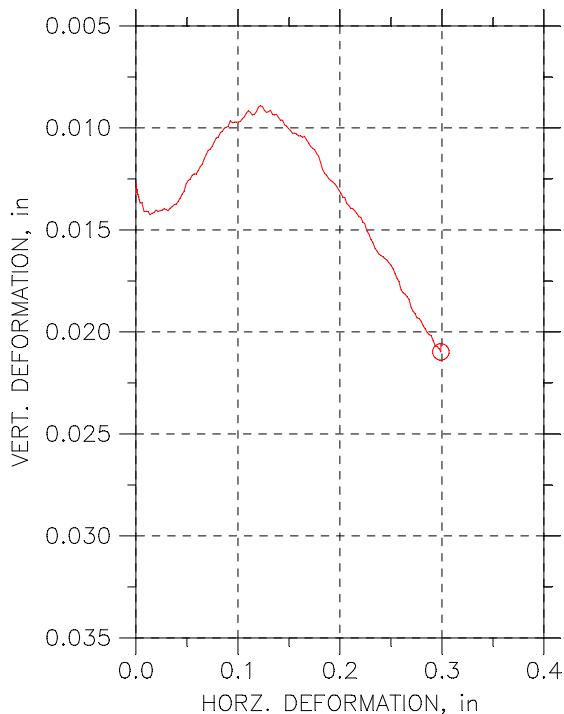
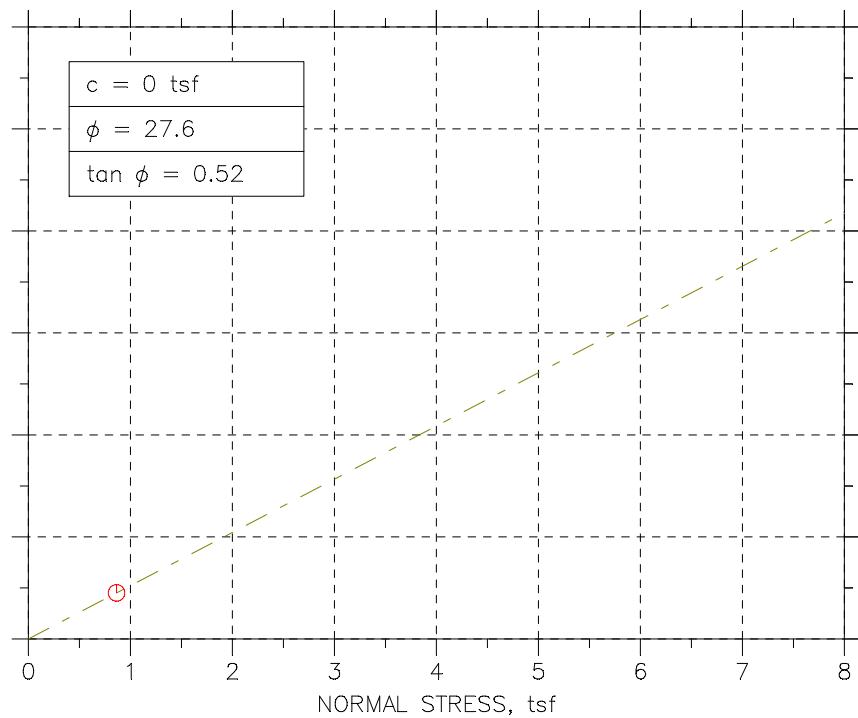
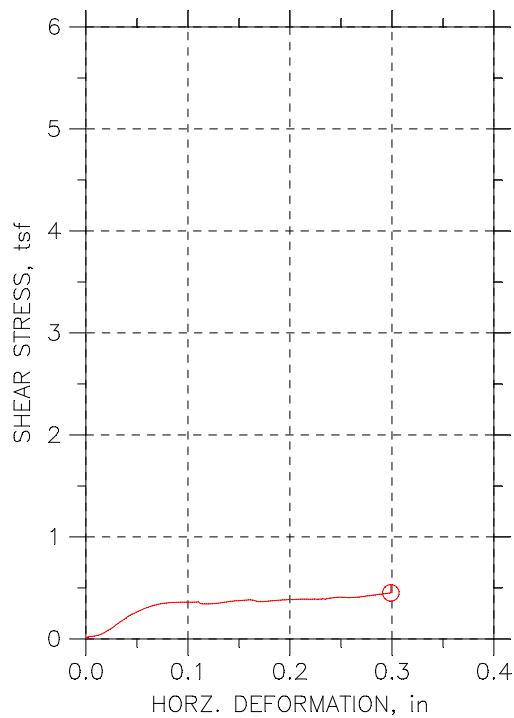


# DIRECT SHEAR TEST REPORT



Symbol	∅			
Test No.	102BOST2A			
Sample No.	OST-2			
Shape	Circular			
Initial	Dimension, in	2.5		
	Area, in <sup>2</sup>	4.9087		
	Height, in	0.81181		
	Water Content, %	30.21		
	Dry Density,pcf	85.102		
	Saturation, %	100.47		
	Void Ratio	0.69453		
	Consol. Height, in	0.80213		
	Consol. Void Ratio	0.67432		
Final	Water Content, %	28.17		
	Dry Density,pcf	87.36		
	Saturation, %	100.01		
	Void Ratio	0.65075		
	Normal Stress, tsf	0.8644		
	Max. Shear Stress, tsf	0.45121		
	Ult. Shear Stress, tsf	0.45121		
	Time to Failure, min	1655.1		

Project: KINGSTON COAL TVA	Disp. Rate, in/min	0.000177
Location: TN	Measured Specific Gravity	2.31
Project No.: 60095742	Liquid Limit	NP
Boring No.: 09-102B ST2	Plastic Limit	NP
Sample Type: 3" OST	Plasticity Index	NP
Description: FLYASH - DARK GRAY		
Remarks: TEST PERFORMED AS PER ASTM D 3080. SPECIMEN WAS EXTRACTED FROM THE VERY TOP OF BORING.		

## DIRECT SHEAR TEST DATA

Project: KINGSTON COAL TVA  
 Boring No.: 09-102B ST2  
 Sample No.: OST-2  
 Test No.: 102BOST2A

Location: TN  
 Tested By: BCM  
 Test Date: 02/09/09  
 Sample Type: 3" OST

Project No.: 60095742  
 Checked By: WPQ  
 Depth: 29.5'-32.0'  
 Elevation:

Soil Description: FLYASH - DARK GRAY

Remarks: TEST PERFORMED AS PER ASTM D 3080. SPECIMEN WAS EXTRACTED FROM THE VERY TOP OF BORING.

Elapsed Time min	Vertical Stress tsf	Vertical Displacement in	Horizontal Stress tsf	Horizontal Displacement in
1	0.00	0.8644	0.01271	0
2	3.34	0.8644	0.0129	0.0007087
3	7.62	0.8644	0.01316	0.0126
4	9.97	0.8636	0.01303	0.01575
5	11.98	0.8644	0.01326	0.01654
6	15.80	0.8644	0.01326	0.0189
7	18.57	0.8644	0.01338	0.02047
8	21.87	0.8644	0.01335	0.02205
9	25.39	0.8644	0.01351	0.02362
10	27.43	0.8644	0.01358	0.02362
11	29.77	0.8644	0.01367	0.02362
12	41.95	0.8644	0.01367	0.0252
13	54.58	0.8644	0.01409	0.02835
14	65.91	0.8644	0.01409	0.0315
15	76.58	0.8644	0.01409	0.03622
16	88.95	0.8644	0.01425	0.04173
17	101.08	0.8644	0.01419	0.0504
18	109.61	0.8644	0.01416	0.05985
19	122.91	0.8644	0.01403	0.07245
20	135.54	0.8644	0.01409	0.08426
21	144.07	0.8644	0.01406	0.09528
22	154.38	0.8644	0.01403	0.1079
23	163.35	0.8644	0.01396	0.1197
24	178.03	0.8644	0.014	0.1386
25	186.36	0.8644	0.01406	0.1496
26	200.19	0.8644	0.01393	0.1677
27	207.35	0.8644	0.01387	0.1772
28	219.31	0.8644	0.01377	0.1921
29	229.46	0.8644	0.01374	0.2047
30	243.90	0.8644	0.01361	0.2221
31	252.70	0.8644	0.01345	0.2315
32	264.33	0.8644	0.01326	0.2441
33	272.28	0.8644	0.0131	0.2496
34	285.69	0.8644	0.01274	0.2622
35	295.71	0.8644	0.01258	0.2717
36	306.52	0.8644	0.01252	0.2795
37	316.03	0.8644	0.01232	0.2874
38	328.63	0.8644	0.01226	0.2969
39	339.08	0.8644	0.01226	0.304
40	348.07	0.8652	0.0121	0.3103
41	362.49	0.8644	0.0119	0.3189
42	372.23	0.8652	0.01178	0.3244
43	383.41	0.8652	0.01152	0.3299
44	393.36	0.8644	0.01129	0.3339
45	407.42	0.8644	0.0111	0.3394
46	417.44	0.8644	0.01104	0.3433
47	425.66	0.8652	0.01091	0.3457
48	440.32	0.8644	0.01068	0.3496
49	450.27	0.8644	0.01049	0.352
50	458.26	0.8644	0.01046	0.3536
51	474.79	0.8644	0.01023	0.3559
52	481.18	0.8644	0.01017	0.3567
53	491.80	0.8652	0.01001	0.3575
54	501.30	0.8644	0.009974	0.3583
55	511.73	0.8644	0.00991	0.3591
56	524.24	0.8644	0.009652	0.3599
57	536.41	0.8652	0.009749	0.3599
58	543.00	0.8652	0.009717	0.3607
59	552.75	0.8652	0.009717	0.3599
60	563.18	0.8644	0.009717	0.3599
61	576.26	0.8644	0.009685	0.3599
62	586.01	0.8644	0.009556	0.3607
63	598.20	0.8652	0.009459	0.3607
64	606.84	0.8644	0.009266	0.3622
65	618.37	0.8652	0.00917	0.363
66	629.10	0.8644	0.009234	0.3465
67	640.73	0.8644	0.009363	0.3433
68	649.10	0.8644	0.009331	0.3425
69	661.58	0.8644	0.009202	0.3425
70	673.66	0.8652	0.008977	0.3433
71	683.08	0.8644	0.008912	0.3441
72	690.97	0.8644	0.008945	0.3449
73	702.20	0.8644	0.009138	0.3457
74	715.61	0.8644	0.009234	0.3488
75	722.53	0.8644	0.009202	0.3496
76	738.51	0.8644	0.009138	0.3536
77	747.44	0.8644	0.009331	0.3559
78	759.07	0.8644	0.009363	0.3599
79	768.07	0.8636	0.009331	0.3622
80	778.43	0.8644	0.009492	0.3662
81	791.46	0.8644	0.00962	0.3685
82	800.36	0.8644	0.00962	0.3701
83	813.44	0.8644	0.009846	0.3725
84	824.83	0.8644	0.00991	0.374
85	833.50	0.8644	0.01004	0.3748
86	845.95	0.8644	0.01014	0.3764

87	854.65	0.8644	0.01026	0.378	0.1536
88	865.67	0.8644	0.01026	0.3796	0.1555
89	873.55	0.8644	0.0103	0.3811	0.1575
90	888.00	0.8644	0.01039	0.3819	0.1595
91	898.29	0.8644	0.01039	0.3819	0.1614
92	909.81	0.8644	0.01046	0.3811	0.1634
93	922.55	0.8644	0.01042	0.3756	0.1654
94	930.06	0.8644	0.01059	0.3701	0.1673
95	942.25	0.8644	0.01075	0.3654	0.1693
96	953.60	0.8644	0.01091	0.3646	0.1713
97	961.54	0.8644	0.011	0.3654	0.1732
98	976.05	0.8644	0.01107	0.367	0.1752
99	985.70	0.8644	0.01126	0.3685	0.1772
100	996.50	0.8644	0.01139	0.3709	0.1791
101	1006.52	0.8644	0.01171	0.3733	0.1811
102	1016.11	0.8636	0.01203	0.374	0.1831
103	1028.20	0.8644	0.01223	0.3764	0.185
104	1036.48	0.8644	0.01232	0.3772	0.187
105	1048.71	0.8644	0.01248	0.3796	0.189
106	1061.03	0.8636	0.01258	0.3811	0.1909
107	1071.15	0.8644	0.01264	0.3827	0.193
108	1082.63	0.8644	0.01274	0.3827	0.1949
109	1093.80	0.8644	0.01287	0.3843	0.1969
110	1101.95	0.8644	0.01303	0.3851	0.1989
111	1115.36	0.8644	0.01319	0.3859	0.2008
112	1127.59	0.8644	0.01338	0.3859	0.2028
113	1134.64	0.8644	0.01342	0.3874	0.2048
114	1148.76	0.8636	0.01371	0.389	0.2067
115	1158.14	0.8644	0.0138	0.389	0.2087
116	1169.96	0.8644	0.01393	0.3898	0.2107
117	1176.89	0.8636	0.01396	0.3906	0.2126
118	1190.15	0.8644	0.01406	0.3898	0.2146
119	1201.03	0.8644	0.01419	0.3898	0.2166
120	1212.62	0.8644	0.01435	0.3882	0.2185
121	1223.47	0.8644	0.01438	0.389	0.2205
122	1231.72	0.8644	0.01461	0.3906	0.2225
123	1242.97	0.8636	0.0147	0.3914	0.2244
124	1257.65	0.8644	0.01506	0.389	0.2264
125	1265.51	0.8644	0.01519	0.3906	0.2284
126	1277.52	0.8636	0.01548	0.3906	0.2303
127	1289.49	0.8644	0.0156	0.3929	0.2323
128	1299.85	0.8644	0.01589	0.3906	0.2343
129	1308.95	0.8644	0.01602	0.3937	0.2362
130	1322.68	0.8644	0.01618	0.3977	0.2382
131	1332.22	0.8644	0.01625	0.4008	0.2402
132	1341.79	0.8644	0.01631	0.4024	0.2421
133	1351.26	0.8644	0.01641	0.4055	0.2441
134	1365.40	0.8644	0.01647	0.4079	0.2461
135	1375.41	0.8644	0.0166	0.4087	0.248
136	1386.20	0.8644	0.01673	0.4087	0.25
137	1394.38	0.8644	0.01689	0.4079	0.252
138	1405.31	0.8644	0.01712	0.4071	0.2539
139	1418.30	0.8644	0.01737	0.4055	0.256
140	1426.23	0.8644	0.01754	0.4047	0.2579
141	1440.41	0.8644	0.01792	0.4055	0.2599
142	1451.69	0.8636	0.01808	0.4063	0.2619
143	1461.34	0.8644	0.01815	0.4071	0.2638
144	1472.51	0.8644	0.01828	0.4087	0.2658
145	1482.94	0.8644	0.0184	0.411	0.2678
146	1497.51	0.8644	0.01879	0.4134	0.2697
147	1506.35	0.8644	0.01898	0.4158	0.2717
148	1514.96	0.8644	0.01911	0.4181	0.2737
149	1530.43	0.8644	0.0193	0.4213	0.2756
150	1537.71	0.8644	0.01934	0.4236	0.2776
151	1547.95	0.8636	0.01947	0.4252	0.2796
152	1561.70	0.8644	0.01969	0.4292	0.2815
153	1572.43	0.8644	0.01985	0.4315	0.2835
154	1583.58	0.8644	0.02001	0.4339	0.2855
155	1597.23	0.8644	0.02014	0.4386	0.2874
156	1603.58	0.8644	0.02017	0.4394	0.2894
157	1616.62	0.8644	0.02043	0.4425	0.2914
158	1624.16	0.8644	0.02066	0.4441	0.2933
159	1636.34	0.8636	0.02072	0.4465	0.2953
160	1649.44	0.8644	0.02082	0.4504	0.2973
161	1655.11	0.8644	0.02098	0.4512	0.2989