

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	34.1
Final Change (ml)	13.9

Initial Dial Reading (mil)	59
Dial Reading After Saturation (mil)	74
Dial Reading After Consolidation (mil)	117

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
11.3	0.000	22.0
35.3	0.001	23.6
49.7	0.002	24.9
103.1	0.007	29.9
136.7	0.012	34.6
155.9	0.018	38.4
176.7	0.026	42.4
188.2	0.036	44.9
206.4	0.047	46.9
233.9	0.069	48.3
274.0	0.099	48.0
319.2	0.135	46.4
365.0	0.170	44.4
410.9	0.210	41.9
439.7	0.239	40.3
466.5	0.280	39.6
523.4	0.338	35.9
572.6	0.398	33.2
602.9	0.441	31.4
646.2	0.500	29.2
676.3	0.545	27.7
703.6	0.591	26.3
730.7	0.636	24.9
750.6	0.665	24.0
765.3	0.694	23.2
782.1	0.724	22.3
801.3	0.753	21.5
823.7	0.799	20.4
843.0	0.845	19.6
856.7	0.875	18.8
871.4	0.905	18.1

Tested By: JCM Date: 11/10/13 Input Checked By: KC Date: 12/3/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	256.4-256.9
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	44.2	*Stage No.*	1
		Test No	25

INITIAL DIMENSIONS

Initial Sample Length (in)	5.93
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.52
Initial Sample Volume (in^3)	38.63

VOLUME CHANGE

Volume After Consolidation (in^3)	37.49
Length After Consolidation (in)	5.87
Area After Consolidation (in^2)	6.387

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	3.76	1.65	46.31	42.6	1.088	0.44	44.43	1.88
0.04	6.01	2.85	47.36	41.3	1.145	0.48	44.35	3.00
0.12	14.35	7.87	50.69	36.3	1.395	0.55	43.51	7.18
0.20	19.59	12.58	51.20	31.6	1.619	0.65	41.41	9.79
0.30	22.57	16.37	50.40	27.8	1.811	0.73	39.12	11.28
0.45	25.77	20.38	49.60	23.8	2.082	0.80	36.71	12.89
0.61	27.52	22.93	48.79	21.3	2.294	0.84	35.03	13.76
0.80	30.31	24.87	49.64	19.3	2.568	0.83	34.48	15.15
1.18	34.44	26.26	52.38	17.9	2.920	0.77	35.16	17.22
1.69	40.43	26.03	58.60	18.2	3.226	0.65	38.38	20.22
2.29	47.11	24.43	66.88	19.8	3.382	0.52	43.33	23.55
2.89	53.78	22.36	75.61	21.8	3.463	0.42	48.72	26.89
3.58	60.31	19.94	84.57	24.3	3.486	0.33	54.42	30.16
4.07	64.35	18.33	90.21	25.9	3.488	0.29	58.04	32.17
4.77	67.87	17.60	94.47	26.6	3.551	0.26	60.53	33.93
5.76	75.56	13.94	105.82	30.3	3.497	0.19	68.04	37.78
6.77	81.92	11.25	114.88	33.0	3.486	0.14	73.91	40.96
7.52	85.65	9.43	120.42	34.8	3.464	0.11	77.59	42.83
8.52	90.93	7.23	127.91	37.0	3.459	0.08	82.44	45.47
9.28	94.46	5.68	132.98	38.5	3.452	0.06	85.75	47.23
10.06	97.48	4.25	137.43	39.9	3.440	0.04	88.69	48.74
10.84	100.42	2.89	141.73	41.3	3.431	0.03	91.52	50.21
11.34	102.63	2.03	144.80	42.2	3.433	0.02	93.49	51.31
11.83	104.07	1.19	147.08	43.0	3.420	0.01	95.05	52.04
12.33	105.80	0.35	149.65	43.9	3.413	0.00	96.75	52.90
12.83	107.81	-0.45	152.47	44.7	3.415	0.00	98.56	53.91
13.61	109.87	-1.57	155.64	45.8	3.401	-0.01	100.70	54.94
14.39	111.47	-2.44	158.10	46.6	3.390	-0.02	102.37	55.73
14.90	112.63	-3.18	160.00	47.4	3.377	-0.03	103.69	56.31
15.41	113.91	-3.86	161.96	48.1	3.370	-0.03	105.01	56.95

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	256.4-256.9
Project No.	2013-465-001	Sample No.	ST-9
Lab ID #	2013-465-001-007	Test No.	25

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G318	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G546	2/13/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	256.9-257.4
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	26

PRESSURES (psi)

Cell Pressure (psi)	111.3
Back Pressure (psi)	21.8
Eff. Conf. Pressure (psi)	89.5
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	94.73
Q	=	50.75

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.952	Diameter 1:	2.876
Length 2:	5.945	Diameter 2:	2.878
Length 3:	5.943	Diameter 3:	2.880
Avg. Length	5.947	*Avg. Diam.:*	2.878

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	30.5
Final Change (ml)	17.5

Initial Dial Reading (mil)	52
Dial Reading After Saturation (mil)	58
Dial Reading After Consolidation (mil)	110

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
20.0	0.000	21.8
42.3	0.001	22.5
64.9	0.002	23.1
163.5	0.006	27.2
248.8	0.011	32.5
313.7	0.016	39.0
378.7	0.024	47.7
419.1	0.032	54.5
452.0	0.044	60.9
489.0	0.064	67.0
522.2	0.093	70.4
551.4	0.129	71.5
575.7	0.166	71.9
598.8	0.208	71.5
609.4	0.238	71.2
628.9	0.279	70.8
654.0	0.335	70.0
681.8	0.395	69.1
698.7	0.441	68.4
726.3	0.499	67.3
745.6	0.544	66.5
768.4	0.589	65.5
788.9	0.633	64.7
802.7	0.663	64.2
816.9	0.693	63.6
830.3	0.723	62.9
844.2	0.753	62.5
864.2	0.796	61.6
885.8	0.841	60.7
899.4	0.871	60.3
912.6	0.901	59.7

Tested By: JCM Date: 11/10/13 Input Checked By: KC Date: 12/3/13

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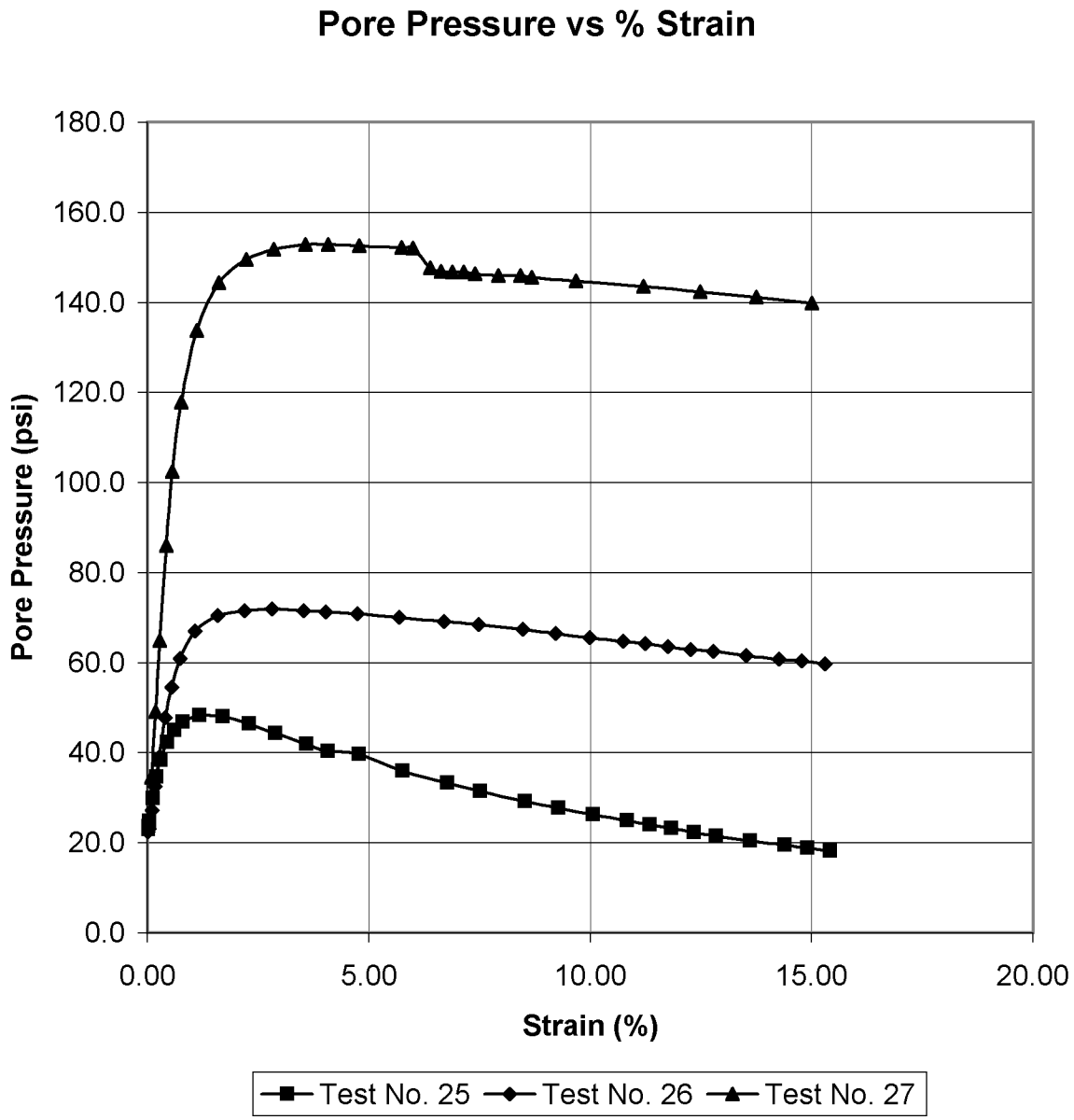
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	255.0-257.5
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	256.9-257.4
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	89.5	*Stage No.*	1
		Test No	26

INITIAL DIMENSIONS

Initial Sample Length (in)	5.95
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	38.69

VOLUME CHANGE

Volume After Consolidation (in^3)	37.50
Length After Consolidation (in)	5.89
Area After Consolidation (in^2)	6.368

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	3.51	0.68	92.32	88.8	1.039	0.19	90.57	1.75
0.03	7.05	1.29	95.26	88.2	1.080	0.18	91.74	3.53
0.10	22.52	5.38	106.64	84.1	1.268	0.24	95.38	11.26
0.18	35.86	10.74	114.63	78.8	1.455	0.30	96.69	17.93
0.27	46.00	17.20	118.30	72.3	1.636	0.37	95.30	23.00
0.41	56.10	25.92	119.68	63.6	1.882	0.46	91.63	28.05
0.55	62.33	32.66	119.17	56.8	2.096	0.52	88.00	31.16
0.74	67.33	39.11	117.72	50.4	2.336	0.58	84.05	33.67
1.08	72.85	45.15	117.20	44.3	2.643	0.62	80.77	36.43
1.58	77.61	48.65	118.46	40.9	2.900	0.63	79.66	38.81
2.20	81.61	49.71	121.40	39.8	3.051	0.61	80.60	40.81
2.82	84.79	50.06	124.23	39.4	3.150	0.59	81.83	42.40
3.53	87.68	49.66	127.52	39.8	3.201	0.57	83.68	43.84
4.04	88.81	49.41	128.90	40.1	3.215	0.56	84.49	44.41
4.74	91.09	49.02	131.57	40.5	3.250	0.54	86.02	45.54
5.69	93.90	48.18	135.22	41.3	3.272	0.51	88.27	46.95
6.71	96.95	47.28	139.16	42.2	3.297	0.49	90.69	48.47
7.48	98.60	46.61	141.50	42.9	3.299	0.47	92.19	49.30
8.48	101.51	45.53	145.48	44.0	3.308	0.45	94.73	50.75
9.23	103.42	44.68	148.24	44.8	3.307	0.43	96.53	51.71
10.00	105.78	43.74	151.54	45.8	3.312	0.41	98.65	52.89
10.75	107.76	42.87	154.39	46.6	3.311	0.40	100.51	53.88
11.25	109.08	42.42	156.15	47.1	3.317	0.39	101.61	54.54
11.77	110.41	41.78	158.13	47.7	3.314	0.38	102.93	55.21
12.28	111.62	41.11	160.02	48.4	3.307	0.37	104.21	55.81
12.78	112.88	40.67	161.71	48.8	3.312	0.36	105.27	56.44
13.52	114.64	39.76	164.39	49.7	3.305	0.35	107.06	57.32
14.27	116.55	38.92	167.12	50.6	3.304	0.33	108.85	58.27
14.79	117.68	38.54	168.64	51.0	3.309	0.33	109.80	58.84
15.30	118.72	37.90	170.32	51.6	3.301	0.32	110.96	59.36

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	256.9-257.4
Project No.	2013-465-001	Sample No.	ST-9
Lab ID #	2013-465-001-007	Test No.	26

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G317	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G1457	8/30/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	255.9-256.4
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	27

PRESSURES (psi)

Cell Pressure (psi)	201.8
Back Pressure (psi)	21.7
Eff. Conf. Pressure (psi)	180.1
Pore Pressure Response (%)	99

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	102.44
Q	=	52.64

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.940	Diameter 1:	2.879
Length 2:	5.940	Diameter 2:	2.873
Length 3:	5.944	Diameter 3:	2.875
Avg. Length:	5.941	*Avg. Diam.:*	2.876

VOLUME CHANGE

Initial Burette Reading (ml)	72.0
Final Burette Reading (ml)	44.5
Final Change (ml)	27.5

Initial Dial Reading (mil)	42
Dial Reading After Saturation (mil)	48
Dial Reading After Consolidation (mil)	132

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
36.2	0.000	21.7
71.1	0.001	23.1
107.3	0.002	24.7
248.0	0.006	34.5
372.7	0.011	49.1
457.1	0.017	64.8
536.2	0.025	85.9
579.0	0.033	102.4
607.5	0.045	117.8
622.7	0.066	133.7
628.9	0.095	144.3
639.0	0.131	149.6
652.9	0.167	151.8
671.5	0.209	152.7
686.7	0.239	152.8
707.2	0.280	152.5
733.4	0.336	152.1
740.5	0.351	152.0
761.8	0.374	147.6
768.8	0.388	146.9
773.9	0.403	146.7
779.2	0.418	146.7
785.5	0.433	146.3
797.7	0.464	145.9
810.9	0.494	145.9
817.6	0.508	145.5
841.9	0.566	144.8
878.8	0.656	143.5
913.2	0.731	142.3
945.8	0.805	141.1
976.4	0.878	139.8

Tested By: JCM Date: 11/21/13 Input Checked By: KC Date: 12/3/13

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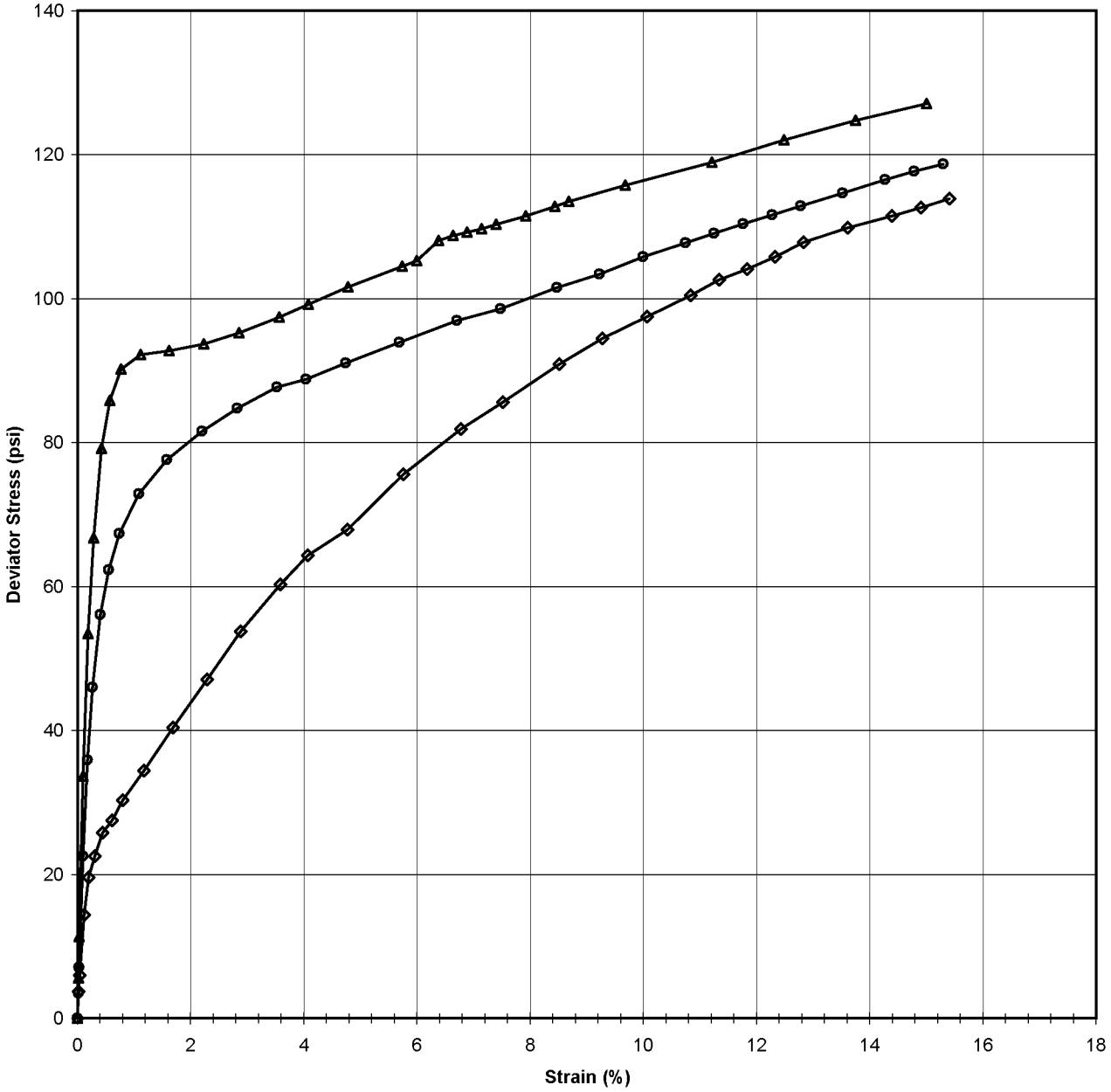
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	255.0-257.5
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 25 3001.511 E50 Test No. 26 15192.92 E50 Test No. 27 28239.82

Tested By: JCM Date: 11/21/13 Approved By: DB Date: 12/3/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	255.9-256.4
Project No.:	2013-465-001	Sample No.:	ST-9
Lab ID:	2013-465-001-007		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	180.1	*Stage No.*	1
		Test No	27

INITIAL DIMENSIONS

Initial Sample Length (in)	5.94
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.49
Initial Sample Volume (in^3)	38.59

VOLUME CHANGE

Volume After Consolidation (in^3)	36.79
Length After Consolidation (in)	5.85
Area After Consolidation (in^2)	6.288

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	5.56	1.44	184.22	178.7	1.031	0.26	181.44	2.78
0.03	11.31	3.02	188.39	177.1	1.064	0.27	182.73	5.65
0.10	33.66	12.80	200.96	167.3	1.201	0.38	184.13	16.83
0.19	53.42	27.42	206.10	152.7	1.350	0.52	179.39	26.71
0.28	66.74	43.15	203.70	137.0	1.487	0.65	170.32	33.37
0.43	79.19	64.22	195.07	115.9	1.683	0.82	155.48	39.59
0.57	85.83	80.66	185.27	99.4	1.863	0.95	142.36	42.91
0.77	90.16	96.08	174.18	84.0	2.073	1.08	129.10	45.08
1.12	92.23	112.02	160.31	68.1	2.355	1.23	114.19	46.12
1.62	92.73	122.62	150.21	57.5	2.613	1.34	103.84	46.37
2.23	93.72	127.86	145.97	52.2	2.794	1.38	99.11	46.86
2.85	95.28	130.09	145.29	50.0	2.905	1.38	97.65	47.64
3.57	97.43	131.04	146.49	49.1	2.986	1.36	97.77	48.72
4.08	99.23	131.13	148.21	49.0	3.026	1.33	98.59	49.62
4.78	101.61	130.83	150.87	49.3	3.062	1.30	100.07	50.80
5.74	104.51	130.43	154.18	49.7	3.104	1.26	101.93	52.26
6.00	105.29	130.30	155.08	49.8	3.114	1.25	102.44	52.64
6.39	108.03	125.90	162.23	54.2	2.993	1.18	108.22	54.02
6.64	108.77	125.17	163.70	54.9	2.980	1.16	109.31	54.39
6.89	109.23	124.98	164.36	55.1	2.982	1.16	109.74	54.62
7.14	109.72	124.95	164.87	55.1	2.989	1.15	110.01	54.86
7.40	110.34	124.64	165.80	55.5	2.990	1.14	110.63	55.17
7.92	111.51	124.22	167.39	55.9	2.996	1.13	111.64	55.76
8.43	112.81	124.21	168.70	55.9	3.018	1.11	112.30	56.41
8.68	113.49	123.81	169.78	56.3	3.016	1.10	113.04	56.74
9.68	115.73	123.05	172.78	57.0	3.029	1.07	114.91	57.87
11.21	118.98	121.77	177.31	58.3	3.040	1.03	117.82	59.49
12.49	122.05	120.61	181.54	59.5	3.052	1.00	120.52	61.03
13.75	124.76	119.39	185.48	60.7	3.055	0.97	123.09	62.38
15.01	127.08	118.08	189.10	62.0	3.049	0.94	125.56	63.54

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	255.9-256.4
Project No.	2013-465-001	Sample No.	ST-9
Lab ID #	2013-465-001-007	Test No.	27

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G322	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G456	2/13/14
Timing Device	G489	5/13/14
Flow Pump	G1509-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-007	Specific Gravity (measured)	2.67
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		

SAMPLE CONDITION SUMMARY

Boring No.:	R-7-1	R-7-1	R-7-1
Depth (ft):	256.4-256.9	256.9-257.4	255.9-256.4
Sample No.:	ST-9	ST-9	ST-9
Test No.	T25	T26	T27
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	22.0	21.8	21.7
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	25.3	25.3	25.3
Total Unit Weight (pcf)	122.2	120.3	120.7
Dry Unit Weight (pcf)	97.5	96.0	96.3
Moisture Content (%) (FINAL)	24.6	25.6	25.0
Initial State Void Ratio,e	0.710	0.737	0.731
Void Ratio at Shear, e	0.660	0.684	0.650

Tested By: JCM Date: 11/10/13 Input Checked By: KC Date: 12/3/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

MOISTURE CONTENT

	T25	T26	T27
Tare Number	615	615	615
Weight of Tare & Wet Sample (g)	165.03	165.03	165.03
Weight of Tare & Dry Sample (g)	148.69	148.69	148.69
Weight of Tare (g)	84.2	84.2	84.2
Moisture Content (%) (INITIAL)	25.34	25.34	25.34
Tare Number	894	59	649
Weight of Tare & Wet Sample (g)	309.69	1391.27	1250.11
Weight of Tare & Dry Sample (g)	270.35	1148.52	1019.46
Weight of Tare (g)	110.27	200.52	98.29
Moisture Content (%) (FINAL)	24.58	25.61	25.04

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1652.83	1639.75	1640.71
Weight of Tube (g)	414.25	418.42	418.04
Weight of Wet Sample (g)	1238.58	1221.33	1222.67
Length 1 (in)	5.926	5.952	5.94
Length 2 (in)	5.927	5.945	5.94
Length 3 (in)	5.928	5.943	5.944
Top Diameter (in)	2.881	2.876	2.879
Middle Diameter (in)	2.878	2.878	2.873
Bottom Diameter (in)	2.883	2.88	2.875
Average Length (in)	5.927	5.946667	5.941333
Average Area (in)	6.517	6.505	6.495
Sample Volume (cm^3)	633.01	633.94	632.34
Unit Wet Weight (g/cm^3)	1.96	1.93	1.93
Unit Wet Weight (pcf)	122.15	120.28	120.71
Unit Dry Weight (pcf)	97.46	95.96	96.31
Unit Dry Weight (g/cm^3)	1.56	1.54	1.54
Initial Burette Reading	**48**	**48**	**72**
Final Burette Reading	**34.1**	**30.5**	**44.5**
Initial Dial Reading	**59**	**52**	**42**
Dial Reading After Saturation	**74**	**58**	**48**
Dial Reading After Consolidation	**117**	**110**	**132**
Volume Change during Consolidation	13.9	17.5	27.5
Volume Change during Saturation	4.81	1.92	1.92
Volume at Shear (cm^3) *These	614.31	614.52	602.93
Volume of Solids (cm^3) measurements	370.11	364.96	365.36
Volume of Voids (cm^3) are all	244.19	249.56	237.57
Volume of Water (cm^3) at	242.85	249.52	244.25
Void Ratio, e shear	0.660	0.684	0.650

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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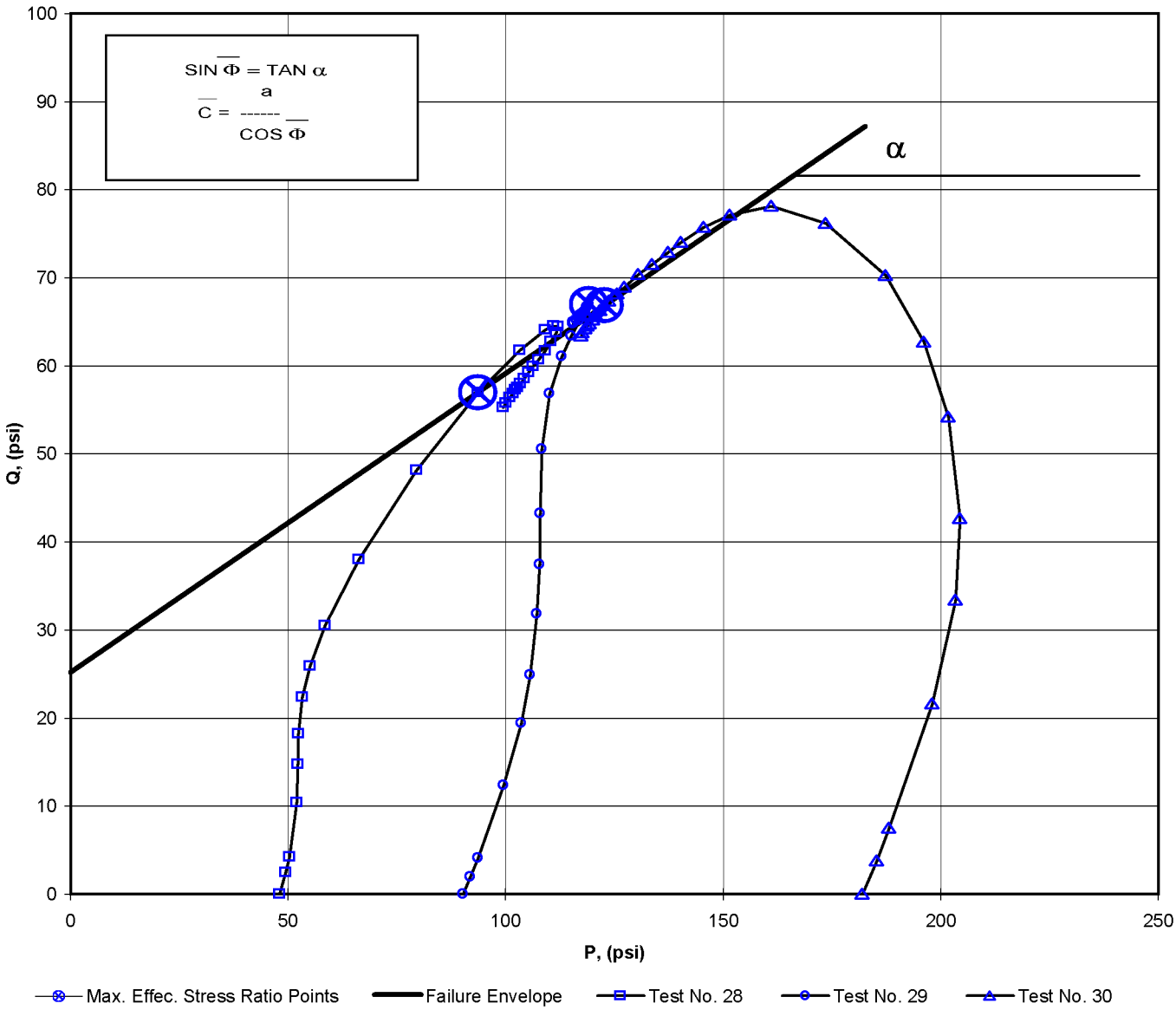
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	266.0-268.7
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	25.18	$\overline{C}$	=	26.77
α	=	18.8	$\overline{\Phi}$	=	19.85

Tested By: JCM Date: 11/10/13 Approved By: DB Date: 11/25/13

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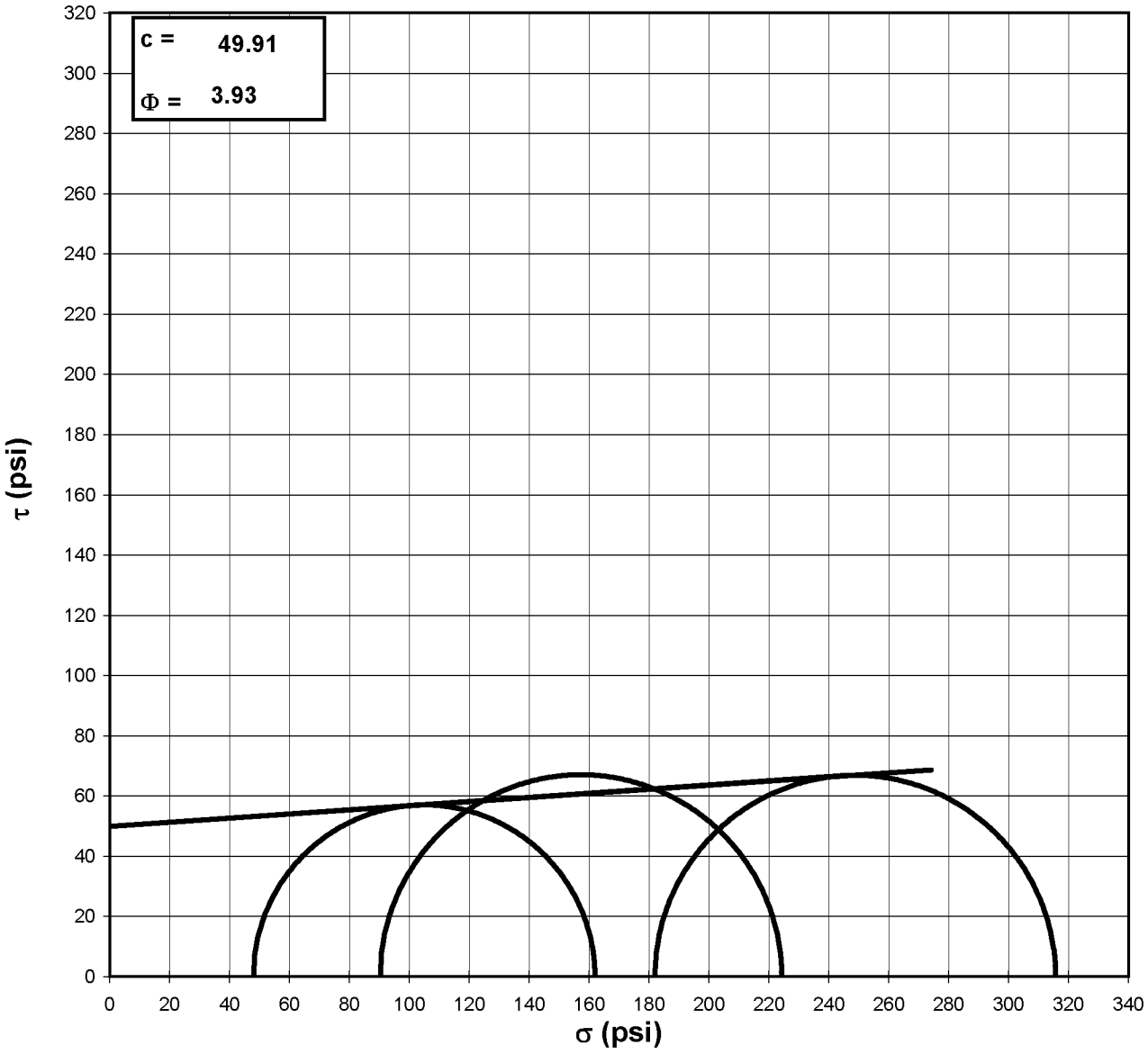
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	266.0-268.7
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 11/10/13 *Approved By:* DB *Date:* 11/25/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	268.1-268.6
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	28

PRESSURES (psi)

Cell Pressure (psi)	69.6
Back Pressure (psi)	21.6
Eff. Conf. Pressure (psi)	48.0
Pore Pressure Response (%)	98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	93.67
Q	=	56.99

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.961	Diameter 1:	2.877
Length 2:	5.953	Diameter 2:	2.872
Length 3:	5.954	Diameter 3:	2.881
Avg. Length:	5.956	*Avg. Diam.:*	2.877

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	31.1
Final Change (ml)	52.0

Initial Dial Reading (mil)	52
Dial Reading After Saturation (mil)	58
Dial Reading After Consolidation (mil)	109

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
12.7	0.000	21.6
42.5	0.001	22.6
63.6	0.002	23.5
137.4	0.007	28.0
190.5	0.013	32.2
232.0	0.018	35.4
282.7	0.027	38.7
325.7	0.036	40.5
381.9	0.047	41.6
474.4	0.068	41.3
600.4	0.097	38.2
712.7	0.132	32.9
776.2	0.168	28.2
810.3	0.209	24.6
820.3	0.239	23.1
825.6	0.280	22.1
824.9	0.338	21.7
820.7	0.398	21.9
813.7	0.442	22.2
809.2	0.501	22.7
805.6	0.545	23.1
803.3	0.590	23.5
800.6	0.636	23.9
797.6	0.666	24.2
796.1	0.695	24.3
796.6	0.724	24.6
795.7	0.754	24.8
795.8	0.799	25.1
794.3	0.844	25.3
792.1	0.874	25.5
790.9	0.905	25.6

Tested By: JCM Date: 11/10/13 Input Checked By: KC Date: 11/25/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	268.1-268.6
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	48.0	*Stage No.*	1
		Test No	28

INITIAL DIMENSIONS

Initial Sample Length (in)	5.96
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.50
Initial Sample Volume (in^3)	38.71

VOLUME CHANGE

Volume After Consolidation (in^3)	35.42
Length After Consolidation (in)	5.90
Area After Consolidation (in^2)	6.004

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	4.97	0.97	51.99	47.0	1.106	0.20	49.51	2.48
0.03	8.48	1.92	54.57	46.1	1.184	0.23	50.33	4.24
0.12	20.74	6.38	62.36	41.6	1.498	0.31	51.99	10.37
0.21	29.55	10.56	66.99	37.4	1.789	0.36	52.22	14.77
0.31	36.40	13.82	70.59	34.2	2.065	0.39	52.38	18.20
0.46	44.77	17.06	75.71	30.9	2.447	0.39	53.33	22.38
0.61	51.81	18.89	80.92	29.1	2.780	0.37	55.01	25.91
0.80	60.99	19.96	89.03	28.0	3.175	0.33	58.53	30.49
1.15	76.01	19.66	104.34	28.3	3.682	0.26	66.34	38.00
1.64	96.28	16.60	127.68	31.4	4.066	0.18	79.54	48.14
2.24	113.97	11.32	150.66	36.7	4.107	0.10	93.67	56.99
2.84	123.54	6.56	164.98	41.4	3.981	0.05	103.21	61.77
3.54	128.14	2.97	173.17	45.0	3.846	0.02	109.10	64.07
4.05	129.06	1.48	175.59	46.5	3.774	0.01	111.06	64.53
4.75	128.95	0.45	176.49	47.5	3.712	0.00	112.02	64.47
5.73	127.52	0.08	175.44	47.9	3.661	0.00	111.68	63.76
6.75	125.48	0.30	173.18	47.7	3.631	0.00	110.44	62.74
7.50	123.40	0.63	170.78	47.4	3.605	0.01	109.08	61.70
8.49	121.39	1.15	168.24	46.9	3.591	0.01	107.55	60.69
9.24	119.85	1.55	166.30	46.5	3.580	0.01	106.38	59.92
10.00	118.51	1.95	164.56	46.1	3.573	0.02	105.30	59.25
10.78	117.07	2.31	162.76	45.7	3.562	0.02	104.22	58.54
11.29	115.96	2.56	161.40	45.4	3.552	0.02	103.42	57.98
11.78	115.10	2.74	160.37	45.3	3.543	0.02	102.81	57.55
12.27	114.53	2.97	159.56	45.0	3.543	0.03	102.30	57.26
12.78	113.74	3.20	158.54	44.8	3.539	0.03	101.67	56.87
13.55	112.74	3.46	157.28	44.5	3.531	0.03	100.91	56.37
14.31	111.54	3.71	155.83	44.3	3.518	0.03	100.06	55.77
14.82	110.57	3.88	154.69	44.1	3.506	0.04	99.40	55.28
15.33	109.73	4.00	153.72	44.0	3.494	0.04	98.86	54.86

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	268.1-268.6
Project No.	2013-465-001	Sample No.	ST-10
Lab ID #	2013-465-001-008	Test No.	28

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G319	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G1456	8/30/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	267.6-268.1
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	29

PRESSURES (psi)

Cell Pressure (psi)	112.0
Back Pressure (psi)	21.7
Eff. Conf. Pressure (psi)	90.3
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	119.22
Q	=	67.01

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.964	Diameter 1:	2.879
Length 2:	5.949	Diameter 2:	2.874
Length 3:	5.952	Diameter 3:	2.871
Avg. Length	5.955	*Avg. Diam.:*	2.875

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	28.4
Final Change (ml)	19.6

Initial Dial Reading (mil)	50
Dial Reading After Saturation (mil)	68
Dial Reading After Consolidation (mil)	129

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
22.3	0.000	21.7
47.3	0.001	22.1
74.4	0.002	22.5
178.3	0.006	24.7
267.9	0.011	27.8
337.7	0.016	31.2
425.5	0.024	36.5
497.8	0.032	41.6
572.3	0.043	47.3
667.5	0.063	54.2
751.1	0.092	58.6
810.4	0.128	60.1
845.5	0.164	60.3
875.3	0.206	60.1
887.0	0.236	60.0
898.7	0.277	59.9
911.2	0.332	59.8
925.7	0.394	59.8
936.9	0.439	59.8
942.0	0.499	59.9
941.8	0.544	60.0
947.2	0.588	60.2
952.8	0.633	60.4
959.2	0.664	60.5
963.9	0.694	60.6
965.5	0.724	60.7
967.0	0.753	60.9
969.9	0.798	61.1
977.4	0.843	61.3
986.0	0.873	61.4
991.4	0.902	61.6

Tested By: JCM Date: 11/10/13 Input Checked By: KC Date: 11/25/13

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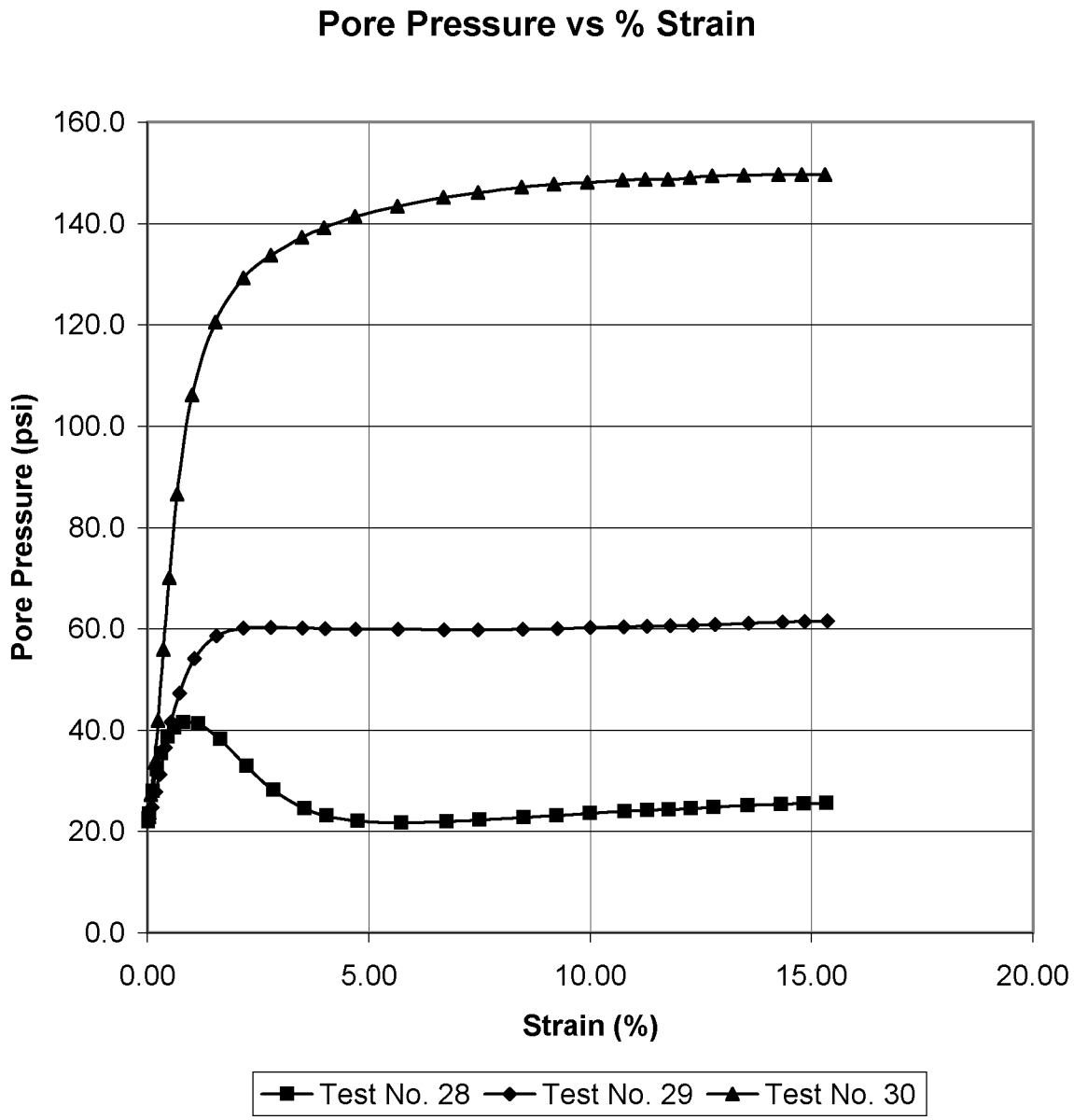
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	266.0-268.7
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	267.6-268.1
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	90.3	*Stage No.*	1
		Test No	29

INITIAL DIMENSIONS

Initial Sample Length (in)	5.96
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.49
Initial Sample Volume (in^3)	38.65

VOLUME CHANGE

Volume After Consolidation (in^3)	37.10
Length After Consolidation (in)	5.88
Area After Consolidation (in^2)	6.314

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	3.96	0.39	93.87	89.9	1.044	0.10	91.89	1.98
0.04	8.25	0.77	97.78	89.5	1.092	0.10	93.65	4.13
0.10	24.68	3.03	111.95	87.3	1.283	0.13	99.61	12.34
0.19	38.82	6.12	123.00	84.2	1.461	0.16	103.59	19.41
0.28	49.80	9.53	130.58	80.8	1.617	0.20	105.67	24.90
0.40	63.60	14.84	139.05	75.5	1.843	0.24	107.25	31.80
0.54	74.90	19.90	145.30	70.4	2.064	0.27	107.85	37.45
0.73	86.47	25.62	151.15	64.7	2.337	0.31	107.92	43.24
1.06	101.09	32.46	158.94	57.8	2.748	0.33	108.39	50.55
1.56	113.61	36.94	166.97	53.4	3.129	0.34	110.17	56.81
2.17	122.10	38.45	173.96	51.9	3.355	0.32	112.91	61.05
2.79	126.74	38.57	178.47	51.7	3.450	0.31	115.10	63.37
3.50	130.36	38.42	182.24	51.9	3.513	0.30	117.06	65.18
4.01	131.44	38.30	183.45	52.0	3.528	0.30	117.72	65.72
4.71	132.26	38.21	184.35	52.1	3.539	0.30	118.22	66.13
5.66	132.81	38.14	184.97	52.2	3.546	0.30	118.56	66.40
6.70	133.49	38.07	185.72	52.2	3.556	0.29	118.97	66.74
7.47	134.02	38.09	186.23	52.2	3.567	0.29	119.22	67.01
8.49	133.29	38.23	185.37	52.1	3.560	0.30	118.72	66.65
9.26	132.13	38.32	184.11	52.0	3.542	0.30	118.04	66.07
10.01	131.82	38.50	183.62	51.8	3.545	0.30	117.71	65.91
10.76	131.50	38.69	183.11	51.6	3.548	0.30	117.36	65.75
11.29	131.61	38.81	183.11	51.5	3.556	0.30	117.30	65.81
11.82	131.50	38.92	182.87	51.4	3.560	0.31	117.12	65.75
12.33	130.96	39.03	182.24	51.3	3.554	0.31	116.75	65.48
12.82	130.42	39.19	181.52	51.1	3.552	0.31	116.32	65.21
13.58	129.69	39.40	180.59	50.9	3.548	0.31	115.74	64.84
14.35	129.55	39.60	180.25	50.7	3.555	0.32	115.48	64.77
14.85	129.95	39.74	180.51	50.6	3.570	0.32	115.54	64.97
15.36	129.90	39.90	180.31	50.4	3.577	0.32	115.36	64.95

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ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	267.6-268.1
Project No.	2013-465-001	Sample No.	ST-10
Lab ID #	2013-465-001-008	Test No.	29

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G320	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G1295	3/4/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	267.1-267.6
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	30

PRESSURES (psi)

Cell Pressure (psi)	203.6
Back Pressure (psi)	21.6
Eff. Conf. Pressure (psi)	182.0
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	122.72
Q	=	66.85

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.875	Diameter 1:	2.883
Length 2:	5.868	Diameter 2:	2.880
Length 3:	5.861	Diameter 3:	2.882
Avg. Length:	5.868	*Avg. Diam.:*	2.882

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	21.8
Final Change (ml)	26.2

Initial Dial Reading (mil)	44
Dial Reading After Saturation (mil)	64
Dial Reading After Consolidation (mil)	118

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
38.2	0.000	21.6
85.6	0.001	22.1
131.8	0.002	22.9
309.5	0.005	27.2
457.4	0.010	33.6
574.1	0.014	41.8
719.1	0.021	55.9
827.6	0.029	70.1
924.3	0.039	86.5
1002.3	0.059	106.1
1032.1	0.089	120.6
1025.7	0.126	129.2
1013.9	0.162	133.7
999.0	0.202	137.3
989.4	0.231	139.1
977.9	0.272	141.4
972.1	0.327	143.4
963.1	0.388	145.2
961.4	0.433	146.1
959.4	0.490	147.1
960.1	0.532	147.7
960.2	0.576	148.1
960.7	0.622	148.6
964.2	0.652	148.7
963.7	0.681	148.7
962.7	0.710	149.1
964.8	0.739	149.4
967.7	0.781	149.5
969.6	0.826	149.6
969.9	0.856	149.6
966.6	0.887	149.7

Tested By: JCM Date: 11/18/13 Input Checked By: KC Date: 11/25/13

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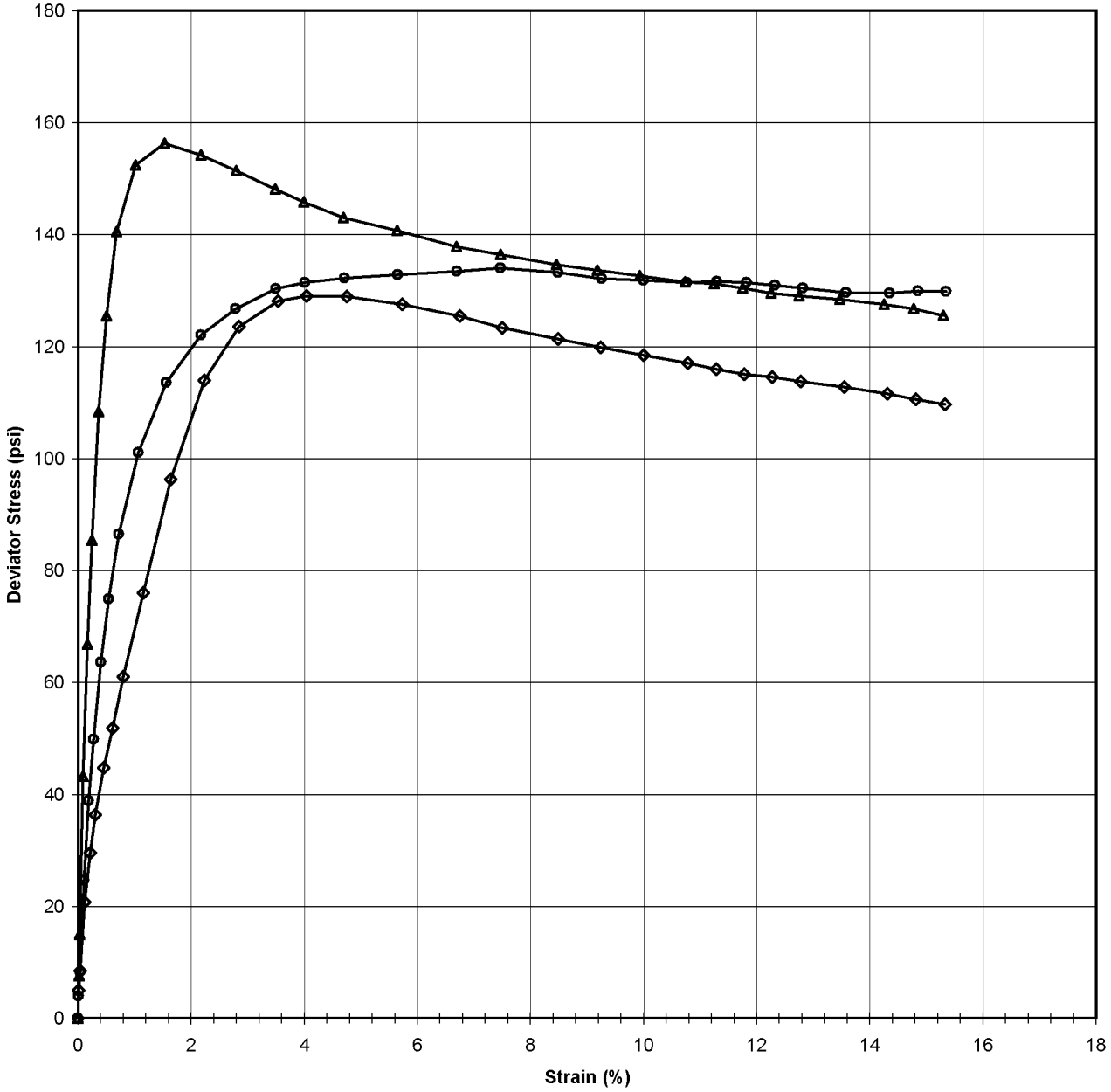
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	266.0-268.7
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 28 7925.991 E50 Test No. 29 15106.76 E50 Test No. 30 39592.26

Tested By: JCM Date: 11/18/13 Approved By: DB Date: 11/25/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	267.1-267.6
Project No.:	2013-465-001	Sample No.:	ST-10
Lab ID:	2013-465-001-008		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	182.0	*Stage No.*	1
		Test No	30

INITIAL DIMENSIONS

Initial Sample Length (in)	5.87
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.52
Initial Sample Volume (in^3)	38.27

VOLUME CHANGE

Volume After Consolidation (in^3)	36.28
Length After Consolidation (in)	5.79
Area After Consolidation (in^2)	6.262

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	7.57	0.47	189.10	181.5	1.042	0.06	185.32	3.79
0.03	14.94	1.27	195.67	180.7	1.083	0.08	188.20	7.47
0.09	43.29	5.59	219.70	176.4	1.245	0.13	198.05	21.64
0.17	66.83	11.98	236.85	170.0	1.393	0.18	203.44	33.42
0.25	85.37	20.24	247.13	161.8	1.528	0.24	204.44	42.69
0.37	108.34	34.32	256.02	147.7	1.734	0.32	201.85	54.17
0.50	125.44	48.48	258.97	133.5	1.939	0.39	196.25	62.72
0.68	140.55	64.93	257.62	117.1	2.201	0.46	187.35	70.28
1.01	152.41	84.54	249.87	97.5	2.564	0.55	173.67	76.20
1.53	156.29	98.96	239.33	83.0	2.882	0.63	161.19	78.14
2.18	154.28	107.57	228.71	74.4	3.073	0.70	151.57	77.14
2.79	151.46	112.14	221.32	69.9	3.168	0.74	145.59	75.73
3.49	148.09	115.68	214.41	66.3	3.233	0.78	140.36	74.04
3.99	145.83	117.53	210.31	64.5	3.262	0.81	137.39	72.92
4.69	143.02	119.75	205.27	62.2	3.298	0.84	133.76	71.51
5.65	140.73	121.83	200.89	60.2	3.339	0.87	130.53	70.36
6.69	137.83	123.59	196.23	58.4	3.360	0.90	127.32	68.91
7.47	136.41	124.51	193.91	57.5	3.373	0.91	125.70	68.21
8.46	134.67	125.53	191.14	56.5	3.385	0.93	123.81	67.33
9.19	133.70	126.13	189.57	55.9	3.393	0.94	122.72	66.85
9.94	132.60	126.52	188.09	55.5	3.390	0.95	121.79	66.30
10.74	131.51	127.01	186.50	55.0	3.391	0.97	120.75	65.76
11.25	131.25	127.11	186.14	54.9	3.391	0.97	120.51	65.63
11.76	130.42	127.13	185.29	54.9	3.377	0.97	120.08	65.21
12.26	129.55	127.49	184.05	54.5	3.377	0.98	119.28	64.77
12.75	129.10	127.78	183.33	54.2	3.381	0.99	118.78	64.55
13.48	128.44	127.93	182.52	54.1	3.375	1.00	118.29	64.22
14.25	127.54	128.05	181.49	54.0	3.364	1.00	117.72	63.77
14.78	126.80	128.04	180.76	54.0	3.350	1.01	117.36	63.40
15.30	125.57	128.05	179.52	53.9	3.328	1.02	116.74	62.79

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WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	267.1-267.6
Project No.	2013-465-001	Sample No.	ST-10
Lab ID #	2013-465-001-008	Test No.	30

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G322	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G041	2/22/14
Timing Device	G489	5/13/14
Flow Pump	G1511-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
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Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-008	Specific Gravity (measured)	2.67
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		

SAMPLE CONDITION SUMMARY

Boring No.:	R-7-1	R-7-1	R-7-1
Depth (ft):	268.1-268.6	267.6-268.1	267.1-267.6
Sample No.:	ST-10	ST-10	ST-10
Test No.	T28	T29	T30
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	21.6	21.7	21.6
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	27.5	27.5	27.5
Total Unit Weight (pcf)	120.0	115.1	119.7
Dry Unit Weight (pcf)	94.2	90.3	93.9
Moisture Content (%) (FINAL)	27.5	28.4	27.0
Initial State Void Ratio,e	0.770	0.845	0.775
Void Ratio at Shear, e	0.718	0.771	0.683

Tested By: JCM Date: 11/10/13 Input Checked By: KC Date: 11/25/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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MOISTURE CONTENT

	T28	T29	T30
Tare Number	785	785	785
Weight of Tare & Wet Sample (g)	241.37	241.37	241.37
Weight of Tare & Dry Sample (g)	207.74	207.74	207.74
Weight of Tare (g)	85.3	85.3	85.3
Moisture Content (%) (INITIAL)	27.47	27.47	27.47
Tare Number	701	897	582
Weight of Tare & Wet Sample (g)	1295.01	328.39	1253.75
Weight of Tare & Dry Sample (g)	1036.98	280.03	1005.19
Weight of Tare (g)	98.86	109.77	83.89
Moisture Content (%) (FINAL)	27.51	28.40	26.98

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1641.62	1585.58	1617.22
Weight of Tube (g)	421.96	417.45	414.83
Weight of Wet Sample (g)	1219.66	1168.13	1202.39
Length 1 (in)	5.961	5.964	5.875
Length 2 (in)	5.953	5.949	5.868
Length 3 (in)	5.954	5.952	5.861
Top Diameter (in)	2.877	2.879	2.883
Middle Diameter (in)	2.872	2.874	2.88
Bottom Diameter (in)	2.881	2.871	2.882
Average Length (in)	5.956	5.955	5.868
Average Area (in)	6.499	6.490	6.522
Sample Volume (cm^3)	634.34	633.36	627.15
Unit Wet Weight (g/cm^3)	1.92	1.84	1.92
Unit Wet Weight (pcf)	120.03	115.14	119.69
Unit Dry Weight (pcf)	94.17	90.33	93.90
Unit Dry Weight (g/cm^3)	1.51	1.45	1.50
Initial Burette Reading	**48**	**48**	**48**
Final Burette Reading	**31.1**	**28.4**	**21.8**
Initial Dial Reading	**52**	**50**	**44**
Dial Reading After Saturation	**58**	**68**	**64**
Dial Reading After Consolidation	**109**	**129**	**118**
Volume Change during Consolidation	16.9	19.6	26.2
Volume Change during Saturation	1.92	5.74	6.41
Volume at Shear (cm^3) *These	615.53	608.01	594.53
Volume of Solids (cm^3) measurements	358.37	343.23	353.30
Volume of Voids (cm^3) are all	257.16	264.78	241.24
Volume of Water (cm^3) at	263.18	260.30	254.50
Void Ratio, e shear	0.718	0.771	0.683

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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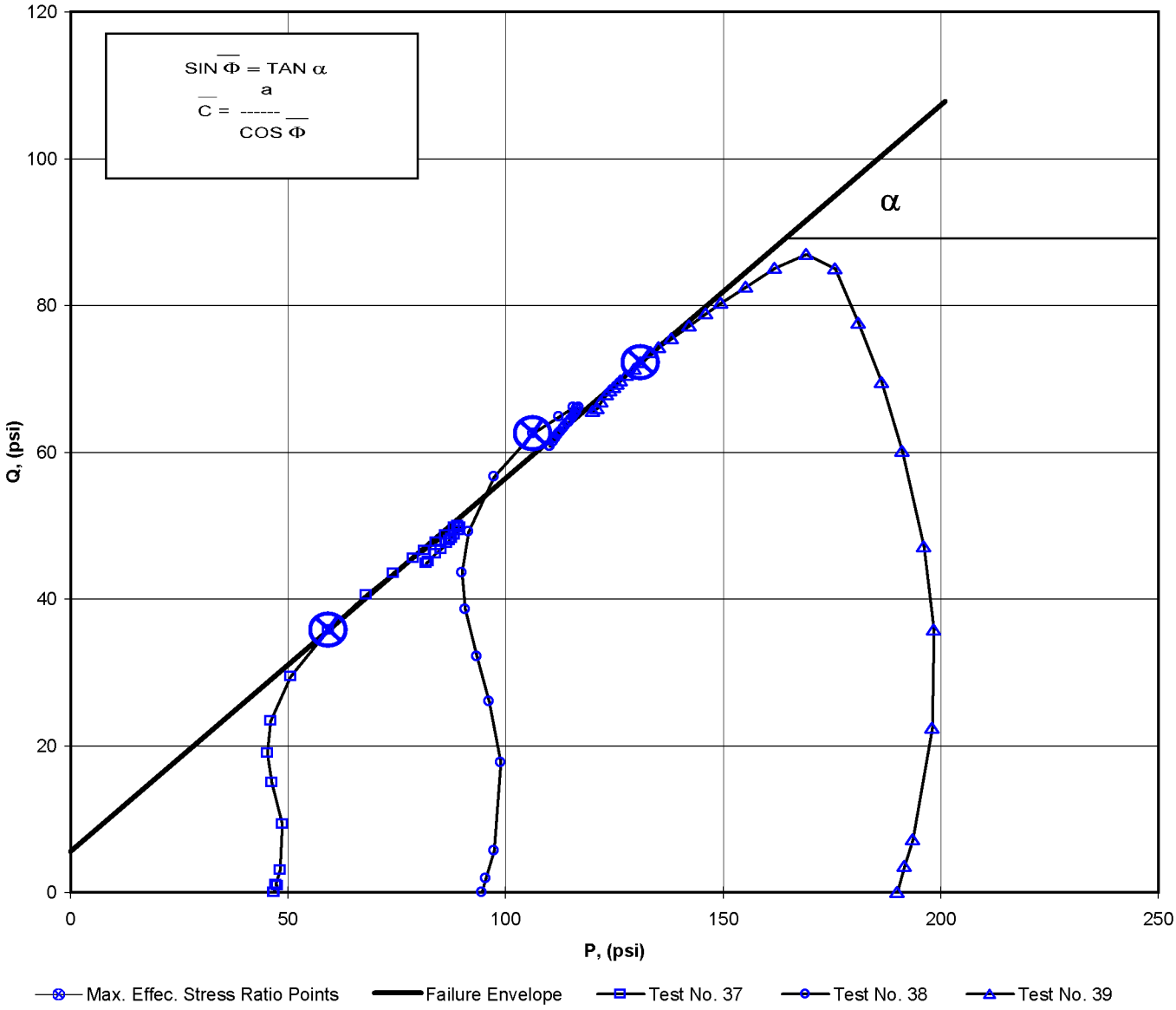
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	277.0-279.7
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	**5.59**	$\overline{C}$	=	**6.50**
α	=	**26.9**	$\overline{\Phi}$	=	**30.56**

Tested By: JCM Date: 11/17/13 Approved By: DB Date: 12/4/13

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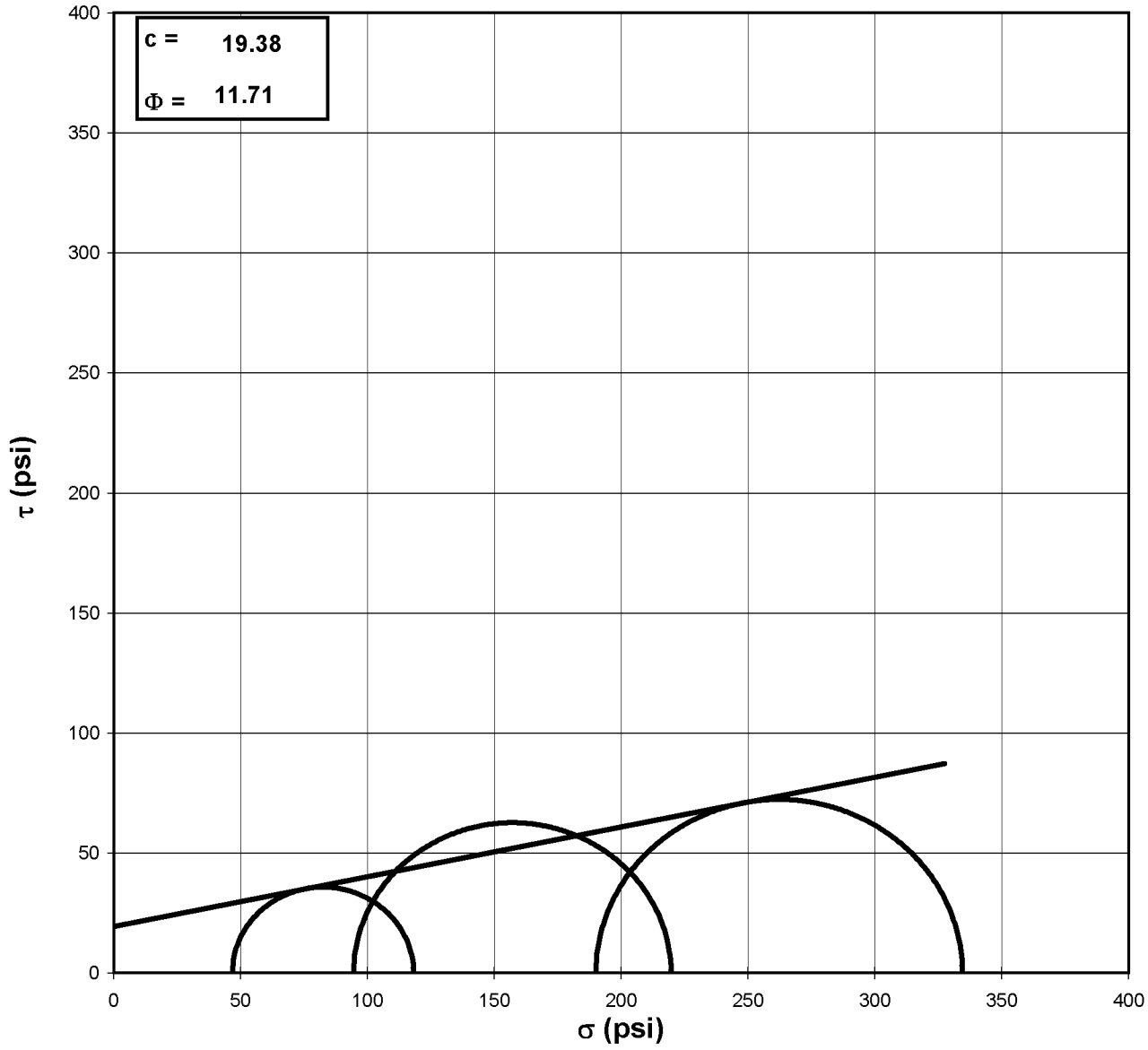
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	277.0-279.7
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 11/17/13 *Approved By:* DB *Date:* 12/4/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	278.1-278.6
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	37

PRESSURES (psi)

Cell Pressure (psi)	68.6
Back Pressure (psi)	21.8
Eff. Conf. Pressure (psi)	46.8
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	59.29
Q	=	35.74

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.935	Diameter 1:	2.880
Length 2:	5.952	Diameter 2:	2.884
Length 3:	5.957	Diameter 3:	2.883
Avg. Length:	5.948	*Avg. Diam.:*	2.882

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	33.9
Final Change (ml)	14.1

Initial Dial Reading (mil)	53
Dial Reading After Saturation (mil)	72
Dial Reading After Consolidation (mil)	110

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
8.0	0.000	21.8
8.0	0.003	21.9
19.8	0.006	22.0
21.9	0.013	22.5
46.7	0.014	23.5
126.6	0.018	29.2
200.3	0.025	37.4
251.9	0.033	42.4
308.6	0.044	46.0
387.8	0.064	47.5
471.1	0.092	45.0
536.8	0.127	41.1
578.1	0.163	37.8
609.5	0.206	35.3
627.5	0.236	33.9
647.1	0.276	32.4
666.3	0.332	31.2
687.4	0.390	30.1
696.2	0.436	29.5
700.7	0.498	29.1
706.7	0.541	28.9
706.0	0.586	28.8
704.2	0.631	29.1
701.4	0.660	29.3
700.5	0.691	29.4
699.5	0.722	29.7
691.7	0.752	30.1
688.0	0.797	30.8
678.3	0.841	31.4
679.7	0.870	31.8
678.3	0.901	32.0

Tested By: JCM Date: 11/17/13 Input Checked By: KC Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	278.1-278.6
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	46.8	*Stage No.*	1
		Test No	37

INITIAL DIMENSIONS

Initial Sample Length (in)	5.95
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.52
Initial Sample Volume (in^3)	38.81

VOLUME CHANGE

Volume After Consolidation (in^3)	37.58
Length After Consolidation (in)	5.89
Area After Consolidation (in^2)	6.379

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.05	0.01	0.13	46.68	46.7	1.000	17.23	46.68	0.00
0.11	1.84	0.17	48.47	46.6	1.040	0.09	47.55	0.92
0.22	2.18	0.66	48.32	46.1	1.047	0.30	47.23	1.09
0.24	6.05	1.65	51.19	45.1	1.134	0.27	48.17	3.02
0.31	18.54	7.40	57.93	39.4	1.470	0.40	48.67	9.27
0.42	30.01	15.58	61.23	31.2	1.961	0.52	46.23	15.01
0.55	38.02	20.59	64.23	26.2	2.451	0.54	45.22	19.01
0.74	46.78	24.16	69.42	22.6	3.066	0.52	46.03	23.39
1.08	58.90	25.66	80.04	21.1	3.786	0.44	50.59	29.45
1.56	71.47	23.25	95.02	23.6	4.035	0.33	59.29	35.74
2.15	81.11	19.34	108.57	27.5	3.954	0.24	68.01	40.55
2.76	86.91	16.01	117.69	30.8	3.823	0.18	74.24	43.45
3.49	91.00	13.51	124.29	33.3	3.733	0.15	78.79	45.50
4.00	93.23	12.05	127.98	34.7	3.683	0.13	81.36	46.62
4.68	95.49	10.57	131.72	36.2	3.636	0.11	83.97	47.75
5.64	97.37	9.36	134.81	37.4	3.601	0.10	86.13	48.69
6.62	99.46	8.34	137.92	38.5	3.586	0.08	88.19	49.73
7.40	99.90	7.72	138.98	39.1	3.556	0.08	89.03	49.95
8.45	99.42	7.34	138.89	39.5	3.519	0.07	89.18	49.71
9.18	99.47	7.08	139.19	39.7	3.504	0.07	89.46	49.74
9.94	98.55	6.96	138.39	39.8	3.474	0.07	89.11	49.28
10.71	97.45	7.29	136.96	39.5	3.466	0.07	88.24	48.72
11.21	96.52	7.47	135.84	39.3	3.454	0.08	87.59	48.26
11.73	95.83	7.64	135.00	39.2	3.447	0.08	87.08	47.92
12.25	95.13	7.94	134.00	38.9	3.448	0.08	86.43	47.57
12.77	93.49	8.33	131.96	38.5	3.430	0.09	85.21	46.75
13.53	92.18	8.97	130.01	37.8	3.437	0.10	83.92	46.09
14.27	90.08	9.63	127.25	37.2	3.424	0.11	82.21	45.04
14.77	89.74	10.00	126.53	36.8	3.439	0.11	81.66	44.87
15.29	89.00	10.17	125.63	36.6	3.430	0.11	81.13	44.50

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	278.1-278.6
Project No.	2013-465-001	Sample No.	ST-11
Lab ID #	2013-465-001-009	Test No.	37

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G312	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G720	3/18/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	278.6-279.1
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	38

PRESSURES (psi)

Cell Pressure (psi)	116.3
Back Pressure (psi)	21.7
Eff. Conf. Pressure (psi)	94.6
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	106.29
Q	=	62.56

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.967	Diameter 1:	2.879
Length 2:	5.956	Diameter 2:	2.887
Length 3:	5.920	Diameter 3:	2.872
Avg. Length	5.948	*Avg. Diam.:*	2.879

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	29.0
Final Change (ml)	19.0

Initial Dial Reading (mil)	54
Dial Reading After Saturation (mil)	78
Dial Reading After Consolidation (mil)	148

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
20.4	0.000	21.7
44.6	0.001	22.8
92.5	0.002	24.6
245.0	0.005	35.1
350.7	0.011	46.0
428.5	0.016	54.9
511.3	0.024	64.1
575.5	0.034	69.8
648.6	0.045	73.9
746.6	0.064	75.5
826.0	0.092	72.6
859.6	0.127	68.7
882.3	0.162	66.7
886.4	0.204	65.8
893.2	0.233	65.5
891.5	0.277	65.4
896.0	0.333	65.4
899.7	0.392	65.5
901.6	0.437	65.6
908.0	0.498	65.8
913.0	0.543	66.0
915.0	0.588	66.1
919.3	0.633	66.2
917.5	0.662	66.3
918.8	0.692	66.4
921.1	0.723	66.5
920.2	0.753	66.6
921.7	0.799	66.7
921.2	0.843	66.8
925.7	0.872	66.9
917.9	0.902	67.0

Tested By: JCM Date: 11/17/13 Input Checked By: KC Date: 12/4/13

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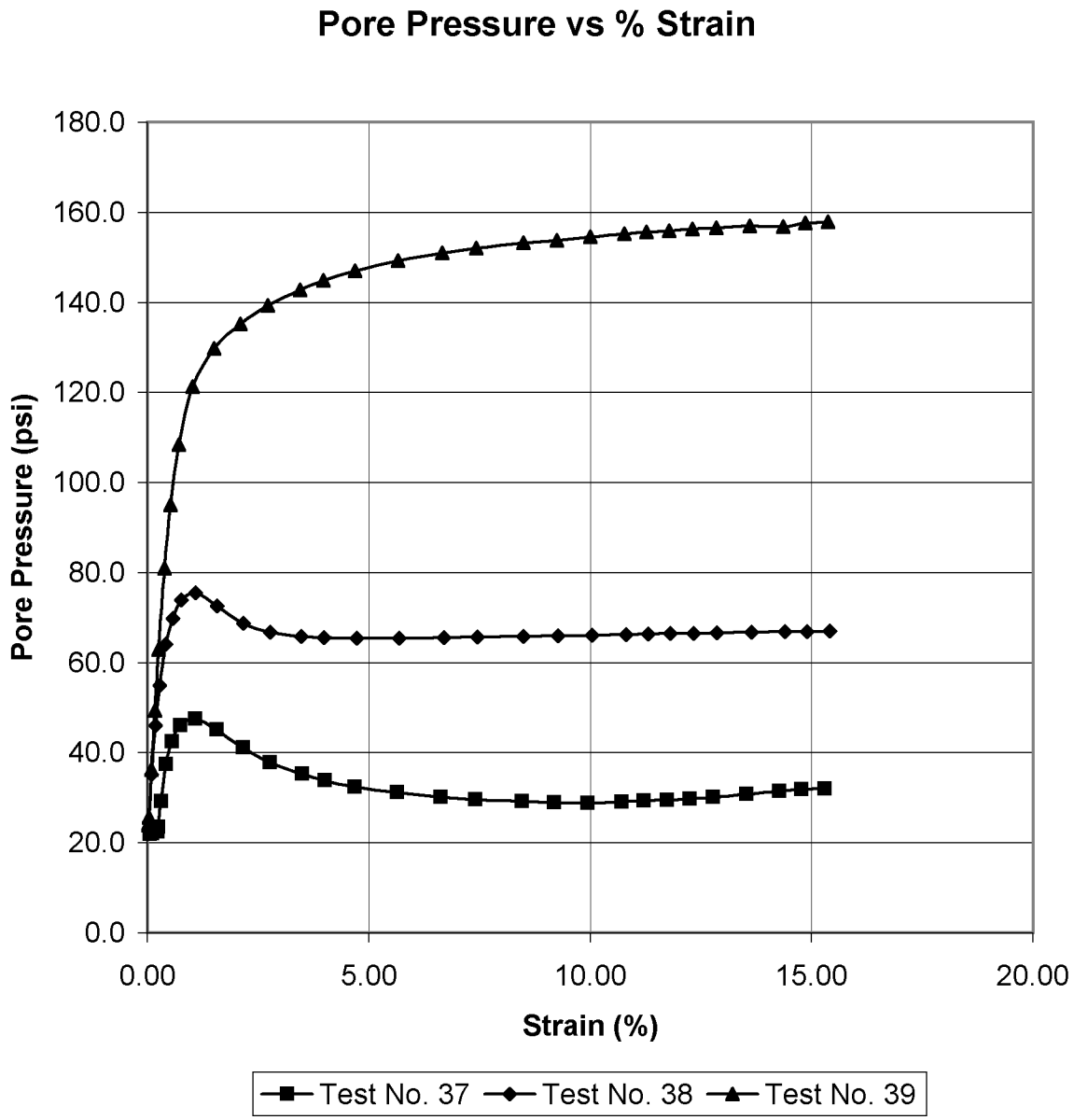
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	277.0-279.7
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	278.6-279.1
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	94.6	*Stage No.*	1
		Test No	38

INITIAL DIMENSIONS

Initial Sample Length (in)	5.95
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	38.73

VOLUME CHANGE

Volume After Consolidation (in^3)	37.10
Length After Consolidation (in)	5.85
Area After Consolidation (in^2)	6.338

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	3.81	1.05	97.36	93.5	1.041	0.28	95.46	1.91
0.03	11.38	2.90	103.08	91.7	1.124	0.25	97.39	5.69
0.09	35.41	13.42	116.59	81.2	1.436	0.38	98.88	17.70
0.19	52.02	24.35	122.27	70.3	1.740	0.47	96.26	26.01
0.28	64.21	33.20	125.61	61.4	2.046	0.52	93.51	32.11
0.42	77.14	42.42	129.32	52.2	2.478	0.55	90.75	38.57
0.57	87.08	48.10	133.58	46.5	2.873	0.55	90.04	43.54
0.76	98.36	52.20	140.75	42.4	3.320	0.53	91.58	49.18
1.09	113.32	53.83	154.09	40.8	3.780	0.48	97.43	56.66
1.58	125.11	50.87	168.84	43.7	3.861	0.41	106.29	62.56
2.18	129.53	47.03	177.10	47.6	3.723	0.36	112.33	64.76
2.77	132.22	45.05	181.77	49.6	3.668	0.34	115.66	66.11
3.48	131.89	44.14	182.35	50.5	3.614	0.33	116.40	65.94
3.99	132.23	43.81	183.02	50.8	3.604	0.33	116.90	66.11
4.73	130.94	43.70	181.84	50.9	3.573	0.33	116.37	65.47
5.69	130.29	43.69	181.20	50.9	3.559	0.34	116.05	65.14
6.70	129.45	43.82	180.23	50.8	3.549	0.34	115.50	64.73
7.46	128.67	43.92	179.35	50.7	3.539	0.34	115.01	64.33
8.50	128.14	44.09	178.64	50.5	3.537	0.34	114.58	64.07
9.27	127.78	44.25	178.13	50.3	3.538	0.35	114.24	63.89
10.04	126.98	44.39	177.19	50.2	3.529	0.35	113.70	63.49
10.81	126.50	44.53	176.57	50.1	3.526	0.35	113.32	63.25
11.31	125.53	44.64	175.49	50.0	3.513	0.36	112.72	62.77
11.82	125.00	44.74	174.86	49.9	3.507	0.36	112.36	62.50
12.34	124.58	44.78	174.40	49.8	3.500	0.36	112.11	62.29
12.86	123.71	44.90	173.41	49.7	3.489	0.36	111.55	61.85
13.65	122.81	45.00	172.41	49.6	3.476	0.37	111.01	61.40
14.40	121.66	45.12	171.14	49.5	3.459	0.37	110.31	60.83
14.90	121.55	45.21	170.94	49.4	3.461	0.37	110.16	60.78
15.41	119.79	45.28	169.11	49.3	3.429	0.38	109.22	59.89

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	278.6-279.1
Project No.	2013-465-001	Sample No.	ST-11
Lab ID #	2013-465-001-009	Test No.	38

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G313	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G721	2/22/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	279.1-279.6
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	39

PRESSURES (psi)

Cell Pressure (psi)	212.0
Back Pressure (psi)	21.9
Eff. Conf. Pressure (psi)	190.1
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	131.08
Q	=	72.23

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.871	Diameter 1:	2.877
Length 2:	5.895	Diameter 2:	2.884
Length 3:	5.875	Diameter 3:	2.871
Avg. Length:	5.880	*Avg. Diam.:*	2.877

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	24.6
Final Change (ml)	23.4

Initial Dial Reading (mil)	45
Dial Reading After Saturation (mil)	64
Dial Reading After Consolidation (mil)	132

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
41.7	0.000	21.9
86.0	0.001	23.8
132.6	0.002	25.6
323.2	0.006	36.2
492.5	0.010	49.3
636.2	0.015	62.9
801.1	0.022	80.9
920.0	0.030	95.0
1024.5	0.042	108.4
1122.2	0.059	121.2
1151.8	0.087	129.7
1135.0	0.122	135.2
1108.7	0.158	139.3
1088.1	0.200	142.7
1075.0	0.230	144.8
1060.9	0.272	146.9
1047.9	0.328	149.3
1042.9	0.386	151.0
1041.0	0.431	152.0
1034.6	0.492	153.2
1030.3	0.536	153.7
1027.0	0.580	154.6
1024.8	0.624	155.2
1023.5	0.654	155.6
1023.3	0.683	155.8
1021.9	0.713	156.3
1020.2	0.744	156.5
1014.8	0.789	156.9
1009.9	0.832	156.8
1010.8	0.861	157.5
1006.9	0.891	157.9

Tested By: JCM Date: 11/17/13 Input Checked By: KC Date: 12/4/13

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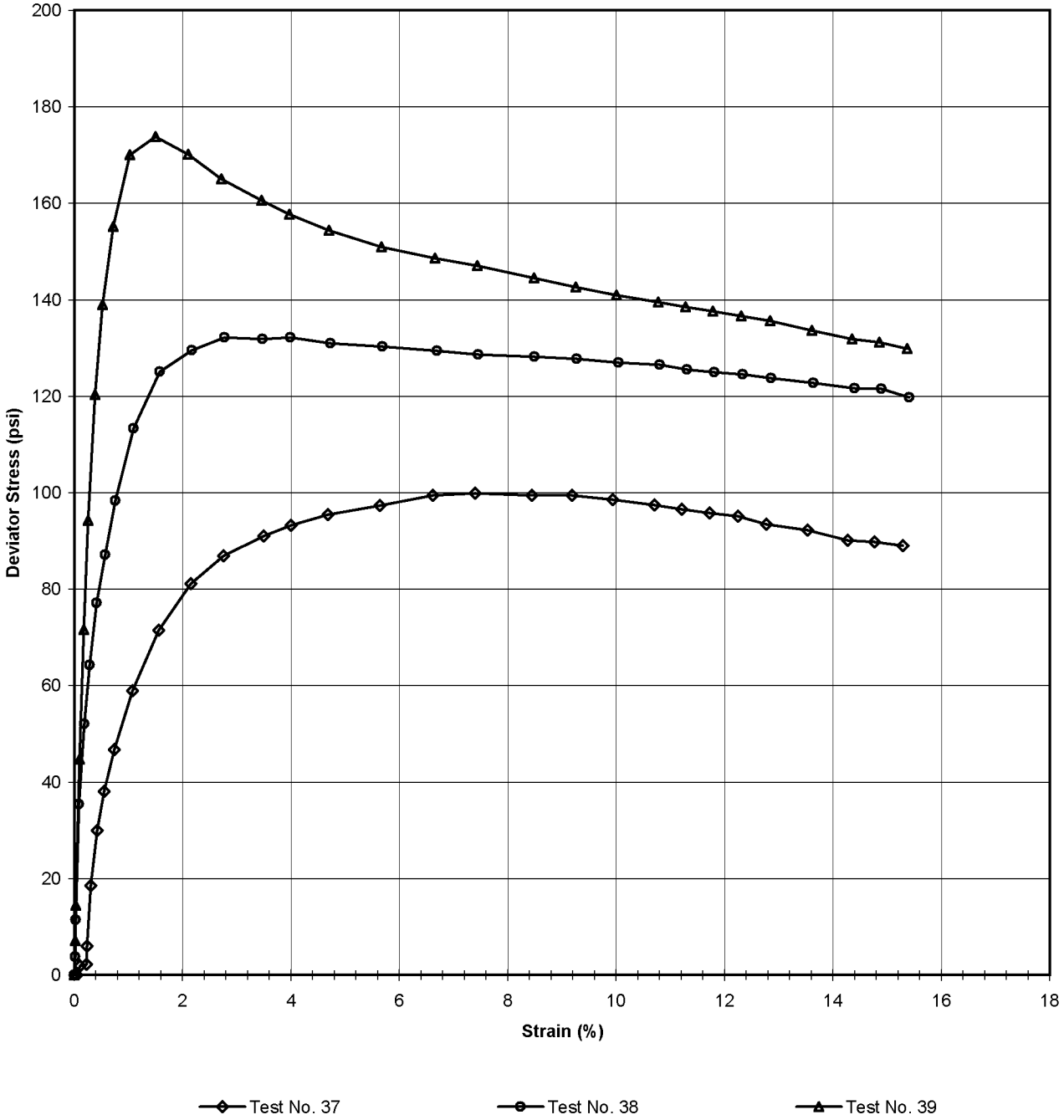
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	277.0-279.7
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 37 6924.496 E50 Test No. 38 23223.93 E50 Test No. 39 40021.69

Tested By: JCM Date: 11/17/13 Approved By: DB Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	279.1-279.6
Project No.:	2013-465-001	Sample No.:	ST-11
Lab ID:	2013-465-001-009		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	190.1	*Stage No.*	1
		Test No	39

INITIAL DIMENSIONS

Initial Sample Length (in)	5.88
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.50
Initial Sample Volume (in^3)	38.24

VOLUME CHANGE

Volume After Consolidation (in^3)	36.44
Length After Consolidation (in)	5.79
Area After Consolidation (in^2)	6.290

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	7.05	1.94	195.21	188.2	1.037	0.28	191.68	3.52
0.03	14.44	3.72	200.82	186.4	1.077	0.26	193.60	7.22
0.10	44.72	14.32	220.50	175.8	1.254	0.32	198.14	22.36
0.18	71.55	27.42	234.23	162.7	1.440	0.38	198.45	35.78
0.26	94.27	40.99	243.39	149.1	1.632	0.43	196.25	47.14
0.39	120.27	59.05	251.33	131.1	1.918	0.49	191.19	60.14
0.53	138.91	73.08	255.92	117.0	2.187	0.53	186.47	69.45
0.72	155.14	86.47	258.77	103.6	2.497	0.56	181.20	77.57
1.03	170.03	99.31	260.83	90.8	2.873	0.58	175.81	85.02
1.50	173.85	107.84	256.11	82.3	3.113	0.62	169.18	86.92
2.10	170.17	113.31	246.96	76.8	3.216	0.67	161.88	85.09
2.72	165.03	117.39	237.74	72.7	3.270	0.71	155.22	82.51
3.46	160.62	120.81	229.90	69.3	3.318	0.75	149.59	80.31
3.97	157.76	122.92	224.94	67.2	3.348	0.78	146.06	78.88
4.70	154.44	125.03	219.51	65.1	3.373	0.81	142.29	77.22
5.67	150.90	127.36	213.64	62.7	3.405	0.84	138.19	75.45
6.66	148.58	129.10	209.58	61.0	3.436	0.87	135.29	74.29
7.44	147.07	130.10	207.08	60.0	3.451	0.88	133.54	73.54
8.49	144.47	131.25	203.32	58.8	3.455	0.91	131.08	72.23
9.25	142.63	131.82	200.91	58.3	3.447	0.92	129.60	71.31
10.01	140.98	132.67	198.41	57.4	3.455	0.94	127.92	70.49
10.78	139.46	133.32	196.24	56.8	3.456	0.96	126.51	69.73
11.28	138.50	133.67	194.93	56.4	3.454	0.97	125.68	69.25
11.79	137.66	133.94	193.82	56.2	3.451	0.97	124.99	68.83
12.31	136.66	134.40	192.37	55.7	3.454	0.98	124.03	68.33
12.85	135.59	134.56	191.13	55.5	3.441	0.99	123.34	67.79
13.61	133.66	134.98	188.78	55.1	3.425	1.01	121.95	66.83
14.36	131.84	134.94	187.00	55.2	3.390	1.02	121.08	65.92
14.86	131.19	135.65	185.64	54.5	3.409	1.03	120.05	65.59
15.38	129.86	136.01	183.95	54.1	3.401	1.05	119.02	64.93

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	279.1-279.6
Project No.	2013-465-001	Sample No.	ST-11
Lab ID #	2013-465-001-009	Test No.	39

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G314	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G1294	3/4/14
Timing Device	G489	5/13/14
Flow Pump	G1510-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-009	Specific Gravity (measured)	2.63
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		

SAMPLE CONDITION SUMMARY

Boring No.:	R-7-1	R-7-1	R-7-1
Depth (ft):	278.1-278.6	278.6-279.1	279.1-279.6
Sample No.:	ST-11	ST-11	ST-11
Test No.	T37	T38	T39
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	21.8	21.7	21.9
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	30.5	30.5	30.5
Total Unit Weight (pcf)	118.6	118.6	119.4
Dry Unit Weight (pcf)	90.9	90.8	91.5
Moisture Content (%) (FINAL)	29.5	28.4	28.2
Initial State Void Ratio,e	0.807	0.808	0.795
Void Ratio at Shear, e	0.750	0.732	0.711

Tested By: JCM Date: 11/17/13 Input Checked By: KC Date: 12/4/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

MOISTURE CONTENT

	T37	T38	T39
Tare Number	1125	1125	1125
Weight of Tare & Wet Sample (g)	238.65	238.65	238.65
Weight of Tare & Dry Sample (g)	202.5	202.5	202.5
Weight of Tare (g)	84.1	84.1	84.1
Moisture Content (%) (INITIAL)	30.53	30.53	30.53
Tare Number	607	690	1453
Weight of Tare & Wet Sample (g)	403.8	1275.05	1316.95
Weight of Tare & Dry Sample (g)	330.72	1014.4	1059.06
Weight of Tare (g)	82.8	95.45	145.52
Moisture Content (%) (FINAL)	29.48	28.36	28.23

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1624.2	1621.62	1608.83
Weight of Tube (g)	415.96	416.45	410.61
Weight of Wet Sample (g)	1208.24	1205.17	1198.22
Length 1 (in)	5.935	5.967	5.871
Length 2 (in)	5.952	5.956	5.895
Length 3 (in)	5.957	5.92	5.875
Top Diameter (in)	2.88	2.879	2.877
Middle Diameter (in)	2.884	2.887	2.884
Bottom Diameter (in)	2.883	2.872	2.871
Average Length (in)	5.948	5.947667	5.880333
Average Area (in)	6.525	6.511	6.502
Sample Volume (cm^3)	635.99	634.63	626.58
Unit Wet Weight (g/cm^3)	1.90	1.90	1.91
Unit Wet Weight (pcf)	118.60	118.56	119.39
Unit Dry Weight (pcf)	90.86	90.82	91.46
Unit Dry Weight (g/cm^3)	1.46	1.46	1.47
Initial Burette Reading	**48**	**48**	**48**
Final Burette Reading	**33.9**	**29**	**24.6**
Initial Dial Reading	**53**	**54**	**45**
Dial Reading After Saturation	**72**	**78**	**64**
Dial Reading After Consolidation	**110**	**148**	**132**
Volume Change during Consolidation	14.1	19	23.4
Volume Change during Saturation	6.09	7.68	6.07
Volume at Shear (cm^3) *These	615.80	607.95	597.10
Volume of Solids (cm^3) measurements	351.95	351.06	349.03
Volume of Voids (cm^3) are all	263.85	256.89	248.07
Volume of Water (cm^3) at	272.85	261.88	259.14
Void Ratio, e shear	0.750	0.732	0.711

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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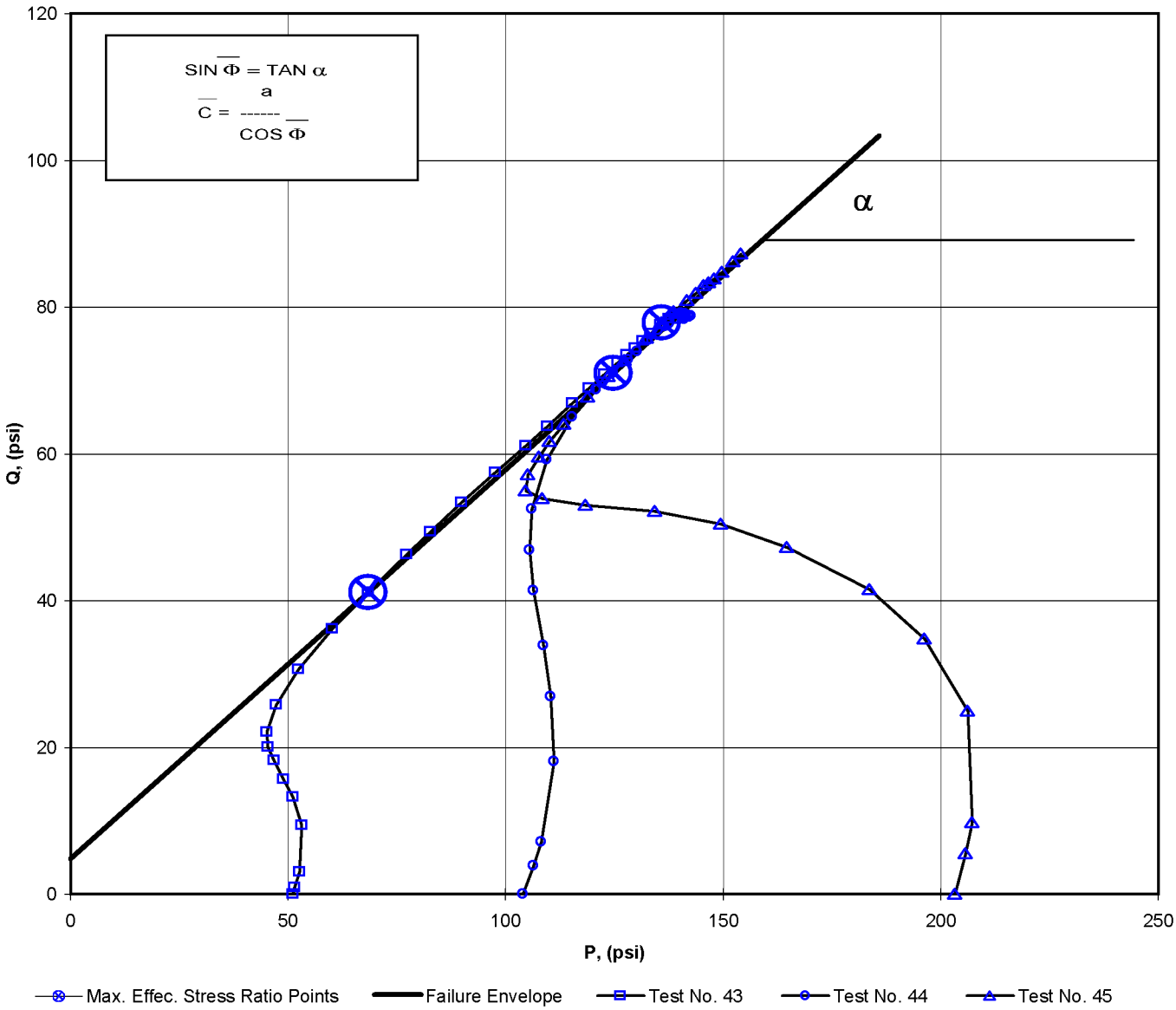
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	298.0-300.7
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	4.83	$\overline{C}$	=	5.69
α	=	27.9	$\overline{\Phi}$	=	32.01

Tested By: JCM Date: 11/19/13 Approved By: DB Date: 12/4/13

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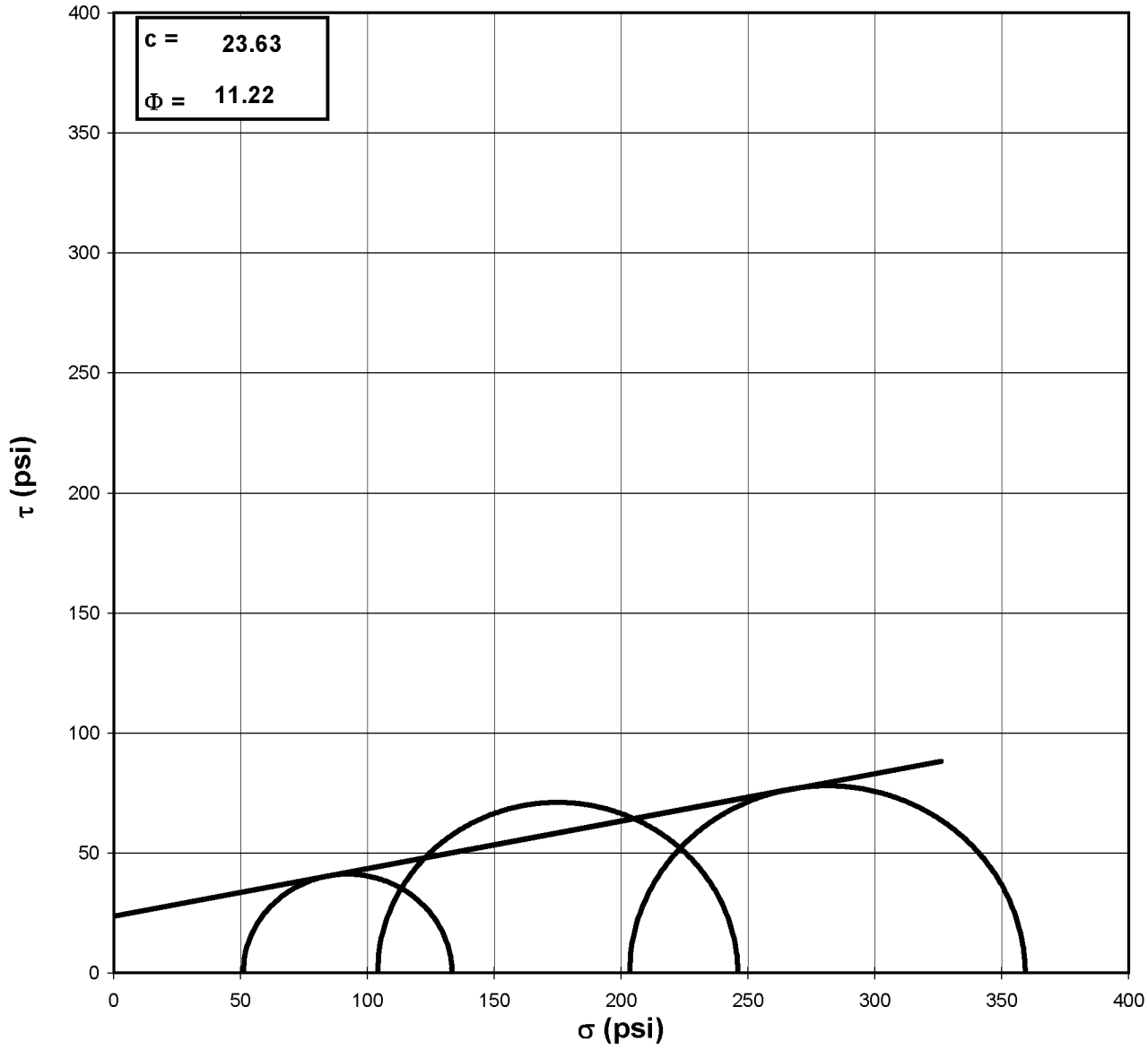
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	298.0-300.7
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 11/19/13 *Approved By:* DB *Date:* 12/4/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	299.2-299.7
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	43

PRESSURES (psi)

Cell Pressure (psi)	72.5
Back Pressure (psi)	21.4
Eff. Conf. Pressure (psi)	51.1
Pore Pressure Response (%)	99

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	68.48
Q	=	41.12

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.914	Diameter 1:	2.877
Length 2:	5.918	Diameter 2:	2.881
Length 3:	5.918	Diameter 3:	2.870
Avg. Length:	5.917	*Avg. Diam.:*	2.876

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	29.5
Final Change (ml)	18.5

Initial Dial Reading (mil)	50
Dial Reading After Saturation (mil)	110
Dial Reading After Consolidation (mil)	156

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
13.7	0.000	21.4
24.9	0.001	21.9
51.3	0.002	22.8
130.3	0.006	28.6
178.5	0.011	34.6
209.2	0.016	39.2
241.2	0.025	44.0
264.0	0.034	47.1
290.7	0.046	49.5
338.3	0.066	51.1
400.7	0.095	50.7
473.7	0.130	48.4
540.1	0.164	45.1
610.0	0.204	41.5
653.7	0.233	39.1
710.3	0.275	35.9
772.1	0.332	32.3
828.8	0.390	28.9
870.9	0.434	26.6
923.0	0.493	24.0
958.5	0.537	22.3
992.9	0.583	20.6
1024.1	0.627	19.1
1044.0	0.656	18.1
1062.7	0.686	17.2
1083.5	0.715	16.4
1103.8	0.745	15.5
1131.2	0.791	14.4
1153.4	0.836	13.4
1169.1	0.865	12.6
1185.8	0.895	12.1

Tested By: JCM Date: 11/19/13 Input Checked By: KC Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	299.2-299.7
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	51.1	*Stage No.*	1
		Test No	43

INITIAL DIMENSIONS

Initial Sample Length (in)	5.92
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.50
Initial Sample Volume (in^3)	38.44

VOLUME CHANGE

Volume After Consolidation (in^3)	36.14
Length After Consolidation (in)	5.81
Area After Consolidation (in^2)	6.219

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	1.81	0.45	52.45	50.6	1.036	0.25	51.55	0.90
0.03	6.04	1.44	55.70	49.7	1.122	0.24	52.68	3.02
0.11	18.72	7.24	62.58	43.9	1.427	0.39	53.22	9.36
0.19	26.45	13.18	64.37	37.9	1.698	0.50	51.15	13.23
0.28	31.35	17.79	64.66	33.3	1.941	0.57	48.99	15.68
0.43	36.42	22.57	64.94	28.5	2.277	0.63	46.73	18.21
0.58	40.02	25.69	65.43	25.4	2.575	0.65	45.42	20.01
0.78	44.19	28.06	67.23	23.0	2.918	0.64	45.14	22.09
1.14	51.61	29.67	73.04	21.4	3.408	0.58	47.23	25.80
1.63	61.21	29.34	82.97	21.8	3.813	0.48	52.37	30.60
2.24	72.31	27.02	96.38	24.1	4.003	0.38	60.23	36.15
2.82	82.25	23.74	109.60	27.4	4.007	0.29	68.48	41.12
3.51	92.51	20.08	123.53	31.0	3.982	0.22	77.28	46.26
4.01	98.78	17.74	132.14	33.4	3.961	0.18	82.75	49.39
4.74	106.71	14.55	143.26	36.6	3.919	0.14	89.91	53.35
5.71	114.99	10.90	155.18	40.2	3.861	0.10	97.69	57.49
6.72	122.25	7.54	165.81	43.6	3.807	0.06	104.68	61.13
7.47	127.53	5.21	173.43	45.9	3.779	0.04	109.66	63.77
8.49	133.80	2.65	182.25	48.5	3.761	0.02	115.35	66.90
9.25	137.86	0.87	188.09	50.2	3.745	0.01	119.16	68.93
10.04	141.64	-0.80	193.54	51.9	3.729	-0.01	122.72	70.82
10.80	144.92	-2.32	198.34	53.4	3.713	-0.02	125.88	72.46
11.30	146.95	-3.33	201.38	54.4	3.700	-0.02	127.90	73.48
11.80	148.76	-4.25	204.11	55.3	3.688	-0.03	129.73	74.38
12.31	150.84	-5.04	206.98	56.1	3.687	-0.03	131.56	75.42
12.82	152.80	-5.85	209.75	57.0	3.683	-0.04	133.35	76.40
13.61	155.24	-6.96	213.29	58.1	3.674	-0.05	135.68	77.62
14.38	156.89	-7.97	215.96	59.1	3.656	-0.05	137.51	78.45
14.89	158.11	-8.75	217.96	59.9	3.642	-0.06	138.91	79.05
15.40	159.43	-9.35	219.88	60.4	3.637	-0.06	140.17	79.72

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	299.2-299.7
Project No.	2013-465-001	Sample No.	ST-13
Lab ID #	2013-465-001-011	Test No.	43

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G332	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G1457	8/30/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	298.7-299.2
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	44

PRESSURES (psi)

Cell Pressure (psi)	125.7
Back Pressure (psi)	21.7
Eff. Conf. Pressure (psi)	104.0
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	124.85
Q	=	71.00

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.972	Diameter 1:	2.877
Length 2:	5.945	Diameter 2:	2.868
Length 3:	5.963	Diameter 3:	2.867
Avg. Length	5.960	*Avg. Diam.:*	2.871

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	28.2
Final Change (ml)	19.8

Initial Dial Reading (mil)	56
Dial Reading After Saturation (mil)	70
Dial Reading After Consolidation (mil)	110

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
29.8	0.000	21.7
77.9	0.001	23.0
118.9	0.002	24.6
256.8	0.006	32.7
368.3	0.010	42.2
456.3	0.015	50.9
551.8	0.024	60.6
622.5	0.033	67.1
693.8	0.044	72.1
782.2	0.066	75.5
860.1	0.097	75.4
912.8	0.132	73.6
947.5	0.166	71.9
977.5	0.206	70.3
997.5	0.235	69.4
1024.7	0.278	68.3
1053.5	0.337	67.4
1071.6	0.396	66.4
1084.4	0.439	65.8
1104.6	0.497	65.0
1125.2	0.543	64.5
1133.9	0.590	64.1
1142.4	0.634	63.5
1144.5	0.663	63.4
1146.9	0.691	63.1
1150.5	0.719	62.9
1159.7	0.749	62.6
1174.9	0.795	62.4
1182.3	0.842	62.2
1191.3	0.872	61.9
1196.8	0.900	61.9

Tested By: JCM Date: 11/19/13 Input Checked By: KC Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
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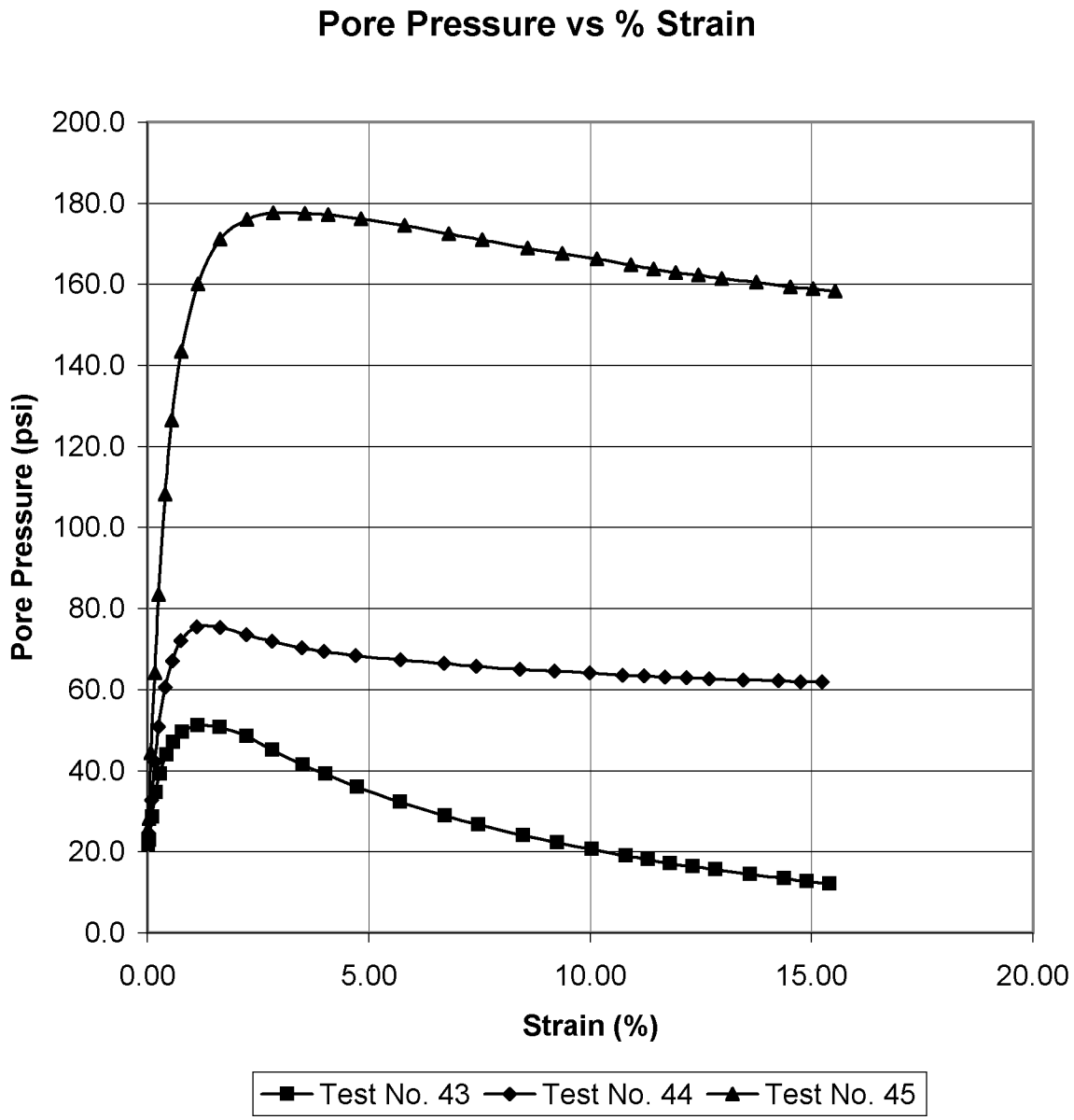
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	298.0-300.7
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	298.7-299.2
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	104.0	*Stage No.*	1
		Test No	44

INITIAL DIMENSIONS

Initial Sample Length (in)	5.96
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.47
Initial Sample Volume (in^3)	38.57

VOLUME CHANGE

Volume After Consolidation (in^3)	37.09
Length After Consolidation (in)	5.91
Area After Consolidation (in^2)	6.281

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	7.66	1.33	110.33	102.7	1.075	0.17	106.50	3.83
0.03	14.18	2.86	115.32	101.1	1.140	0.20	108.23	7.09
0.10	36.11	10.95	129.16	93.0	1.388	0.30	111.11	18.06
0.18	53.80	20.49	137.31	83.5	1.644	0.38	110.41	26.90
0.26	67.72	29.16	142.56	74.8	1.905	0.43	108.70	33.86
0.40	82.78	38.90	147.88	65.1	2.272	0.47	106.49	41.39
0.57	93.84	45.38	152.46	58.6	2.601	0.48	105.54	46.92
0.75	104.93	50.40	158.52	53.6	2.958	0.48	106.06	52.46
1.12	118.47	53.75	168.71	50.2	3.358	0.45	109.48	59.23
1.64	130.03	53.69	180.34	50.3	3.584	0.41	115.33	65.01
2.23	137.45	51.87	189.59	52.1	3.637	0.38	120.86	68.73
2.82	142.00	50.15	195.85	53.8	3.637	0.35	124.85	71.00
3.49	145.63	48.55	201.08	55.4	3.626	0.33	128.26	72.81
3.99	147.92	47.71	204.22	56.3	3.628	0.32	130.25	73.96
4.70	150.95	46.63	208.32	57.4	3.631	0.31	132.85	75.47
5.71	153.68	45.68	212.00	58.3	3.635	0.30	135.16	76.84
6.71	154.75	44.71	214.04	59.3	3.610	0.29	136.66	77.38
7.43	155.43	44.09	215.34	59.9	3.595	0.28	137.62	77.72
8.42	156.73	43.33	217.40	60.7	3.583	0.28	139.03	78.36
9.19	158.38	42.80	219.58	61.2	3.588	0.27	140.39	79.19
9.99	158.23	42.36	219.87	61.6	3.567	0.27	140.76	79.12
10.73	158.14	41.77	220.37	62.2	3.541	0.26	141.30	79.07
11.22	157.57	41.69	219.88	62.3	3.529	0.26	141.09	78.79
11.70	157.05	41.39	219.66	62.6	3.509	0.26	141.13	78.53
12.18	156.70	41.16	219.54	62.8	3.494	0.26	141.19	78.35
12.69	157.07	40.94	220.13	63.1	3.491	0.26	141.59	78.54
13.46	157.78	40.69	221.09	63.3	3.492	0.26	142.20	78.89
14.25	157.34	40.46	220.88	63.5	3.476	0.26	142.21	78.67
14.76	157.64	40.20	221.44	63.8	3.471	0.26	142.62	78.82
15.24	157.49	40.16	221.33	63.8	3.467	0.26	142.58	78.75

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	298.7-299.2
Project No.	2013-465-001	Sample No.	ST-13
Lab ID #	2013-465-001-011	Test No.	44

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G330	INITIAL ONLY
Load Cell	G1437	1/7/14
Cell Pressure Transducer	G1513	11/7/14
Pore Pressure Transducer	G1515	11/7/14
Extensometer	G1516	11/7/14
Load Frame	G1434	1/7/14
Dial Indicator	G528	8/30/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	G1510-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	298.2-298.7
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	45

PRESSURES (psi)

Cell Pressure (psi)	225.6
Back Pressure (psi)	22.2
Eff. Conf. Pressure (psi)	203.4
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	135.88
Q	=	77.92

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.873	Diameter 1:	2.881
Length 2:	5.885	Diameter 2:	2.872
Length 3:	5.881	Diameter 3:	2.884
Avg. Length:	5.880	*Avg. Diam.:*	2.879

VOLUME CHANGE

Initial Burette Reading (ml)	72.0
Final Burette Reading (ml)	31.7
Final Change (ml)	40.3

Initial Dial Reading (mil)	42
Dial Reading After Saturation (mil)	56
Dial Reading After Consolidation (mil)	171

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
44.7	0.000	22.2
113.1	0.001	25.4
165.8	0.002	28.1
353.4	0.005	44.3
475.2	0.010	64.1
559.0	0.015	83.4
631.5	0.023	108.2
672.0	0.032	126.5
694.8	0.044	143.4
707.4	0.066	160.1
722.6	0.094	171.0
740.2	0.130	176.0
771.6	0.164	177.6
808.8	0.204	177.5
839.6	0.235	177.1
876.7	0.277	176.1
934.1	0.334	174.5
980.1	0.392	172.4
1017.1	0.435	171.0
1069.1	0.494	168.9
1107.5	0.539	167.6
1136.9	0.584	166.2
1167.4	0.628	164.8
1187.8	0.657	163.7
1208.4	0.686	162.9
1221.0	0.716	162.2
1235.5	0.746	161.4
1260.0	0.791	160.6
1291.0	0.836	159.4
1314.8	0.865	158.8
1329.8	0.894	158.3

Tested By: JCM Date: 11/19/13 Input Checked By: KC Date: 12/4/13

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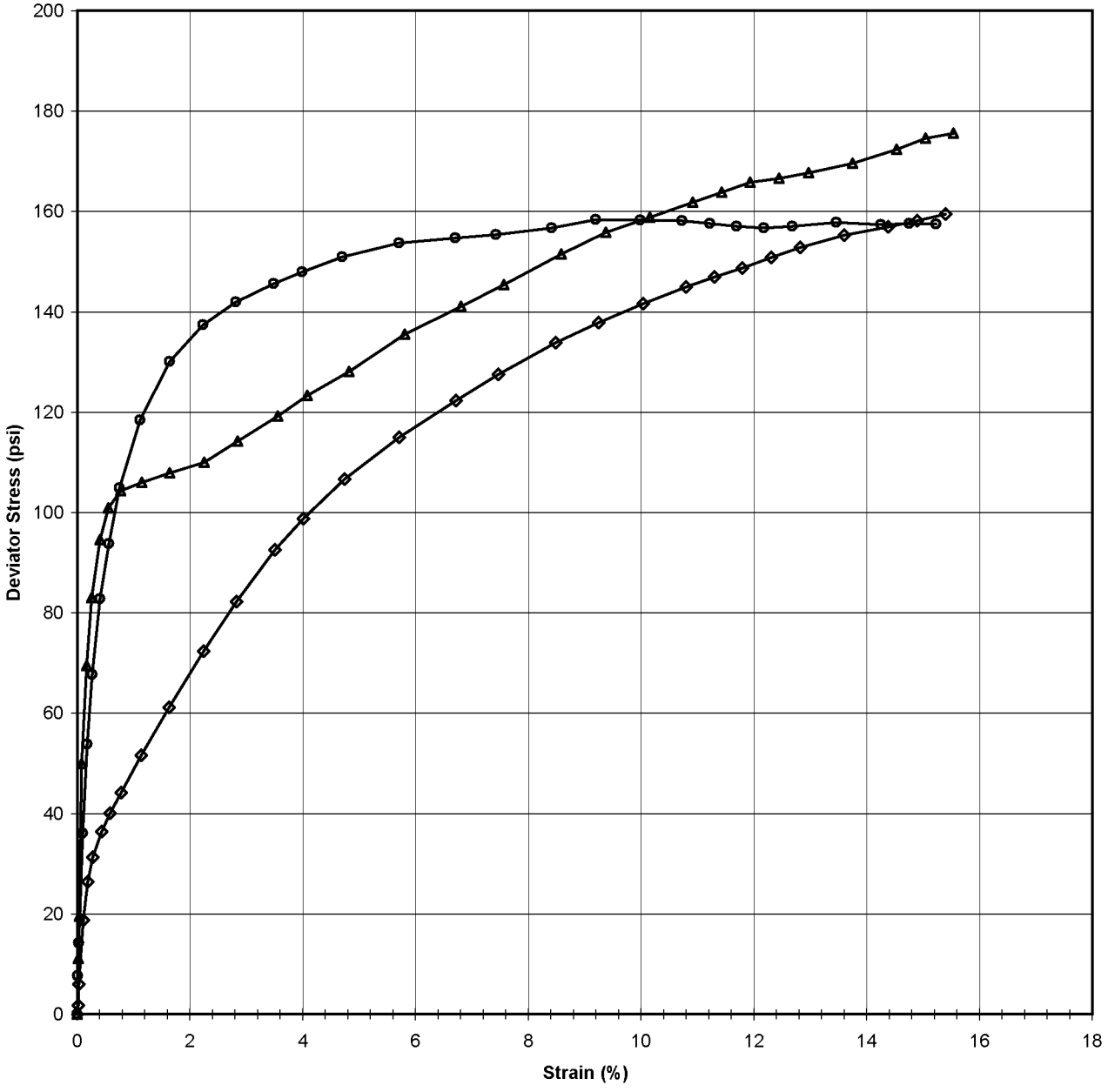
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	298.0-300.7
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 43 6482.568 E50 Test No. 44 24281.12 E50 Test No. 45 34612.11

Tested By: JCM Date: 11/19/13 Approved By: DB Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	298.2-298.7
Project No.:	2013-465-001	Sample No.:	ST-13
Lab ID:	2013-465-001-011		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	203.4	*Stage No.*	1
		Test No	45

INITIAL DIMENSIONS

Initial Sample Length (in)	5.88
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	38.28

VOLUME CHANGE

Volume After Consolidation (in^3)	35.54
Length After Consolidation (in)	5.75
Area After Consolidation (in^2)	6.181

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	11.07	3.18	211.29	200.2	1.055	0.29	205.75	5.53
0.03	19.58	5.91	217.07	197.5	1.099	0.30	207.28	9.79
0.08	49.91	22.12	231.19	181.3	1.275	0.44	206.24	24.95
0.17	69.53	41.86	231.07	161.5	1.430	0.60	196.30	34.76
0.26	83.00	61.22	225.18	142.2	1.584	0.74	183.68	41.50
0.41	94.56	85.97	211.99	117.4	1.805	0.91	164.71	47.28
0.56	100.93	104.32	200.01	99.1	2.019	1.03	149.55	50.47
0.77	104.38	121.18	186.60	82.2	2.269	1.16	134.41	52.19
1.14	106.00	137.91	171.49	65.5	2.619	1.30	118.49	53.00
1.64	107.88	148.84	162.44	54.6	2.977	1.38	108.50	53.94
2.25	109.99	153.75	159.64	49.6	3.215	1.40	104.65	55.00
2.85	114.26	155.35	162.30	48.0	3.378	1.36	105.18	57.13
3.56	119.24	155.30	167.34	48.1	3.479	1.30	107.72	59.62
4.08	123.35	154.94	171.81	48.5	3.545	1.26	110.14	61.68
4.82	128.11	153.95	177.57	49.5	3.591	1.20	113.51	64.06
5.81	135.54	152.26	186.69	51.1	3.650	1.12	118.91	67.77
6.81	141.03	150.24	194.19	53.2	3.653	1.07	123.68	70.52
7.57	145.43	148.79	200.04	54.6	3.663	1.02	127.32	72.71
8.59	151.51	146.67	208.24	56.7	3.671	0.97	132.48	75.75
9.37	155.83	145.43	213.80	58.0	3.688	0.93	135.88	77.92
10.15	158.78	144.05	218.13	59.4	3.675	0.91	138.74	79.39
10.92	161.81	142.60	222.61	60.8	3.661	0.88	141.71	80.90
11.43	163.81	141.54	225.67	61.9	3.648	0.86	143.77	81.90
11.93	165.83	140.73	228.49	62.7	3.646	0.85	145.58	82.91
12.45	166.63	140.03	230.00	63.4	3.629	0.84	146.68	83.32
12.97	167.69	139.22	231.87	64.2	3.613	0.83	148.02	83.84
13.75	169.59	138.37	234.62	65.0	3.608	0.82	149.82	84.79
14.53	172.35	137.18	238.57	66.2	3.603	0.80	152.39	86.18
15.04	174.59	136.62	241.37	66.8	3.614	0.78	154.07	87.29
15.54	175.61	136.09	242.92	67.3	3.609	0.77	155.11	87.80

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	298.2-298.7
Project No.	2013-465-001	Sample No.	ST-13
Lab ID #	2013-465-001-011	Test No.	45

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G336	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G546	2/12/14
Timing Device	G489	5/13/14
Flow Pump	G1511-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-011	Specific Gravity (measured)	2.66

Visual Description: Greenish Gray Silty Sand (Undisturbed)

SAMPLE CONDITION SUMMARY

Boring No.:	R-7-1	R-7-1	R-7-1
Depth (ft):	299.2-299.7	298.7-299.2	298.2-298.7
Sample No.:	ST-13	ST-13	ST-13
Test No.	T43	T44	T45
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	21.4	21.7	22.2
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	26.9	26.9	26.9
Total Unit Weight (pcf)	124.8	125.5	122.2
Dry Unit Weight (pcf)	98.3	98.8	96.3
Moisture Content (%) (FINAL)	22.1	23.0	22.1
Initial State Void Ratio,e	0.689	0.680	0.725
Void Ratio at Shear, e	0.589	0.616	0.602

Tested By: JCM Date: 11/19/13 Input Checked By: KC Date: 12/4/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

MOISTURE CONTENT

	T43	T44	T45
Tare Number	785	785	785
Weight of Tare & Wet Sample (g)	279.7	279.7	279.7
Weight of Tare & Dry Sample (g)	238.44	238.44	238.44
Weight of Tare (g)	85.34	85.34	85.34
Moisture Content (%) (INITIAL)	26.95	26.95	26.95
Tare Number	960	22	46
Weight of Tare & Wet Sample (g)	1359	1449.65	1389.46
Weight of Tare & Dry Sample (g)	1131.11	1216.81	1174.81
Weight of Tare (g)	99.18	203.11	204.98
Moisture Content (%) (FINAL)	22.08	22.97	22.13

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1672.08	1682.14	1635.67
Weight of Tube (g)	413.23	411.76	407.77
Weight of Wet Sample (g)	1258.85	1270.38	1227.9
Length 1 (in)	5.914	5.972	5.873
Length 2 (in)	5.918	5.945	5.885
Length 3 (in)	5.918	5.963	5.881
Top Diameter (in)	2.877	2.877	2.881
Middle Diameter (in)	2.881	2.868	2.872
Bottom Diameter (in)	2.87	2.867	2.884
Average Length (in)	5.916667	5.96	5.879667
Average Area (in)	6.496	6.472	6.510
Sample Volume (cm^3)	629.86	632.12	627.23
Unit Wet Weight (g/cm^3)	2.00	2.01	1.96
Unit Wet Weight (pcf)	124.77	125.47	122.22
Unit Dry Weight (pcf)	98.29	98.83	96.27
Unit Dry Weight (g/cm^3)	1.57	1.58	1.54
Initial Burette Reading	**48**	**48**	**72**
Final Burette Reading	**29.5**	**28.2**	**31.7**
Initial Dial Reading	**50**	**56**	**42**
Dial Reading After Saturation	**110**	**70**	**56**
Dial Reading After Consolidation	**156**	**110**	**171**
Volume Change during Consolidation	18.5	19.8	40.3
Volume Change during Saturation	19.16	4.45	4.48
Volume at Shear (cm^3) *These	592.20	607.87	582.45
Volume of Solids (cm^3) measurements	372.79	376.20	363.62
Volume of Voids (cm^3) are all	219.41	231.67	218.83
Volume of Water (cm^3) at	218.99	229.85	214.08
Void Ratio, e shear	0.589	0.616	0.602

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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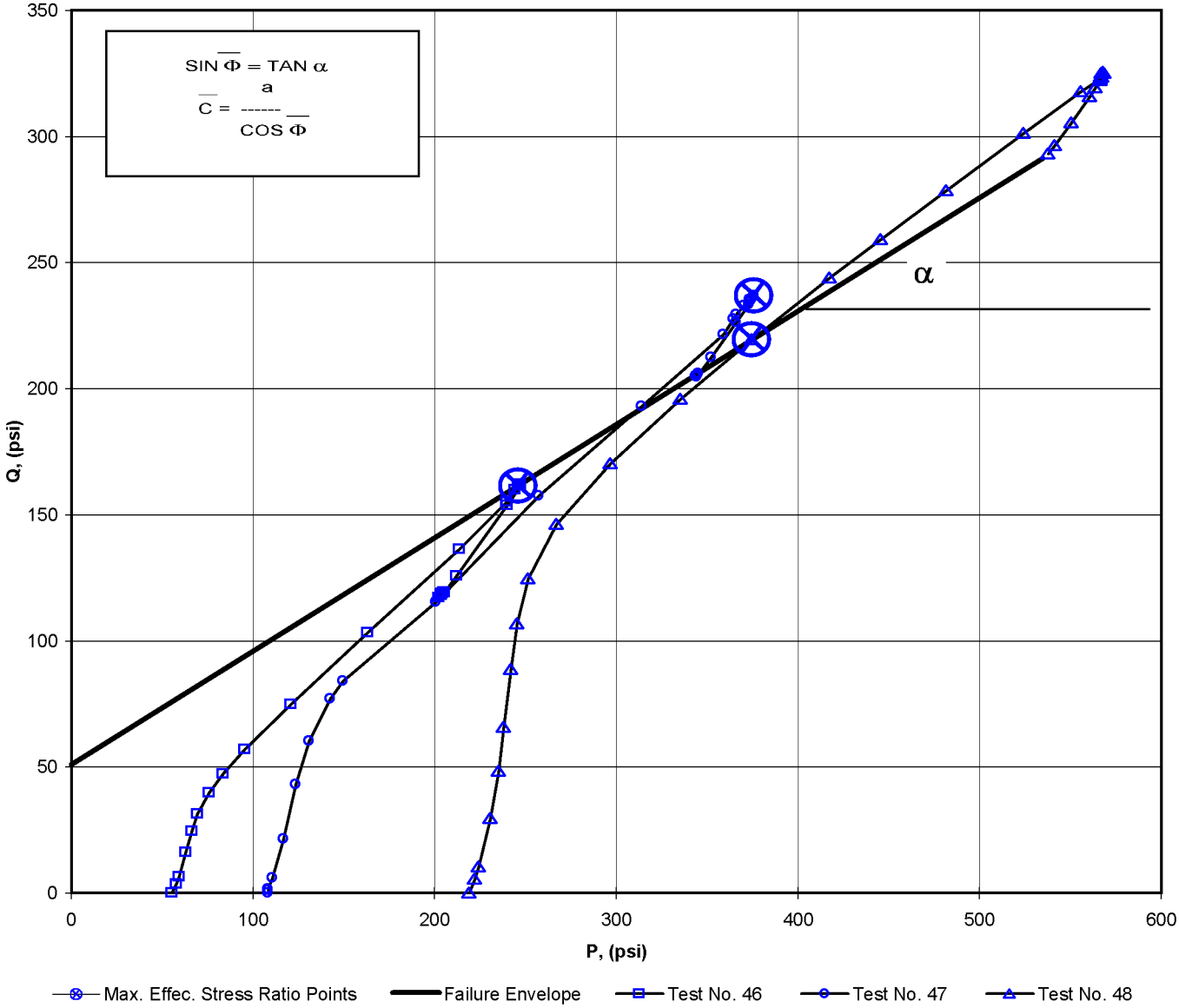
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	319.7-322.2
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	50.89	$\overline{C}$	=	56.97
α	=	24.2	$\overline{\Phi}$	=	26.70

Tested By: JCM Date: 11/21/13 Approved By: DB Date: 12/4/13

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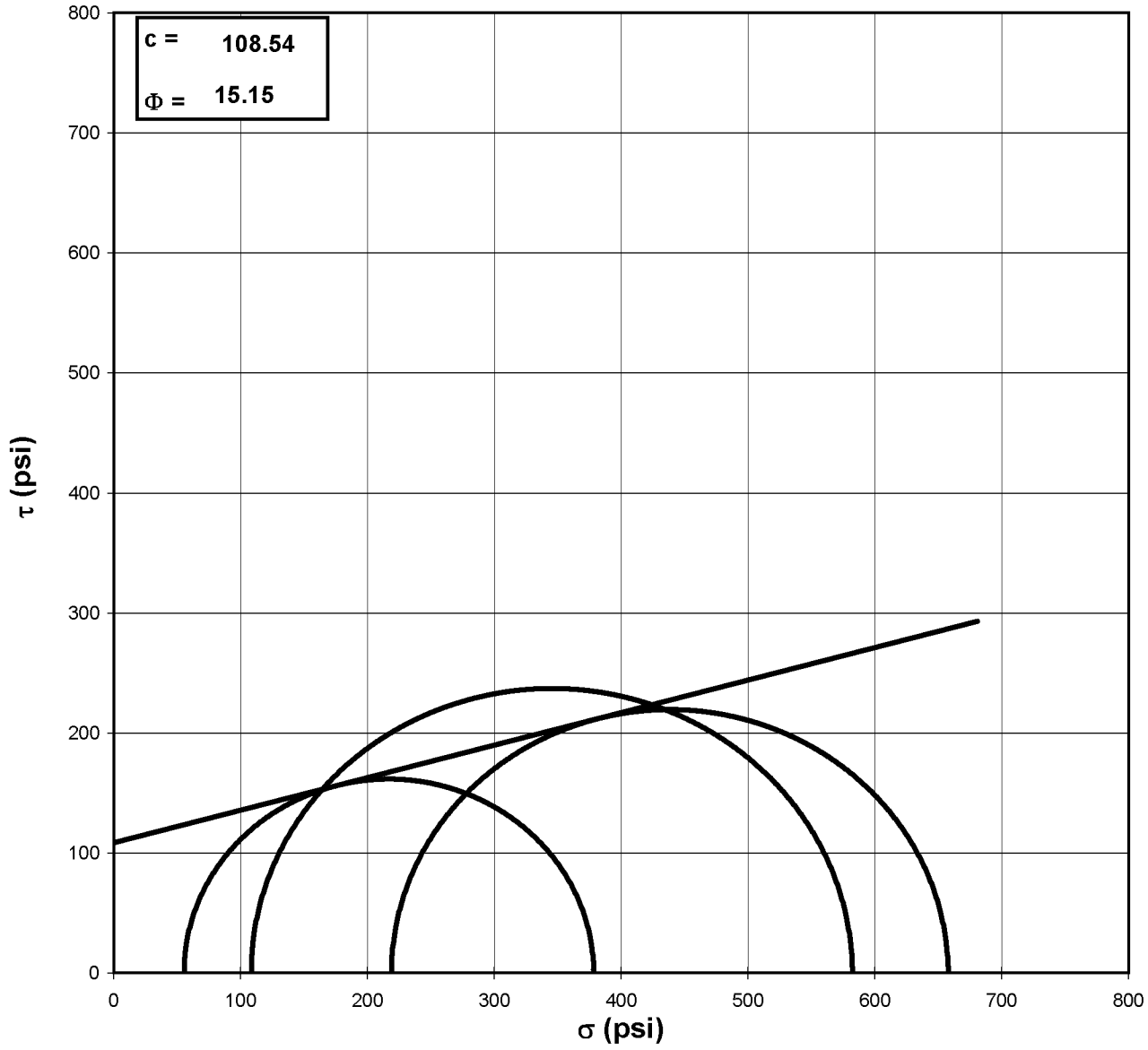
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	319.7-322.2
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 11/21/13 *Approved By:* DB *Date:* 12/4/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	321.5-322.0
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	46

PRESSURES (psi)

Cell Pressure (psi)	76.2
Back Pressure (psi)	20.7
Eff. Conf. Pressure (psi)	55.5
Pore Pressure Response (%)	99

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	246.04
Q	=	161.46

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.808	Diameter 1:	2.867
Length 2:	5.882	Diameter 2:	2.884
Length 3:	5.817	Diameter 3:	2.871
Avg. Length:	5.836	*Avg. Diam.:*	2.874

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	15.1
Final Change (ml)	8.9

Initial Dial Reading (mil)	69
Dial Reading After Saturation (mil)	66
Dial Reading After Consolidation (mil)	78

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
31.4	0.000	20.7
76.1	0.001	22.0
113.9	0.002	23.2
237.1	0.008	29.1
345.9	0.013	34.4
434.0	0.019	38.0
544.4	0.026	40.2
639.9	0.034	39.9
765.6	0.044	37.5
1001.1	0.063	30.1
1374.8	0.089	16.0
1815.0	0.119	-1.2
2072.9	0.152	-8.6
2154.4	0.195	-8.3
2186.0	0.225	-8.4
2211.8	0.267	-8.9
2223.9	0.321	-9.6
2141.4	0.381	-10.1
1772.3	0.429	-10.1
1700.5	0.491	-10.0
1715.8	0.536	-9.8
1729.9	0.578	-9.7
1737.8	0.621	-9.5
1740.4	0.652	-9.4
1746.0	0.682	-9.3
1760.4	0.713	-9.3
1779.0	0.742	-9.2
1793.6	0.786	-9.1
1802.3	0.830	-9.0
1794.2	0.859	-9.0
1793.2	0.887	-8.9

Tested By: JCM Date: 11/21/13 Input Checked By: KC Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	321.5-322.0
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	55.5	*Stage No.*	1
		Test No	46

INITIAL DIMENSIONS

Initial Sample Length (in)	5.84
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.49
Initial Sample Volume (in^3)	37.86

VOLUME CHANGE

Volume After Consolidation (in^3)	37.37
Length After Consolidation (in)	5.83
Area After Consolidation (in^2)	6.414

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	6.97	1.27	61.20	54.2	1.129	0.18	57.71	3.49
0.04	12.85	2.53	65.82	53.0	1.243	0.20	59.40	6.42
0.13	32.02	8.42	79.10	47.1	1.680	0.27	63.09	16.01
0.23	48.92	13.68	90.73	41.8	2.170	0.28	66.28	24.46
0.32	62.56	17.26	100.80	38.2	2.636	0.28	69.52	31.28
0.45	79.62	19.46	115.66	36.0	3.209	0.25	75.85	39.81
0.58	94.31	19.18	130.63	36.3	3.597	0.21	83.47	47.16
0.76	113.60	16.78	152.32	38.7	3.934	0.15	95.52	56.80
1.08	149.55	9.36	195.69	46.1	4.241	0.06	120.92	74.78
1.52	206.26	-4.65	266.41	60.2	4.429	-0.02	163.28	103.13
2.05	272.37	-21.86	349.73	77.4	4.521	-0.08	213.55	136.19
2.62	309.96	-29.25	394.71	84.8	4.657	-0.10	239.73	154.98
3.35	319.92	-28.98	404.39	84.5	4.787	-0.09	244.43	159.96
3.87	322.92	-29.08	407.50	84.6	4.818	-0.09	246.04	161.46
4.58	324.36	-29.62	409.49	85.1	4.810	-0.09	247.31	162.18
5.52	322.96	-30.31	408.78	85.8	4.764	-0.09	247.29	161.48
6.53	307.47	-30.79	393.76	86.3	4.563	-0.10	240.03	153.74
7.36	251.44	-30.84	337.78	86.3	3.912	-0.12	212.06	125.72
8.42	238.31	-30.66	324.47	86.2	3.766	-0.13	205.31	119.16
9.19	238.47	-30.51	324.48	86.0	3.773	-0.13	205.25	119.23
9.92	238.55	-30.38	324.42	85.9	3.778	-0.13	205.15	119.27
10.66	237.66	-30.20	323.37	85.7	3.773	-0.13	204.53	118.83
11.18	236.64	-30.15	322.29	85.6	3.763	-0.13	203.97	118.32
11.71	236.01	-30.03	321.54	85.5	3.759	-0.13	203.54	118.00
12.24	236.58	-29.97	322.05	85.5	3.768	-0.13	203.76	118.29
12.73	237.76	-29.91	323.17	85.4	3.784	-0.13	204.29	118.88
13.49	237.67	-29.79	322.96	85.3	3.787	-0.13	204.13	118.83
14.25	236.76	-29.71	321.97	85.2	3.778	-0.13	203.59	118.38
14.74	234.32	-29.67	319.49	85.2	3.751	-0.13	202.33	117.16
15.22	232.85	-29.58	317.94	85.1	3.737	-0.13	201.51	116.43

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WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	321.5-322.0
Project No.	2013-465-001	Sample No.	ST-16
Lab ID #	2013-465-001-013	Test No.	46

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G331	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G041	2/22/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	321.0-321.5
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	47

PRESSURES (psi)

Cell Pressure (psi)	130.1
Back Pressure (psi)	21.7
Eff. Conf. Pressure (psi)	108.4
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	375.80
Q	=	236.93

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.814	Diameter 1:	2.872
Length 2:	5.812	Diameter 2:	2.874
Length 3:	5.811	Diameter 3:	2.871
Avg. Length	5.812	*Avg. Diam.:*	2.872

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	38.1
Final Change (ml)	9.9

Initial Dial Reading (mil)	67
Dial Reading After Saturation (mil)	70
Dial Reading After Consolidation (mil)	82

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
24.8	0.000	21.7
37.9	0.001	22.8
40.2	0.002	22.8
44.6	0.008	23.1
102.0	0.012	25.4
297.4	0.017	34.5
575.4	0.023	49.3
798.6	0.031	59.4
1015.2	0.042	64.5
1106.6	0.047	64.5
1516.7	0.080	44.6
2073.4	0.110	30.0
2548.6	0.140	8.8
2939.4	0.177	-7.6
3035.9	0.205	-7.1
3082.3	0.248	-6.8
3154.3	0.288	-7.4
3218.1	0.346	-8.3
3265.7	0.387	-8.8
3271.4	0.447	-9.2
3305.9	0.492	-9.4
3307.1	0.535	-9.6
3234.6	0.580	-9.7
3055.0	0.609	-9.7
2962.2	0.639	-9.6
2983.5	0.668	-9.5
3008.2	0.697	-9.3
3040.1	0.741	-9.1
3053.1	0.786	-9.0
3067.1	0.815	-8.8
3063.0	0.845	-8.7

Tested By: JCM Date: 11/21/13 Input Checked By: KC Date: 12/4/13

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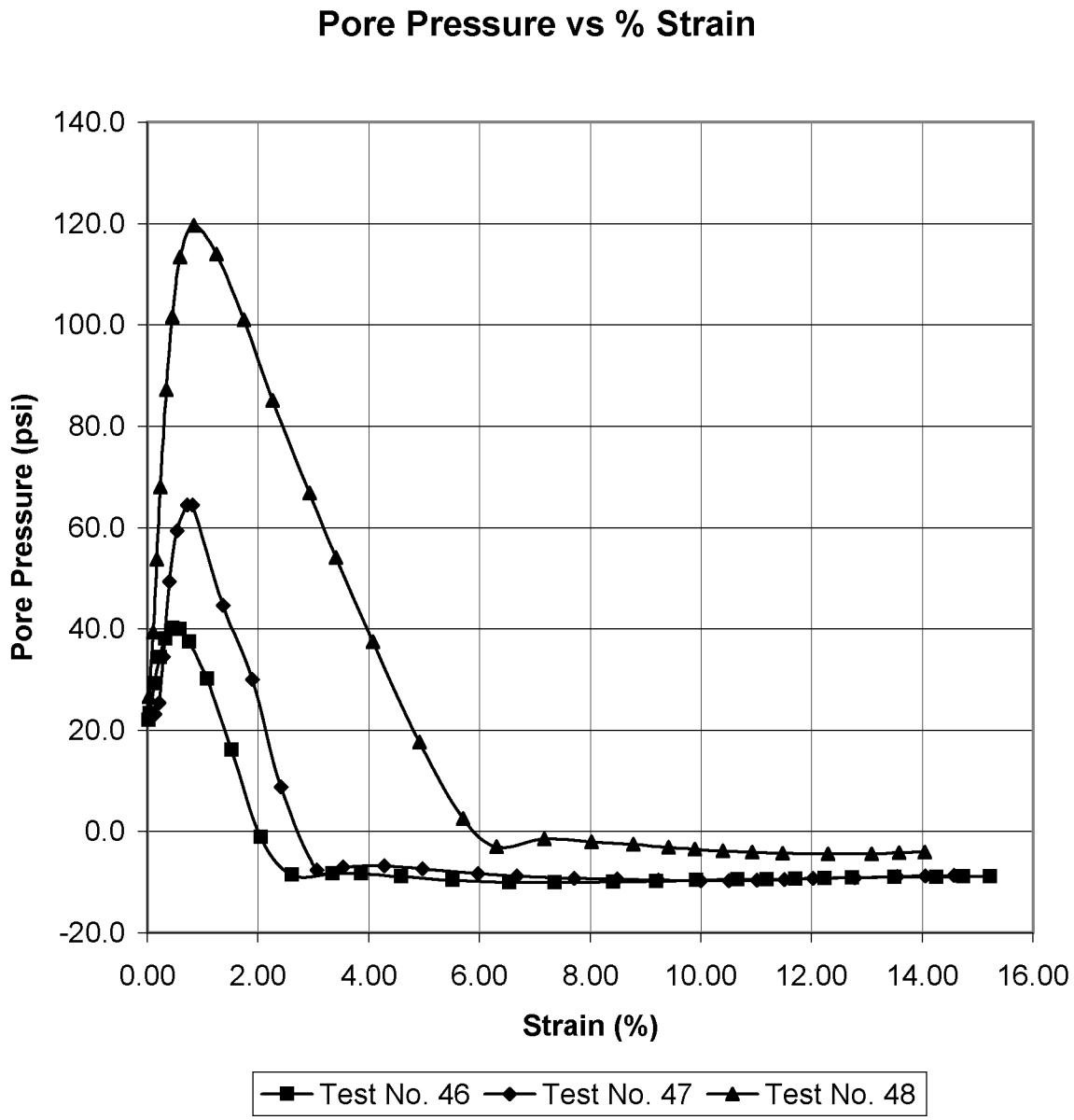
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	319.7-322.2
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	321.0-321.5
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	108.4	*Stage No.*	1
		Test No	47

INITIAL DIMENSIONS

Initial Sample Length (in)	5.81
Initial Sample Diameter (in)	2.87
Initial Sample Area (in^2)	6.48
Initial Sample Volume (in^3)	37.66

VOLUME CHANGE

Volume After Consolidation (in^3)	37.00
Length After Consolidation (in)	5.80
Area After Consolidation (in^2)	6.382

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	2.05	1.06	109.39	107.3	1.019	0.52	108.36	1.03
0.04	2.41	1.14	109.67	107.3	1.022	0.47	108.46	1.21
0.14	3.10	1.44	110.06	107.0	1.029	0.46	108.51	1.55
0.22	12.07	3.72	116.75	104.7	1.115	0.31	110.72	6.03
0.29	42.59	12.79	138.19	95.6	1.445	0.30	116.90	21.29
0.40	85.93	27.63	166.71	80.8	2.064	0.32	123.74	42.97
0.54	120.58	37.67	191.31	70.7	2.705	0.31	131.02	60.29
0.72	154.06	42.75	219.71	65.6	3.347	0.28	142.68	77.03
0.82	168.11	42.77	233.74	65.6	3.561	0.25	149.69	84.06
1.37	230.54	22.91	316.04	85.5	3.697	0.10	200.76	115.27
1.90	314.89	8.27	415.02	100.1	4.145	0.03	257.57	157.44
2.41	385.90	-12.88	507.18	121.3	4.182	-0.03	314.23	192.95
3.06	442.69	-29.28	580.38	137.7	4.215	-0.07	359.03	221.35
3.53	455.12	-28.78	592.30	137.2	4.318	-0.06	364.74	227.56
4.28	458.53	-28.53	595.46	136.9	4.349	-0.06	366.20	229.27
4.97	465.94	-29.08	603.42	137.5	4.389	-0.06	370.45	232.97
5.97	470.46	-29.98	608.84	138.4	4.400	-0.06	373.61	235.23
6.68	473.86	-30.47	612.73	138.9	4.412	-0.06	375.80	236.93
7.72	469.43	-30.94	608.77	139.3	4.369	-0.07	374.06	234.71
8.49	470.46	-31.14	610.00	139.5	4.372	-0.07	374.77	235.23
9.23	466.79	-31.29	606.48	139.7	4.342	-0.07	373.09	233.40
10.00	452.65	-31.42	592.47	139.8	4.237	-0.07	366.15	226.32
10.51	424.86	-31.41	564.67	139.8	4.039	-0.07	352.24	212.43
11.02	409.54	-31.29	549.23	139.7	3.932	-0.08	344.46	204.77
11.51	410.20	-31.15	549.75	139.6	3.939	-0.08	344.65	205.10
12.03	411.23	-31.03	550.65	139.4	3.949	-0.08	345.04	205.61
12.79	412.04	-30.82	551.25	139.2	3.960	-0.07	345.24	206.02
13.56	410.16	-30.65	549.22	139.1	3.950	-0.07	344.14	205.08
14.06	409.68	-30.54	548.61	138.9	3.949	-0.07	343.77	204.84
14.57	406.67	-30.43	545.50	138.8	3.929	-0.07	342.17	203.34

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WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	321.0-321.5
Project No.	2013-465-001	Sample No.	ST-16
Lab ID #	2013-465-001-013	Test No.	47

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G334	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G590	3/14/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	G1511-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	320.5-321.0
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	48

PRESSURES (psi)

Cell Pressure (psi)	240.6
Back Pressure (psi)	21.5
Eff. Conf. Pressure (psi)	219.1
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	374.82
Q	=	219.34

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.883	Diameter 1:	2.879
Length 2:	5.897	Diameter 2:	2.875
Length 3:	5.897	Diameter 3:	2.874
Avg. Length:	5.892	*Avg. Diam.:*	2.876

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	33.9
Final Change (ml)	14.1

Initial Dial Reading (mil)	62
Dial Reading After Saturation (mil)	64
Dial Reading After Consolidation (mil)	103

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
41.3	0.000	21.5
111.6	0.001	24.0
175.0	0.002	26.6
420.3	0.006	39.3
660.2	0.010	53.7
881.9	0.014	68.0
1176.6	0.020	87.1
1410.2	0.027	101.6
1642.5	0.035	113.4
1926.6	0.049	119.6
2244.1	0.073	113.9
2587.6	0.102	100.9
2908.5	0.133	85.1
3251.2	0.171	66.8
3469.6	0.200	54.0
3750.8	0.239	37.4
4089.7	0.288	17.6
4346.6	0.334	2.5
4444.4	0.369	-3.1
4515.3	0.420	-1.5
4563.1	0.469	-2.1
4575.0	0.514	-2.6
4627.9	0.551	-3.1
4627.4	0.579	-3.5
4635.7	0.609	-3.8
4621.2	0.640	-4.1
4600.2	0.671	-4.3
4492.5	0.720	-4.5
4399.5	0.766	-4.4
4373.0	0.795	-4.3
4369.9	0.822	-4.1

Tested By: JCM Date: 11/21/13 Input Checked By: KC Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
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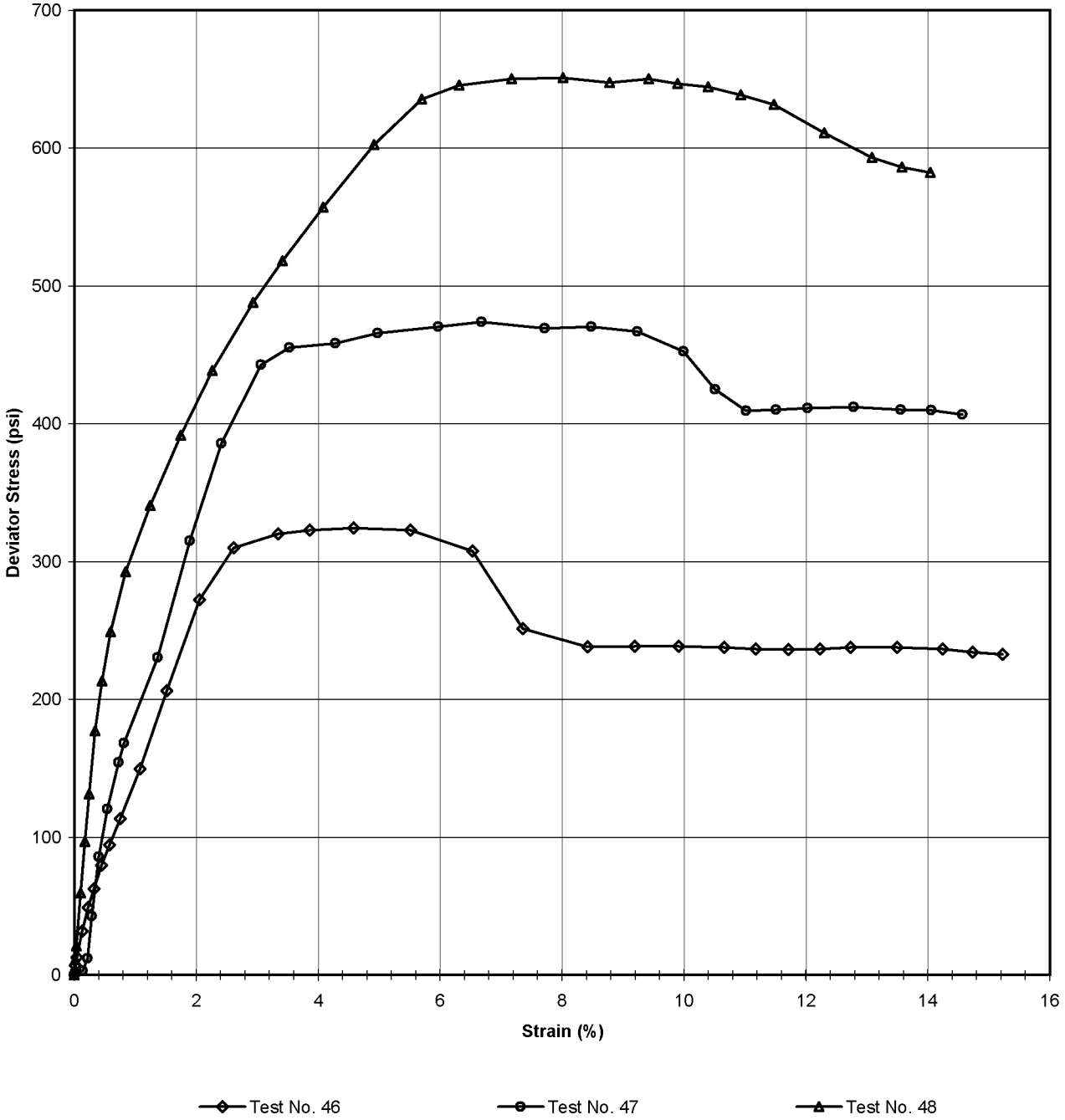
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	319.7-322.2
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 46 13803.89 E50 Test No. 47 16759.71 E50 Test No. 48 45636.4

Tested By: JCM Date: 11/21/13 Approved By: DB Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	320.5-321.0
Project No.:	2013-465-001	Sample No.:	ST-16
Lab ID:	2013-465-001-013		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	219.1	*Stage No.*	1
		Test No	48

INITIAL DIMENSIONS

Initial Sample Length (in)	5.89
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.50
Initial Sample Volume (in^3)	38.28

VOLUME CHANGE

Volume After Consolidation (in^3)	37.38
Length After Consolidation (in)	5.85
Area After Consolidation (in^2)	6.388

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	11.01	2.48	227.63	216.6	1.051	0.22	222.13	5.50
0.04	20.92	5.10	234.92	214.0	1.098	0.24	224.46	10.46
0.11	59.26	17.78	260.58	201.3	1.294	0.30	230.95	29.63
0.17	96.71	32.19	283.62	186.9	1.517	0.33	235.26	48.35
0.24	131.28	46.49	303.89	172.6	1.761	0.35	238.25	65.64
0.34	177.11	65.64	330.57	153.5	2.154	0.37	242.02	88.55
0.46	213.30	80.10	352.31	139.0	2.535	0.38	245.66	106.65
0.59	249.17	91.91	376.35	127.2	2.959	0.37	251.77	124.58
0.85	292.64	98.09	413.65	121.0	3.418	0.34	267.33	146.32
1.25	340.53	92.40	467.23	126.7	3.688	0.27	296.96	170.27
1.75	391.62	79.43	531.29	139.7	3.804	0.20	335.48	195.81
2.27	438.67	63.61	594.16	155.5	3.821	0.15	374.82	219.34
2.93	487.75	45.28	661.57	173.8	3.806	0.09	417.69	243.88
3.41	518.34	32.55	704.89	186.6	3.778	0.06	445.72	259.17
4.08	557.00	15.91	760.19	203.2	3.741	0.03	481.69	278.50
4.92	602.58	-3.88	825.56	223.0	3.702	-0.01	524.27	301.29
5.70	635.52	-19.00	873.62	238.1	3.669	-0.03	555.86	317.76
6.31	645.75	-24.57	889.42	243.7	3.650	-0.04	566.54	322.87
7.17	650.14	-22.98	892.22	242.1	3.686	-0.04	567.15	325.07
8.02	651.07	-23.59	893.76	242.7	3.683	-0.04	568.22	325.53
8.78	647.37	-24.11	890.58	243.2	3.662	-0.04	566.89	323.69
9.42	650.34	-24.59	894.03	243.7	3.669	-0.04	568.86	325.17
9.89	646.88	-24.98	890.96	244.1	3.650	-0.04	567.52	323.44
10.40	644.40	-25.29	888.79	244.4	3.637	-0.04	566.59	322.20
10.93	638.58	-25.58	883.27	244.7	3.610	-0.04	563.97	319.29
11.48	631.75	-25.81	876.66	244.9	3.580	-0.04	560.78	315.88
12.30	611.06	-25.98	856.14	245.1	3.493	-0.04	550.61	305.53
13.08	592.98	-25.90	837.98	245.0	3.420	-0.04	541.49	296.49
13.58	586.01	-25.75	830.86	244.9	3.393	-0.04	537.86	293.01
14.04	582.44	-25.60	827.14	244.7	3.380	-0.04	535.92	291.22

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ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	320.5-321.0
Project No.	2013-465-001	Sample No.	ST-16
Lab ID #	2013-465-001-013	Test No.	48

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G323	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G150	2/22/14
Timing Device	G489	5/13/14
Flow Pump	G1510-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
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Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-013	Specific Gravity (measured)	2.61

Visual Description: Greenish Gray Silty Sand (Undisturbed)

SAMPLE CONDITION SUMMARY

Boring No.:	R-7-1	R-7-1	R-7-1
Depth (ft):	321.5-322.0	321.0-321.5	320.5-321.0
Sample No.:	ST-16	ST-16	ST-16
Test No.	T46	T47	T48
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	20.7	21.7	21.5
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	24.3	24.3	24.3
Total Unit Weight (pcf)	124.6	122.3	120.4
Dry Unit Weight (pcf)	100.3	98.4	96.9
Moisture Content (%) (FINAL)	24.6	26.5	27.1
Initial State Void Ratio,e	0.625	0.655	0.681
Void Ratio at Shear, e	0.604	0.626	0.642

Tested By: JCM Date: 11/21/13 Input Checked By: KC Date: 12/4/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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MOISTURE CONTENT

	T46	T47	T48
Tare Number	2725	2725	2725
Weight of Tare & Wet Sample (g)	191.98	191.98	191.98
Weight of Tare & Dry Sample (g)	155.79	155.79	155.79
Weight of Tare (g)	6.73	6.73	6.73
Moisture Content (%) (INITIAL)	24.28	24.28	24.28
Tare Number	897	972	301
Weight of Tare & Wet Sample (g)	362.46	1269.66	1274.13
Weight of Tare & Dry Sample (g)	312.67	1024.8	1025.41
Weight of Tare (g)	109.86	101.74	106.49
Moisture Content (%) (FINAL)	24.55	26.53	27.07

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1647.09	1614.54	1624.78
Weight of Tube (g)	408.61	405.35	414.61
Weight of Wet Sample (g)	1238.48	1209.19	1210.17
Length 1 (in)	5.808	5.814	5.883
Length 2 (in)	5.882	5.812	5.897
Length 3 (in)	5.817	5.811	5.897
Top Diameter (in)	2.867	2.872	2.879
Middle Diameter (in)	2.884	2.874	2.875
Bottom Diameter (in)	2.871	2.871	2.874
Average Length (in)	5.835667	5.812333	5.892333
Average Area (in)	6.487	6.480	6.496
Sample Volume (cm^3)	620.38	617.18	627.27
Unit Wet Weight (g/cm^3)	2.00	1.96	1.93
Unit Wet Weight (pcf)	124.63	122.31	120.44
Unit Dry Weight (pcf)	100.28	98.42	96.91
Unit Dry Weight (g/cm^3)	1.61	1.58	1.55
Initial Burette Reading	**24**	**48**	**48**
Final Burette Reading	**15.1**	**38.1**	**33.9**
Initial Dial Reading	**69**	**67**	**62**
Dial Reading After Saturation	**66**	**70**	**64**
Dial Reading After Consolidation	**78**	**82**	**103**
Volume Change during Consolidation	8.9	9.9	14.1
Volume Change during Saturation	-0.96	0.96	0.64
Volume at Shear (cm^3) *These	612.43	606.32	612.53
Volume of Solids (cm^3) measurements	381.81	372.78	373.09
Volume of Voids (cm^3) are all	230.62	233.54	239.45
Volume of Water (cm^3) at	244.65	258.10	263.56
Void Ratio, e shear	0.604	0.626	0.642

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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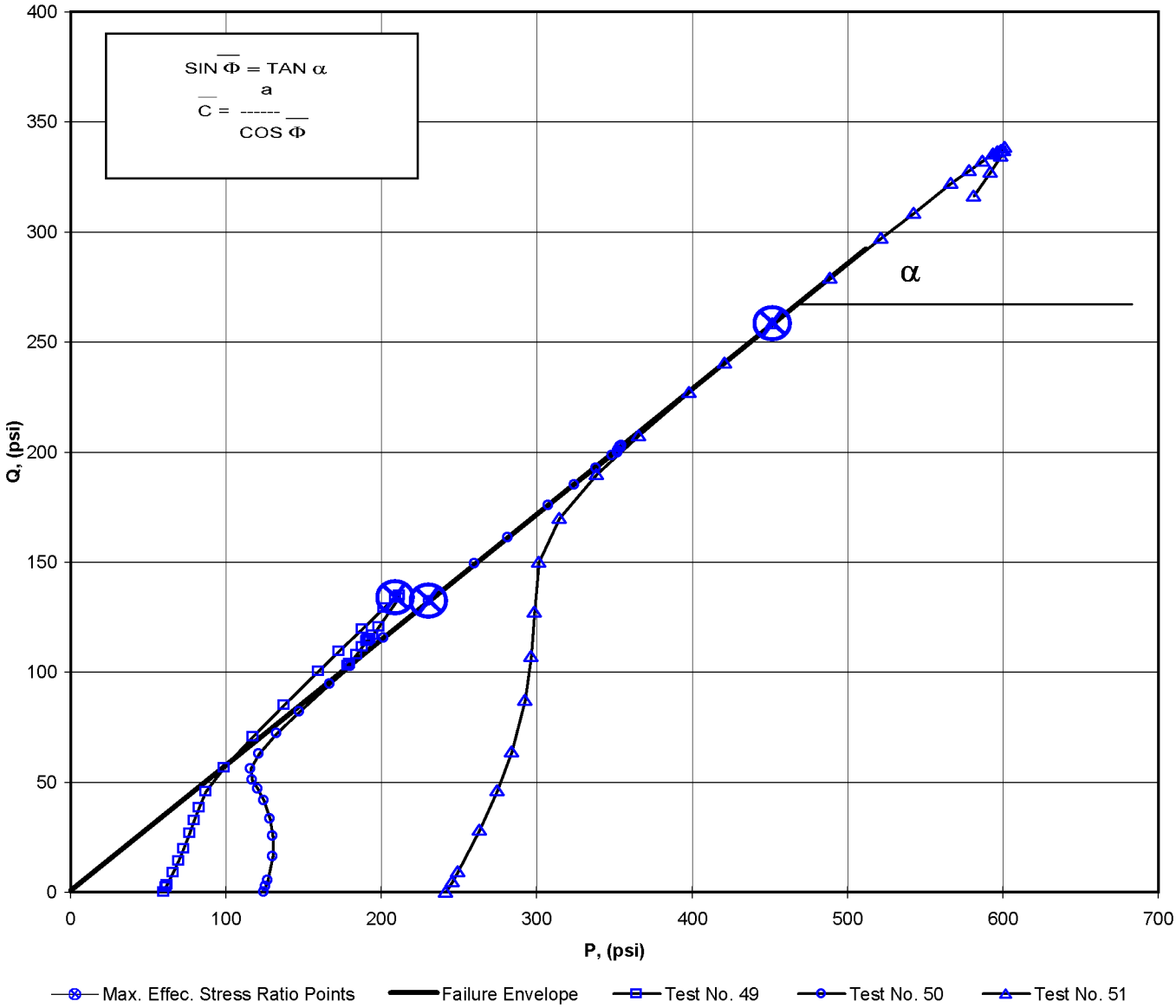
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	354.0-356.0
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	0.84	$\overline{C}$	=	1.02
α	=	29.7	$\overline{\Phi}$	=	34.74

Tested By: JCM Date: 11/23/13 Approved By: DB Date: 12/5/13

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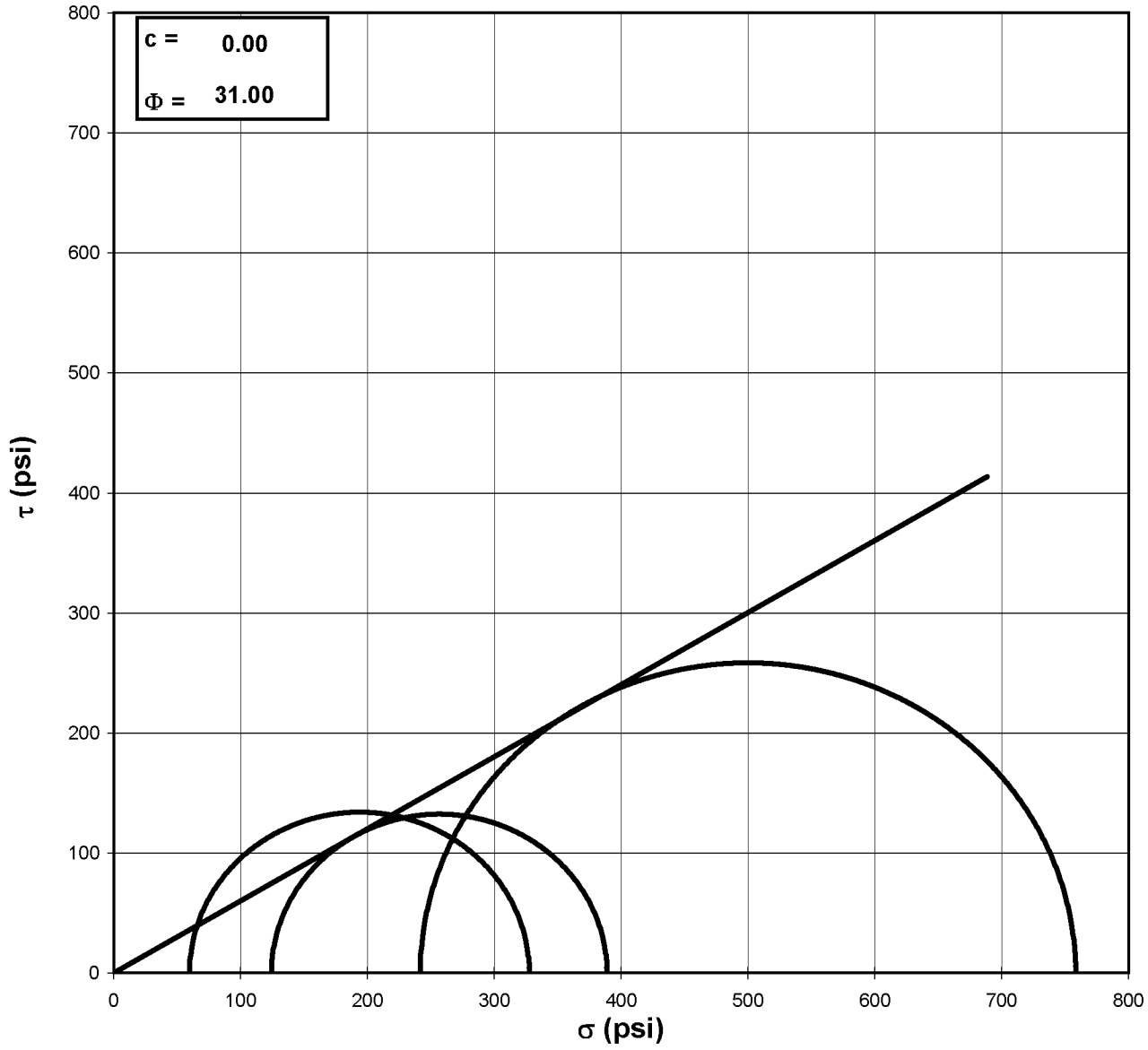
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	354.0-356.0
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 11/23/13 *Approved By:* DB *Date:* 12/5/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	355.4-355.9
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	49

PRESSURES (psi)

Cell Pressure (psi)	81.3
Back Pressure (psi)	21.4
Eff. Conf. Pressure (psi)	59.9
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	209.23
Q	=	133.88

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.812	Diameter 1:	2.877
Length 2:	5.822	Diameter 2:	2.883
Length 3:	5.827	Diameter 3:	2.876
Avg. Length:	5.820	*Avg. Diam.:*	2.879

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	35.0
Final Change (ml)	13.0

Initial Dial Reading (mil)	51
Dial Reading After Saturation (mil)	72
Dial Reading After Consolidation (mil)	96

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
14.9	0.000	21.4
43.1	0.001	22.1
58.0	0.002	22.5
127.7	0.007	24.1
195.5	0.013	26.0
263.8	0.018	28.2
356.1	0.025	31.4
429.8	0.033	34.3
505.7	0.044	37.0
600.3	0.063	39.9
744.4	0.090	38.8
930.6	0.123	34.5
1124.1	0.156	28.7
1333.9	0.198	21.9
1460.4	0.227	17.9
1605.4	0.266	13.0
1749.6	0.319	8.6
1833.6	0.375	6.0
1862.0	0.421	4.6
1864.5	0.482	3.5
1699.4	0.527	3.2
1659.8	0.571	3.6
1653.6	0.614	4.0
1653.5	0.644	4.3
1658.7	0.674	4.5
1661.9	0.704	4.7
1636.9	0.734	4.9
1599.7	0.779	5.2
1553.0	0.823	5.5
1548.5	0.851	5.7
1550.0	0.880	5.9

Tested By: JCM Date: 11/23/13 Input Checked By: KC Date: 12/5/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	355.4-355.9
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	59.9	*Stage No.*	1
		Test No	49

INITIAL DIMENSIONS

Initial Sample Length (in)	5.82
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	37.88

VOLUME CHANGE

Volume After Consolidation (in^3)	36.68
Length After Consolidation (in)	5.78
Area After Consolidation (in^2)	6.351

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	4.43	0.72	63.61	59.2	1.075	0.17	61.39	2.22
0.04	6.79	1.09	65.59	58.8	1.115	0.17	62.20	3.39
0.13	17.73	2.73	74.90	57.2	1.310	0.16	66.04	8.87
0.22	28.38	4.65	83.63	55.3	1.514	0.17	69.44	14.19
0.31	39.07	6.76	92.22	53.1	1.735	0.18	72.68	19.54
0.44	53.49	10.03	103.36	49.9	2.073	0.19	76.61	26.75
0.58	64.96	12.89	111.97	47.0	2.382	0.20	79.49	32.48
0.76	76.69	15.59	121.01	44.3	2.731	0.21	82.66	38.35
1.09	91.18	18.47	132.61	41.4	3.201	0.21	87.02	45.59
1.57	113.07	17.42	155.55	42.5	3.661	0.16	99.02	56.53
2.13	141.12	13.12	187.90	46.8	4.017	0.10	117.34	70.56
2.71	169.94	7.29	222.54	52.6	4.230	0.04	137.58	84.97
3.43	200.58	0.53	259.95	59.4	4.379	0.00	159.66	100.29
3.93	218.66	-3.48	282.04	63.4	4.450	-0.02	172.71	109.33
4.61	238.89	-8.36	307.15	68.3	4.500	-0.04	187.71	119.45
5.53	258.05	-12.77	330.72	72.7	4.551	-0.05	201.69	129.02
6.50	267.77	-15.45	343.12	75.3	4.554	-0.06	209.23	133.88
7.28	269.67	-16.78	346.36	76.7	4.517	-0.06	211.52	134.84
8.34	266.96	-17.87	344.73	77.8	4.433	-0.07	211.25	133.48
9.13	241.03	-18.17	319.09	78.1	4.087	-0.08	198.58	120.51
9.88	233.41	-17.79	311.10	77.7	4.004	-0.08	194.40	116.71
10.63	230.61	-17.43	307.94	77.3	3.982	-0.08	192.63	115.31
11.15	229.24	-17.08	306.22	77.0	3.978	-0.08	191.60	114.62
11.67	228.63	-16.89	305.42	76.8	3.978	-0.08	191.10	114.32
12.19	227.73	-16.71	304.33	76.6	3.973	-0.08	190.47	113.86
12.71	222.93	-16.54	299.37	76.4	3.917	-0.08	187.90	111.47
13.48	215.89	-16.22	292.01	76.1	3.836	-0.08	184.06	107.95
14.24	207.69	-15.88	283.47	75.8	3.741	-0.08	179.62	103.85
14.74	205.90	-15.67	281.47	75.6	3.725	-0.08	178.52	102.95
15.24	204.87	-15.46	280.23	75.4	3.719	-0.08	177.80	102.44

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	355.4-355.9
Project No.	2013-465-001	Sample No.	ST-20
Lab ID #	2013-465-001-017	Test No.	49

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G332	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G1457	8/30/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	354.4-354.9
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	50

PRESSURES (psi)

Cell Pressure (psi)	145.9
Back Pressure (psi)	21.4
Eff. Conf. Pressure (psi)	124.5
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	230.58
Q	=	132.24

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.530	Diameter 1:	2.873
Length 2:	5.538	Diameter 2:	2.875
Length 3:	5.515	Diameter 3:	2.877
Avg. Length	5.528	*Avg. Diam.:*	2.875

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	30.0
Final Change (ml)	18.0

Initial Dial Reading (mil)	59
Dial Reading After Saturation (mil)	71
Dial Reading After Consolidation (mil)	108

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
33.4	0.000	21.4
65.9	0.001	22.8
99.8	0.002	24.1
236.1	0.005	31.6
354.5	0.010	40.9
453.4	0.014	50.5
560.0	0.022	63.0
626.5	0.030	72.0
679.1	0.040	79.7
747.6	0.059	85.8
838.5	0.086	87.5
961.6	0.119	85.0
1095.3	0.152	80.3
1268.1	0.191	73.3
1380.3	0.218	68.3
1560.2	0.256	59.6
1800.3	0.307	47.6
2046.6	0.360	34.7
2226.7	0.402	25.4
2450.0	0.458	13.9
2598.9	0.498	6.2
2726.6	0.538	-0.1
2832.5	0.579	-4.5
2880.3	0.606	-5.6
2912.7	0.633	-5.6
2935.8	0.661	-5.5
2958.9	0.689	-5.7
2985.8	0.731	-6.1
2998.2	0.771	-6.5
2979.4	0.798	-6.7
2956.5	0.825	-6.9

Tested By: JCM Date: 11/23/13 Input Checked By: KC Date: 12/5/13

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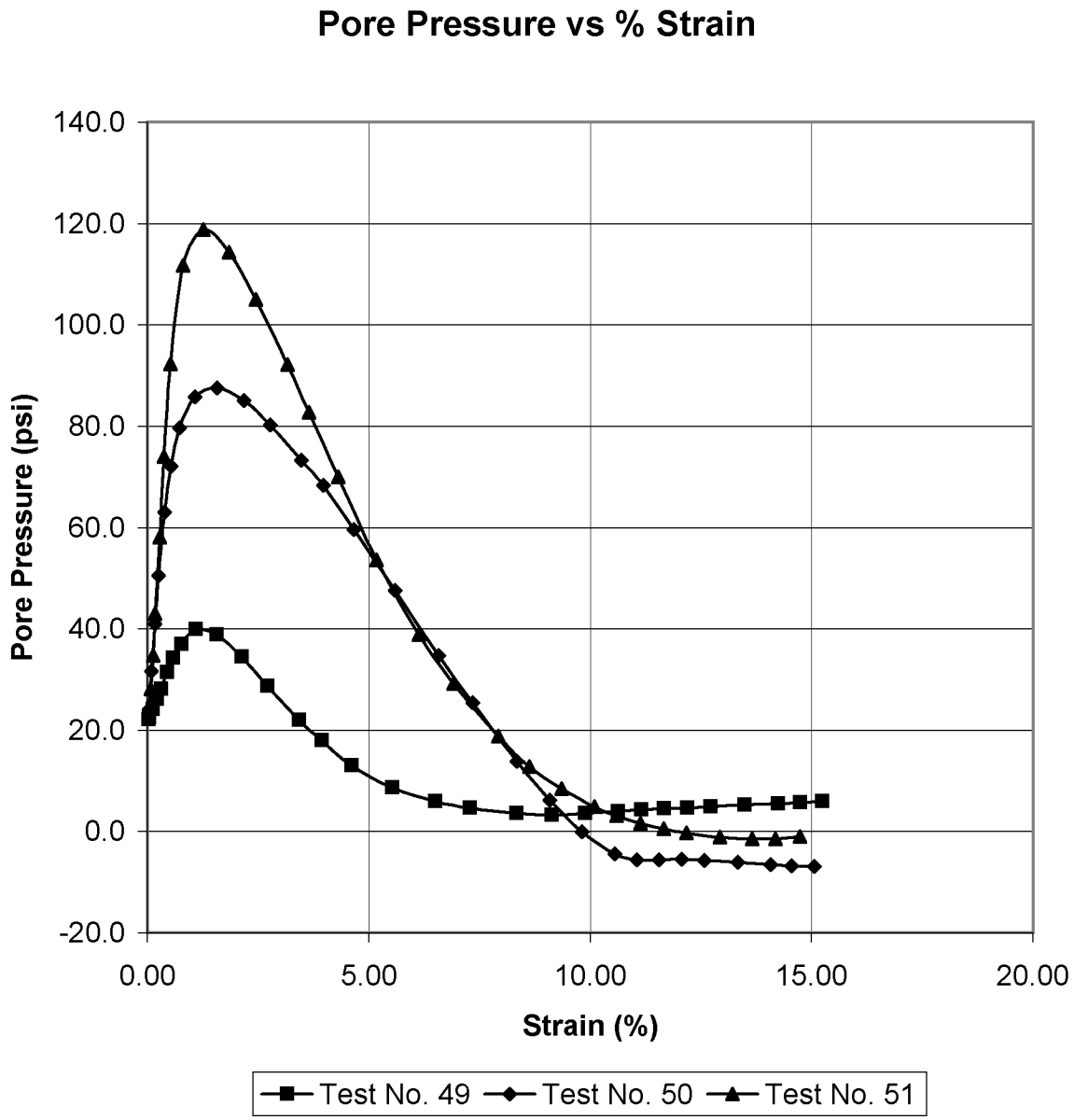
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	354.0-356.0
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	354.4-354.9
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	124.5	*Stage No.*	1
		Test No	50

INITIAL DIMENSIONS

Initial Sample Length (in)	5.53
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.49
Initial Sample Volume (in^3)	35.88

VOLUME CHANGE

Volume After Consolidation (in^3)	34.55
Length After Consolidation (in)	5.48
Area After Consolidation (in^2)	6.307

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	5.15	1.42	128.23	123.1	1.042	0.28	125.66	2.58
0.04	10.52	2.73	132.30	121.8	1.086	0.26	127.03	5.26
0.09	32.11	10.25	146.36	114.3	1.281	0.32	130.31	16.06
0.18	50.82	19.50	155.82	105.0	1.484	0.38	130.41	25.41
0.26	66.42	29.13	161.78	95.4	1.696	0.44	128.57	33.21
0.40	83.17	41.59	166.08	82.9	2.003	0.50	124.49	41.59
0.54	93.53	50.63	167.40	73.9	2.266	0.54	120.64	46.76
0.73	101.63	58.26	167.87	66.2	2.534	0.57	117.06	50.82
1.08	112.02	64.35	172.17	60.1	2.863	0.57	116.16	56.01
1.57	125.66	66.10	184.06	58.4	3.152	0.53	121.23	62.83
2.18	143.97	63.61	204.86	60.9	3.364	0.44	132.88	71.98
2.78	163.69	58.87	229.32	65.6	3.494	0.36	147.47	81.85
3.48	188.95	51.88	261.57	72.6	3.602	0.27	167.10	94.48
3.98	205.06	46.90	282.66	77.6	3.643	0.23	180.13	102.53
4.67	230.78	38.24	317.04	86.3	3.675	0.17	201.65	115.39
5.60	264.47	26.15	362.82	98.3	3.689	0.10	230.58	132.24
6.58	298.21	13.30	409.41	111.2	3.682	0.04	260.31	149.11
7.35	322.23	4.02	442.71	120.5	3.674	0.01	281.60	161.11
8.35	351.17	-7.51	483.18	132.0	3.660	-0.02	307.60	175.58
9.09	369.83	-15.20	509.52	139.7	3.647	-0.04	324.61	184.91
9.82	385.12	-21.51	531.13	146.0	3.638	-0.06	338.57	192.56
10.56	396.95	-25.88	547.33	150.4	3.640	-0.07	348.86	198.47
11.06	401.51	-27.02	553.02	151.5	3.650	-0.07	352.27	200.75
11.56	403.77	-26.98	555.25	151.5	3.666	-0.07	353.36	201.89
12.07	404.65	-26.91	556.06	151.4	3.673	-0.07	353.74	202.33
12.58	405.53	-27.08	557.11	151.6	3.675	-0.07	354.34	202.77
13.34	405.71	-27.49	557.70	152.0	3.669	-0.07	354.85	202.85
14.07	403.95	-27.90	556.35	152.4	3.651	-0.07	354.37	201.97
14.56	399.13	-28.14	551.76	152.6	3.615	-0.07	352.20	199.56
15.07	393.66	-28.28	546.44	152.8	3.577	-0.07	349.61	196.83

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	354.4-354.9
Project No.	2013-465-001	Sample No.	ST-20
Lab ID #	2013-465-001-017	Test No.	50

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G336	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G041	2/22/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	G1509-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	354.9-355.4
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	51

PRESSURES (psi)

Cell Pressure (psi)	263.5
Back Pressure (psi)	21.7
Eff. Conf. Pressure (psi)	241.8
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	451.77
Q	=	258.28

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.808	Diameter 1:	2.876
Length 2:	5.812	Diameter 2:	2.881
Length 3:	5.807	Diameter 3:	2.877
Avg. Length:	5.809	*Avg. Diam.:*	2.878

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	30.8
Final Change (ml)	17.2

Initial Dial Reading (mil)	48
Dial Reading After Saturation (mil)	48
Dial Reading After Consolidation (mil)	113

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
49.8	0.000	21.7
112.5	0.001	22.6
169.9	0.001	23.4
410.0	0.004	28.1
641.8	0.008	34.7
865.7	0.010	43.0
1167.8	0.016	58.1
1424.2	0.022	74.0
1688.3	0.030	92.3
1982.5	0.047	111.7
2252.0	0.073	118.7
2521.9	0.106	114.3
2768.8	0.141	105.0
3050.4	0.182	92.1
3241.1	0.210	82.6
3502.7	0.248	70.0
3815.1	0.297	53.6
4099.3	0.353	38.8
4291.1	0.397	29.1
4524.1	0.455	18.8
4639.9	0.496	12.8
4738.3	0.537	8.4
4823.9	0.580	4.9
4865.0	0.609	3.1
4899.9	0.640	1.6
4953.1	0.670	0.5
4957.9	0.699	-0.3
4963.3	0.743	-1.1
4898.0	0.785	-1.5
4766.9	0.815	-1.5
4729.0	0.846	-1.0

Tested By: JCM Date: 11/23/13 Input Checked By: KC Date: 12/5/13

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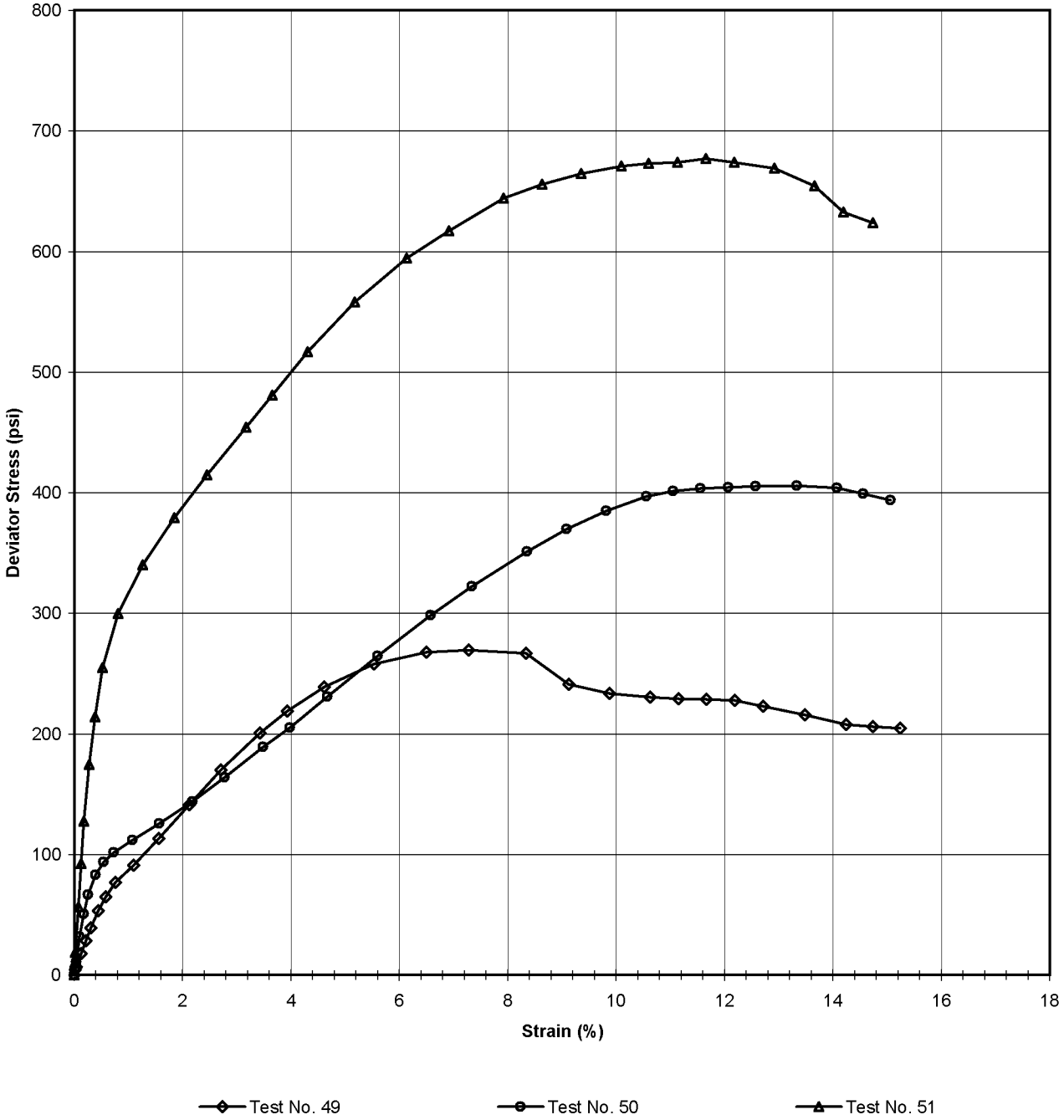
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	354.0-356.0
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 49 6759.104 E50 Test No. 50 7387.171 E50 Test No. 51 47220.65

Tested By: JCM Date: 11/23/13 Approved By: DB Date: 12/5/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	354.9-355.4
Project No.:	2013-465-001	Sample No.:	ST-20
Lab ID:	2013-465-001-017		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	241.8	*Stage No.*	1
		Test No	51

INITIAL DIMENSIONS

Initial Sample Length (in)	5.81
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	37.79

VOLUME CHANGE

Volume After Consolidation (in^3)	36.74
Length After Consolidation (in)	5.74
Area After Consolidation (in^2)	6.396

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.01	9.79	0.90	250.70	240.9	1.041	0.09	245.80	4.90
0.02	18.78	1.74	258.84	240.1	1.078	0.09	249.45	9.39
0.08	56.27	6.39	291.68	235.4	1.239	0.11	263.55	28.14
0.13	92.43	13.01	321.22	228.8	1.404	0.14	275.01	46.21
0.18	127.33	21.30	347.83	220.5	1.577	0.17	284.16	63.67
0.28	174.29	36.41	379.68	205.4	1.849	0.21	292.54	87.15
0.38	214.06	52.31	403.55	189.5	2.130	0.24	296.52	107.03
0.52	254.82	70.59	426.03	171.2	2.488	0.28	298.62	127.41
0.81	299.70	89.97	451.52	151.8	2.974	0.30	301.67	149.85
1.26	339.95	97.04	484.71	144.8	3.348	0.29	314.73	169.97
1.85	379.35	92.56	528.59	149.2	3.542	0.24	338.91	189.68
2.45	414.67	83.28	573.19	158.5	3.616	0.20	365.86	207.33
3.17	454.26	70.39	625.67	171.4	3.650	0.15	398.54	227.13
3.66	480.70	60.95	661.55	180.9	3.658	0.13	421.20	240.35
4.31	516.56	48.31	710.05	193.5	3.670	0.09	451.77	258.28
5.17	558.23	31.87	768.16	209.9	3.659	0.06	489.04	279.11
6.14	594.25	17.11	818.94	224.7	3.645	0.03	521.81	297.13
6.92	617.21	7.43	851.58	234.4	3.634	0.01	542.97	308.61
7.93	644.06	-2.91	888.77	244.7	3.632	0.00	566.74	322.03
8.63	655.66	-8.93	906.40	250.7	3.615	-0.01	578.57	327.83
9.36	664.41	-13.28	919.49	255.1	3.605	-0.02	587.29	332.21
10.10	671.03	-16.80	929.63	258.6	3.595	-0.03	594.12	335.51
10.60	672.99	-18.65	933.44	260.4	3.584	-0.03	596.94	336.49
11.14	673.83	-20.09	935.72	261.9	3.573	-0.03	598.81	336.92
11.66	677.20	-21.16	940.16	263.0	3.575	-0.03	601.56	338.60
12.18	673.91	-22.03	937.74	263.8	3.554	-0.03	600.78	336.95
12.93	668.89	-22.81	933.50	264.6	3.528	-0.03	599.06	334.44
13.66	654.43	-23.24	919.47	265.0	3.469	-0.04	592.26	327.21
14.19	632.81	-23.18	897.79	265.0	3.388	-0.04	581.39	316.41
14.74	623.74	-22.74	888.28	264.5	3.358	-0.04	576.41	311.87

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	354.9-355.4
Project No.	2013-465-001	Sample No.	ST-20
Lab ID #	2013-465-001-017	Test No.	51

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G330	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G721	2/22/14
Timing Device	G489	5/13/14
Flow Pump	G1510-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-017	Specific Gravity (measured)	2.61
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		

SAMPLE CONDITION SUMMARY

Boring No.:	R-7-1	R-7-1	R-7-1
Depth (ft):	355.4-355.9	354.4-354.9	354.9-355.4
Sample No.:	ST-20	ST-20	ST-20
Test No.	T49	T50	T51
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	21.4	21.4	21.7
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	24.9	24.9	24.9
Total Unit Weight (pcf)	121.5	119.4	121.7
Dry Unit Weight (pcf)	97.3	95.6	97.4
Moisture Content (%) (FINAL)	26.1	26.6	25.9
Initial State Void Ratio,e	0.675	0.704	0.672
Void Ratio at Shear, e	0.622	0.641	0.626

Tested By: JCM Date: 11/23/13 Input Checked By: KC Date: 12/5/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

MOISTURE CONTENT

	T49	T50	T51
Tare Number	1706	1706	1706
Weight of Tare & Wet Sample (g)	132.62	132.62	132.62
Weight of Tare & Dry Sample (g)	122.68	122.68	122.68
Weight of Tare (g)	82.8	82.8	82.8
Moisture Content (%) (INITIAL)	24.92	24.92	24.92
Tare Number	39	970	899
Weight of Tare & Wet Sample (g)	1405	1212.44	399.16
Weight of Tare & Dry Sample (g)	1156.74	978.99	339.65
Weight of Tare (g)	206.83	101.45	110.07
Moisture Content (%) (FINAL)	26.14	26.60	25.92

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1613.08	1419.54	1612.5
Weight of Tube (g)	404.83	294.66	405.08
Weight of Wet Sample (g)	1208.25	1124.88	1207.42
Length 1 (in)	5.812	5.53	5.808
Length 2 (in)	5.822	5.538	5.812
Length 3 (in)	5.827	5.515	5.807
Top Diameter (in)	2.877	2.873	2.876
Middle Diameter (in)	2.883	2.875	2.881
Bottom Diameter (in)	2.876	2.877	2.877
Average Length (in)	5.820333	5.527667	5.809
Average Area (in)	6.508	6.492	6.505
Sample Volume (cm^3)	620.76	588.04	619.26
Unit Wet Weight (g/cm^3)	1.95	1.91	1.95
Unit Wet Weight (pcf)	121.51	119.42	121.72
Unit Dry Weight (pcf)	97.27	95.60	97.44
Unit Dry Weight (g/cm^3)	1.56	1.53	1.56
Initial Burette Reading	**48**	**48**	**48**
Final Burette Reading	**35**	**30**	**30.8**
Initial Dial Reading	**51**	**59**	**48**
Dial Reading After Saturation	**72**	**71**	**48**
Dial Reading After Consolidation	**96**	**108**	**113**
Volume Change during Consolidation	13	18	17.2
Volume Change during Saturation	6.72	3.83	0.00
Volume at Shear (cm^3) *These	601.04	566.21	602.06
Volume of Solids (cm^3) measurements	370.57	345.00	370.31
Volume of Voids (cm^3) are all	230.47	221.21	231.75
Volume of Water (cm^3) at	252.77	239.54	250.53
Void Ratio, e shear	0.622	0.641	0.626

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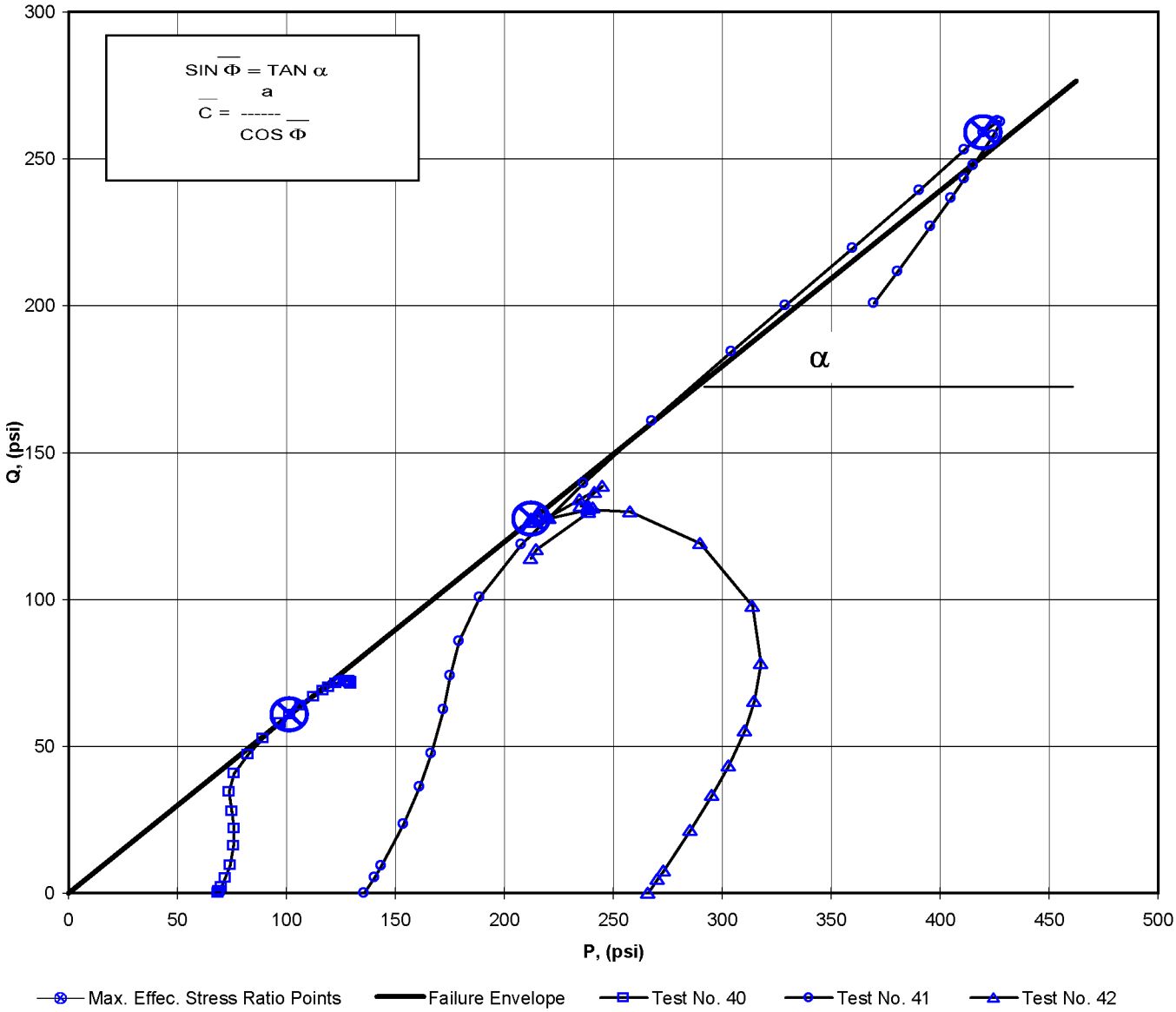
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	390.0-392.5
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	0.00	$\overline{C}$	=	0.00
α	=	30.9	$\overline{\Phi}$	=	36.72

Tested By: JCM Date: 11/18/13 Approved By: DB Date: 12/4/13

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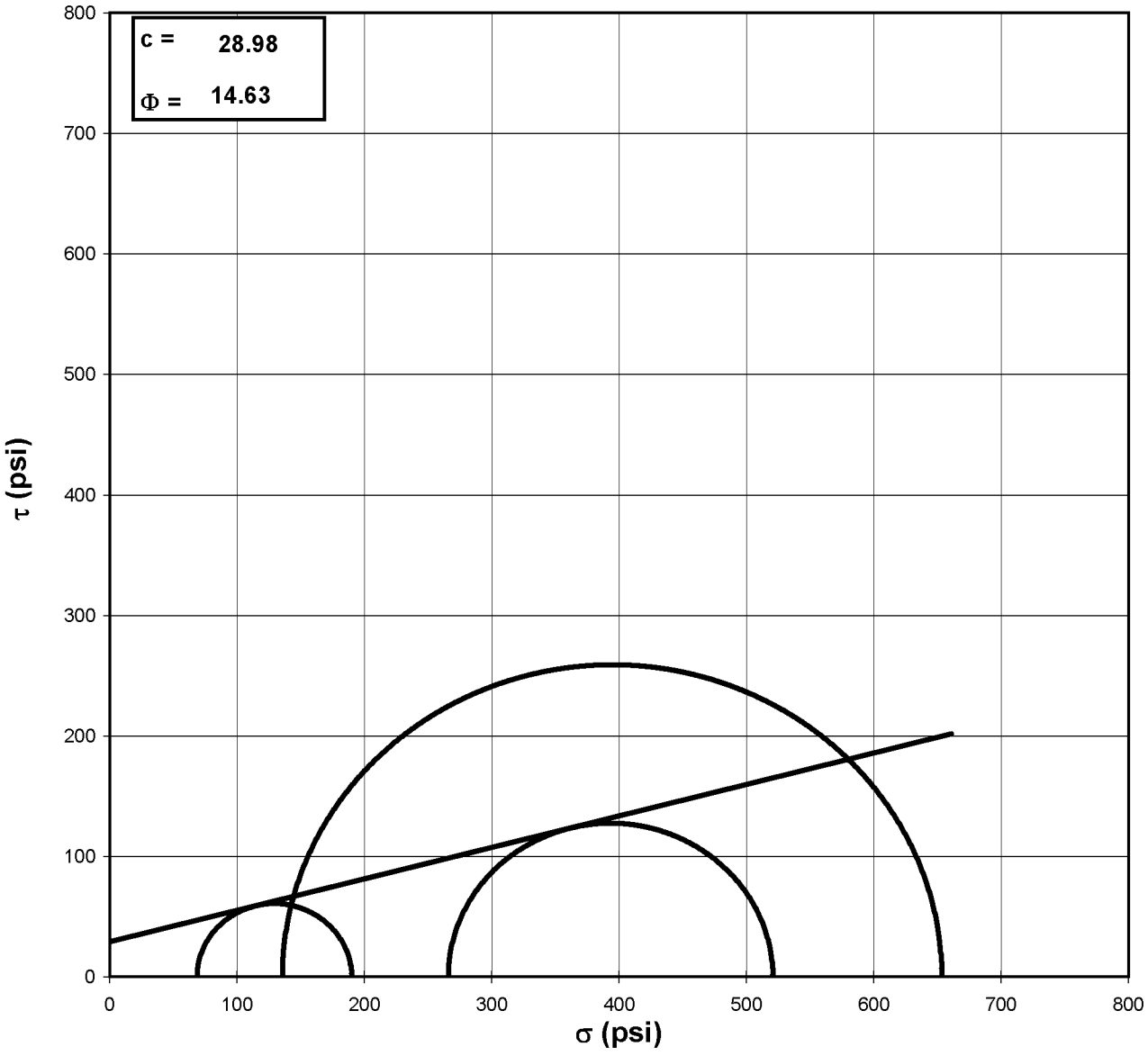
MOHR TOTAL STRENGTH ENVELOPE

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	390.0-392.5
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: JCM *Date:* 11/18/13 *Approved By:* DB *Date:* 12/4/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	391.9-392.4
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	40

PRESSURES (psi)

Cell Pressure (psi)	90.6
Back Pressure (psi)	21.9
Eff. Conf. Pressure (psi)	68.7
Pore Pressure Response (%)	100

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	101.56
Q	=	60.73

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.817	Diameter 1:	2.883
Length 2:	5.806	Diameter 2:	2.873
Length 3:	5.805	Diameter 3:	2.881
Avg. Length:	5.809	*Avg. Diam.:*	2.879

VOLUME CHANGE

Initial Burette Reading (ml)	72.0
Final Burette Reading (ml)	45.1
Final Change (ml)	26.9

Initial Dial Reading (mil)	57
Dial Reading After Saturation (mil)	90
Dial Reading After Consolidation (mil)	166

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
21.0	0.000	21.9
27.2	0.001	22.1
29.8	0.002	22.2
46.0	0.008	22.5
85.2	0.013	23.7
140.4	0.017	26.0
223.5	0.025	30.9
295.3	0.032	36.6
369.7	0.043	43.4
454.5	0.063	51.2
536.9	0.091	55.2
621.4	0.125	55.4
696.3	0.158	53.9
768.8	0.199	51.4
809.6	0.228	49.8
854.5	0.269	47.6
905.0	0.325	45.1
941.4	0.383	42.7
965.0	0.427	41.3
992.4	0.486	39.3
1010.1	0.530	37.8
1024.1	0.574	36.4
1031.9	0.618	35.3
1038.8	0.647	34.8
1043.9	0.676	34.3
1047.5	0.705	33.8
1048.9	0.735	33.4
1058.3	0.779	32.9
1059.7	0.823	32.4
1063.3	0.852	32.1
1062.9	0.881	31.8

Tested By: JCM Date: 11/18/13 Input Checked By: KC Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	391.9-392.4
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	68.7	*Stage No.*	1
		Test No	40

INITIAL DIMENSIONS

Initial Sample Length (in)	5.81
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	37.82

VOLUME CHANGE

Volume After Consolidation (in^3)	35.53
Length After Consolidation (in)	5.70
Area After Consolidation (in^2)	6.233

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	0.99	0.21	69.48	68.5	1.015	0.21	68.99	0.50
0.04	1.41	0.27	69.84	68.4	1.021	0.19	69.14	0.70
0.14	4.00	0.65	72.05	68.1	1.059	0.16	70.05	2.00
0.22	10.28	1.82	77.16	66.9	1.154	0.18	72.02	5.14
0.31	19.10	4.09	83.71	64.6	1.296	0.21	74.16	9.55
0.44	32.35	9.00	92.05	59.7	1.542	0.28	75.87	16.17
0.57	43.76	14.65	97.80	54.0	1.810	0.33	75.92	21.88
0.76	55.52	21.55	102.68	47.2	2.177	0.39	74.92	27.76
1.10	68.78	29.25	108.23	39.4	2.744	0.43	73.84	34.39
1.60	81.44	33.27	116.87	35.4	3.299	0.41	76.15	40.72
2.19	94.22	33.49	129.43	35.2	3.676	0.36	82.32	47.11
2.78	105.33	31.96	142.07	36.7	3.867	0.30	89.41	52.66
3.49	115.78	29.52	154.96	39.2	3.955	0.25	97.07	57.89
4.00	121.46	27.87	162.29	40.8	3.975	0.23	101.56	60.73
4.72	127.41	25.72	170.39	43.0	3.965	0.20	106.68	63.70
5.70	133.73	23.16	179.27	45.5	3.937	0.17	112.40	66.86
6.72	137.73	20.81	185.62	47.9	3.876	0.15	116.75	68.86
7.48	140.12	19.35	189.46	49.3	3.839	0.14	119.40	70.06
8.52	142.57	17.36	193.91	51.3	3.777	0.12	122.62	71.28
9.30	143.93	15.86	196.77	52.8	3.724	0.11	124.80	71.97
10.08	144.71	14.51	198.90	54.2	3.671	0.10	126.54	72.36
10.84	144.61	13.44	199.87	55.3	3.617	0.09	127.57	72.30
11.34	144.76	12.88	200.57	55.8	3.593	0.09	128.19	72.38
11.86	144.64	12.38	200.97	56.3	3.568	0.09	128.65	72.32
12.37	144.31	11.92	201.09	56.8	3.542	0.08	128.94	72.16
12.89	143.65	11.46	200.89	57.2	3.510	0.08	129.06	71.83
13.67	143.67	10.96	201.41	57.7	3.488	0.08	129.57	71.83
14.44	142.58	10.53	200.75	58.2	3.451	0.07	129.46	71.29
14.95	142.22	10.17	200.75	58.5	3.430	0.07	129.64	71.11
15.46	141.31	9.89	200.12	58.8	3.403	0.07	129.46	70.66

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	391.9-392.4
Project No.	2013-465-001	Sample No.	ST-23
Lab ID #	2013-465-001-019	Test No.	40

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G331	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G1190	2/22/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	NA	NA

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	390.9-391.4
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	41

PRESSURES (psi)

Cell Pressure (psi)	168.0
Back Pressure (psi)	32.3
Eff. Conf. Pressure (psi)	135.7
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	419.82
Q	=	258.90

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.964	Diameter 1:	2.871
Length 2:	5.961	Diameter 2:	2.882
Length 3:	5.964	Diameter 3:	2.887
Avg. Length	5.963	*Avg. Diam.:*	2.880

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	32.6
Final Change (ml)	15.4

Initial Dial Reading (mil)	85
Dial Reading After Saturation (mil)	91
Dial Reading After Consolidation (mil)	175

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
48.6	0.000	32.3
117.6	0.001	32.8
167.2	0.002	33.6
351.1	0.006	37.6
514.1	0.011	43.0
662.5	0.016	49.0
856.3	0.024	58.2
1005.7	0.033	66.8
1161.3	0.044	74.4
1359.0	0.064	80.0
1600.4	0.092	78.7
1883.8	0.125	71.0
2173.2	0.159	60.8
2504.1	0.200	47.9
2727.0	0.229	39.0
3009.3	0.270	27.7
3309.1	0.326	16.7
3531.5	0.382	9.9
3640.7	0.426	7.1
3738.5	0.487	4.4
3761.9	0.531	2.8
3728.4	0.575	1.4
3612.9	0.620	0.4
3567.6	0.650	0.0
3492.3	0.680	-0.4
3370.2	0.711	-0.7
3165.6	0.742	-0.9
3035.0	0.789	-0.8

Tested By: JCM Date: 11/18/13 Input Checked By: KC Date: 12/4/13

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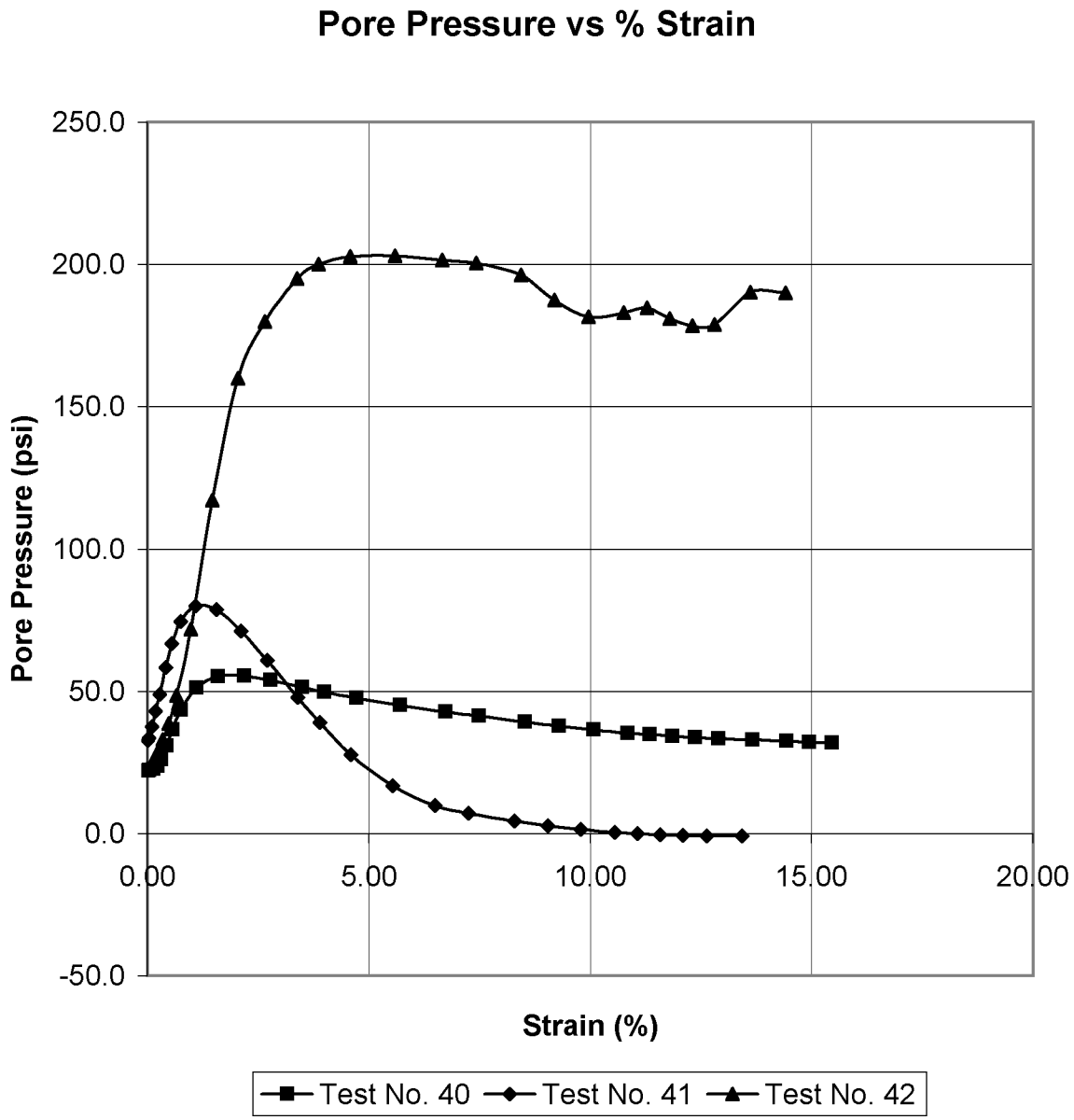
CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	390.0-392.5
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		



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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	390.9-391.4
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	135.7	*Stage No.*	1
		Test No	41

INITIAL DIMENSIONS

Initial Sample Length (in)	5.96
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.51
Initial Sample Volume (in^3)	38.85

VOLUME CHANGE

Volume After Consolidation (in^3)	37.79
Length After Consolidation (in)	5.87
Area After Consolidation (in^2)	6.434

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	10.73	0.46	145.96	135.2	1.079	0.04	140.60	5.36
0.03	18.43	1.27	152.86	134.4	1.137	0.07	143.64	9.22
0.10	46.96	5.34	177.32	130.4	1.360	0.12	153.84	23.48
0.19	72.21	10.67	197.25	125.0	1.578	0.15	161.14	36.11
0.28	95.15	16.65	214.20	119.0	1.799	0.18	166.62	47.57
0.42	125.00	25.93	234.77	109.8	2.139	0.21	172.27	62.50
0.56	147.92	34.46	249.16	101.2	2.461	0.24	175.20	73.96
0.75	171.63	42.10	265.23	93.6	2.834	0.25	179.41	85.82
1.09	201.44	47.74	289.40	88.0	3.290	0.24	188.68	100.72
1.57	237.40	46.41	326.68	89.3	3.659	0.20	207.98	118.70
2.12	279.17	38.74	376.13	97.0	3.879	0.14	236.55	139.59
2.71	321.25	28.54	428.41	107.2	3.998	0.09	267.78	160.63
3.40	368.65	15.57	488.78	120.1	4.069	0.04	304.45	184.33
3.90	400.03	6.67	529.06	129.0	4.100	0.02	329.04	200.01
4.60	438.98	-4.64	579.33	140.3	4.128	-0.01	359.84	219.49
5.54	478.64	-15.63	629.97	151.3	4.163	-0.03	390.65	239.32
6.50	506.11	-22.38	664.19	158.1	4.202	-0.05	411.13	253.06
7.25	517.80	-25.22	678.72	160.9	4.218	-0.05	419.82	258.90
8.30	525.89	-27.89	689.48	163.6	4.215	-0.05	426.53	262.94
9.05	524.89	-29.55	690.14	165.2	4.176	-0.06	427.69	262.44
9.79	515.92	-30.93	682.55	166.6	4.096	-0.06	424.59	257.96
10.55	495.50	-31.89	663.08	167.6	3.957	-0.07	415.34	247.75
11.07	486.35	-32.31	654.36	168.0	3.895	-0.07	411.19	243.17
11.58	473.24	-32.70	641.64	168.4	3.810	-0.07	405.02	236.62
12.10	453.77	-33.02	622.49	168.7	3.689	-0.08	395.61	226.88
12.64	423.22	-33.21	592.13	168.9	3.506	-0.08	380.52	211.61
13.43	401.80	-33.09	570.59	168.8	3.381	-0.08	369.69	200.90

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WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	390.9-391.4
Project No.	2013-465-001	Sample No.	ST-23
Lab ID #	2013-465-001-019	Test No.	41

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G309	INITIAL ONLY
Load Cell	G1310	1/8/14
Cell Pressure Transducer	G1073B	11/7/14
Pore Pressure Transducer	G1518	11/7/14
Extensometer	G835	1/8/14
Load Frame	G833	1/8/14
Dial Indicator	G1295	3/4/14
Timing Device	G489	5/13/14
Balance	NA	NA
Flow Pump	G1511-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	391.4-391.9
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Stage No.	1
Test No.	42

PRESSURES (psi)

Cell Pressure (psi)	288.1
Back Pressure (psi)	22.1
Eff. Conf. Pressure (psi)	266.0
Pore Pressure Response (%)	97

MAXIMUM OBLIQUITY POINTS

$\overline{P}$	=	212.57
Q	=	127.41

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	5.927	Diameter 1:	2.875
Length 2:	5.923	Diameter 2:	2.877
Length 3:	5.925	Diameter 3:	2.881
Avg. Length:	5.925	*Avg. Diam.:*	2.878

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	38.6
Final Change (ml)	9.4

Initial Dial Reading (mil)	43
Dial Reading After Saturation (mil)	51
Dial Reading After Consolidation (mil)	174

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
47.9	0.000	22.1
109.6	0.001	22.4
147.7	0.002	22.6
326.4	0.006	24.0
482.5	0.010	25.9
613.7	0.014	28.4
772.9	0.021	33.0
904.2	0.028	38.6
1075.2	0.038	48.4
1336.0	0.057	71.9
1624.9	0.085	117.1
1777.4	0.118	159.9
1797.8	0.154	179.9
1769.8	0.196	195.0
1764.7	0.224	200.0
1773.5	0.266	202.7
1809.1	0.324	202.9
1841.1	0.386	201.6
1858.6	0.431	200.5
1866.2	0.489	196.2
1973.4	0.533	187.5
2055.5	0.577	181.6
2044.0	0.623	183.1
1984.8	0.654	184.6
1997.1	0.684	181.0
1999.6	0.714	178.5
1989.7	0.742	178.9
1814.2	0.789	190.1
1786.0	0.835	190.0

Tested By: JCM Date: 11/18/13 Input Checked By: KC Date: 12/4/13

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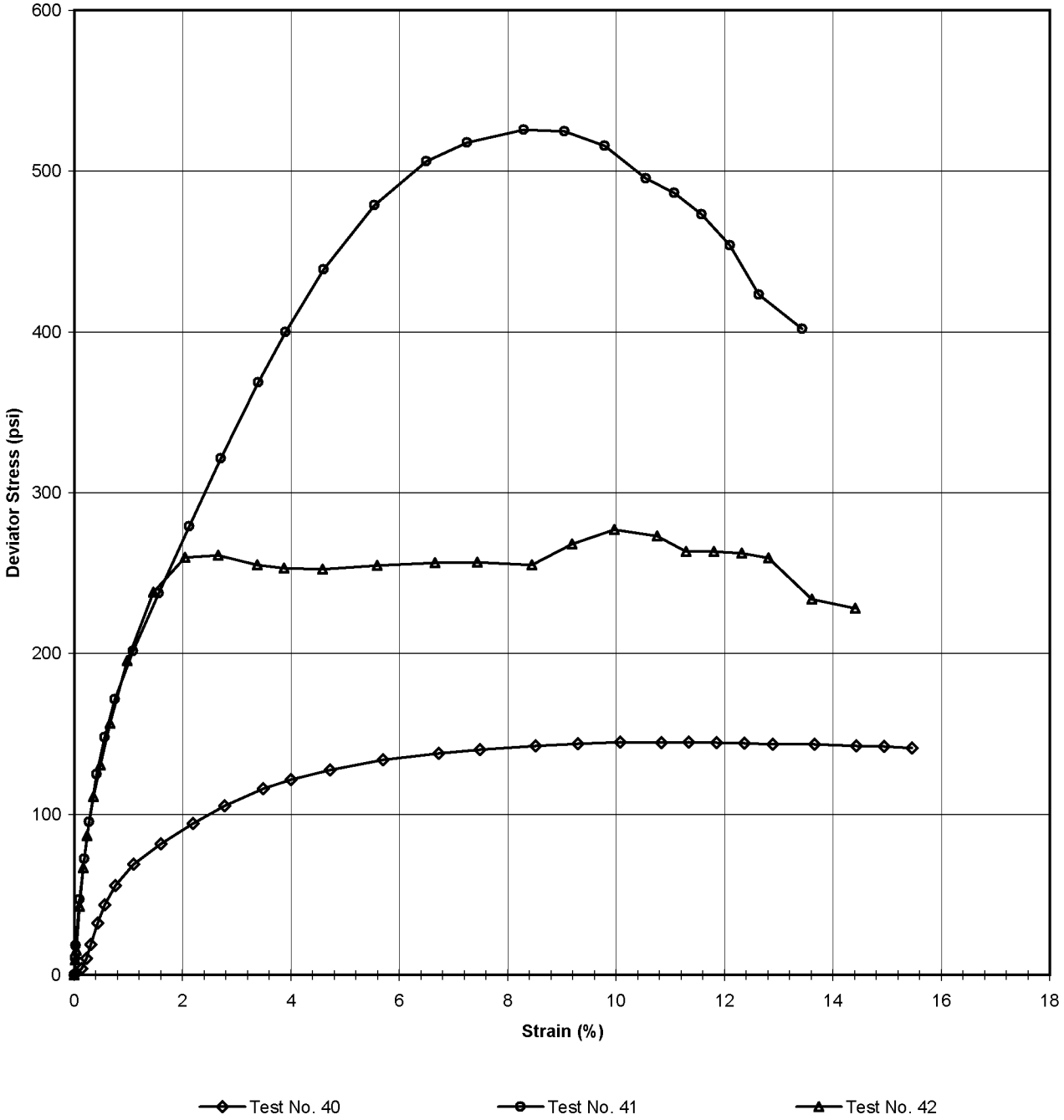
ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	390.0-392.5
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		



E50 Test No. 40 6795.731 E50 Test No. 41 13971.59 E50 Test No. 42 27450.68

Tested By: JCM Date: 11/18/13 Approved By: DB Date: 12/4/13

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

Client:	Paul C. Rizzo & Associates	Boring No.:	R-7-1
Client Reference:	Turkey Point Units 6 & 7 Site	Depth (ft):	391.4-391.9
Project No.:	2013-465-001	Sample No.:	ST-23
Lab ID:	2013-465-001-019		

Visual Description: Greenish Gray Silty Sand (Undisturbed)

Effective Confining Pressure (psi)	266.0	*Stage No.*	1
		Test No	42

INITIAL DIMENSIONS

Initial Sample Length (in)	5.93
Initial Sample Diameter (in)	2.88
Initial Sample Area (in^2)	6.50
Initial Sample Volume (in^3)	38.54

VOLUME CHANGE

Volume After Consolidation (in^3)	37.81
Length After Consolidation (in)	5.79
Area After Consolidation (in^2)	6.525

Strain (%)	Deviation Stress	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principle Stress Ratio	$\overline{A}$	$\overline{P}$	Q
0.02	9.46	0.33	275.12	265.7	1.036	0.04	270.40	4.73
0.04	15.29	0.54	280.75	265.5	1.058	0.04	273.10	7.65
0.10	42.63	1.91	306.72	264.1	1.161	0.05	285.40	21.32
0.17	66.49	3.82	328.67	262.2	1.254	0.06	295.43	33.24
0.24	86.51	6.25	346.25	259.7	1.333	0.07	303.00	43.25
0.36	110.71	10.91	365.81	255.1	1.434	0.10	310.45	55.36
0.48	130.59	16.55	380.05	249.5	1.524	0.13	314.75	65.30
0.66	156.41	26.28	396.13	239.7	1.652	0.17	317.93	78.20
0.98	195.47	49.75	411.71	216.2	1.904	0.26	313.98	97.73
1.47	238.15	94.95	409.19	171.0	2.392	0.41	290.12	119.07
2.04	259.65	137.83	387.82	128.2	3.026	0.55	257.99	129.82
2.66	261.04	157.83	369.21	108.2	3.413	0.62	238.69	130.52
3.38	254.97	172.91	348.05	93.1	3.739	0.70	220.57	127.48
3.87	252.93	177.88	341.06	88.1	3.870	0.73	214.59	126.47
4.59	252.33	180.61	337.72	85.4	3.955	0.74	211.56	126.17
5.59	254.82	180.83	339.98	85.2	3.992	0.73	212.57	127.41
6.66	256.51	179.51	343.01	86.5	3.966	0.72	214.75	128.26
7.44	256.87	178.37	344.50	87.6	3.931	0.72	216.07	128.43
8.44	255.14	174.11	347.02	91.9	3.777	0.70	219.46	127.57
9.19	267.97	165.36	368.61	100.6	3.663	0.64	234.63	133.99
9.97	277.03	159.48	383.54	106.5	3.601	0.59	245.03	138.51
10.76	273.01	161.00	378.01	105.0	3.600	0.61	241.51	136.51
11.29	263.33	162.51	366.82	103.5	3.544	0.64	235.15	131.66
11.81	263.46	158.92	370.55	107.1	3.460	0.62	238.81	131.73
12.32	262.27	156.41	371.86	109.6	3.393	0.61	240.72	131.13
12.81	259.47	156.83	368.64	109.2	3.377	0.62	238.90	129.74
13.62	233.84	168.00	331.84	98.0	3.386	0.74	214.92	116.92
14.41	227.99	167.87	326.12	98.1	3.323	0.76	212.13	113.99

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

EQUIPMENT LIST

Client	Paul C. Rizzo & Associates	Boring No.	R-7-1
Client Reference	Turkey Point Units 6 & 7 Site	Depth (ft)	391.4-391.9
Project No.	2013-465-001	Sample No.	ST-23
Lab ID #	2013-465-001-019	Test No.	42

Equipment	Equipment ID#	Calibration Due Date
Oven	G1387	8/16/14
Balance	G1047	3/25/14
Calipers	G1123	12/13/13
PI Tape	G1121	1/14/14
Pressure Transducer	G134	1/9/14
Burette, Outflow	G334	INITIAL ONLY
Load Cell	G1311	1/8/14
Cell Pressure Transducer	G1512	11/7/14
Pore Pressure Transducer	G1514	11/7/14
Extensometer	G1073A	1/8/14
Load Frame	G1073	1/8/14
Dial Indicator	G1456	8/30/14
Timing Device	G489	5/13/14
Flow Pump	G1510-1	11/7/14

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CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client:	Paul C. Rizzo & Associates		
Client Reference:	Turkey Point Units 6 & 7 Site		
Project No.:	2013-465-001		
Lab ID:	2013-465-001-019	Specific Gravity (measured)	2.6
Visual Description:	Greenish Gray Silty Sand (Undisturbed)		

SAMPLE CONDITION SUMMARY

Boring No.:	R-7-1	R-7-1	R-7-1
Depth (ft):	391.9-392.4	390.9-391.4	391.4-391.9
Sample No.:	ST-23	ST-23	ST-23
Test No.	T40	T41	T42
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	21.9	32.3	22.1
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	26.8	26.8	26.8
Total Unit Weight (pcf)	116.1	123.1	120.9
Dry Unit Weight (pcf)	91.5	97.1	95.3
Moisture Content (%) (FINAL)	35.1	26.1	29.6
Initial State Void Ratio,e	0.773	0.672	0.702
Void Ratio at Shear, e	0.666	0.627	0.670

Tested By: JCM Date: 11/18/13 Input Checked By: KC Date: 12/4/13

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS

ASTM D4767-11

MOISTURE CONTENT

	T40	T41	T42
Tare Number	1126	1126	1126
Weight of Tare & Wet Sample (g)	182.1	182.1	182.1
Weight of Tare & Dry Sample (g)	161.54	161.54	161.54
Weight of Tare (g)	84.87	84.87	84.87
Moisture Content (%) (INITIAL)	26.82	26.82	26.82
Tare Number	580	926	649
Weight of Tare & Wet Sample (g)	297.06	1343.81	1308.88
Weight of Tare & Dry Sample (g)	241.79	1085.42	1031.84
Weight of Tare (g)	84.36	95.77	96.84
Moisture Content (%) (FINAL)	35.11	26.11	29.63

UNIT WEIGHT

Weight of Tube & Wet Sample (g)	1557.3	1672.34	1637.42
Weight of Tube (g)	405.21	417.37	414.42
Weight of Wet Sample (g)	1152.09	1254.97	1223
Length 1 (in)	5.817	5.964	5.927
Length 2 (in)	5.806	5.961	5.923
Length 3 (in)	5.805	5.964	5.925
Top Diameter (in)	2.883	2.871	2.875
Middle Diameter (in)	2.873	2.882	2.877
Bottom Diameter (in)	2.881	2.887	2.881
Average Length (in)	5.809333	5.963	5.925
Average Area (in)	6.510	6.514	6.504
Sample Volume (cm^3)	619.73	636.56	631.48
Unit Wet Weight (g/cm^3)	1.86	1.97	1.94
Unit Wet Weight (pcf)	116.06	123.08	120.91
Unit Dry Weight (pcf)	91.52	97.05	95.34
Unit Dry Weight (g/cm^3)	1.47	1.55	1.53
Initial Burette Reading	**72**	**48**	**48**
Final Burette Reading	**45.1**	**32.6**	**38.6**
Initial Dial Reading	**57**	**85**	**43**
Dial Reading After Saturation	**90**	**91**	**51**
Dial Reading After Consolidation	**166**	**175**	**174**
Volume Change during Consolidation	26.9	15.4	9.4
Volume Change during Saturation	10.56	1.92	2.56
Volume at Shear (cm^3) *These	582.27	619.24	619.52
Volume of Solids (cm^3) measurements	349.41	380.61	370.92
Volume of Voids (cm^3) are all	232.85	238.63	248.60
Volume of Water (cm^3) at	318.94	258.38	285.75
Void Ratio, e shear	0.666	0.627	0.670

DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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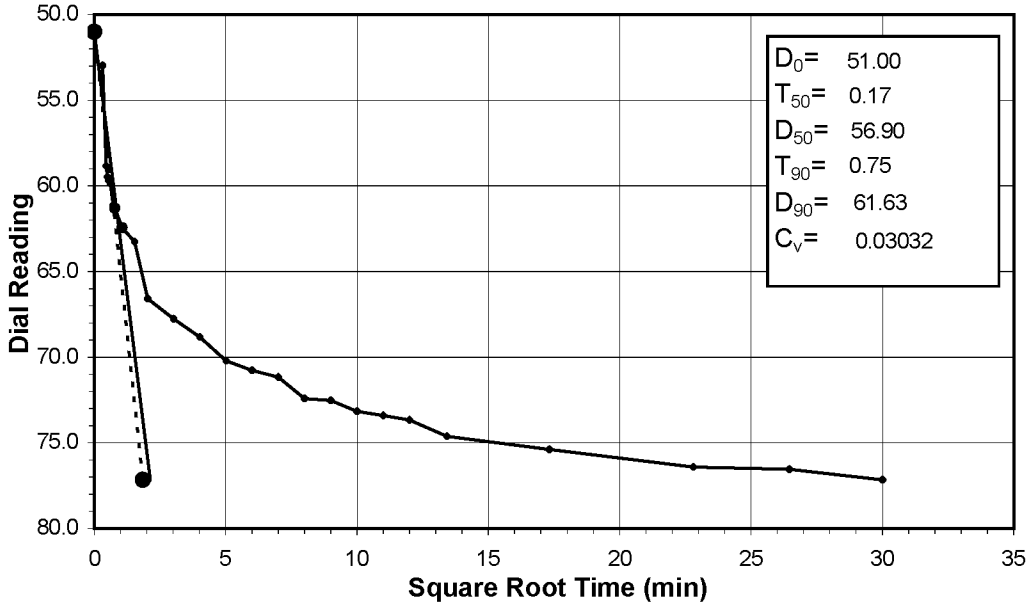
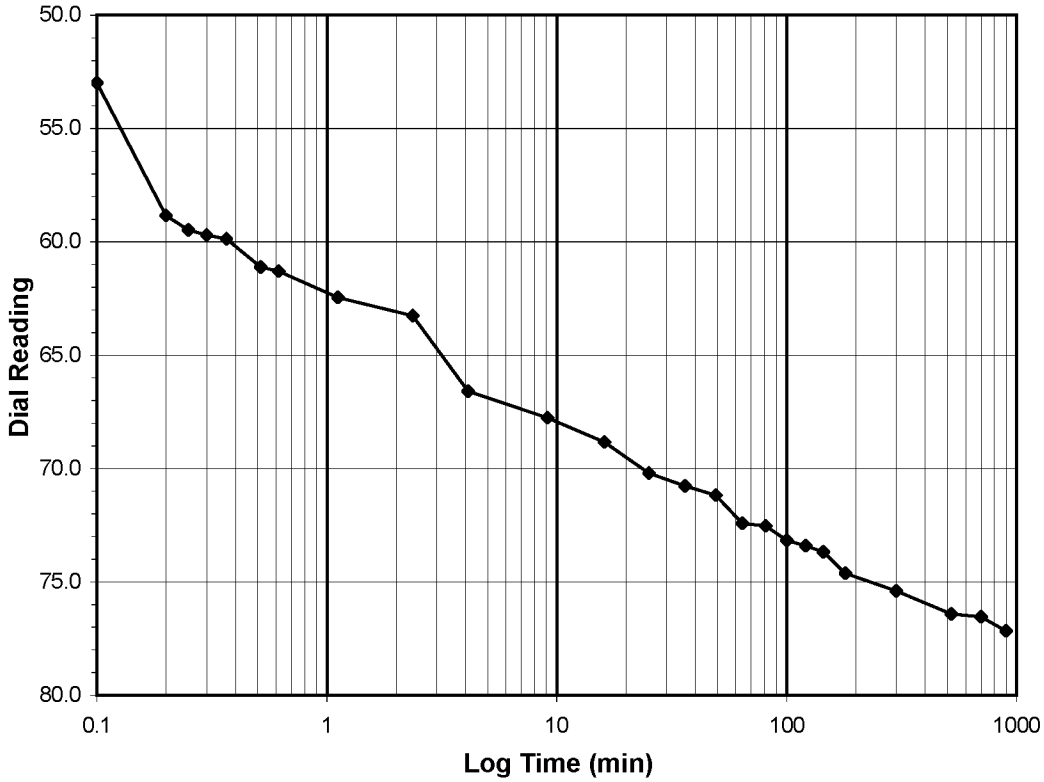
ONE DIMENSIONAL CONSOLIDATION

ASTM D2435 / D2435M-11

Client	Paul C. Rizzo & Associates	Boring No.	R-6-1b
Client Project	Turkey Point Units 6 & 7 Site	Depth (ft)	163.4-163.6
Project No.	2013-465-001	Sample No.	ST-5
Lab ID	2013-465-001-022	Visual Description	Gray Silty Sand

Sample Conditions: Undisturbed, Inundated And Double Drained





Test Load	**(tsf)**	**0.0-0.25**
Final Reading	**(div)**	**77.2**
Consolidometer No.		**G1427**
1 Division	(in)	0.0001
Start Date		12/2/13
Start Time		11:12:58

Elapsed Time (min)	Dial Reading (div)
Initial	**0.0**
0.10	53.0
0.20	58.8
0.25	59.5
0.30	59.7
0.37	59.9
0.52	61.1
0.62	61.3
1.12	62.4
2.37	63.3
4.12	66.6
9.12	67.8
16.12	68.8
25.13	70.2
36.13	70.8
49.13	71.2
64.13	72.4
81.13	72.5
100.13	73.2
121.13	73.4
144.13	73.7
180.13	74.6
300.13	75.4
520.13	76.4
700.13	76.5
900.15	77.2

Tested By *DB* *Date* *12/2/13* *Checked By* *NM* *Date* *12/16/13*

DCN: CT-24 AutoT50-CV Date: 1127/13 Revision: 0

CONSOL-Auto T50-Cv