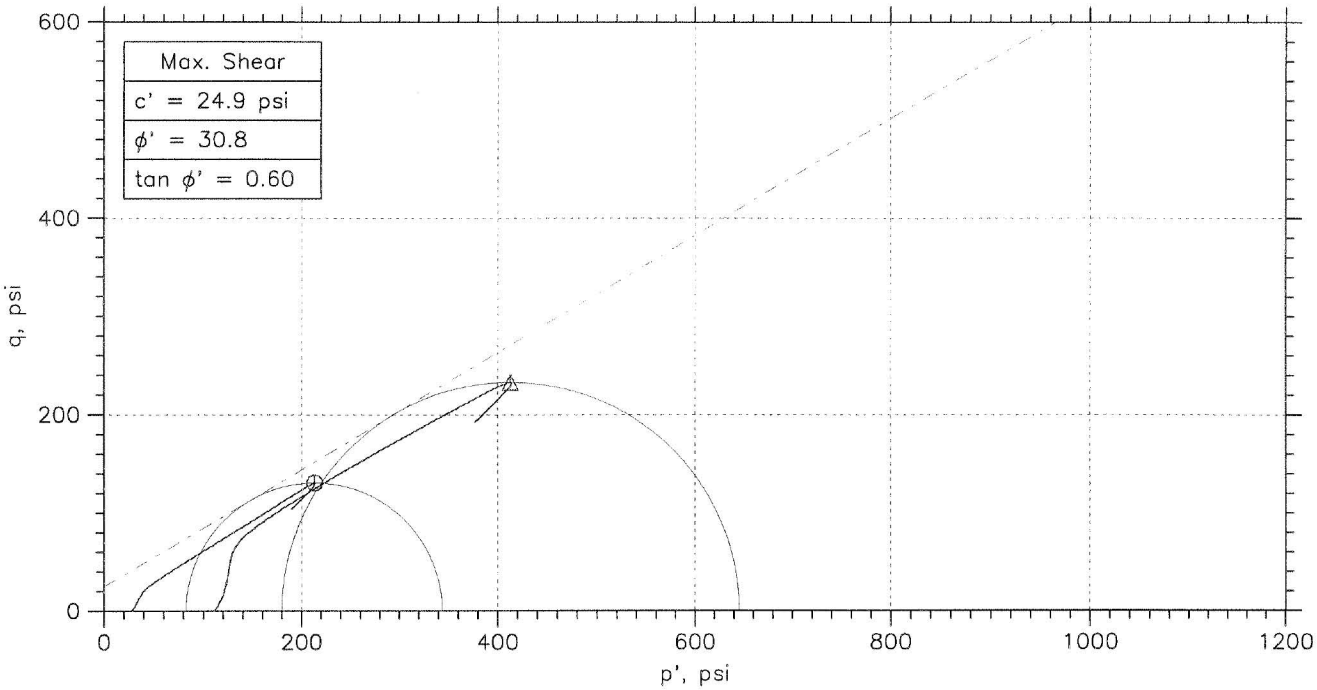
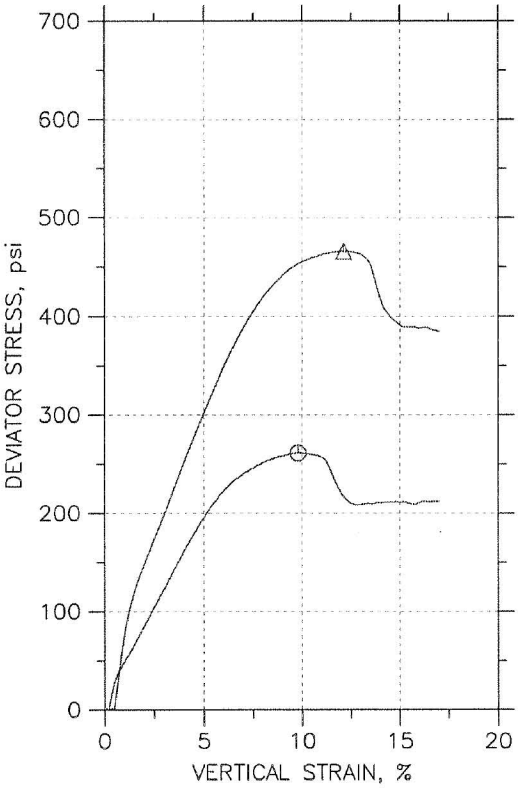
# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | | |
|---|---|---|---|---|---|
| Sample No. | | UD-3 | UD-3 | | |
| Test No. | | 7562.1 | 7562.3 | | |
| Depth | | 173.5 ft | 173.5 ft | | |
| Initial | Diameter, in | 2.816 | 2.854 | | |
| | Height, in | 5.603 | 5.602 | | |
| | Water Content, % | 17.5 | 18.3 | | |
| | Dry Density, pcf | 105. | 104.8 | | |
| | Saturation, % | 80.6 | 83.8 | | |
| | Void Ratio | 0.575 | 0.579 | | |
| Before Shear | Water Content, % | 20.1 | 20.1 | | |
| | Dry Density, pcf | 108. | 108. | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.532 | 0.532 | | |
| | Back Press., psi | 60. | 86. | | |
| Ver. Eff. Cons. Stress, psi | | 27.99 | 112. | | |
| Shear Strength, psi | | 130.6 | 232.7 | | |
| Strain at Failure, % | | 9.79 | 12.1 | | |
| Strain Rate, %/min | | 0.1 | 0.1 | | |
| B-Value | | 1.04 | 0.97 | | |
| Estimated Specific Gravity | | 2.65 | 2.65 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

Project: Vogtle COL

Location: B-4002

Project No.: 6141060286

Boring No.: B-4002

Sample Type: Undisturbed

Description: SAND, with silt (SP-SM)

Remarks:

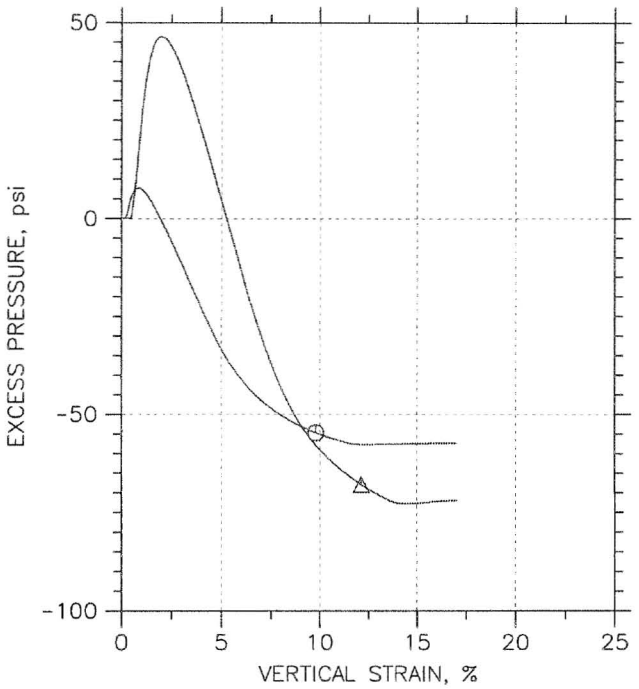
Phase calculations based on start of test.

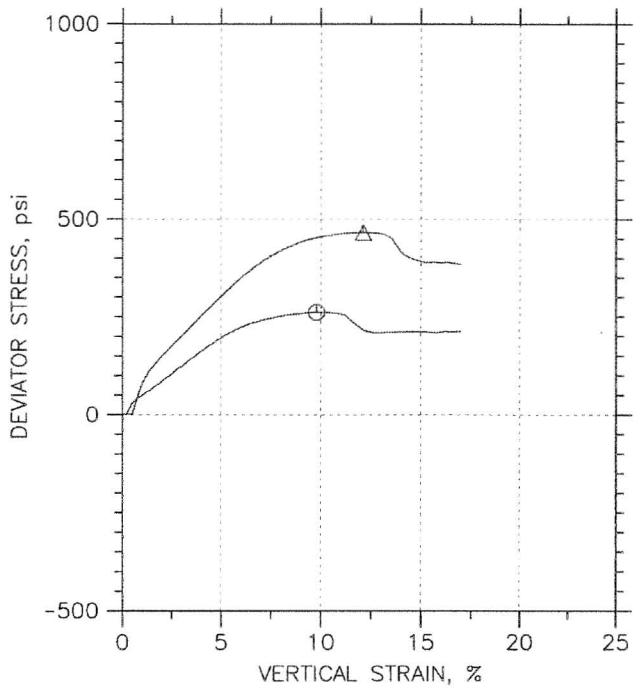
* Saturation is set to 100% for phase calculations.

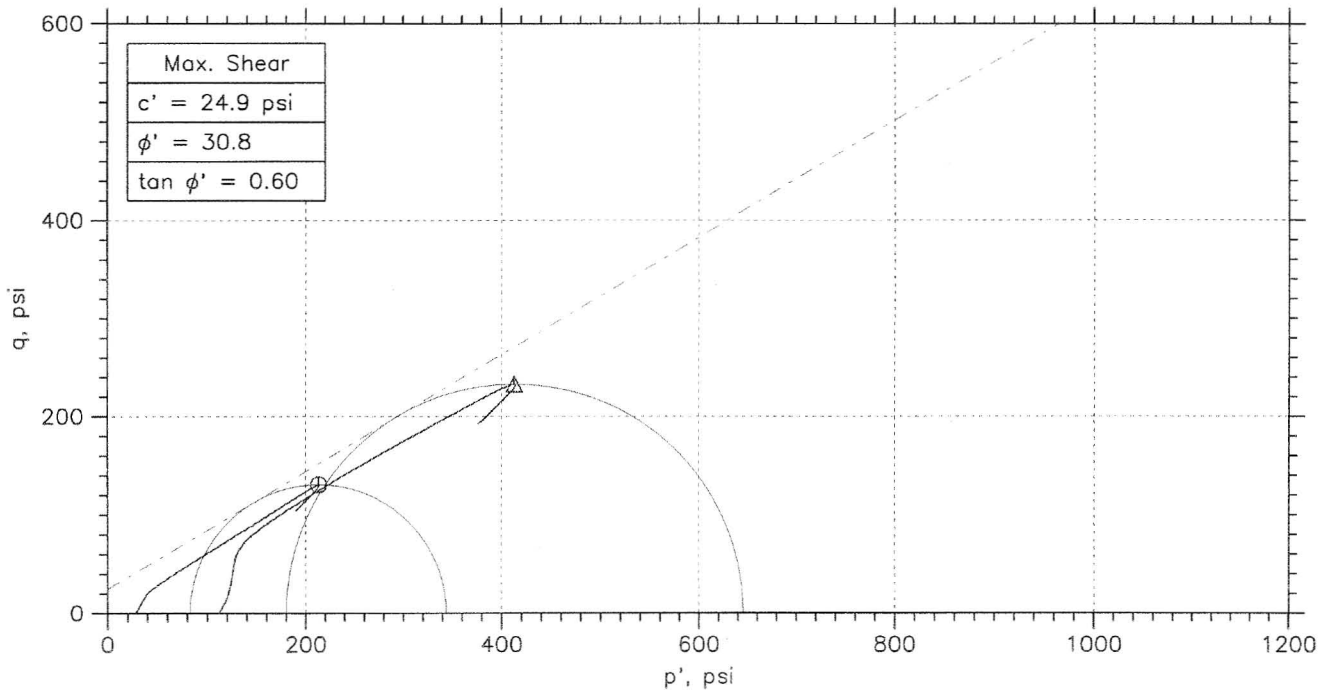


Thu, 27-SEP-2007 14:00:03

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊕ | UD-3 | 7562.1 | 173.5 ft | HJ | 7/17/06 | JW | | 7562.1_2583.dat |
| △ | UD-3 | 7562.3 | 173.5 ft | HJ | 7/17/07 | JW | | 7562.3_2582.dat |
| | | | | | | | | |
| | | | | | | | | |

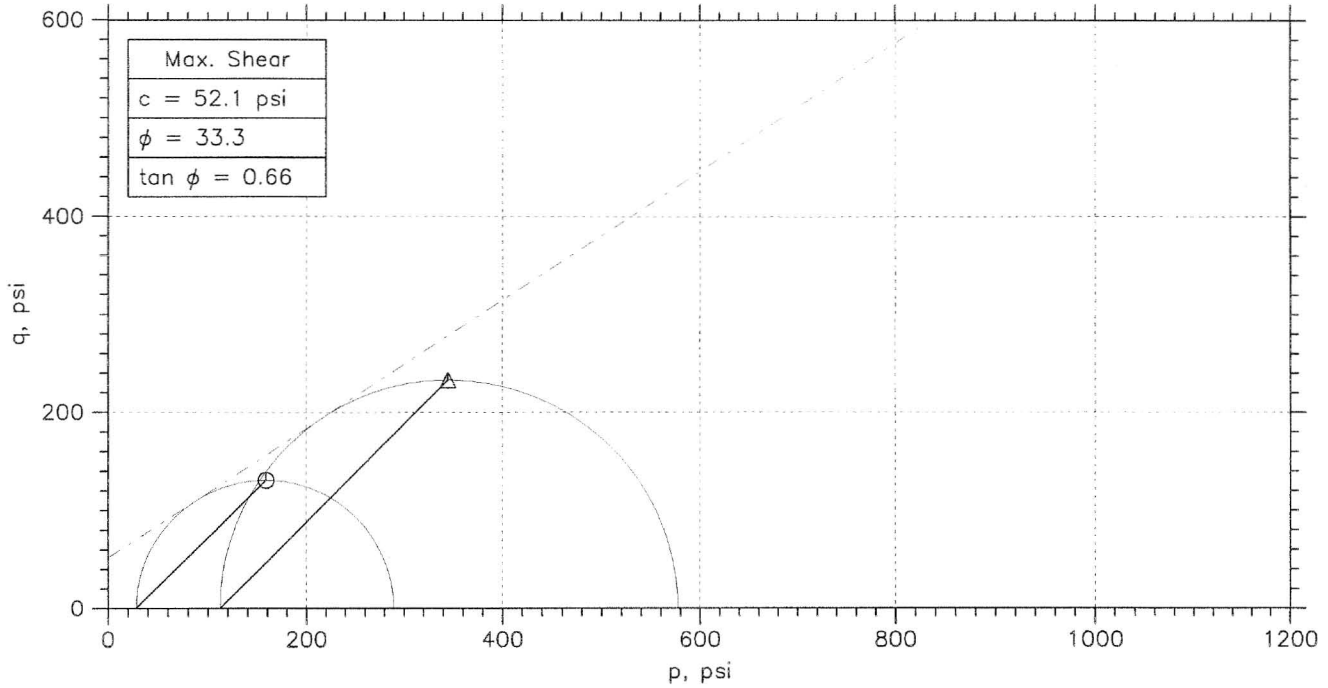
MACTEC

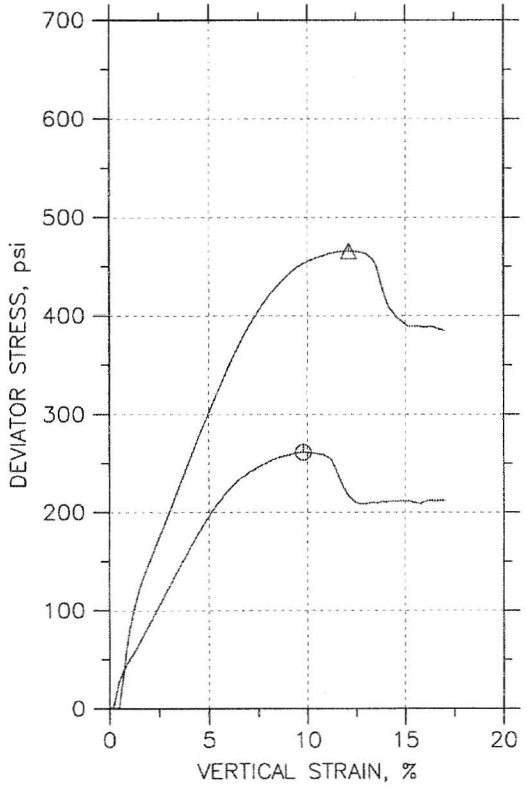
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4002 | Project No.: 6141060286 |
| Boring No.: B-4002 | Sample Type: Undisturbed | |
| Description: SAND, with silt (SP-SM) | | |
| Remarks: | | |



Thu, 27-SEP-2007 14:00:03

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | | | | | |
|---|---|---|---|---|---|
| Symbol | | ⦶ | △ | | |
| Sample No. | | UD-3 | UD-3 | | |
| Test No. | | 7562.1 | 7562.3 | | |
| Depth | | 173.5 ft | 173.5 ft | | |
| Initial | Diameter, in | 2.816 | 2.854 | | |
| | Height, in | 5.603 | 5.602 | | |
| | Water Content, % | 17.5 | 18.3 | | |
| | Dry Density, pcf | 105. | 104.8 | | |
| | Saturation, % | 80.6 | 83.8 | | |
| | Void Ratio | 0.575 | 0.579 | | |
| Before Shear | Water Content, % | 20.1 | 20.1 | | |
| | Dry Density, pcf | 108. | 108. | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.532 | 0.532 | | |
| | Back Press., psi | 60. | 86. | | |
| Ver. Eff. Cons. Stress, psi | | 27.99 | 112. | | |
| Shear Strength, psi | | 130.6 | 232.7 | | |
| Strain at Failure, % | | 9.79 | 12.1 | | |
| Strain Rate, %/min | | 0.1 | 0.1 | | |
| B-Value | | 1.04 | 0.97 | | |
| Estimated Specific Gravity | | 2.65 | 2.65 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

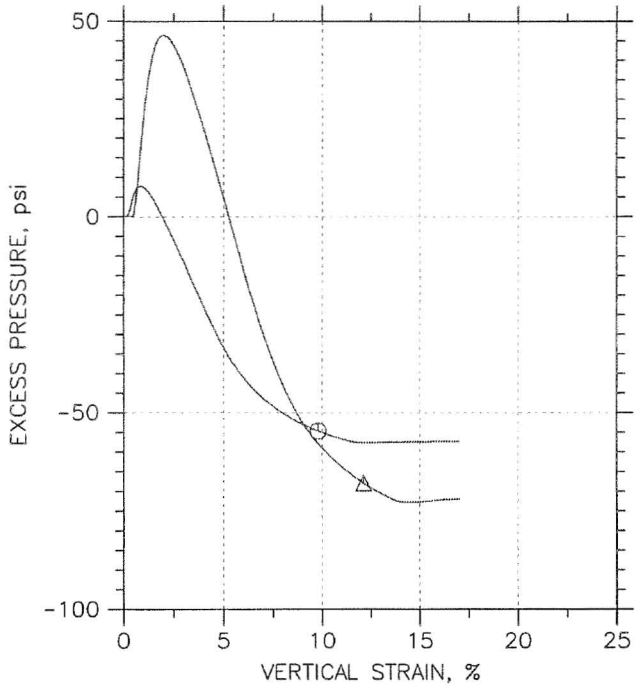
MACTEC

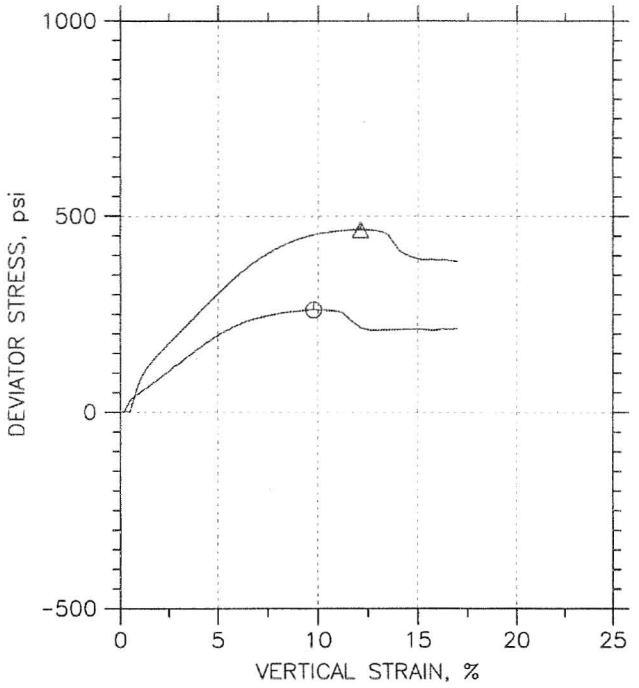
Project: Vogtle COL
Location: B-4002
Project No.: 6141060286
Boring No.: B-4002
Sample Type: Undisturbed
Description: SAND, with silt (SP-SM)
Remarks:

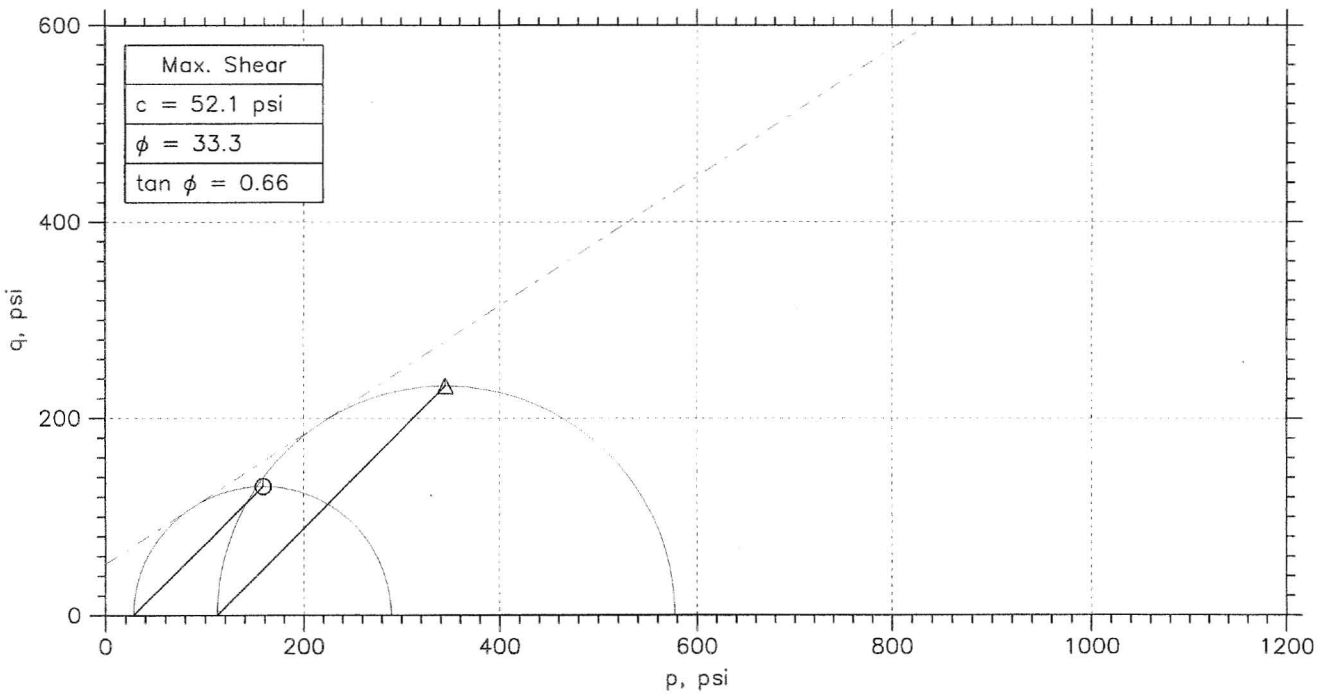
Phase calculations based on start of test.

* Saturation is set to 100% for phase calculations.

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⦶ | UD-3 | 7562.1 | 173.5 ft | HJ | 7/17/06 | JW | | 7562.1_2583.dat |
| △ | UD-3 | 7562.3 | 173.5 ft | HJ | 7/17/07 | JW | | 7562.3_2582.dat |
| | | | | | | | | |
| | | | | | | | | |

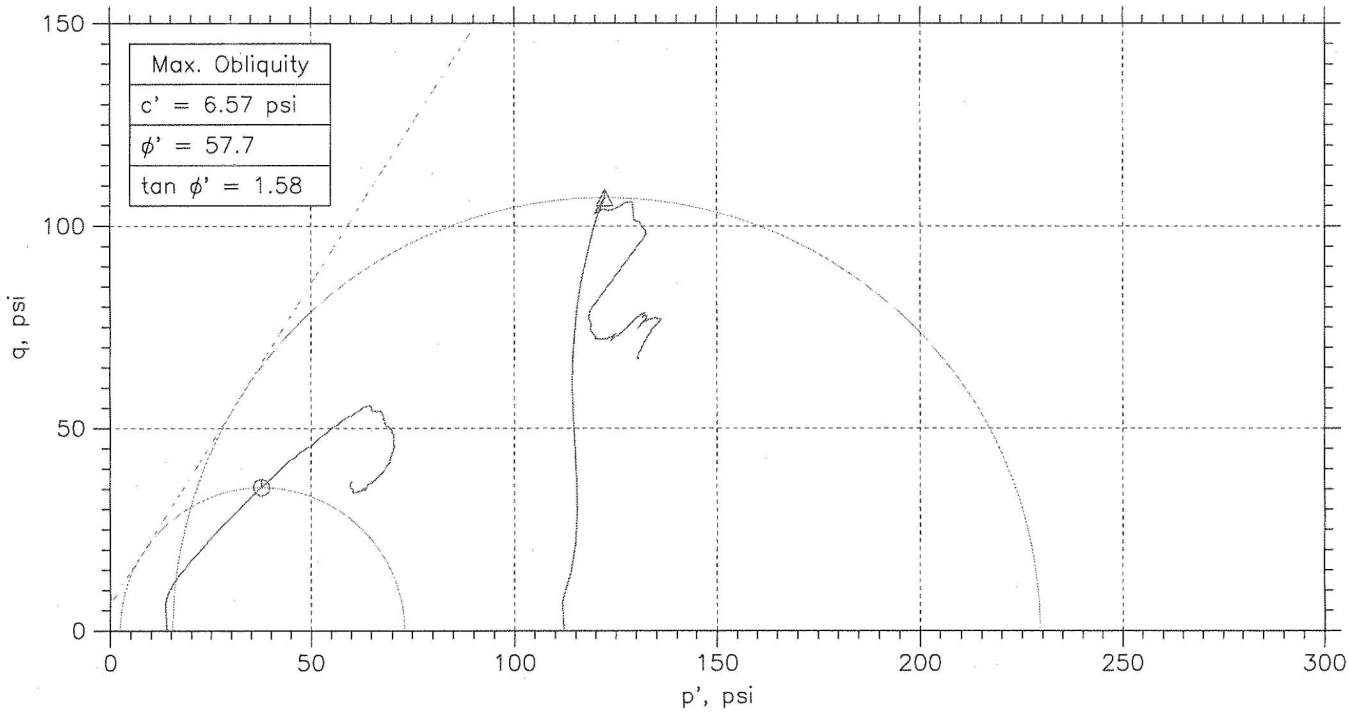
MACTEC

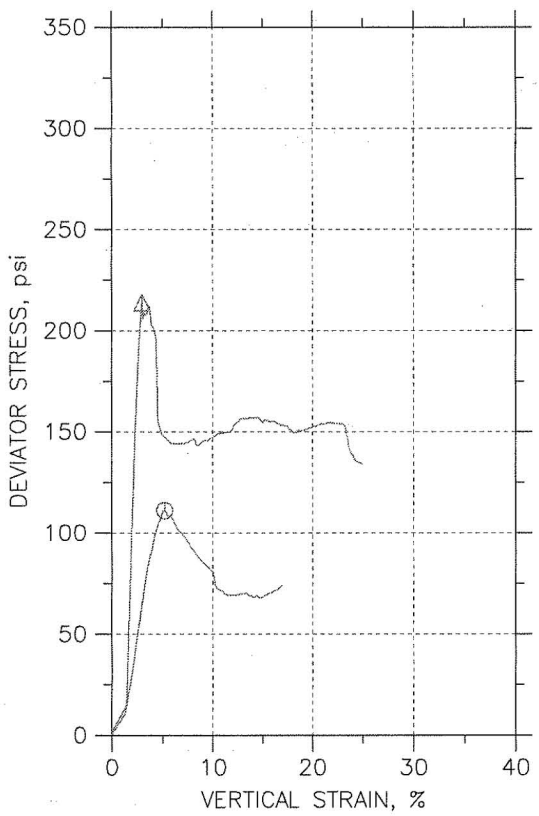
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4002 | Project No.: 6141060286 |
| Boring No.: B-4002 | Sample Type: Undisturbed | |
| Description: SAND, with silt (SP-SM) | | |
| Remarks: | | |



Thu, 27-SEP-2007 14:00:37

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | | |
|---|---|---|---|---|---|
| Sample No. | | UD-1 | UD-1 | | |
| Test No. | | 7568.1 | 7568.3 | | |
| Depth | | 98.5 ft | 98.5 ft | | |
| Initial | Diameter, in | 2.87 | 2.843 | | |
| | Height, in | 5.966 | 5.963 | | |
| | Water Content, % | 30.7 | 45.2 | | |
| | Dry Density, pcf | 80.21 | 71.73 | | |
| | Saturation, % | 75.0 | 90.2 | | |
| | Void Ratio | 1.11 | 1.36 | | |
| Before Shear | Water Content, % | 32.2 | 44.4 | | |
| | Dry Density, pcf | 90.37 | 76.8 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.872 | 1.2 | | |
| | Back Press., psi | 100. | 37.99 | | |
| Ver. Eff. Cons. Stress, psi | | 14. | 112. | | |
| Shear Strength, psi | | 55.53 | 107. | | |
| Strain at Failure, % | | 5.22 | 2.98 | | |
| Strain Rate, %/min | | 0.05 | 0.05 | | |
| B-Value | | 0.98 | 0.95 | | |
| Measured Specific Gravity | | 2.71 | 2.71 | | |
| Liquid Limit | | 95 | 96 | | |
| Plastic Limit | | 52 | 52 | | |

MACTEC

Project: Vogtle COL

Location: B-4007

Project No.: 6141060286

Boring No.: B-4007

Sample Type: Undisturbed

Description: SILT, sand (MH)

Remarks:

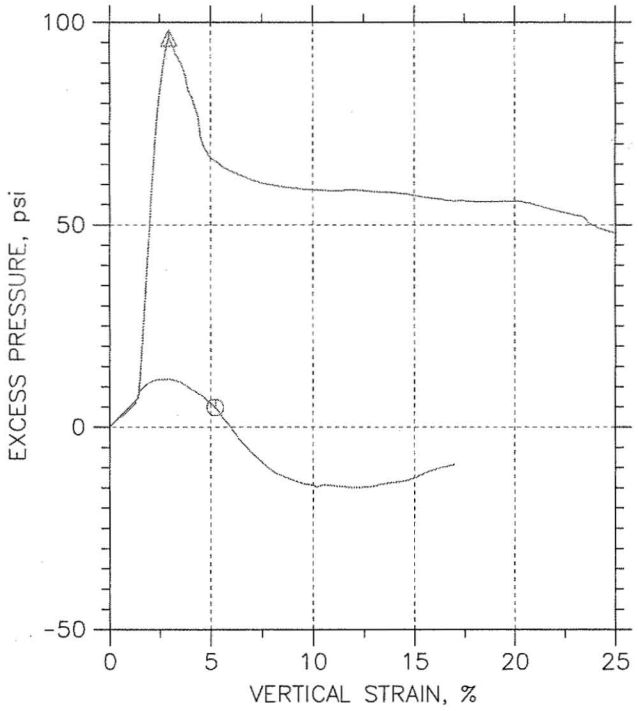


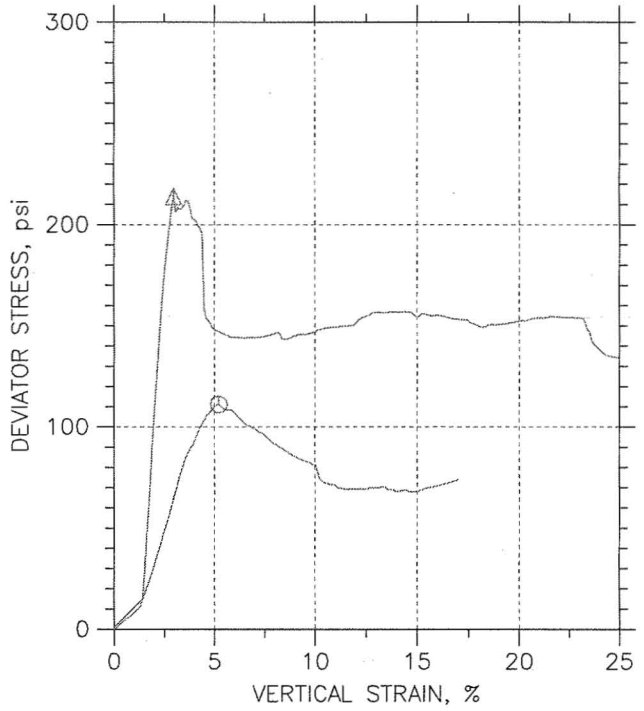
Phase calculations based on start and end of test.

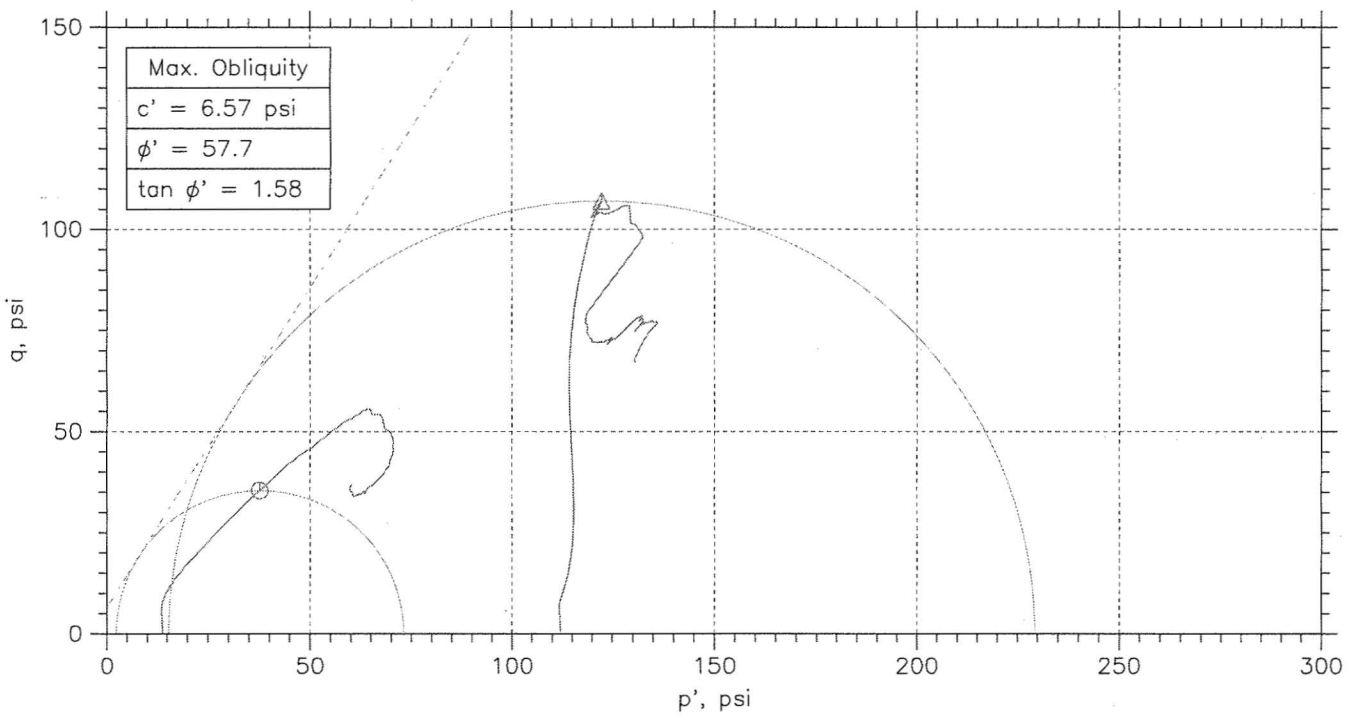
* Saturation is set to 100% for phase calculations

Tue, 31-JUL-2007 13:51:15

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-1 | 7568.1 | 98.5 ft | HJ | 6/15/07 | JW | JW 7/31/07 | 7568.1_2582a.dat |
| △ | UD-1 | 7568.3 | 98.5 ft | HJ | 6/13/07 | JW | | 7568.3_2547a.dat |
| | | | | | | | | |
| | | | | | | | | |

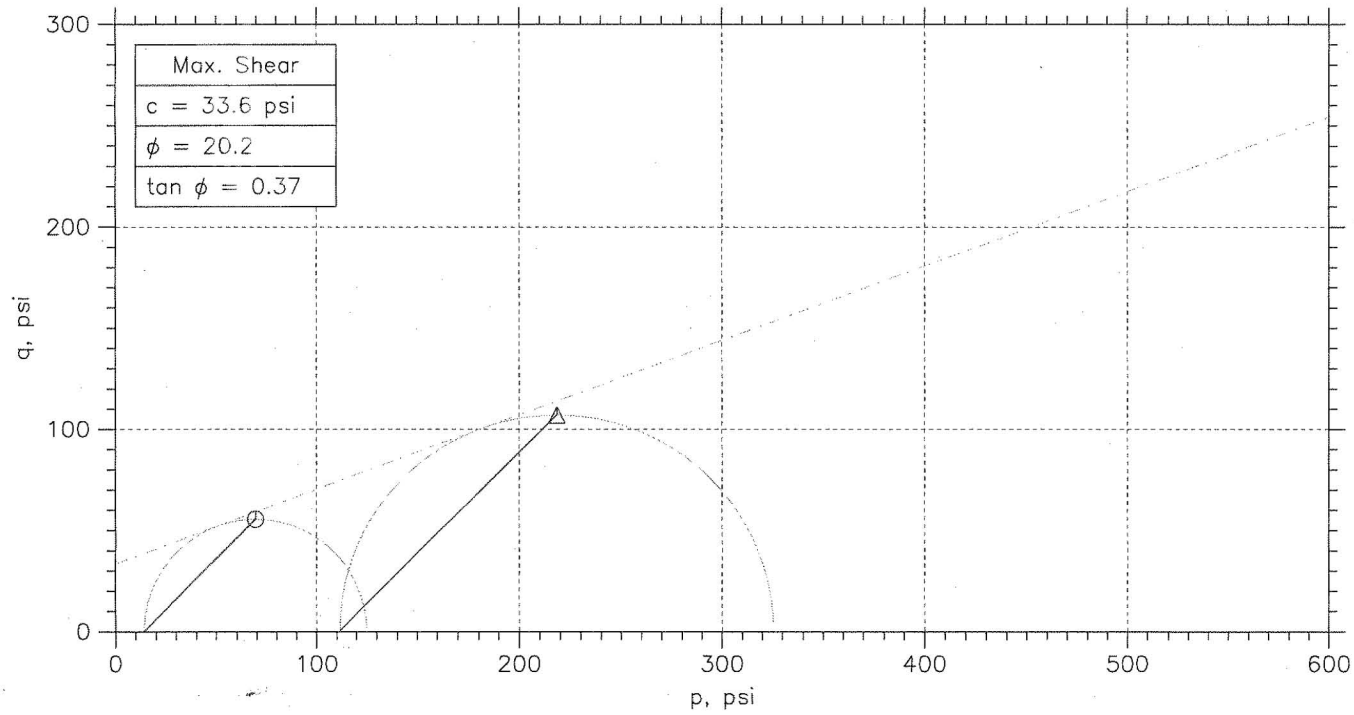
MACTEC

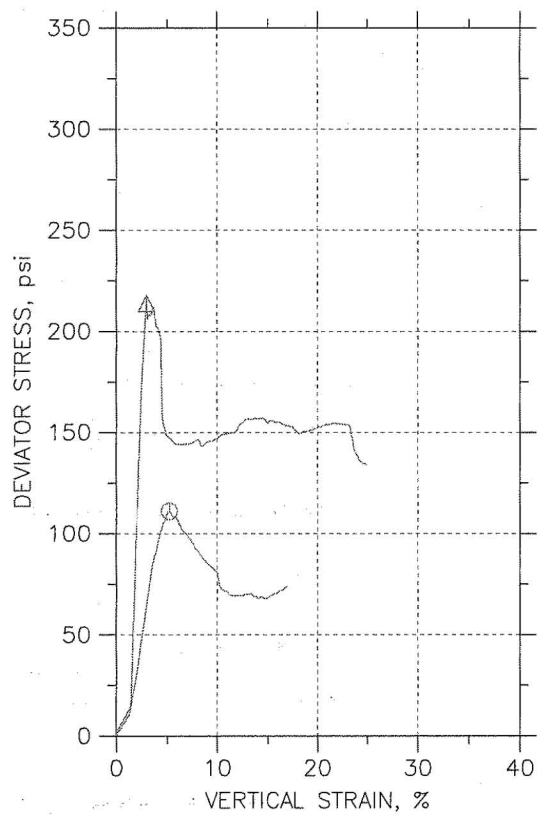
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4007 | Project No.: 6141060286 |
| Boring No.: B-4007 | Sample Type: Undisturbed | |
| Description: SILT, sand (MH) | | |
| Remarks: | | |



Tue, 31-JUL-2007 13:51:15

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | | |
|---|---|---|---|---|---|
| Sample No. | | UD-1 | UD-1 | | |
| Test No. | | 7568.1 | 7568.3 | | |
| Depth | | 98.5 ft | 98.5 ft | | |
| Initial | Diameter, in | 2.87 | 2.843 | | |
| | Height, in | 5.966 | 5.963 | | |
| | Water Content, % | 30.7 | 45.2 | | |
| | Dry Density, pcf | 80.21 | 71.73 | | |
| | Saturation, % | 75.0 | 90.2 | | |
| | Void Ratio | 1.11 | 1.36 | | |
| Before Shear | Water Content, % | 32.2 | 44.4 | | |
| | Dry Density, pcf | 90.37 | 76.8 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.872 | 1.2 | | |
| | Back Press., psi | 100. | 37.99 | | |
| Ver. Eff. Cons. Stress, psi | | 14. | 112. | | |
| Shear Strength, psi | | 55.53 | 107. | | |
| Strain at Failure, % | | 5.22 | 2.98 | | |
| Strain Rate, %/min | | 0.05 | 0.05 | | |
| B-Value | | 0.98 | 0.95 | | |
| Measured Specific Gravity | | 2.71 | 2.71 | | |
| Liquid Limit | | 95 | 96 | | |
| Plastic Limit | | 52 | 52 | | |

MACTEC

Project: Vogtle COL

Location: B-4007

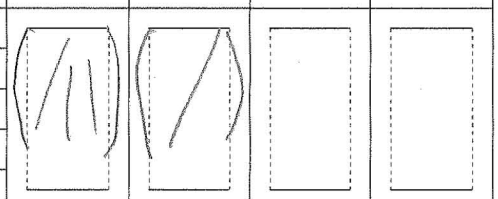
Project No.: 6141060286

Boring No.: B-4007

Sample Type: Undisturbed

Description: SILT, sand (MH)

Remarks:



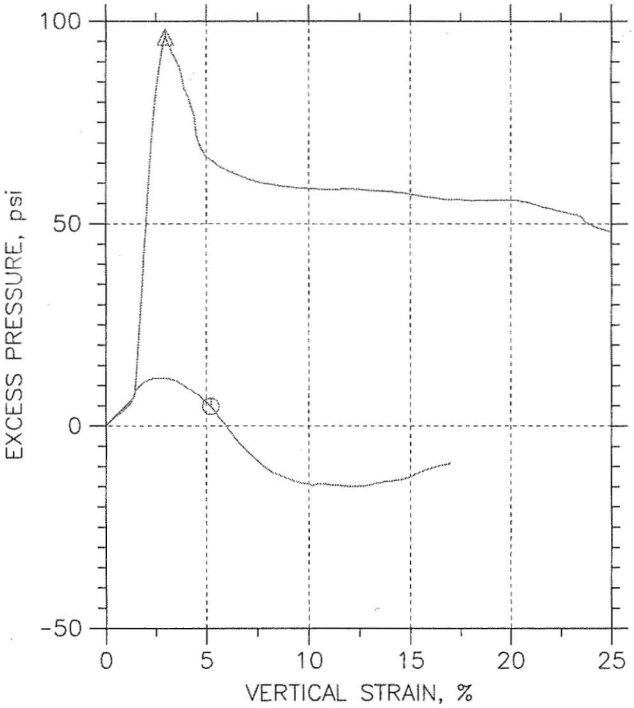


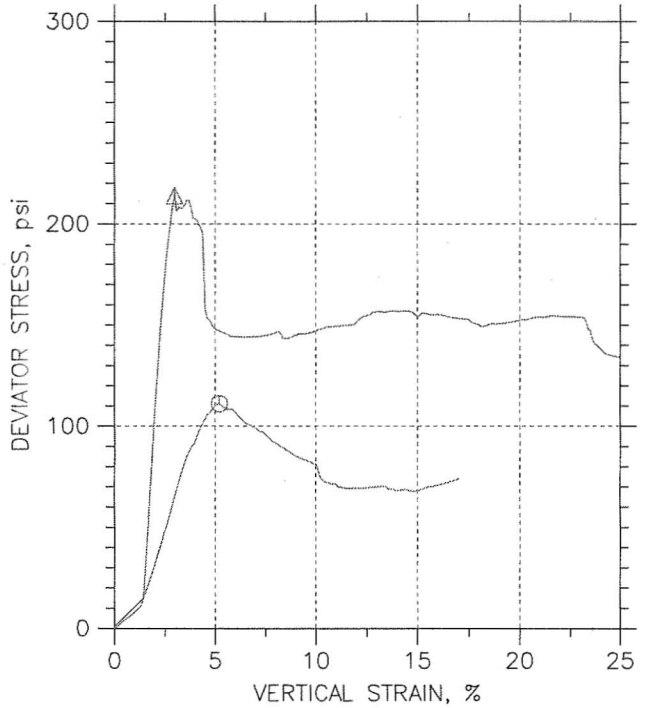
Phase calculations based on start and end of test.

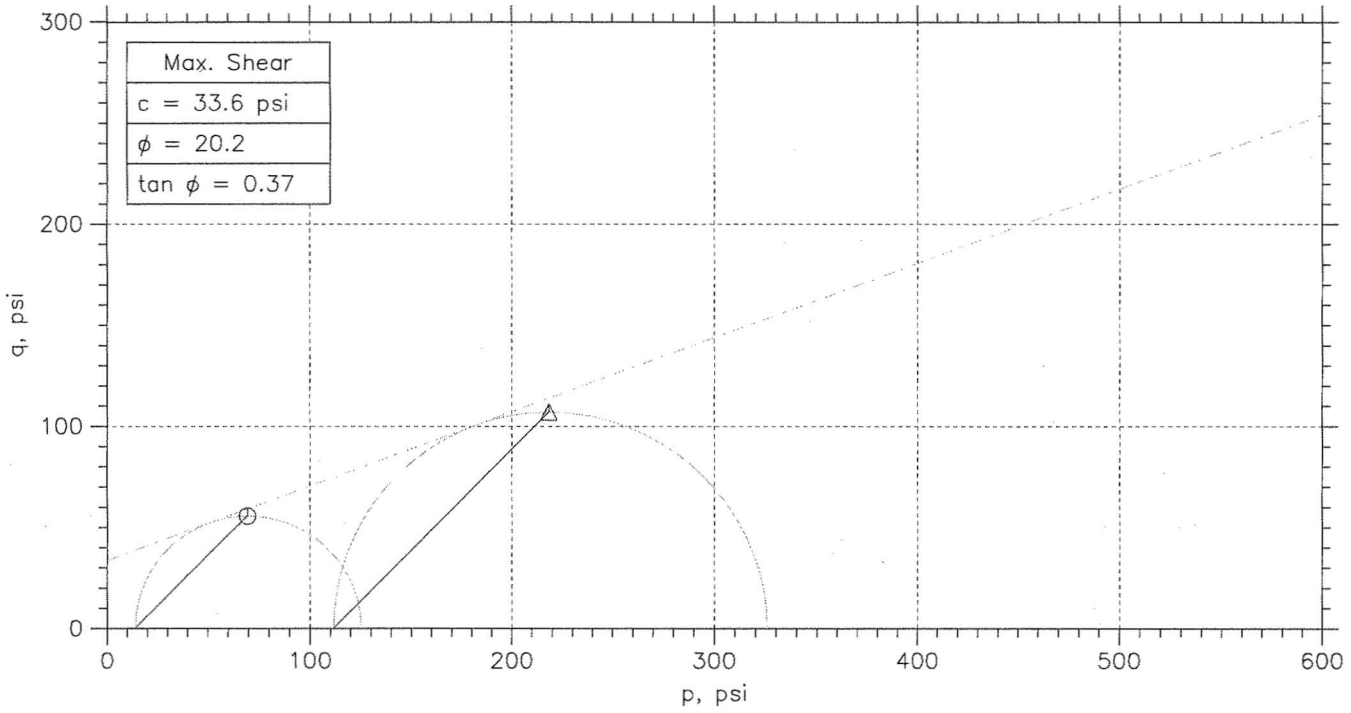
* Saturation is set to 100% for phase calculations.

Tue, 31-JUL-2007 13:51:41

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-1 | 7568.1 | 98.5 ft | HJ | 6/15/07 | JW JW | 7/31/07 | 7568.1_2582a.dat |
| △ | UD-1 | 7568.3 | 98.5 ft | HJ | 6/13/07 | JW | | 7568.3_2547a.dat |
| | | | | | | | | |
| | | | | | | | | |

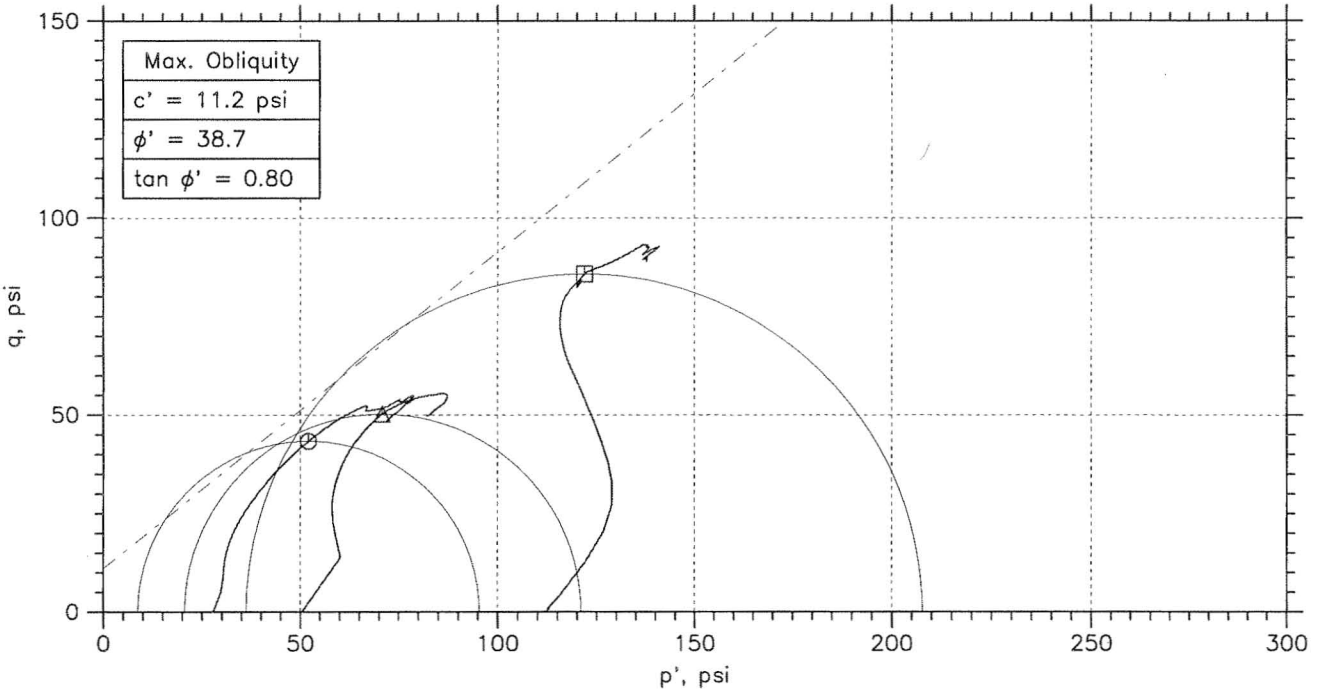
MACTEC

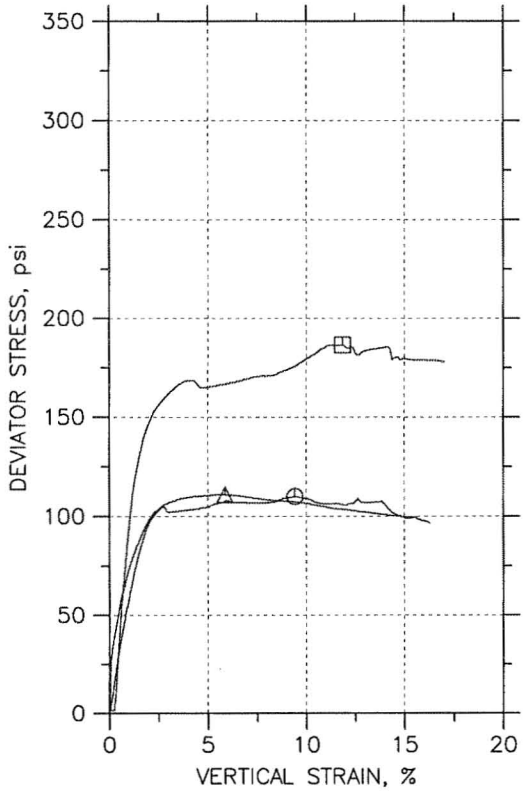
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4007 | Project No.: 6141060286 |
| Boring No.: B-4007 | Sample Type: Undisturbed | |
| Description: SILT, sand (MH) | | |
| Remarks: | | |



Tue, 31-JUL-2007 13:51:41

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⊙ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-3 | UD-3 | UD-3 | |
| Test No. | | 7570.1 | 7570.2 | 7570.3 | |
| Depth | | 153.5 ft | 153.5 ft | 153.5 ft | |
| Initial | Diameter, in | 2.867 | 2.862 | 2.834 | |
| | Height, in | 5.982 | 5.967 | 5.967 | |
| | Water Content, % | 32.2 | 26.6 | 24.6 | |
| | Dry Density, pcf | 87.93 | 95.62 | 100.2 | |
| | Saturation, % | 96.8 | 96.7 | 100.4 | |
| | Void Ratio | 0.882 | 0.73 | 0.65 | |
| Before Shear | Water Content, % | 32.6 | 25.7 | 23.5 | |
| | Dry Density, pcf | 88.78 | 98.45 | 102. | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.863 | 0.68 | 0.622 | |
| | Back Press., psi | 64. | 48. | 31.99 | |
| Ver. Eff. Cons. Stress, psi | | 28. | 56. | 112. | |
| Shear Strength, psi | | 54.92 | 55.39 | 93.22 | |
| Strain at Failure, % | | 9.43 | 5.86 | 11.9 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.95 | 0.96 | 0.95 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

Project: Vogtle COL

Location: B-4007

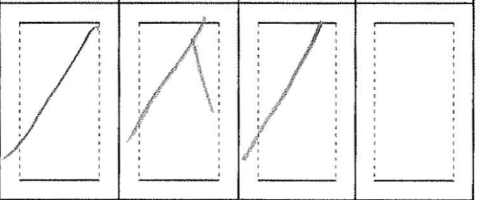
Project No.: 6141060286

Boring No.: B-4007

Sample Type: Undisturbed

Description: Silt (ML) (Visual)

Remarks:

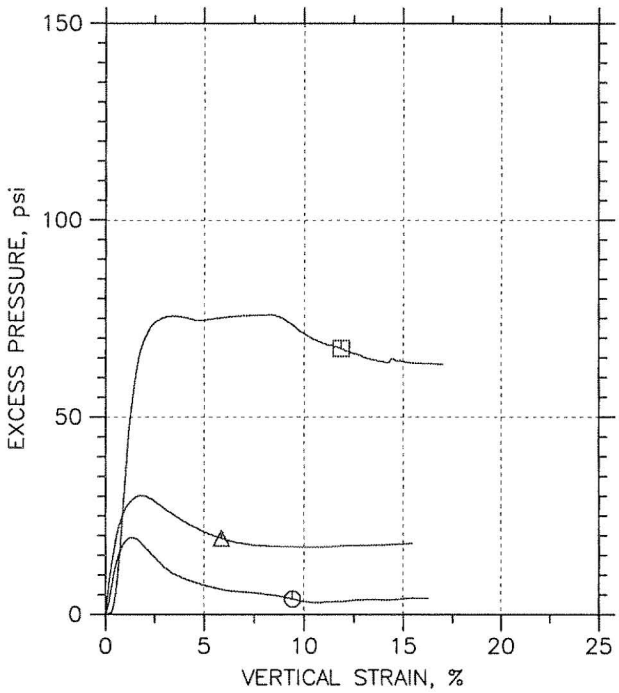


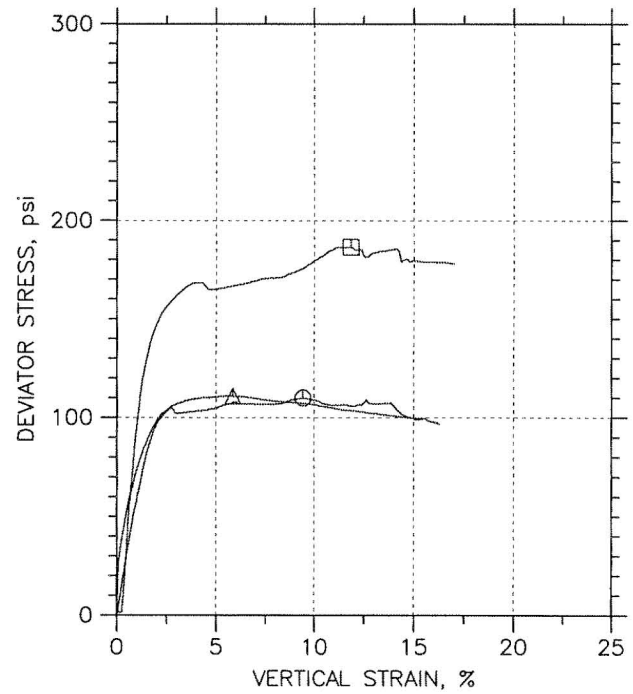
Phase calculations based on start and end of test.

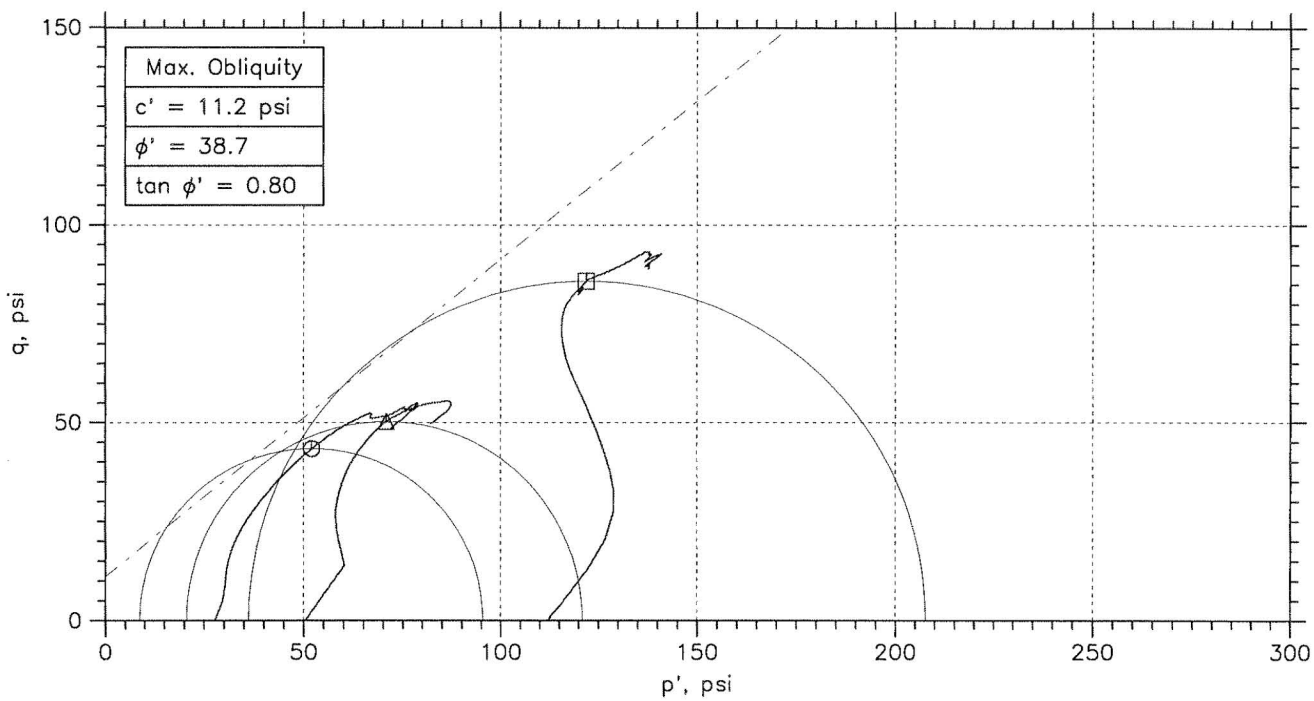
* Saturation is set to 100% for phase calculations.

Mon, 30-JUL-2007 17:01:20

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-3 | 7570.1 | 153.5 ft | HJ | 6/14/07 | JW | | 7570.1_2546a.dat |
| △ | UD-3 | 7570.2 | 153.5 ft | HJ | 6/14/07 | JW | JW 7/31/07 | 7570.2_2545a.dat |
| ⊡ | UD-3 | 7570.3 | 153.5 ft | HJ | 6/14/07 | JW | | 7570.3_2547.dat |
| | | | | | | | | |

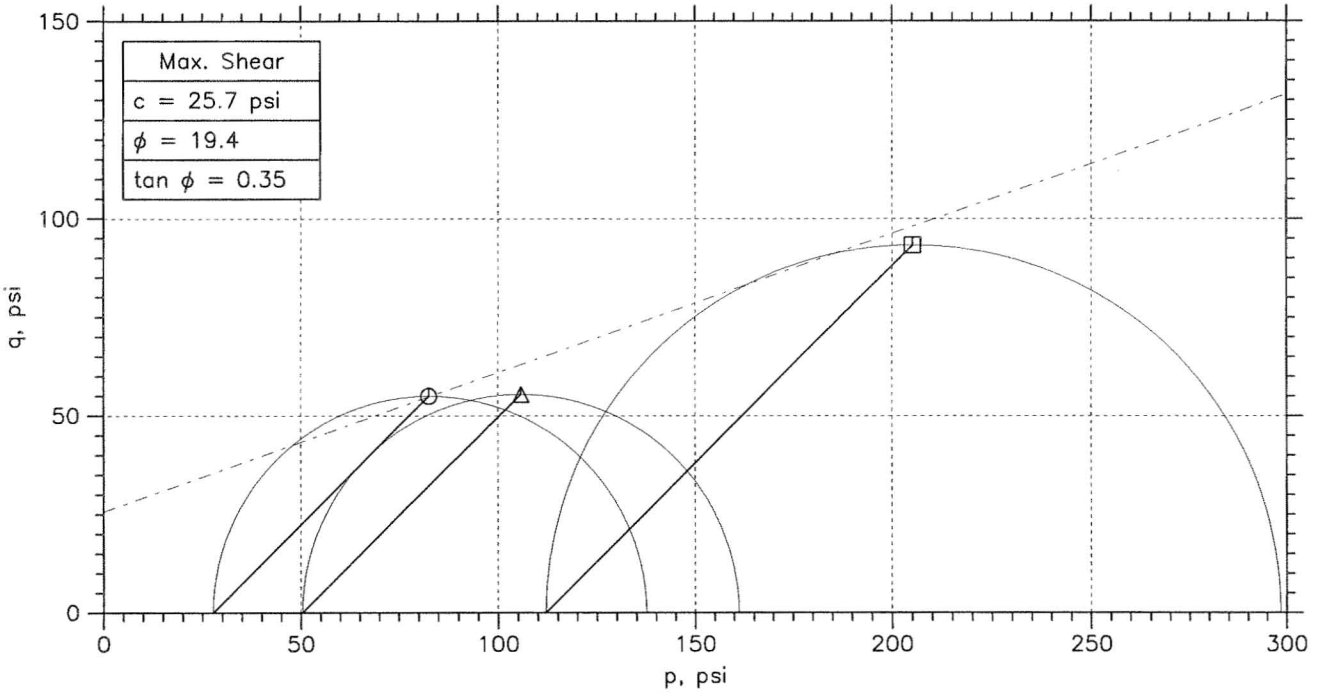
MACTEC

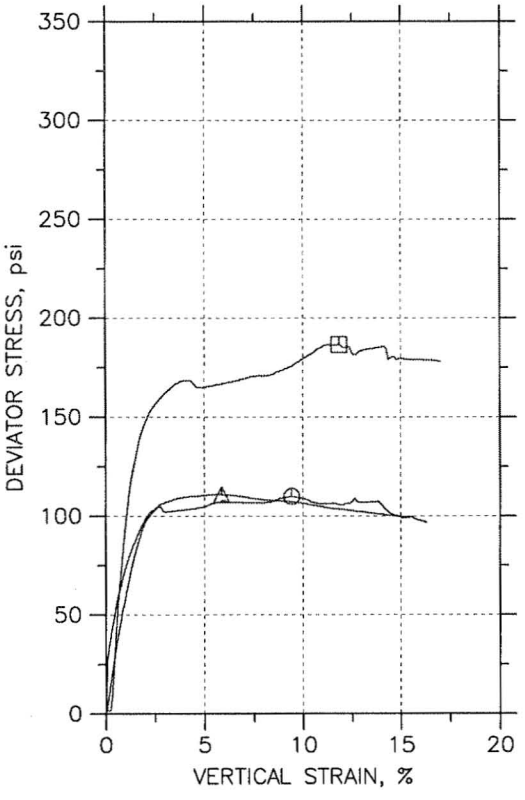
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4007 | Project No.: 6141060286 |
| Boring No.: B-4007 | Sample Type: Undisturbed | |
| Description: Silt (ML) (Visual) | | |
| Remarks: | | |



Mon, 30-JUL-2007 17:01:20

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⊙ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-3 | UD-3 | UD-3 | |
| Test No. | | 7570.1 | 7570.2 | 7570.3 | |
| Depth | | 153.5 ft | 153.5 ft | 153.5 ft | |
| Initial | Diameter, in | 2.867 | 2.862 | 2.834 | |
| | Height, in | 5.982 | 5.967 | 5.967 | |
| | Water Content, % | 32.2 | 26.6 | 24.6 | |
| | Dry Density, pcf | 87.93 | 95.62 | 100.2 | |
| | Saturation, % | 96.8 | 96.7 | 100.4 | |
| | Void Ratio | 0.882 | 0.73 | 0.65 | |
| Before Shear | Water Content, % | 32.6 | 25.7 | 23.5 | |
| | Dry Density, pcf | 88.78 | 98.45 | 102. | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.863 | 0.68 | 0.622 | |
| | Back Press., psi | 64. | 48. | 31.99 | |
| Ver. Eff. Cons. Stress, psi | | 28. | 56. | 112. | |
| Shear Strength, psi | | 54.92 | 55.39 | 93.22 | |
| Strain at Failure, % | | 9.43 | 5.86 | 11.9 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.95 | 0.96 | 0.95 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

Project: Vogtle COL

Location: B-4007

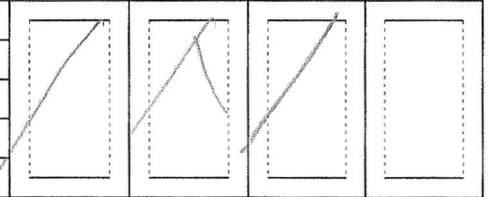
Project No.: 6141060286

Boring No.: B-4007

Sample Type: Undisturbed

Description: Silt (ML) (Visual)

Remarks:

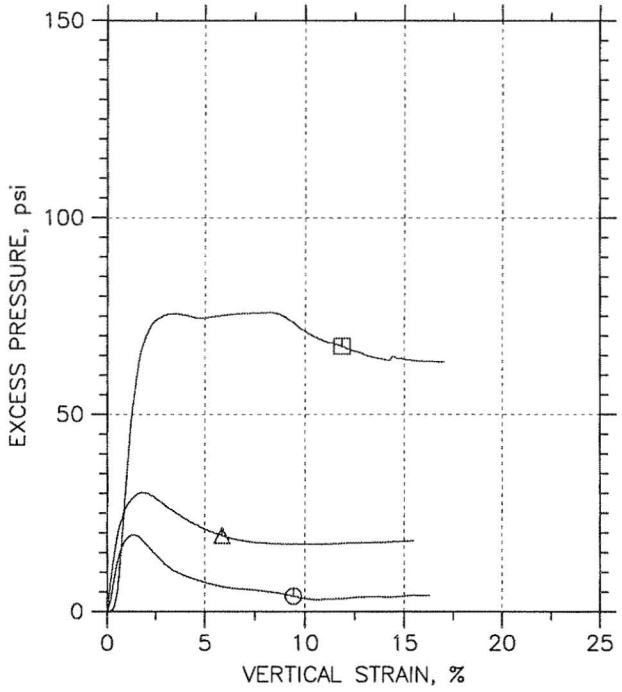


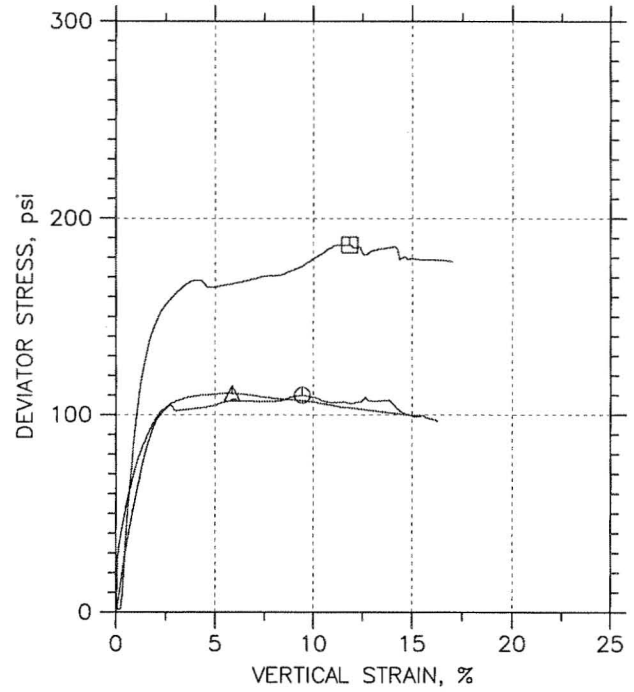
Phase calculations based on start and end of test.

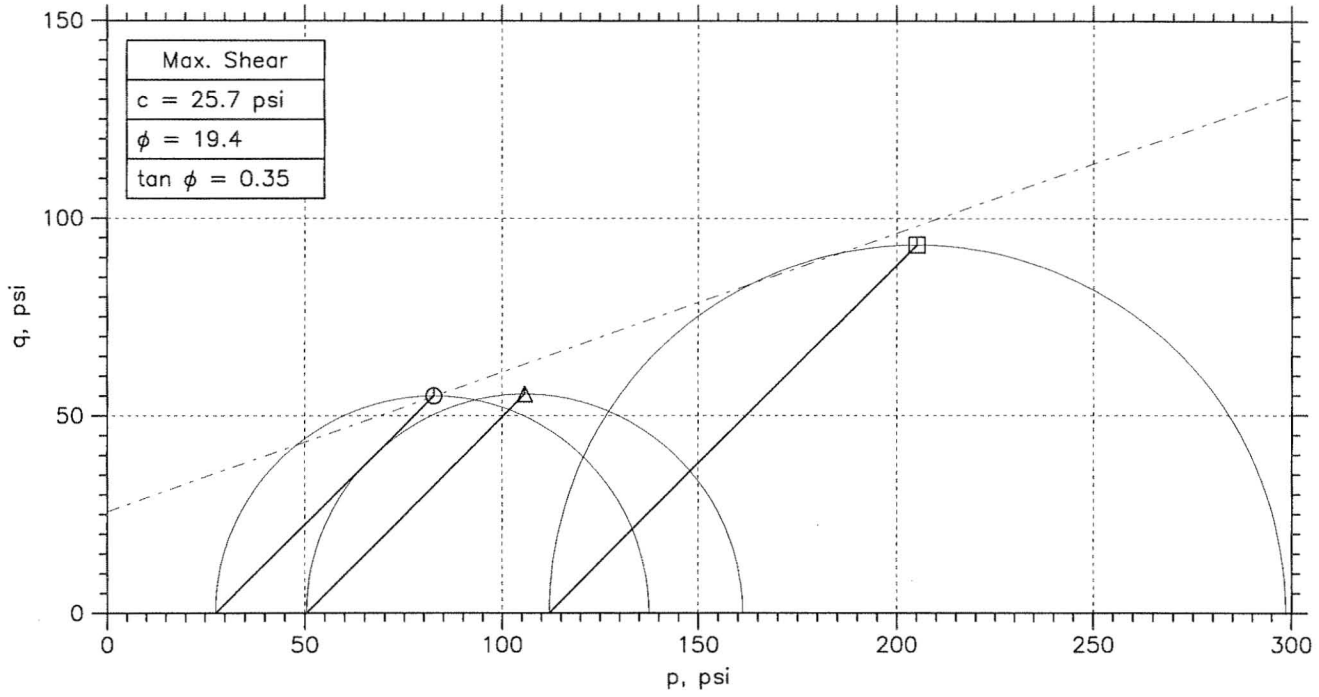
* Saturation is set to 100% for phase calculations.

Mon, 30-JUL-2007 17:01:28

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-3 | 7570.1 | 153.5 ft | HJ | 6/14/07 | JW | | 7570.1_2546a.dat |
| △ | UD-3 | 7570.2 | 153.5 ft | HJ | 6/14/07 | JW | SW 7/31/07 | 7570.2_2545a.dat |
| ⊡ | UD-3 | 7570.3 | 153.5 ft | HJ | 6/14/07 | JW | | 7570.3_2547.dat |
| | | | | | | | | |

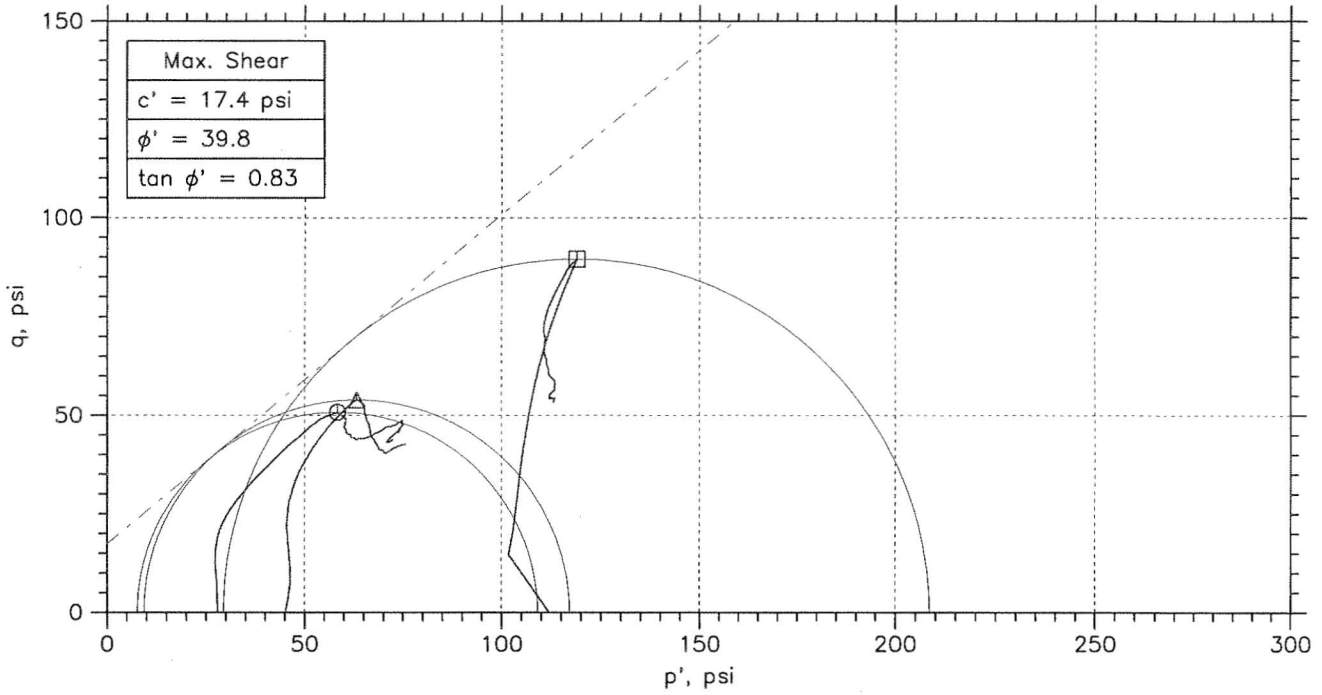
MACTEC

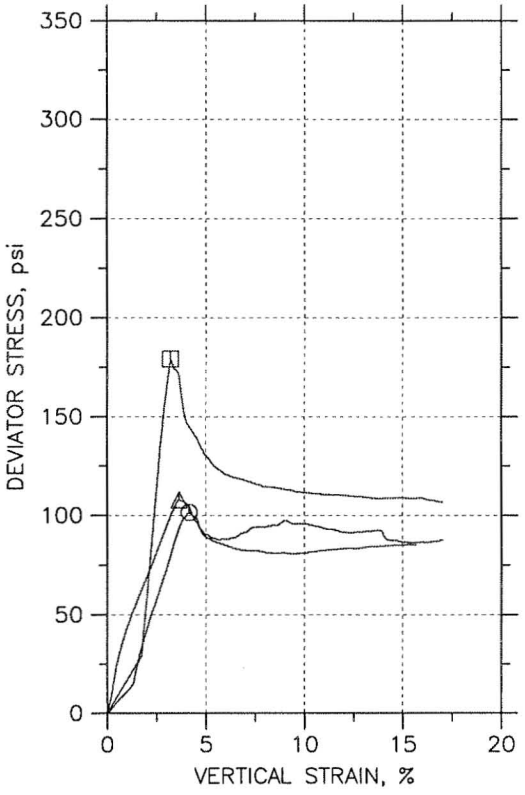
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4007 | Project No.: 6141060286 |
| Boring No.: B-4007 | Sample Type: Undisturbed | |
| Description: Silt (ML) (Visual) | | |
| Remarks: | | |



Mon, 30-JUL-2007 17:01:28

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⊙ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-1 | UD-1 | UD-1 | |
| Test No. | | 7575.1 | 7575.2 | 7575.3 | |
| Depth | | 108.0 ft | 108.0 ft | 108.0 ft | |
| Initial | Diameter, in | 2.856 | 2.85 | 2.865 | |
| | Height, in | 5.961 | 5.961 | 5.961 | |
| | Water Content, % | 41.7 | 42.5 | 40.9 | |
| | Dry Density, pcf | 77.39 | 76.81 | 78.11 | |
| | Saturation, % | 97.0 | 97.6 | 97.0 | |
| | Void Ratio | 1.14 | 1.15 | 1.12 | |
| Before Shear | Water Content, % | 41.4 | 41.1 | 40.0 | |
| | Dry Density, pcf | 78.92 | 79.14 | 80.34 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 1.1 | 1.09 | 1.06 | |
| | Back Press., psi | 71.99 | 84.01 | 35.01 | |
| Ver. Eff. Cons. Stress, psi | | 28.01 | 55.99 | 112. | |
| Shear Strength, psi | | 50.72 | 53.88 | 89.56 | |
| Strain at Failure, % | | 4.14 | 3.64 | 3.21 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.95 | 0.96 | 0.96 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | 89 | 89 | 89 | |
| Plastic Limit | | 48 | 48 | 48 | |

MACTEC

Project: Vogtle COL

Location: B-4009

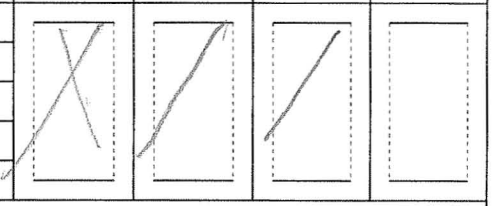
Project No.: 6141060286

Boring No.: B-4009

Sample Type: Undisturbed

Description: SILT (MH)

Remarks:

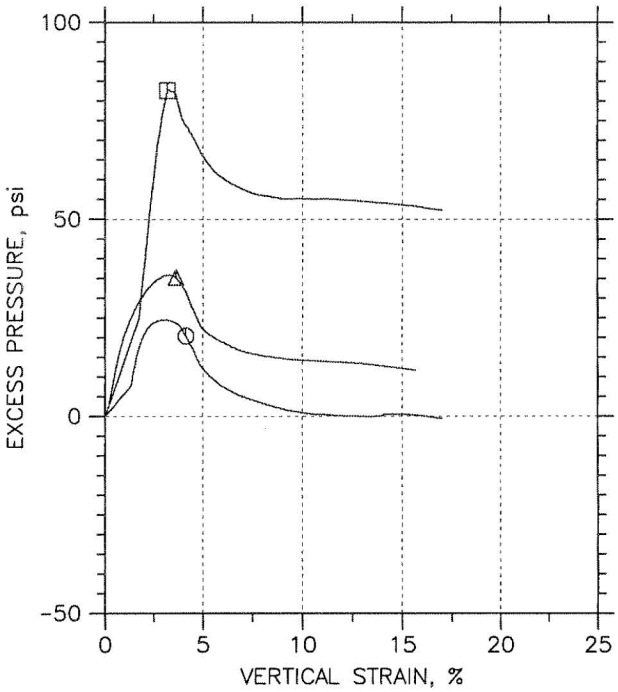


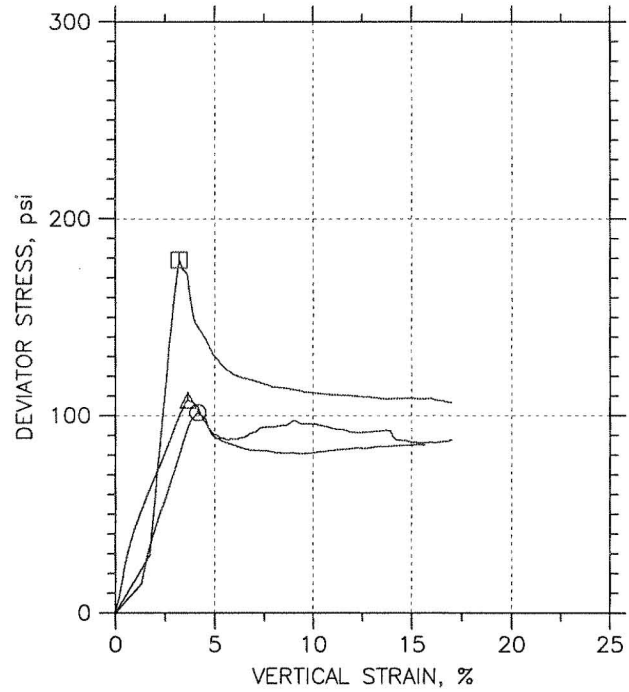
Phase calculations based on start and end of test.

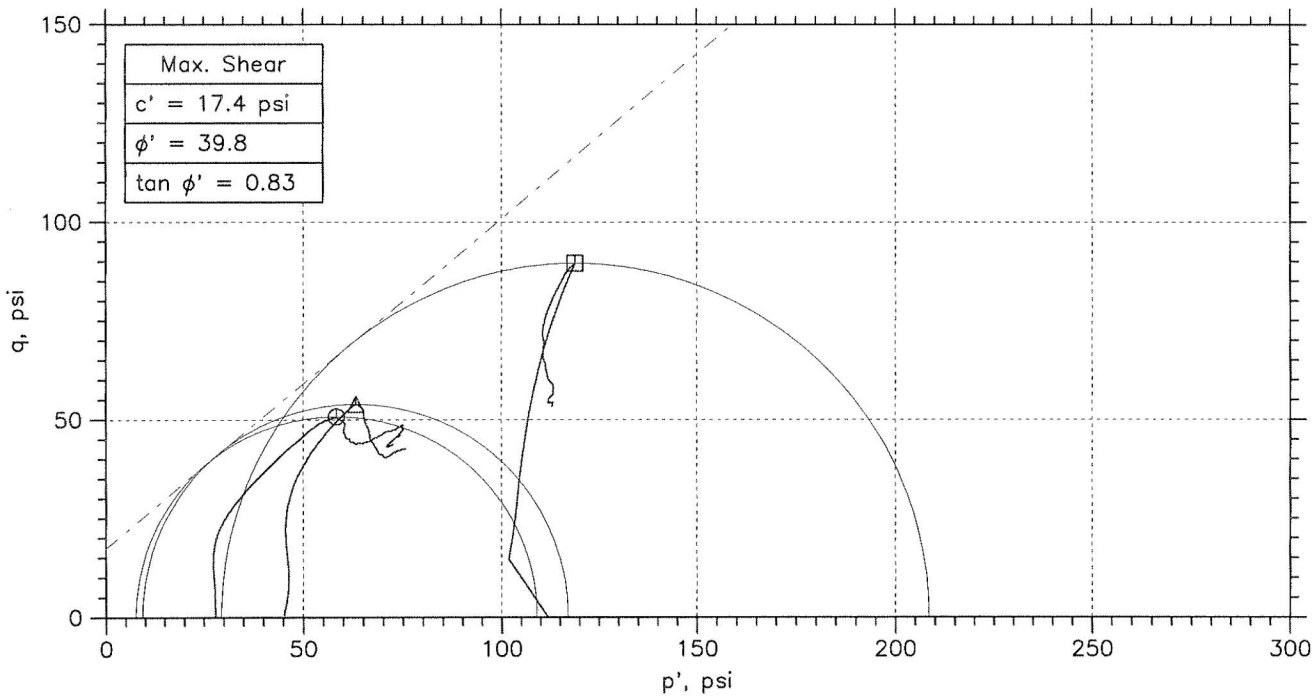
* Saturation is set to 100% for phase calculations.

Mon, 30-JUL-2007 17:06:20

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-1 | 7575.1 | 108.0 ft | HJ | 6/16/07 | JW | | 7575.1_2546a.dat |
| △ | UD-1 | 7575.2 | 108.0 ft | HJ | 6/16/07 | JW | JCW 7/31/07 | 7575.2_2545a.dat |
| ⊡ | UD-1 | 7575.3 | 108.0 ft | HJ | 6/16/07 | JW | | 7575.3_2547a.dat |
| | | | | | | | | |

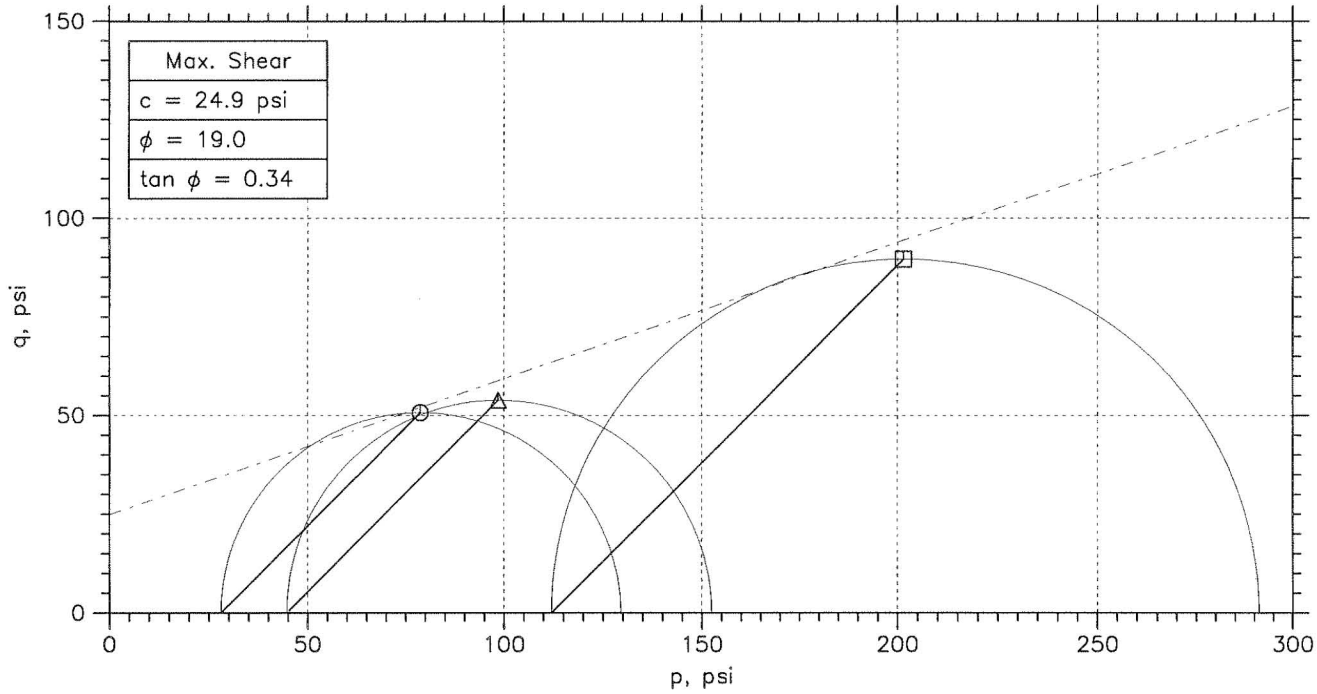
MACTEC

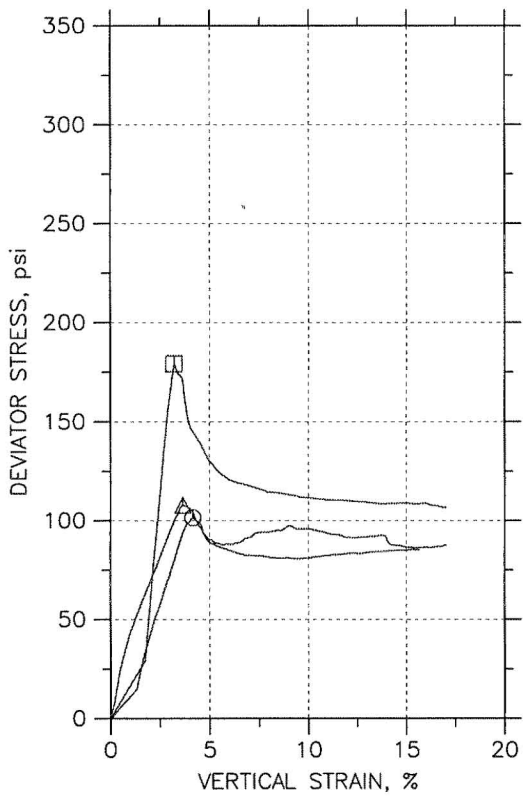
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4009 | Project No.: 6141060286 |
| Boring No.: B-4009 | Sample Type: Undisturbed | |
| Description: SILT (MH) | | |
| Remarks: | | |



Mon, 30-JUL-2007 17:06:20

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

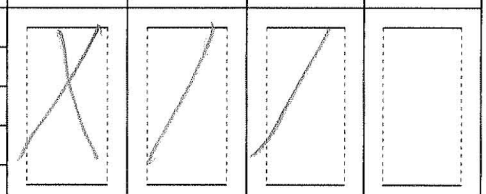



| Symbol | | ⦶ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-1 | UD-1 | UD-1 | |
| Test No. | | 7575.1 | 7575.2 | 7575.3 | |
| Depth | | 108.0 ft | 108.0 ft | 108.0 ft | |
| Initial | Diameter, in | 2.856 | 2.85 | 2.865 | |
| | Height, in | 5.961 | 5.961 | 5.961 | |
| | Water Content, % | 41.7 | 42.5 | 40.9 | |
| | Dry Density, pcf | 77.39 | 76.81 | 78.11 | |
| | Saturation, % | 97.0 | 97.6 | 97.0 | |
| | Void Ratio | 1.14 | 1.15 | 1.12 | |
| Before Shear | Water Content, % | 41.4 | 41.1 | 40.0 | |
| | Dry Density, pcf | 78.92 | 79.14 | 80.34 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 1.1 | 1.09 | 1.06 | |
| | Back Press., psi | 71.99 | 84.01 | 35.01 | |
| Ver. Eff. Cons. Stress, psi | | 28.01 | 55.99 | 112. | |
| Shear Strength, psi | | 50.72 | 53.88 | 89.56 | |
| Strain at Failure, % | | 4.14 | 3.64 | 3.21 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.95 | 0.96 | 0.96 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | 89 | 89 | 89 | |
| Plastic Limit | | 48 | 48 | 48 | |

MACTEC

Project: Vogtle COL
Location: B-4009
Project No.: 6141060286
Boring No.: B-4009
Sample Type: Undisturbed
Description: SILT (MH)
Remarks:

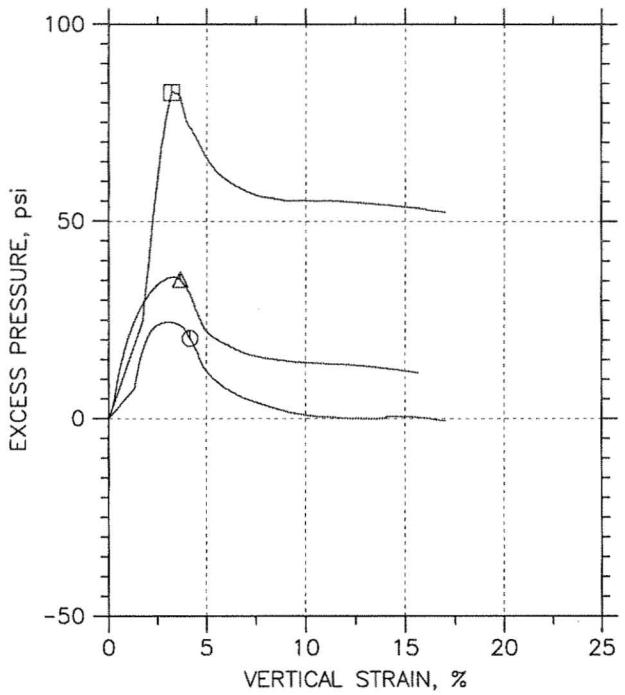


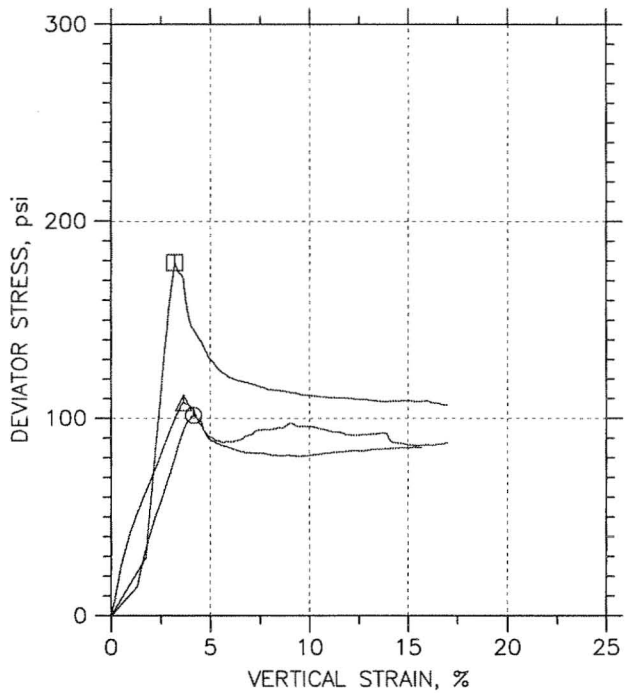
Phase calculations based on start and end of test.

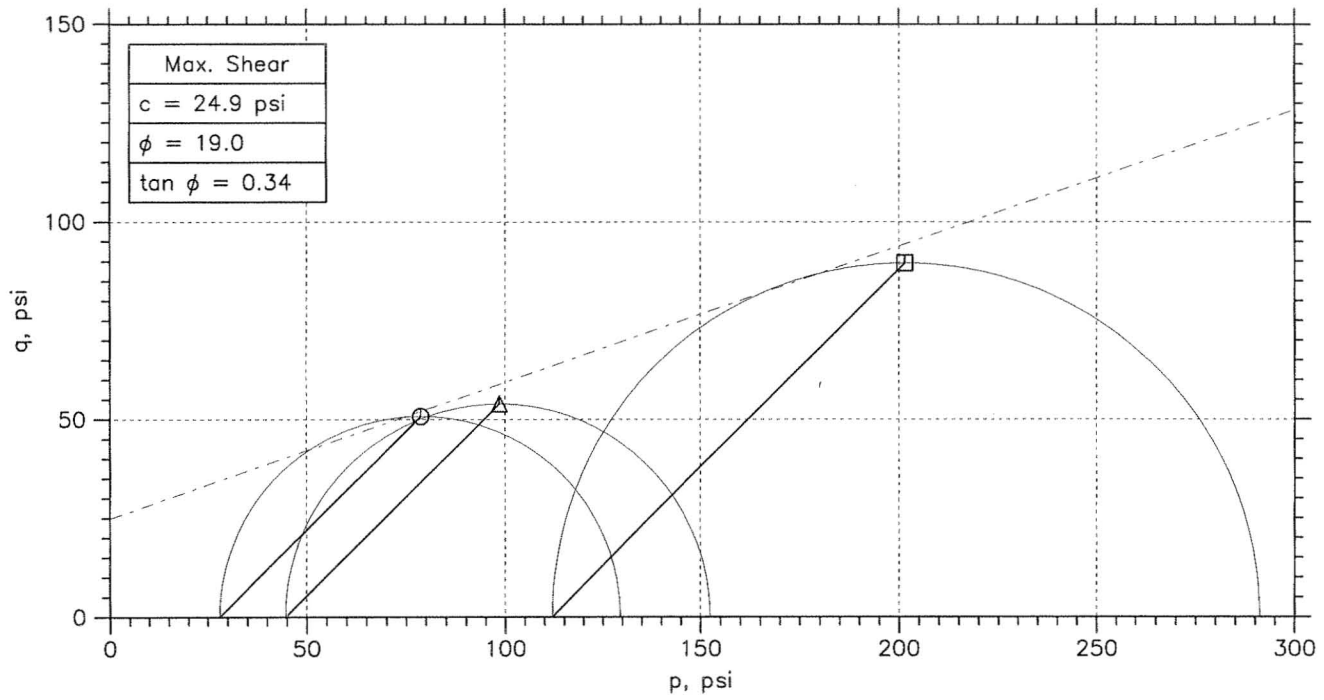
Mon, 30-JUL-2007 17:06:45

* Saturation is set to 100% for phase calculations.

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-1 | 7575.1 | 108.0 ft | HJ | 6/16/07 | JW | | 7575.1_2546a.dat |
| △ | UD-1 | 7575.2 | 108.0 ft | HJ | 6/16/07 | JW | JW 7/31/07 | 7575.2_2545a.dat |
| ◫ | UD-1 | 7575.3 | 108.0 ft | HJ | 6/16/07 | JW | | 7575.3_2547a.dat |
| | | | | | | | | |

MACTEC

| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4009 | Project No.: 6141060286 |
| Boring No.: B-4009 | Sample Type: Undisturbed | |
| Description: SILT (MH) | | |
| Remarks: | | |



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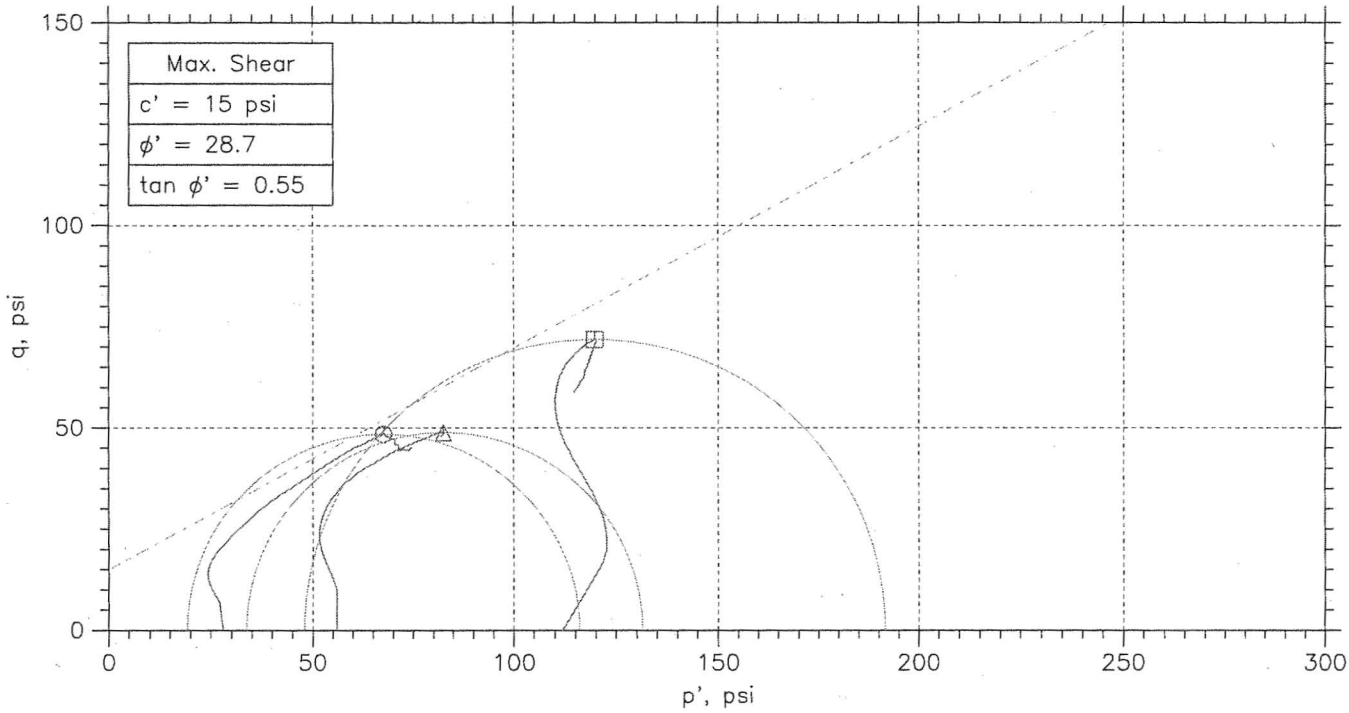
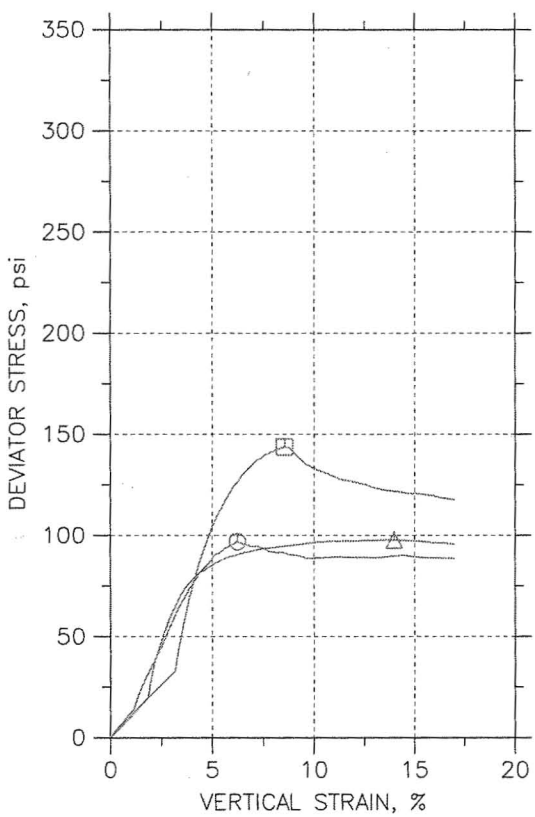
# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

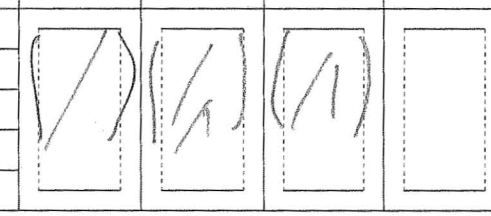



| Symbol | | ⦶ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-3 | UD-3 | UD-3 | |
| Test No. | | 7578.1 | 7578.2 | 7578.3 | |
| Depth | | 128.5 ft | 128.5 ft | 128.5 ft | |
| Initial | Diameter, in | 2.855 | 2.825 | 2.73 | |
| | Height, in | 5.561 | 5.972 | 5.579 | |
| | Water Content, % | 27.5 | 29.6 | 30.0 | |
| | Dry Density, pcf | 91.26 | 87.82 | 85.44 | |
| | Saturation, % | 89.8 | 87.0 | 83.3 | |
| | Void Ratio | 0.813 | 0.919 | 0.973 | |
| Before Shear | Water Content, % | 28.6 | 29.2 | 27.9 | |
| | Dry Density, pcf | 94.12 | 94.31 | 96.1 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.758 | 0.787 | 0.754 | |
| | Back Press., psi | 92. | 85.99 | 31.92 | |
| Ver. Eff. Cons. Stress, psi | | 28. | 56.01 | 112. | |
| Shear Strength, psi | | 48.43 | 48.85 | 71.81 | |
| Strain at Failure, % | | 6.22 | 14 | 8.55 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.97 | 0.98 | 0.96 | |
| Estimated Specific Gravity | | 2.65 | 2.7 | 2.7 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

Project: Vogtle COL
Location: B-4013
Project No.: 6141060286
Boring No.: B-4013
Sample Type: Undisturbed
Description: Clay, silty (CL-ML) (Visual)
Remarks:

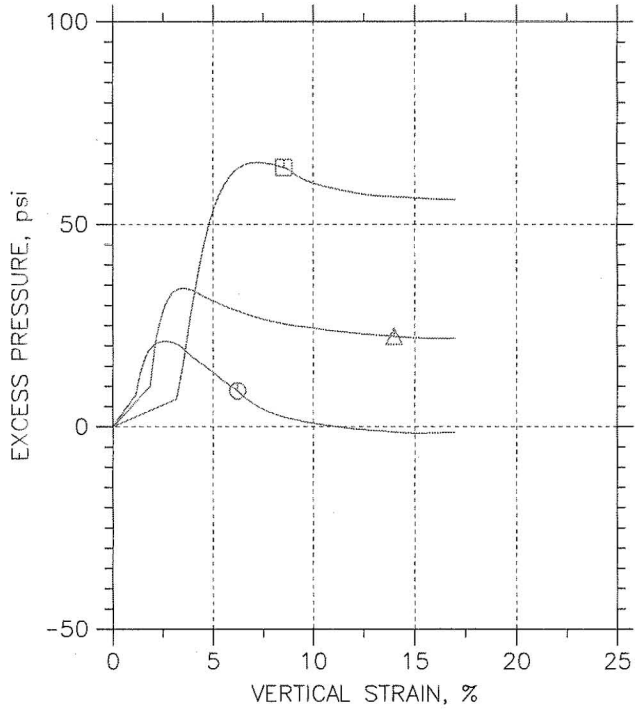


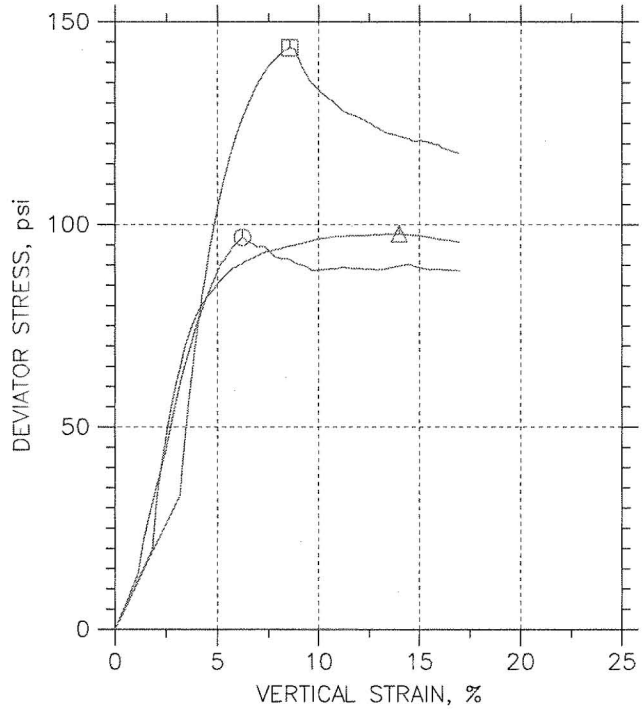
Phase calculations based on start and end of test.
* Saturation is set to 100% for phase calculations.

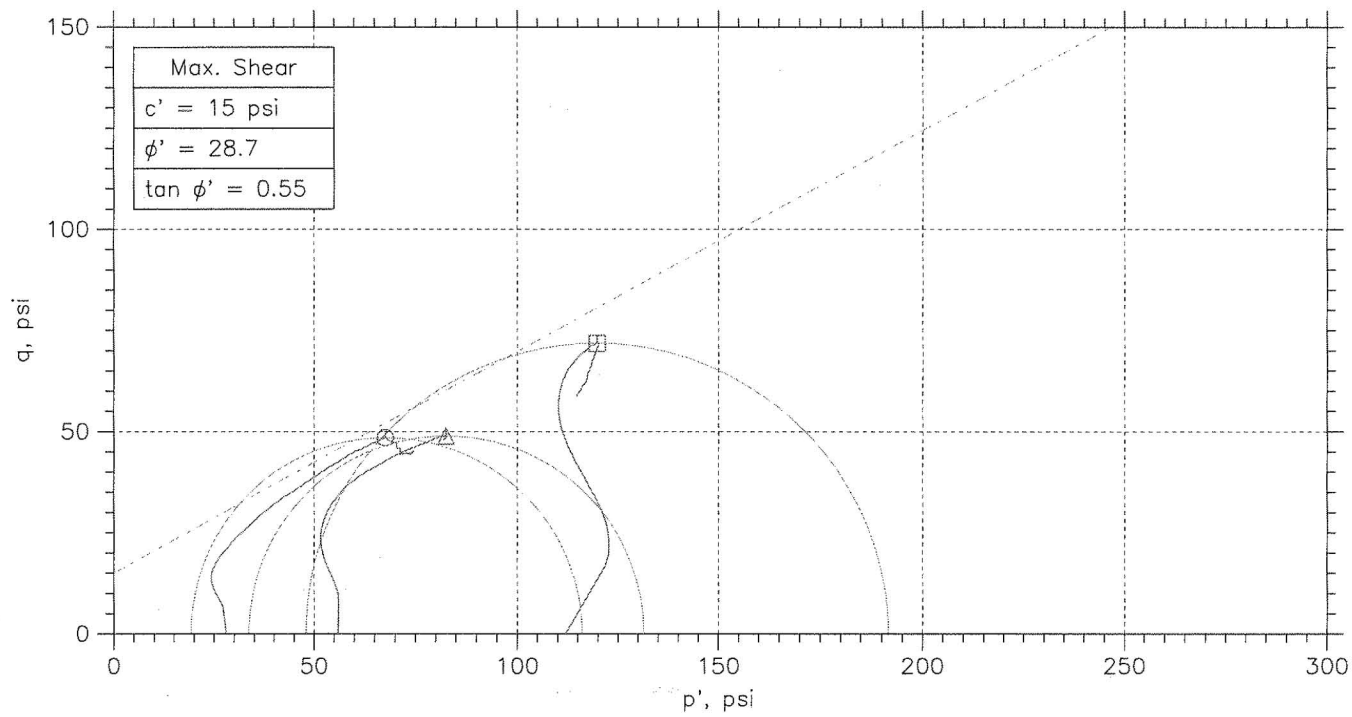


Tue, 31-JUL-2007 11:53:24

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ○ | UD-3 | 7578.1 | 128.5 ft | JW | 6/17/07 | HJ | | 7578.1_2581a.dat |
| △ | UD-3 | 7578.2 | 128.5 ft | JW | 6/17/07 | HJ | 7/31/07 | 7578.2_2582a.dat |
| □ | UD-3 | 7578.3 | 128.5 ft | JW | 6/17/07 | HJ | | 7578.3_2583a.dat |
| | | | | | | | | |

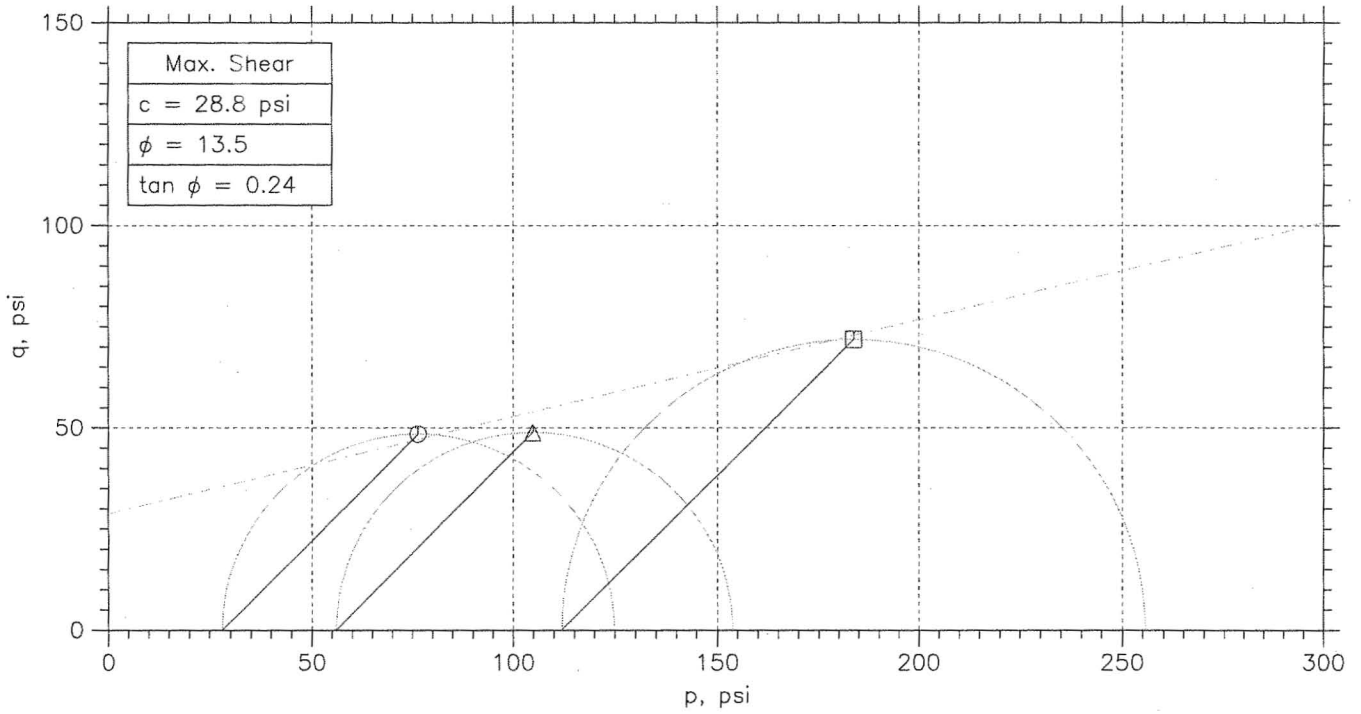
MACTEC

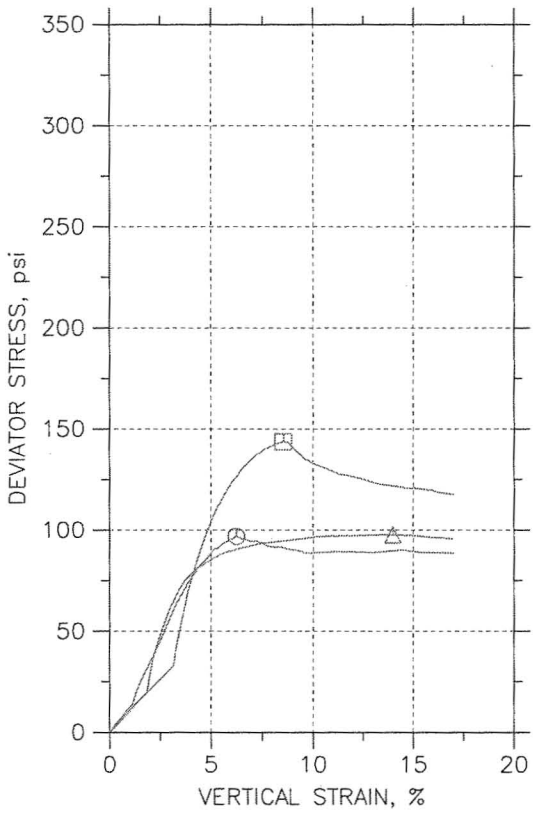
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4013 | Project No.: 6141060286 |
| Boring No.: B-4013 | Sample Type: Undisturbed | |
| Description: Clay, silty (CL-ML) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 11:53:24

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⊙ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-3 | UD-3 | UD-3 | |
| Test No. | | 7578.1 | 7578.2 | 7578.3 | |
| Depth | | 128.5 ft | 128.5 ft | 128.5 ft | |
| Initial | Diameter, in | 2.855 | 2.825 | 2.73 | |
| | Height, in | 5.561 | 5.972 | 5.579 | |
| | Water Content, % | 27.5 | 29.6 | 30.0 | |
| | Dry Density, pcf | 91.26 | 87.82 | 85.44 | |
| | Saturation, % | 89.8 | 87.0 | 83.3 | |
| | Void Ratio | 0.813 | 0.919 | 0.973 | |
| Before Shear | Water Content, % | 28.6 | 29.2 | 27.9 | |
| | Dry Density, pcf | 94.12 | 94.31 | 96.1 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.758 | 0.787 | 0.754 | |
| | Back Press., psi | 92. | 85.99 | 31.92 | |
| Ver. Eff. Cons. Stress, psi | | 28. | 56.01 | 112. | |
| Shear Strength, psi | | 48.43 | 48.85 | 71.81 | |
| Strain at Failure, % | | 6.22 | 14 | 8.55 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.97 | 0.98 | 0.96 | |
| Estimated Specific Gravity | | 2.65 | 2.7 | 2.7 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

Project: Vogtle COL

Location: B-4013

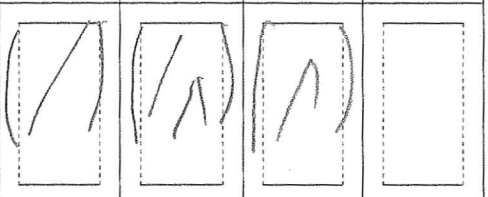
Project No.: 6141060286

Boring No.: B-4013

Sample Type: Undisturbed

Description: Clay, silty (CL-ML) (Visual)

Remarks:



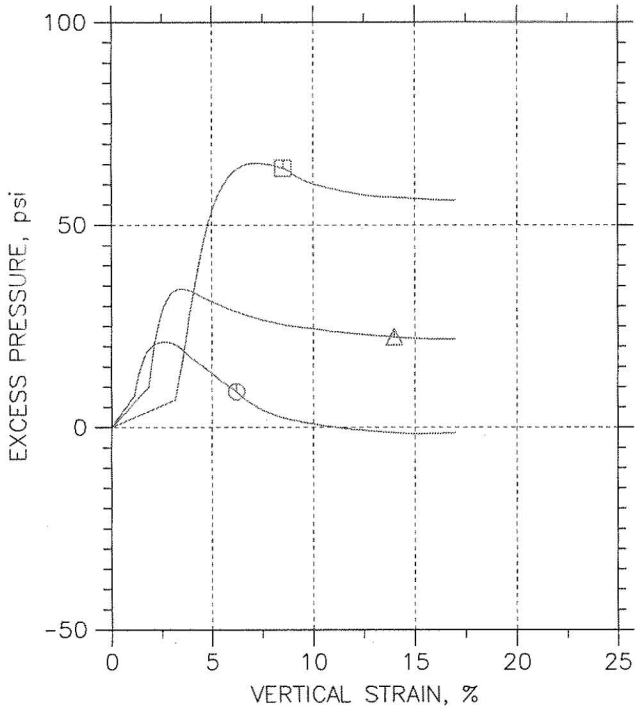
Phase calculations based on start and end of test.

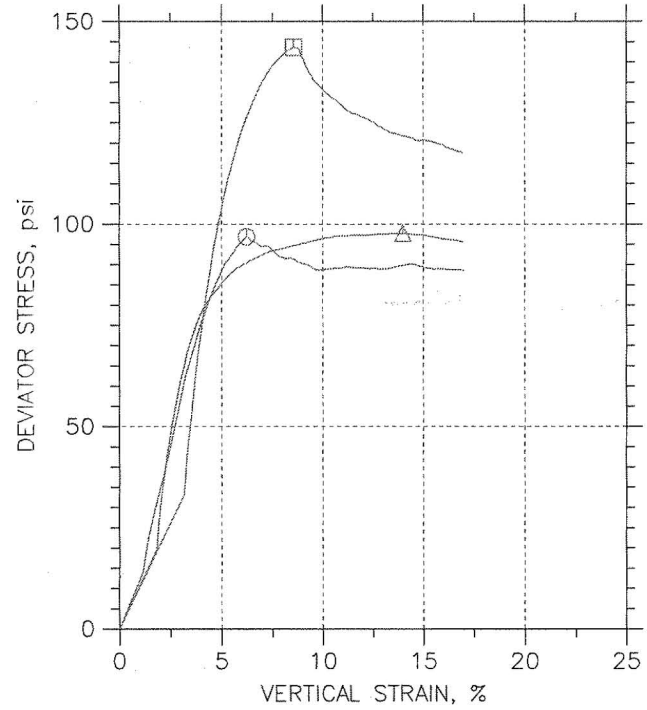
* Saturation is set to 100% for phase calculations.

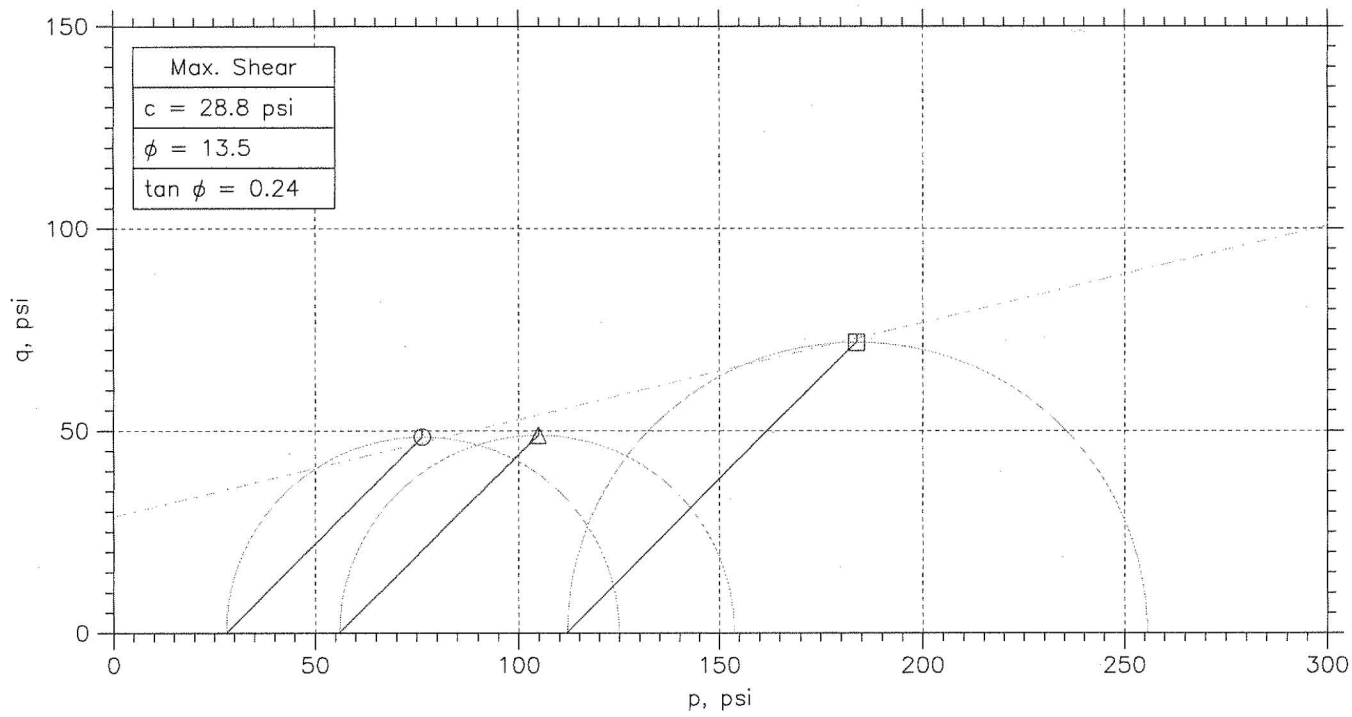


Tue, 31-JUL-2007 11:53:33

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⦶ | UD-3 | 7578.1 | 128.5 ft | JW | 6/17/07 | HJ | | 7578.1_2581a.dat |
| △ | UD-3 | 7578.2 | 128.5 ft | JW | 6/17/07 | HJ HJ | 7/31/07 | 7578.2_2582a.dat |
| ⊡ | UD-3 | 7578.3 | 128.5 ft | JW | 6/17/07 | HJ | | 7578.3_2583a.dat |
| | | | | | | | | |

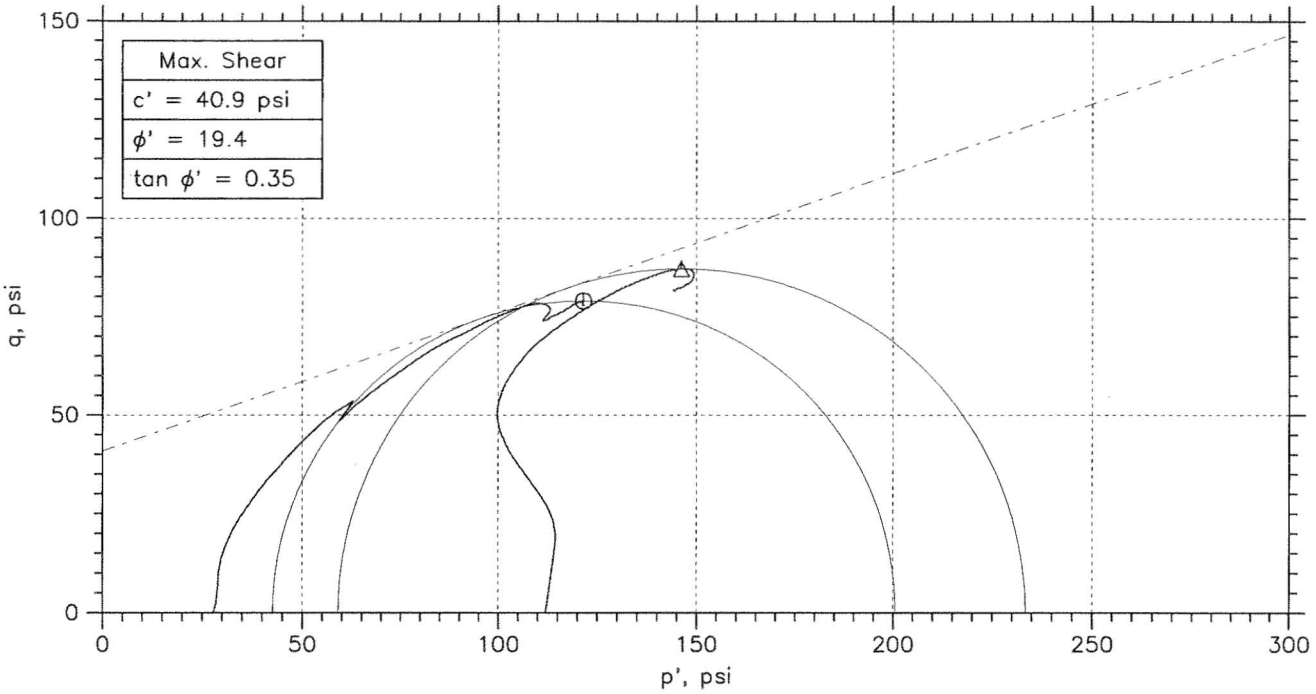
MACTEC

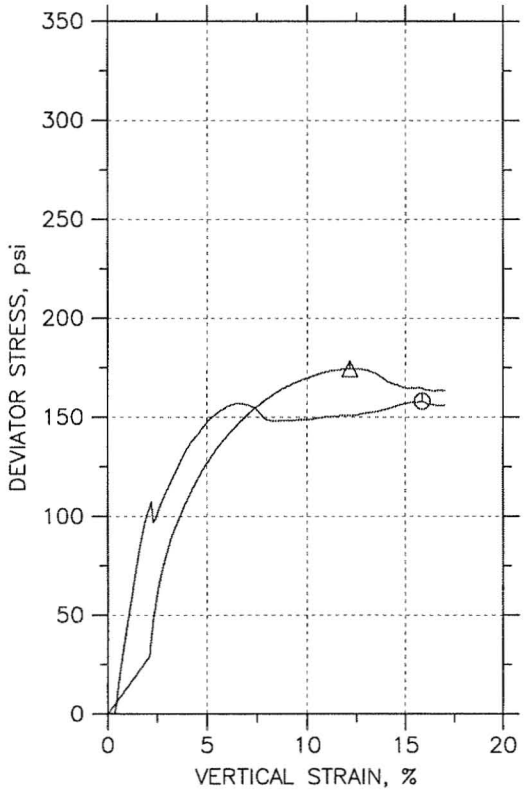
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4013 | Project No.: 6141060286 |
| Boring No.: B-4013 | Sample Type: Undisturbed | |
| Description: Clay, silty (CL-ML) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 11:53:33

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | | | | | |
|---|---|---|---|---|---|
| Symbol | | ⏲ | △ | | |
| Sample No. | | UD-3 | UD-3 | | |
| Test No. | | 7583.1 | 7583.3 | | |
| Depth | | 103.0 ft | 103.0 ft | | |
| Initial | Diameter, in | 2.875 | 2.879 | | |
| | Height, in | 5.961 | 5.961 | | |
| | Water Content, % | 28.2 | 24.8 | | |
| | Dry Density, pcf | 92.19 | 99.28 | | |
| | Saturation, % | 92.0 | 96.1 | | |
| | Void Ratio | 0.828 | 0.698 | | |
| Before Shear | Water Content, % | 29.7 | 23.4 | | |
| | Dry Density, pcf | 93.49 | 103.3 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.803 | 0.632 | | |
| | Back Press., psi | 69.99 | 38. | | |
| Ver. Eff. Cons. Stress, psi | | 28. | 112. | | |
| Shear Strength, psi | | 78.96 | 87.15 | | |
| Strain at Failure, % | | 15.9 | 12.2 | | |
| Strain Rate, %/min | | 0.05 | 0.05 | | |
| B-Value | | 0.99 | 0.93 | | |
| Estimated Specific Gravity | | 2.7 | 2.7 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

Project: Vogtle COL

Location: B-4018

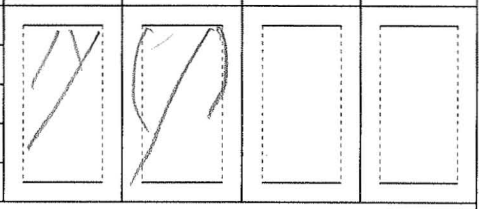
Project No.: 6141060286

Boring No.: B-4018

Sample Type: Undisturbed

Description: Clay (CL) (Visual)

Remarks:

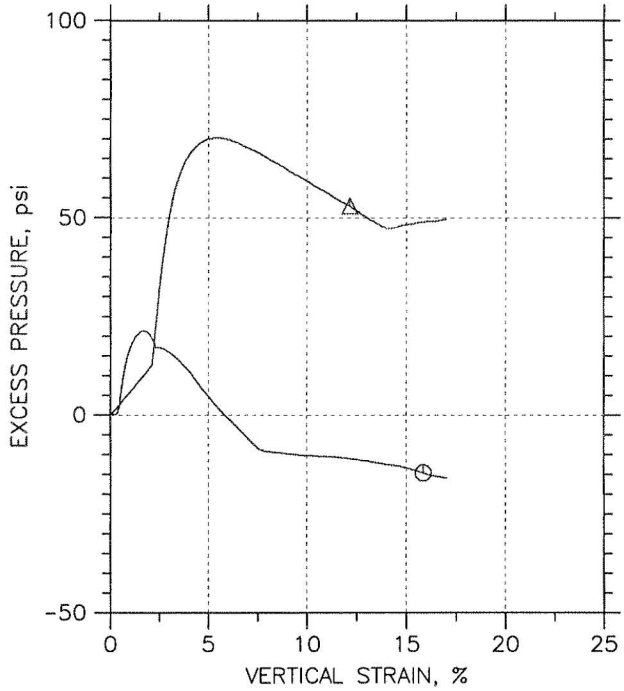


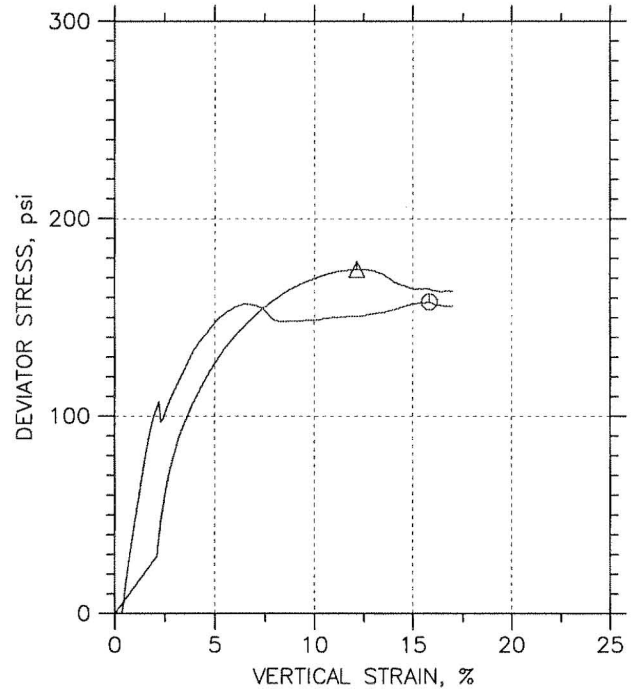
Phase calculations based on start and end of test.

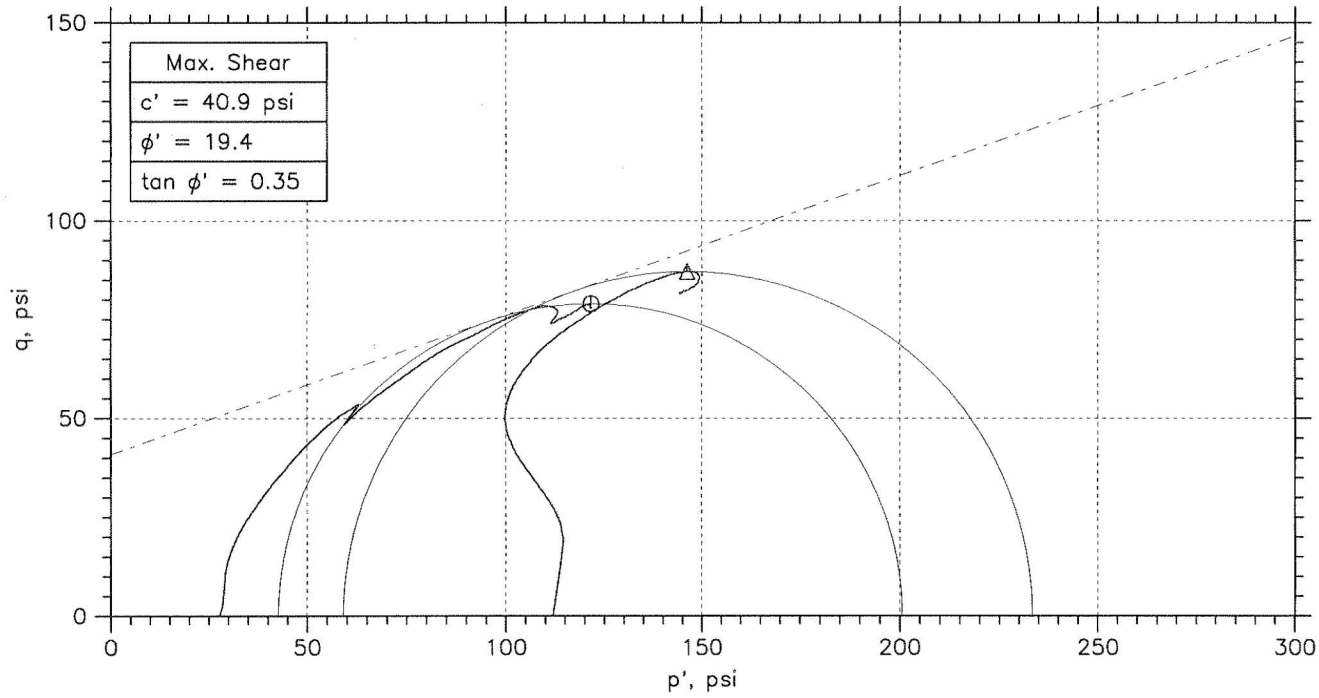
* Saturation is set to 100% for phase calculations.

Mon, 30-JUL-2007 17:19:57

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-3 | 7583.1 | 103.0 ft | HJ | 6/18/07 | JW | SW 7/31/07 | 7583.1_2583.dat |
| △ | UD-3 | 7583.3 | 103.0 ft | HJ | 6/18/07 | JW | | 7583.3_2582a.dat |
| | | | | | | | | |
| | | | | | | | | |

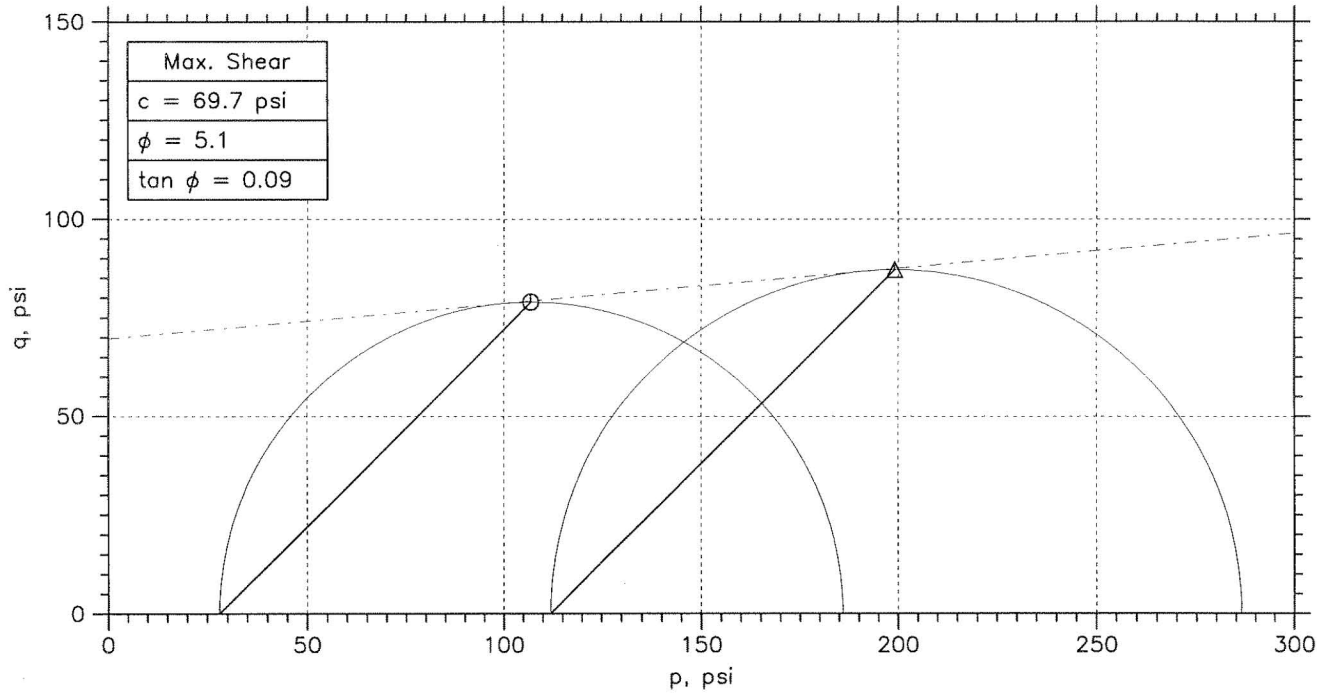
MACTEC

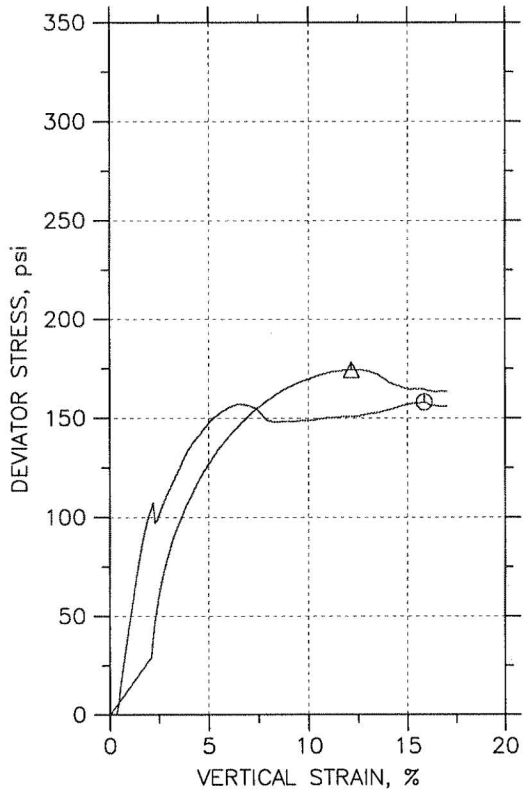
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4018 | Project No.: 6141060286 |
| Boring No.: B-4018 | Sample Type: Undisturbed | |
| Description: Clay (CL) (Visual) | | |
| Remarks: | | |



Mon, 30-JUL-2007 17:19:57

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | | |
|---|---|---|---|---|---|
| Sample No. | | UD-3 | UD-3 | | |
| Test No. | | 7583.1 | 7583.3 | | |
| Depth | | 103.0 ft | 103.0 ft | | |
| Initial | Diameter, in | 2.875 | 2.879 | | |
| | Height, in | 5.961 | 5.961 | | |
| | Water Content, % | 28.2 | 24.8 | | |
| | Dry Density, pcf | 92.19 | 99.28 | | |
| | Saturation, % | 92.0 | 96.1 | | |
| | Void Ratio | 0.828 | 0.698 | | |
| Before Shear | Water Content, % | 29.7 | 23.4 | | |
| | Dry Density, pcf | 93.49 | 103.3 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.803 | 0.632 | | |
| | Back Press., psi | 69.99 | 38. | | |
| Ver. Eff. Cons. Stress, psi | | 28. | 112. | | |
| Shear Strength, psi | | 78.96 | 87.15 | | |
| Strain at Failure, % | | 15.9 | 12.2 | | |
| Strain Rate, %/min | | 0.05 | 0.05 | | |
| B-Value | | 0.99 | 0.93 | | |
| Estimated Specific Gravity | | 2.7 | 2.7 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

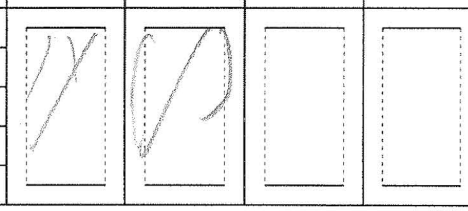
Project: Vogtle COL

Location: B-4018

Project No.: 6141060286

Boring No.: B-4018

Sample Type: Undisturbed



Description: Clay (CL) (Visual)

Remarks:

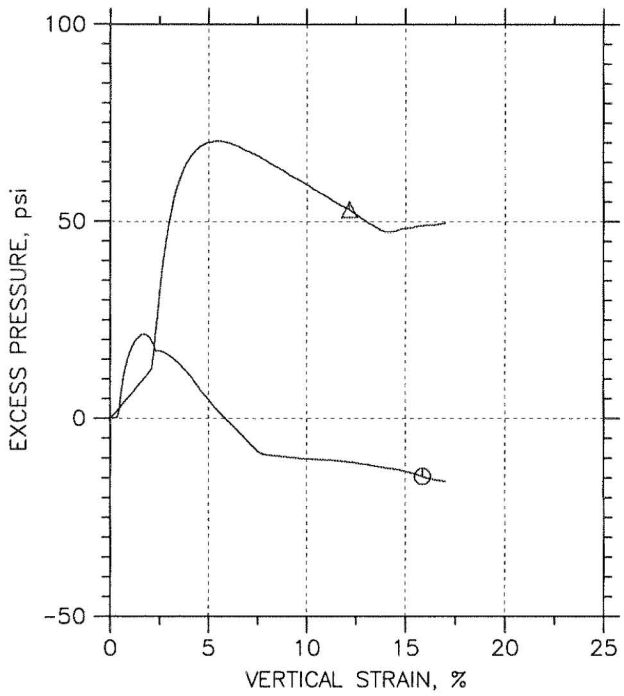
Phase calculations based on start and end of test.

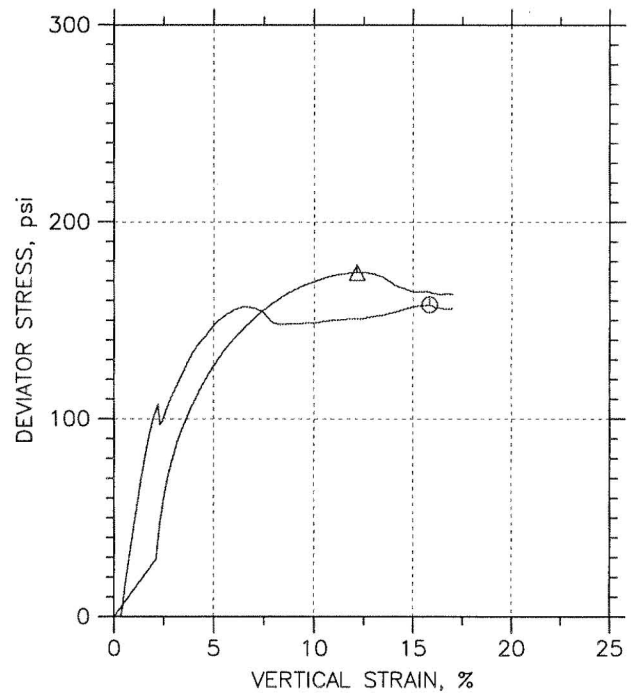
* Saturation is set to 100% for phase calculations.

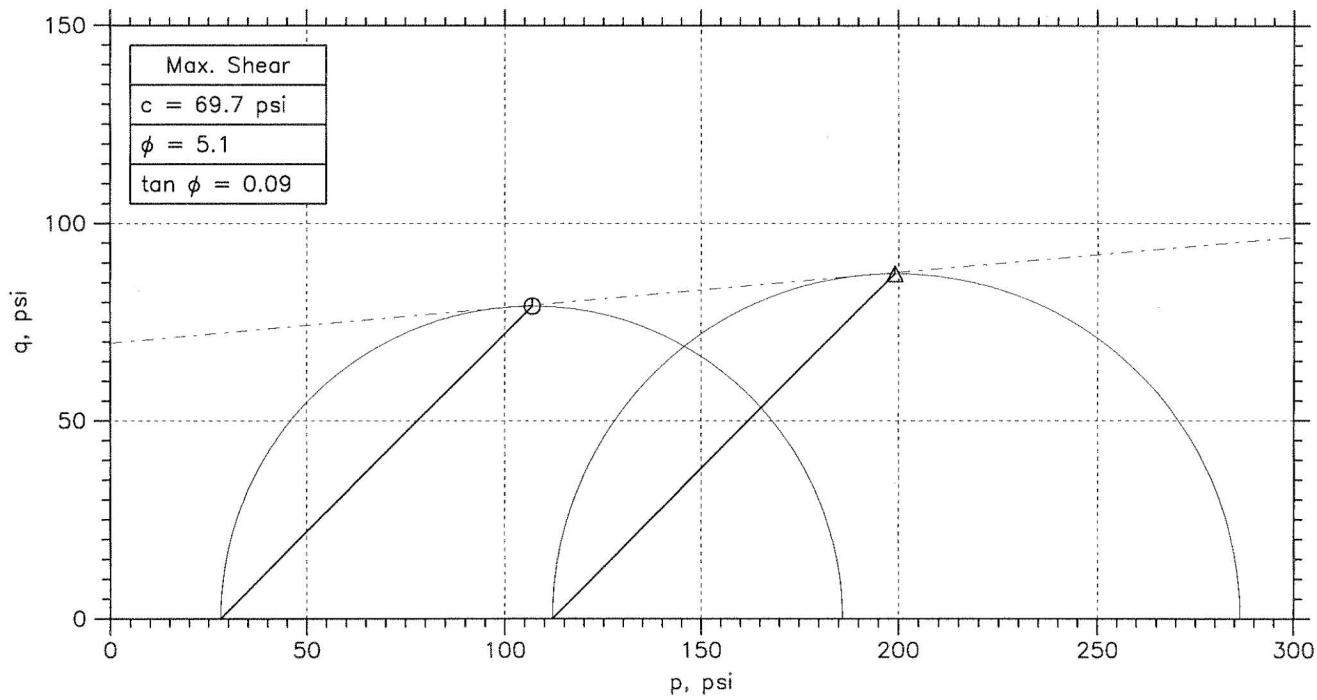


Mon, 30-JUL-2007 17:20:26

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-3 | 7583.1 | 103.0 ft | HJ | 6/18/07 | JW | JW 7/31/07 | 7583.1_2583.dat |
| △ | UD-3 | 7583.3 | 103.0 ft | HJ | 6/18/07 | JW | | 7583.3_2582a.dat |
| | | | | | | | | |
| | | | | | | | | |

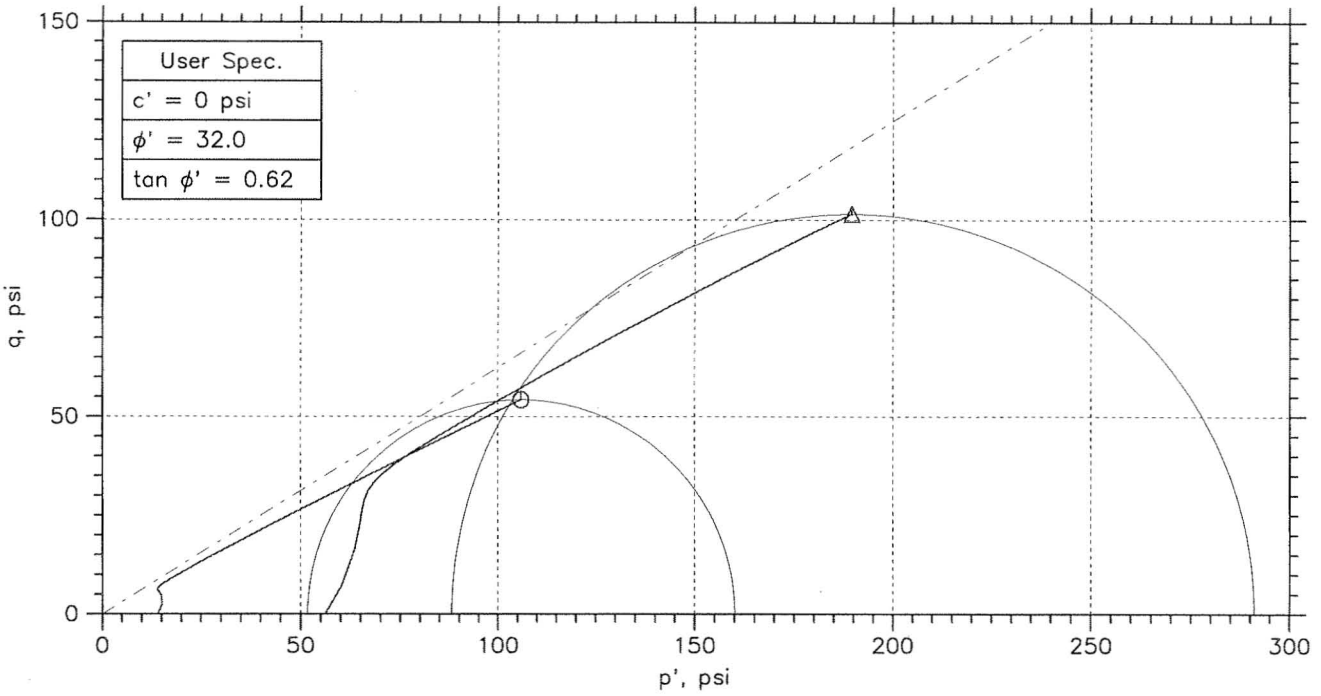
MACTEC

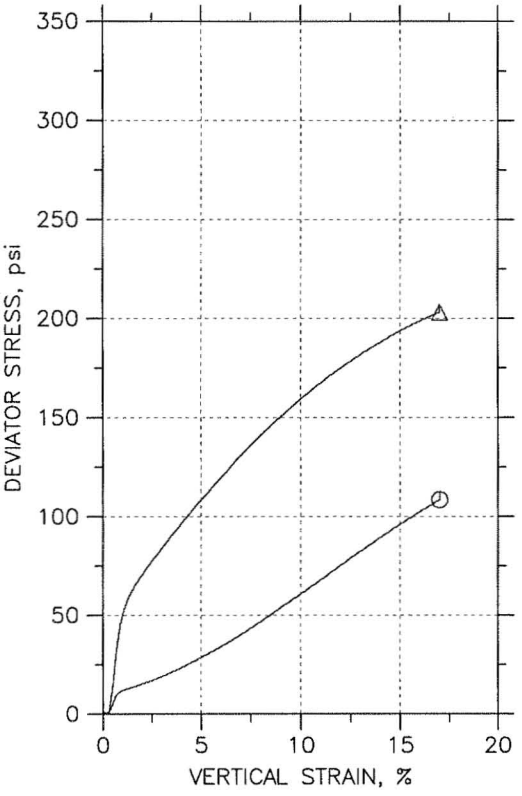
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4018 | Project No.: 6141060286 |
| Boring No.: B-4018 | Sample Type: Undisturbed | |
| Description: Clay (CL) (Visual) | | |
| Remarks: | | |



Mon, 30-JUL-2007 17:20:26

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | | | | | |
|---|---|---|---|---|---|
| Symbol | | ⦶ | △ | | |
| Sample No. | | UD-1 | UD-1 | | |
| Test No. | | 7604.1 | 7604.3 | | |
| Depth | | 13.5 ft | 13.5 ft | | |
| Initial | Diameter, in | 2.82 | 2.811 | | |
| | Height, in | 5.621 | 6 | | |
| | Water Content, % | 12.2 | 9.7 | | |
| | Dry Density, pcf | 100.5 | 97.4 | | |
| | Saturation, % | 48.2 | 35.5 | | |
| | Void Ratio | 0.69 | 0.743 | | |
| Before Shear | Water Content, % | 21.6 | 23.1 | | |
| | Dry Density, pcf | 106.9 | 104.3 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.589 | 0.627 | | |
| | Back Press., psi | 170. | 136. | | |
| Ver. Eff. Cons. Stress, psi | | 14. | 56. | | |
| Shear Strength, psi | | 54.19 | 101.4 | | |
| Strain at Failure, % | | 17 | 17 | | |
| Strain Rate, %/min | | 0.1 | 0.1 | | |
| B-Value | | 0.98 | 0.97 | | |
| Measured Specific Gravity | | 2.72 | 2.72 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

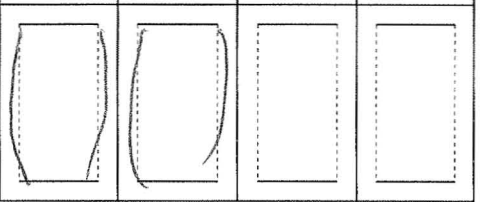
Project: Votgle COL

Location: B-4030

Project No.: 6141060286

Boring No.: B-4030

Sample Type: Undisturbed



Description: SAND, with silt (SP-SM) (Visual)

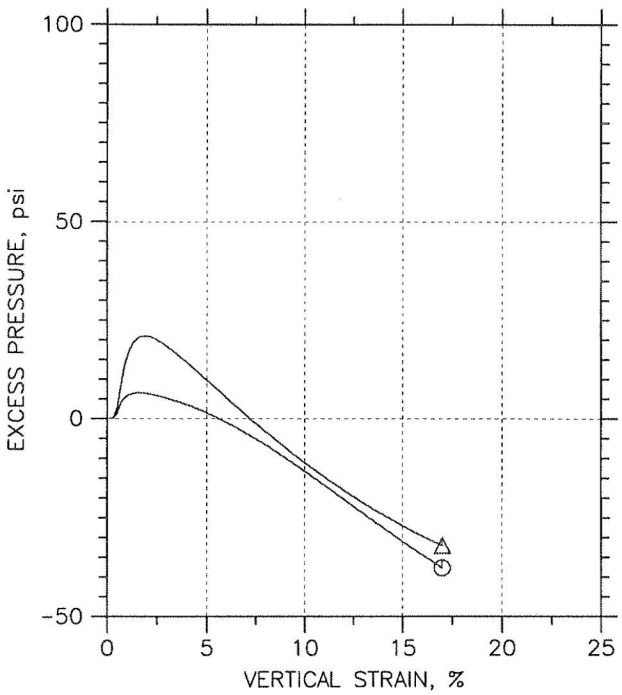
Remarks:

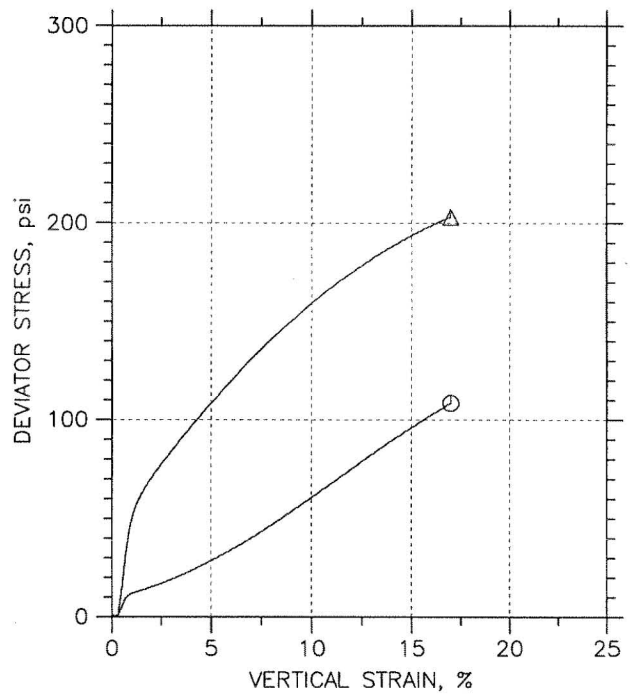
Phase calculations based on start and end of test.

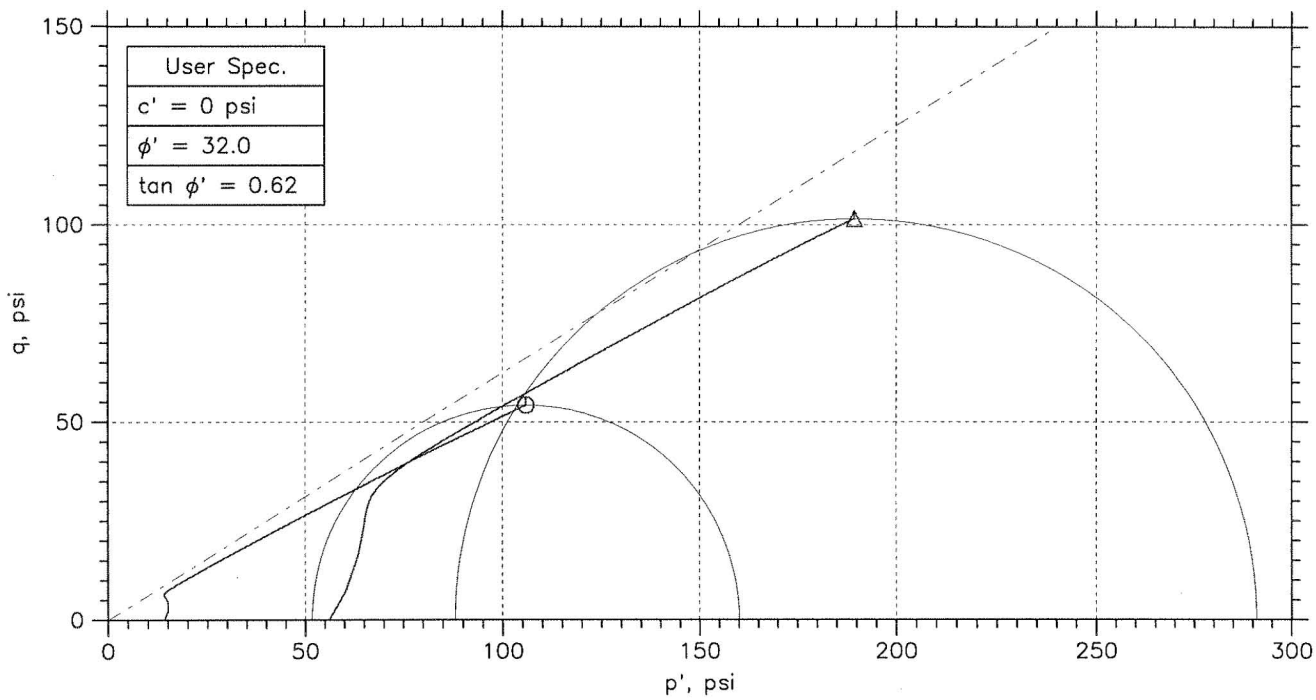
* Saturation is set to 100% for phase calculations.

Tue, 31-JUL-2007 14:17:59

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-1 | 7604.1 | 13.5 ft | JW | 7/26/07 | HJ | 7/31/07 | 7604.1_2582.dat |
| △ | UD-1 | 7604.3 | 13.5 ft | JW | 7/26/07 | HJ | | 7604.3_2581.dat |
| | | | | | | | | |
| | | | | | | | | |

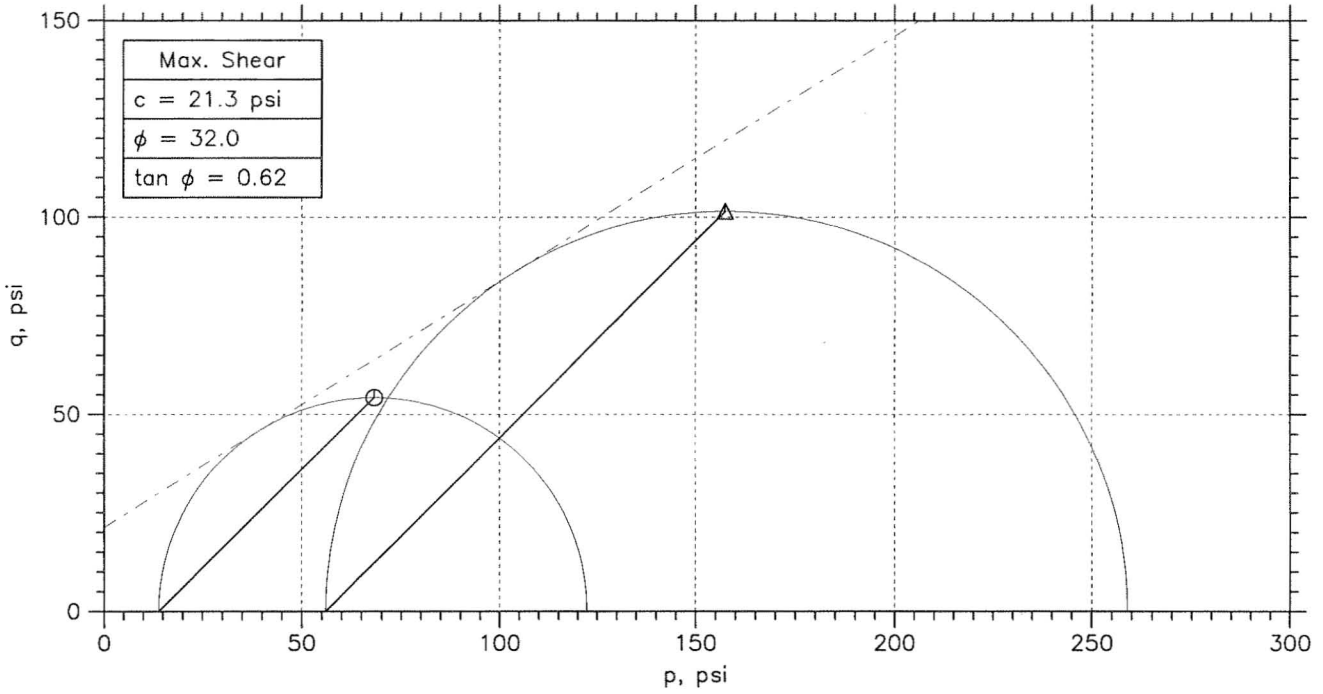
MACTEC

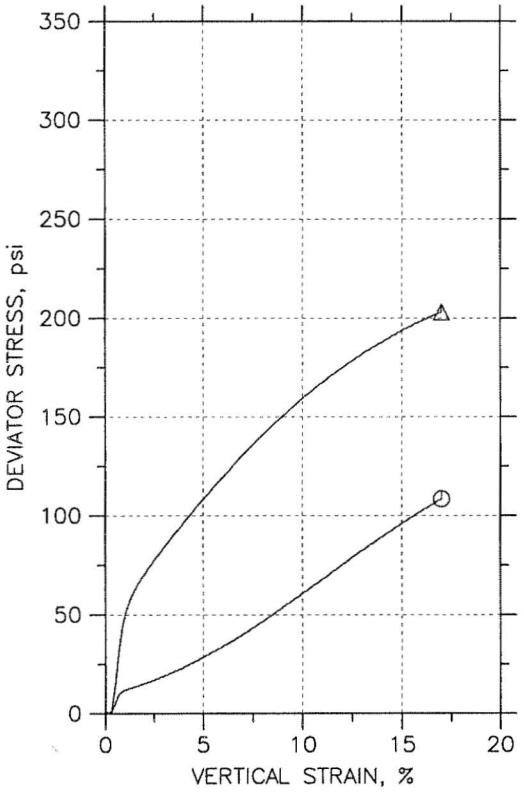
| | | |
|---|---|---|
| Project: Votgle COL | Location: B-4030 | Project No.: 6141060286 |
| Boring No.: B-4030 | Sample Type: Undisturbed | |
| Description: SAND, with silt (SP-SM) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 14:18:00

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | | |
|---|---|---|---|---|---|
| Sample No. | | UD-1 | UD-1 | | |
| Test No. | | 7604.1 | 7604.3 | | |
| Depth | | 13.5 ft | 13.5 ft | | |
| Initial | Diameter, in | 2.82 | 2.811 | | |
| | Height, in | 5.621 | 6 | | |
| | Water Content, % | 12.2 | 9.7 | | |
| | Dry Density, pcf | 100.5 | 97.4 | | |
| | Saturation, % | 48.2 | 35.5 | | |
| | Void Ratio | 0.69 | 0.743 | | |
| Before Shear | Water Content, % | 21.6 | 23.1 | | |
| | Dry Density, pcf | 106.9 | 104.3 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.589 | 0.627 | | |
| | Back Press., psi | 170. | 136. | | |
| Ver. Eff. Cons. Stress, psi | | 14. | 56. | | |
| Shear Strength, psi | | 54.19 | 101.4 | | |
| Strain at Failure, % | | 17 | 17 | | |
| Strain Rate, %/min | | 0.1 | 0.1 | | |
| B-Value | | 0.98 | 0.97 | | |
| Measured Specific Gravity | | 2.72 | 2.72 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

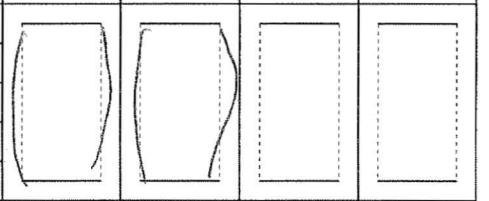
Project: Votgle COL

Location: B-4030

Project No.: 6141060286

Boring No.: B-4030

Sample Type: Undisturbed



Description: SAND, with silt (SP-SM) (Visual)

Remarks:

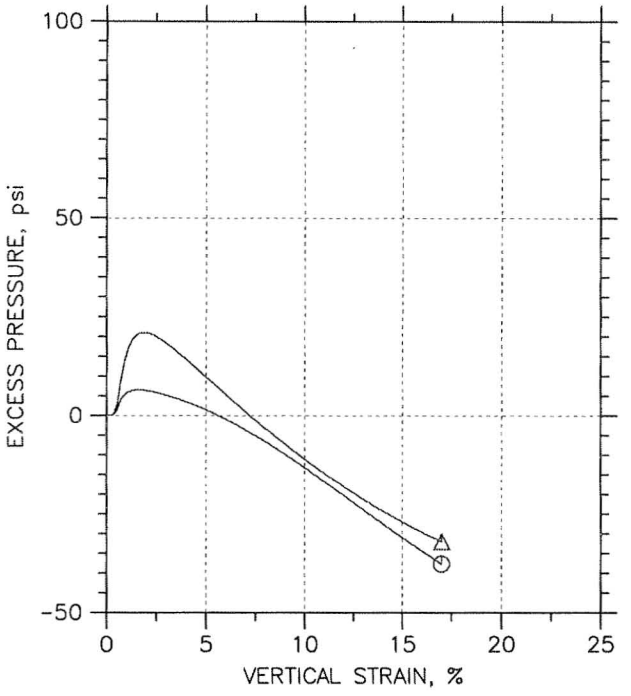
Phase calculations based on start and end of test.

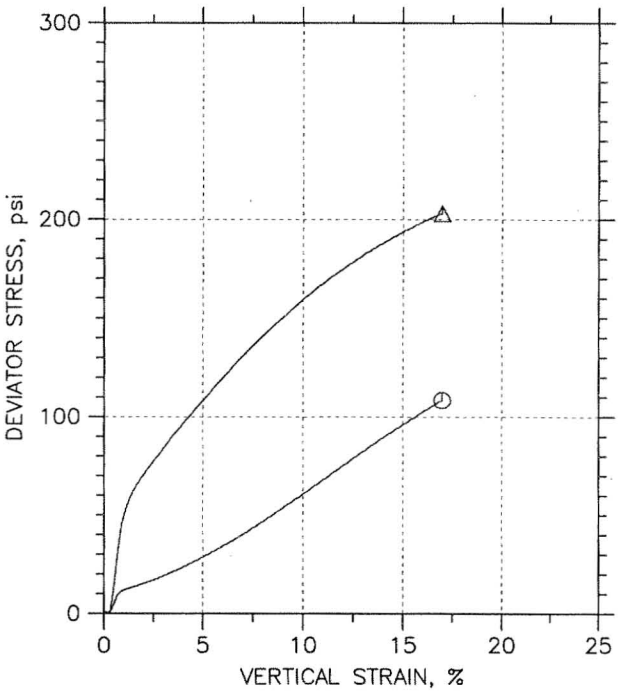
* Saturation is set to 100% for phase calculations.

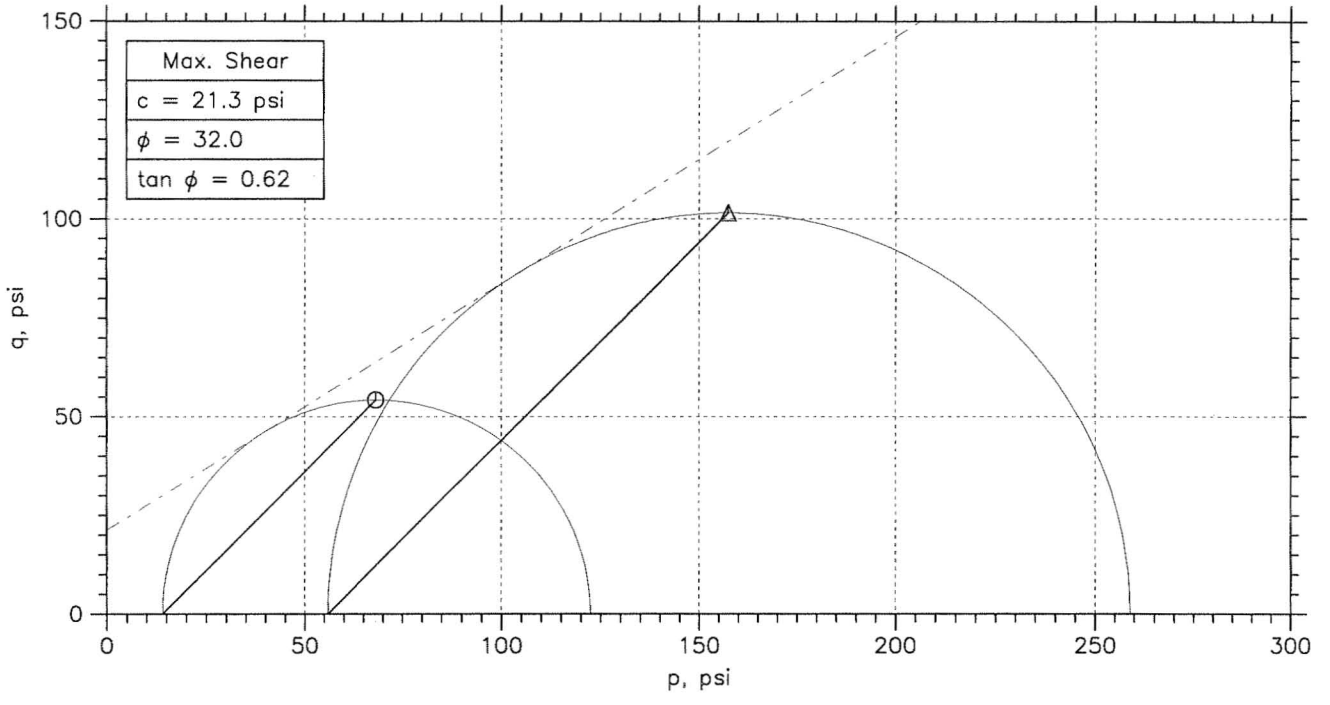


Tue, 31-JUL-2007 14:18:13

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⏲ | UD-1 | 7604.1 | 13.5 ft | JW | 7/26/07 | HJ | 7/31/07 | 7604.1_2582.dat |
| △ | UD-1 | 7604.3 | 13.5 ft | JW | 7/26/07 | HJ | | 7604.3_2581.dat |
| | | | | | | | | |
| | | | | | | | | |

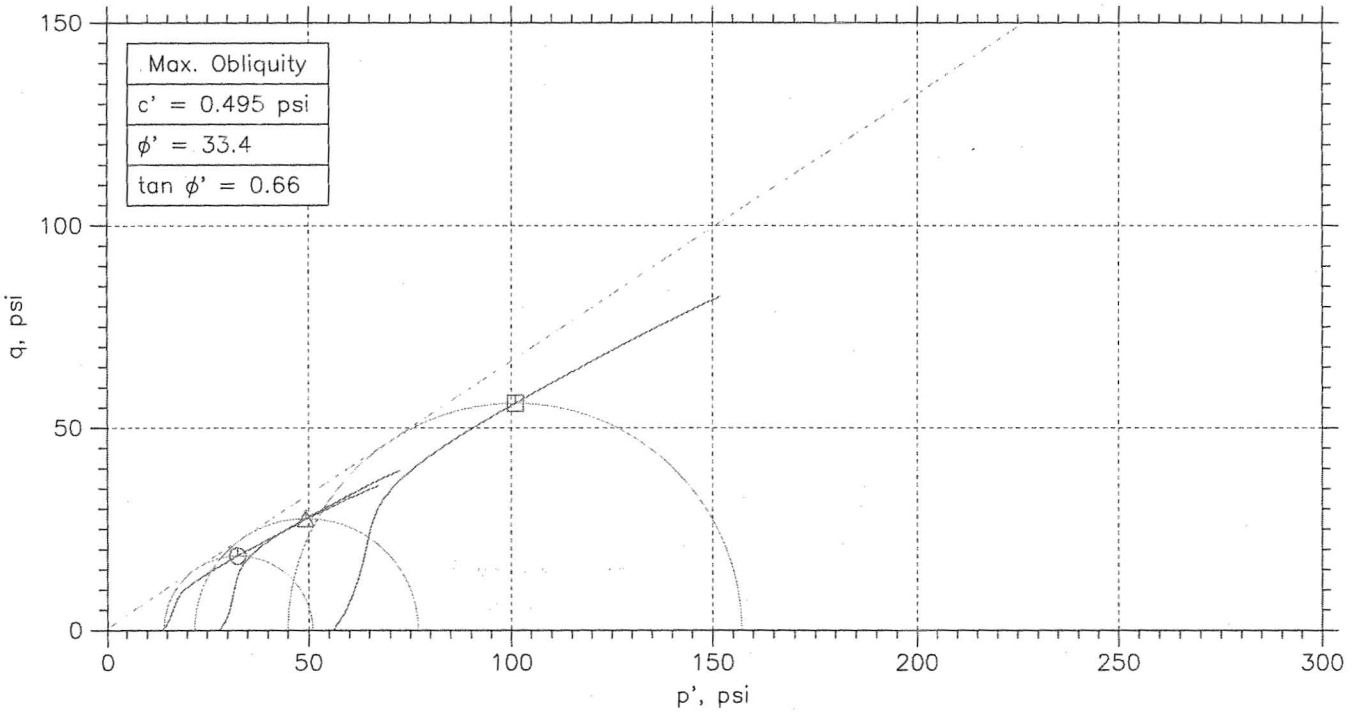
MACTEC

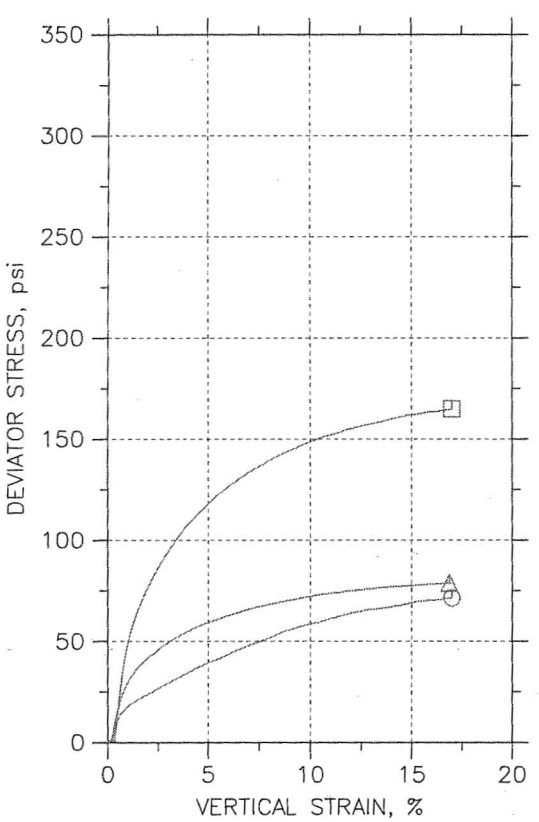
| | | |
|---|---|---|
| Project: Votgle COL | Location: B-4030 | Project No.: 6141060286 |
| Boring No.: B-4030 | Sample Type: Undisturbed | |
| Description: SAND, with silt (SP-SM) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 14:18:13

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⏲ | △ | ◫ | |
|---|---|---|---|---|---|
| Sample No. | | UD-2 | UD-2 | UD-2 | |
| Test No. | | 7611.1 | 7611.2 | 7611.3 | |
| Depth | | 33.5 ft | 33..5 ft | 33.5 ft | |
| Initial | Diameter, in | 2.863 | 2.863 | 2.865 | |
| | Height, in | 5.98 | 5.962 | 5.962 | |
| | Water Content, % | 15.8 | 13.5 | 13.8 | |
| | Dry Density, pcf | 103.7 | 107.2 | 107.2 | |
| | Saturation, % | 70.3 | 65.9 | 67.3 | |
| | Void Ratio | 0.595 | 0.543 | 0.544 | |
| Before Shear | Water Content, % | 18.9 | 18.6 | 18.1 | |
| | Dry Density, pcf | 110.2 | 110.9 | 111.9 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.502 | 0.492 | 0.479 | |
| | Back Press., psi | 100. | 57.99 | 89.99 | |
| Ver. Eff. Cons. Stress, psi | | 14. | 28.01 | 56.01 | |
| Shear Strength, psi | | 35.7 | 39.37 | 82.43 | |
| Strain at Failure, % | | 17 | 16.9 | 17 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.95 | 0.96 | 0.97 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

Project: Vogtle COL

Location: B-4031

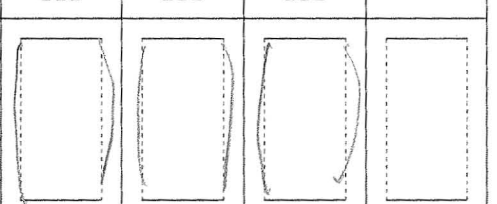
Project No.: 6141060286

Boring No.: B-4031

Sample Type: Undisturbed

Description: Sand, silty (SM) (Visual)

Remarks:

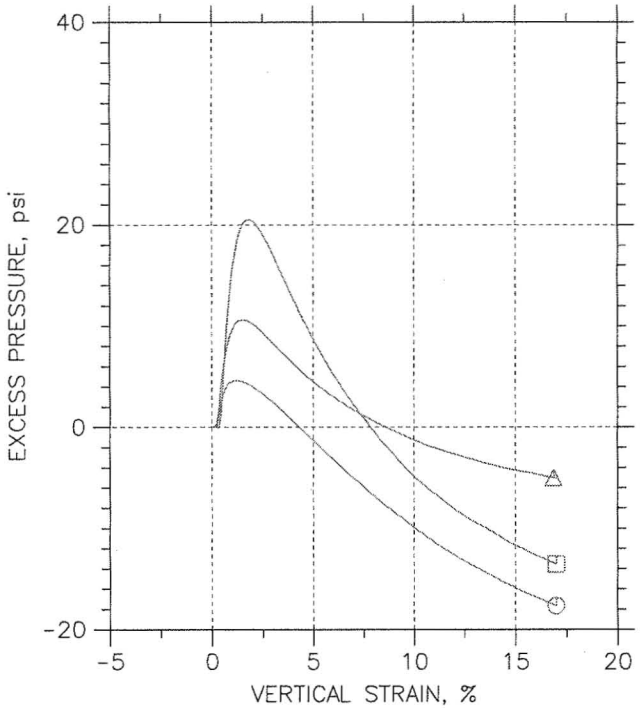


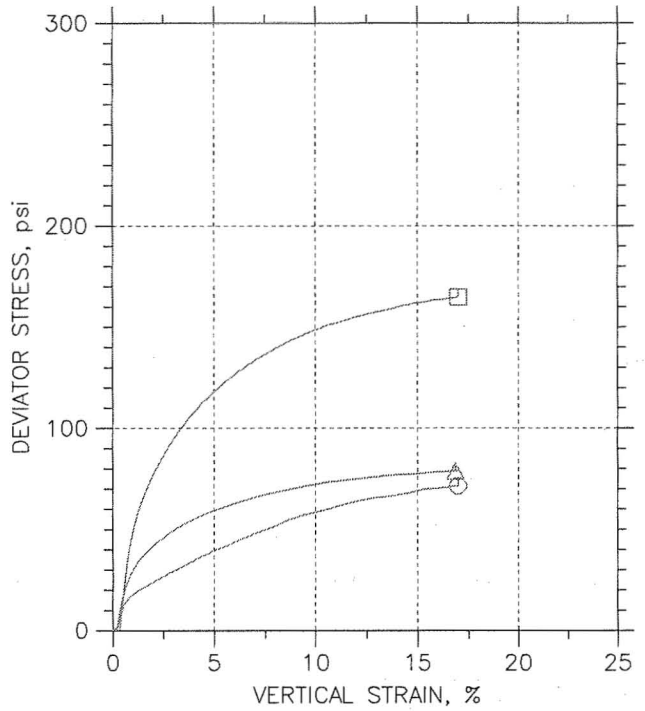
Phase calculations based on start and end of test.

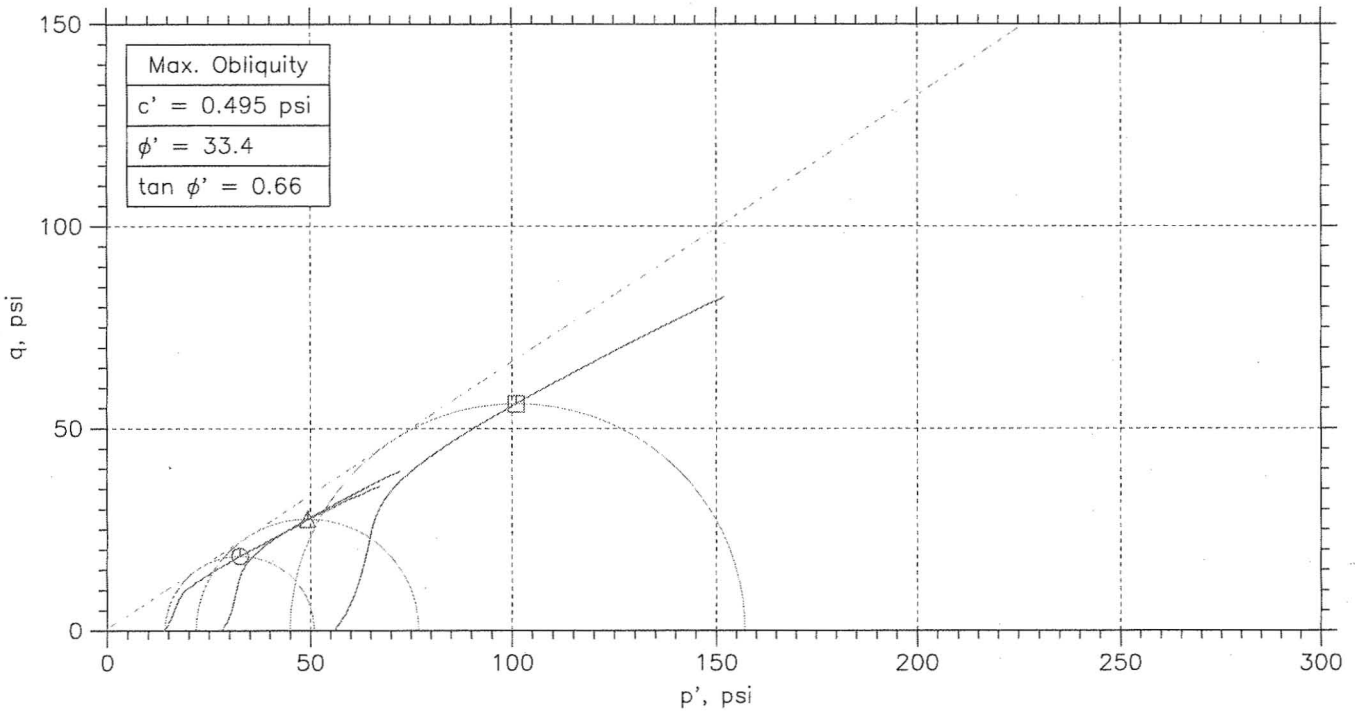
* Saturation is set to 100% for phase calculations.

Tue, 31-JUL-2007 11:05:57

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⏲ | UD-2 | 7611.1 | 33.5 ft | HJ | 6/21/07 | JW | | 7611.1_2582.dat |
| △ | UD-2 | 7611.2 | 33..5 ft | HJ | 6/19/07 | JW | JW 7/31/07 | 7611.2_2583.dat |
| ⊡ | UD-2 | 7611.3 | 33.5 ft | HJ | 6/19/07 | JW | | 7611.3_2581.dat |
| | | | | | | | | |

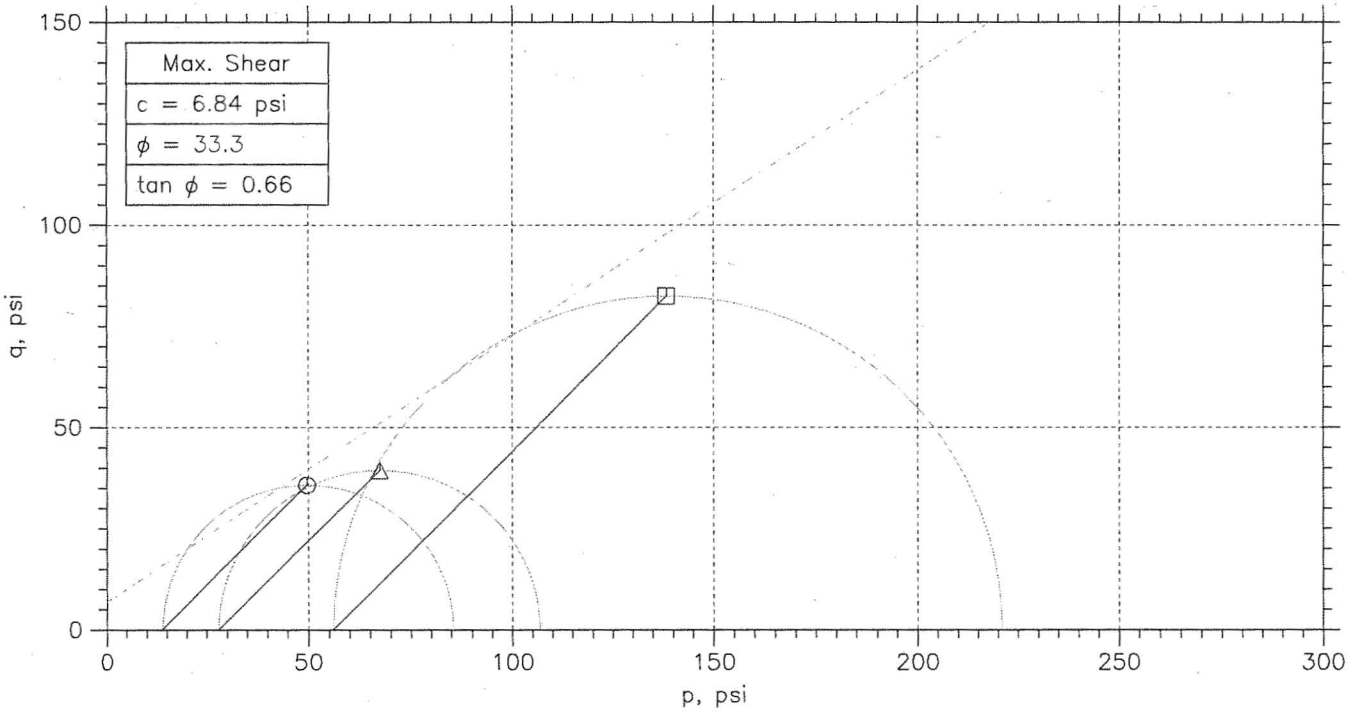
MACTEC

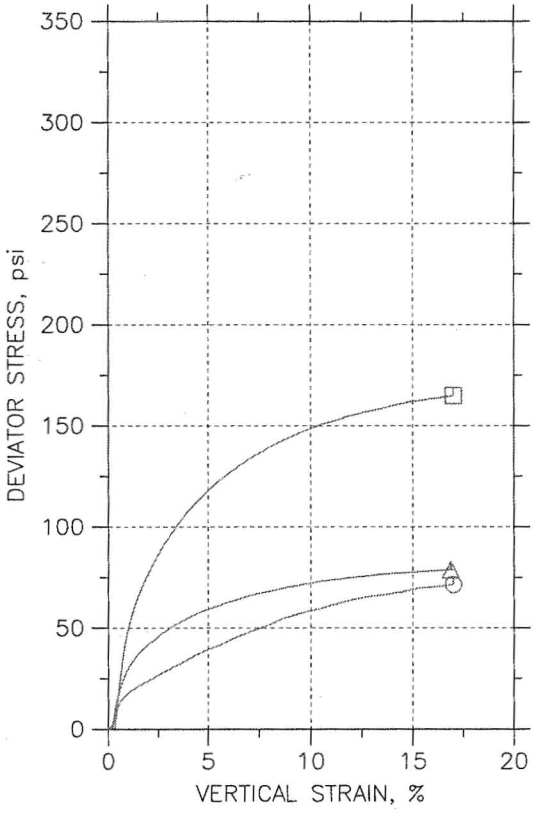
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4031 | Project No.: 6141060286 |
| Boring No.: B-4031 | Sample Type: Undisturbed | |
| Description: Sand, silty (SM) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 11:05:57

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-2 | UD-2 | UD-2 | |
| Test No. | | 7611.1 | 7611.2 | 7611.3 | |
| Depth | | 33.5 ft | 33..5 ft | 33.5 ft | |
| Initial | Diameter, in | 2.863 | 2.863 | 2.865 | |
| | Height, in | 5.98 | 5.962 | 5.962 | |
| | Water Content, % | 15.8 | 13.5 | 13.8 | |
| | Dry Density, pcf | 103.7 | 107.2 | 107.2 | |
| | Saturation, % | 70.3 | 65.9 | 67.3 | |
| | Void Ratio | 0.595 | 0.543 | 0.544 | |
| Before Shear | Water Content, % | 18.9 | 18.6 | 18.1 | |
| | Dry Density, pcf | 110.2 | 110.9 | 111.9 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.502 | 0.492 | 0.479 | |
| | Back Press., psi | 100. | 57.99 | 89.99 | |
| Ver. Eff. Cons. Stress, psi | | 14. | 28.01 | 56.01 | |
| Shear Strength, psi | | 35.7 | 39.37 | 82.43 | |
| Strain at Failure, % | | 17 | 16.9 | 17 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.95 | 0.96 | 0.97 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

Project: Vogtle COL

Location: B-4031

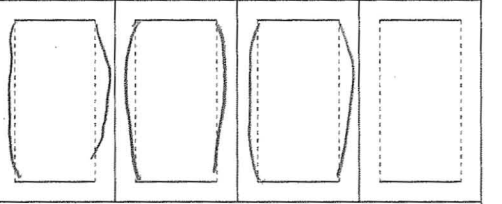
Project No.: 6141060286

Boring No.: B-4031

Sample Type: Undisturbed

Description: Sand, silty (SM) (Visual)

Remarks:



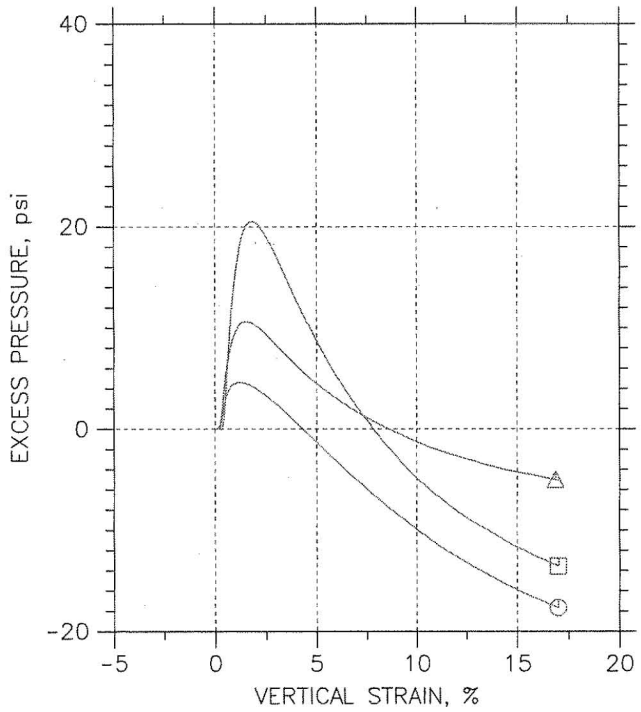


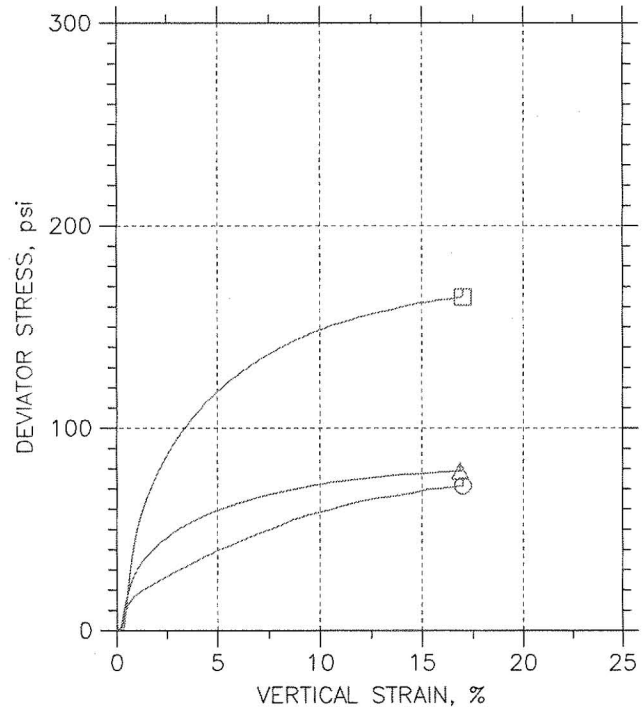
Phase calculations based on start and end of test.

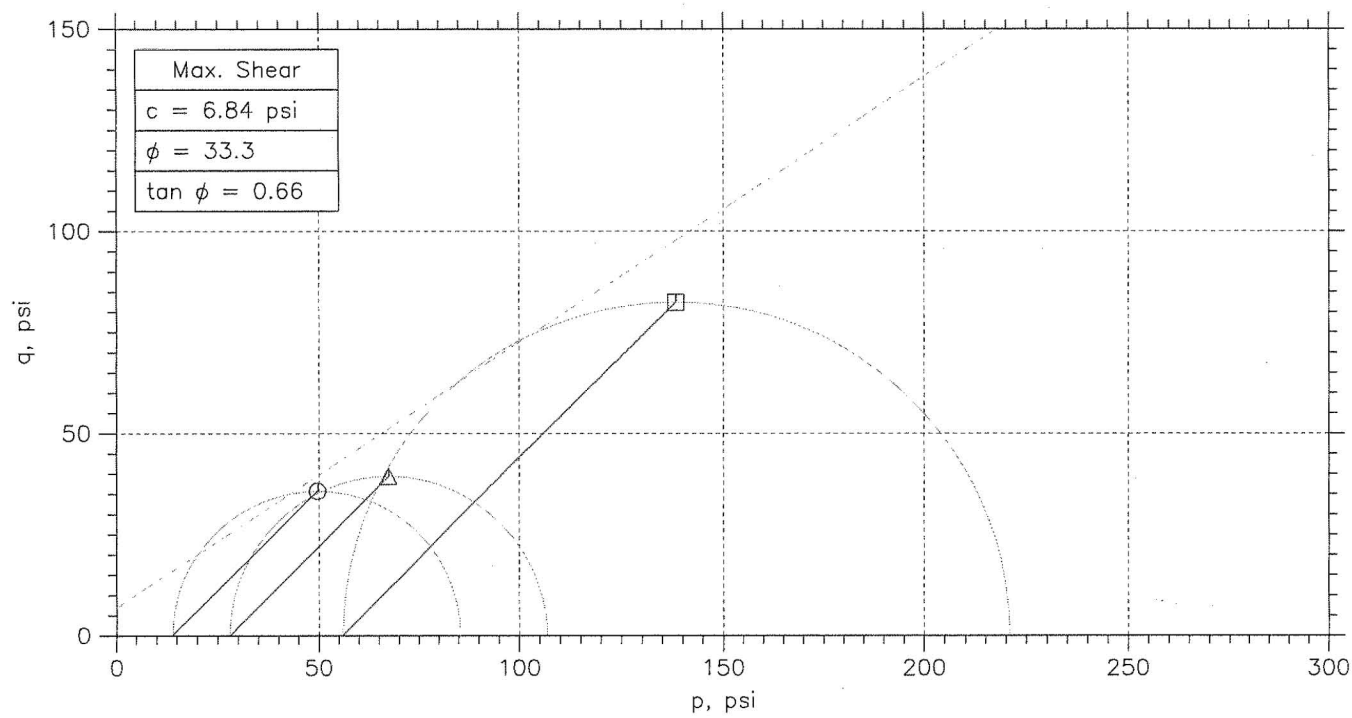
Saturation is set to 100% for phase calculations.

Tue. 31-JUL-2007 11:06:07

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-2 | 7611.1 | 33.5 ft | HJ | 6/21/07 | JW | | 7611.1_2582.dat |
| △ | UD-2 | 7611.2 | 33..5 ft | HJ | 6/19/07 | JW | JW 7/31/07 | 7611.2_2583.dat |
| ⊡ | UD-2 | 7611.3 | 33.5 ft | HJ | 6/19/07 | JW | | 7611.3_2581.dat |
| | | | | | | | | |

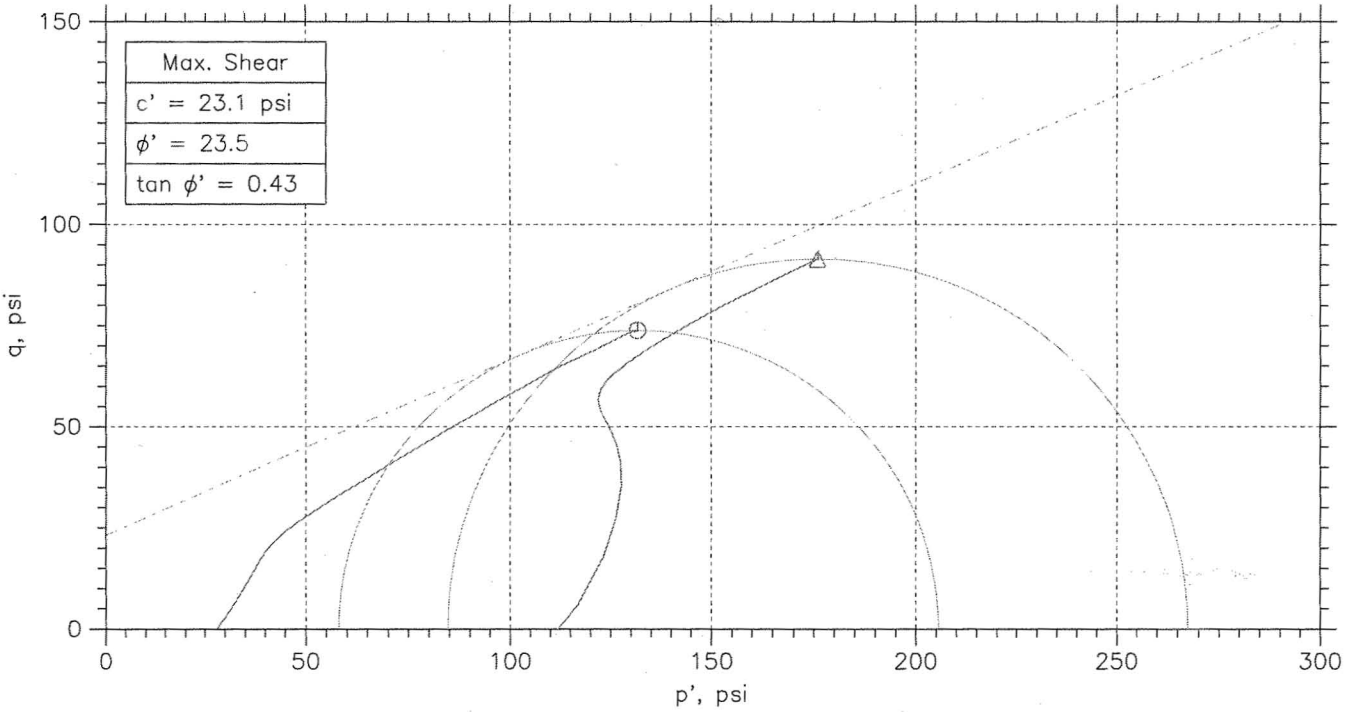
MACTEC

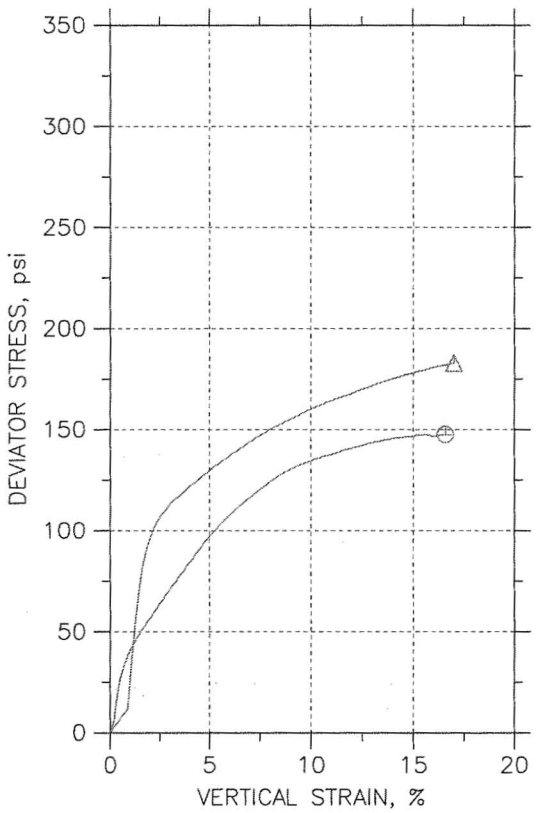
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4031 | Project No.: 6141060286 |
| Boring No.: B-4031 | Sample Type: Undisturbed | |
| Description: Sand, silty (SM) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 11:06:07

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | | | | | |
|---|---|---|---|---|---|
| Symbol | | ⦶ | △ | | |
| Sample No. | | UD-3 | UD-3 | | |
| Test No. | | 7612.1 | 7612.3 | | |
| Depth | | 38.5 ft | 38.5 ft | | |
| Initial | Diameter, in | 2.82 | 2.822 | | |
| | Height, in | 5.606 | 5.607 | | |
| | Water Content, % | 21.1 | 17.6 | | |
| | Dry Density, pcf | 96.69 | 94.74 | | |
| | Saturation, % | 78.6 | 62.6 | | |
| | Void Ratio | 0.711 | 0.746 | | |
| Before Shear | Water Content, % | 23.9 | 25.1 | | |
| | Dry Density, pcf | 101.2 | 99.29 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.634 | 0.666 | | |
| | Back Press., psi | 40.01 | 69.99 | | |
| Ver. Eff. Cons. Stress, psi | | 27.98 | 112. | | |
| Shear Strength, psi | | 73.76 | 91.42 | | |
| Strain at Failure, % | | 16.6 | 17 | | |
| Strain Rate, %/min | | 0.1 | 0.1 | | |
| B-Value | | 1.11 | 0.92 | | |
| Estimated Specific Gravity | | 2.65 | 2.65 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

Project: Vogtle COL

Location: B-4031

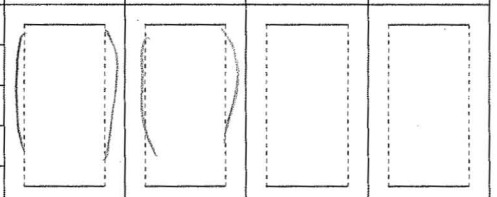
Project No.: 6141060286

Boring No.: B-4031

Sample Type: Undisturbed

Description: SAND, silty (SM) (Visual)

Remarks:



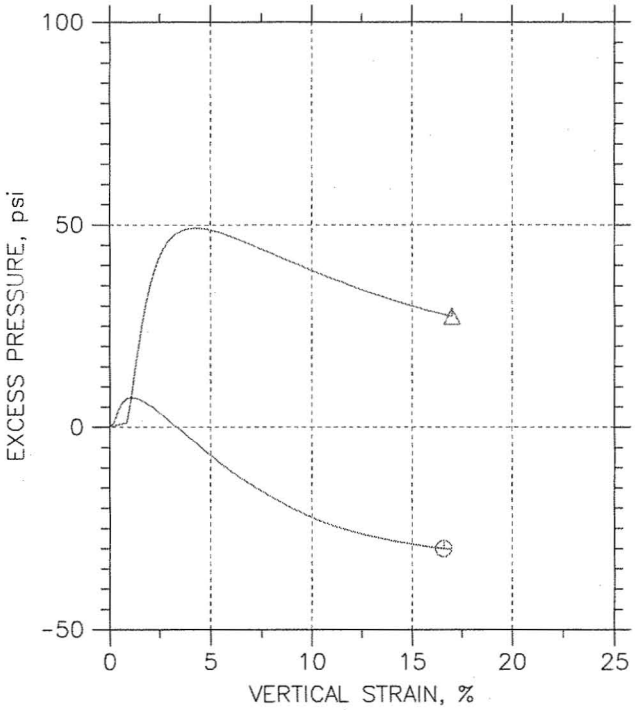


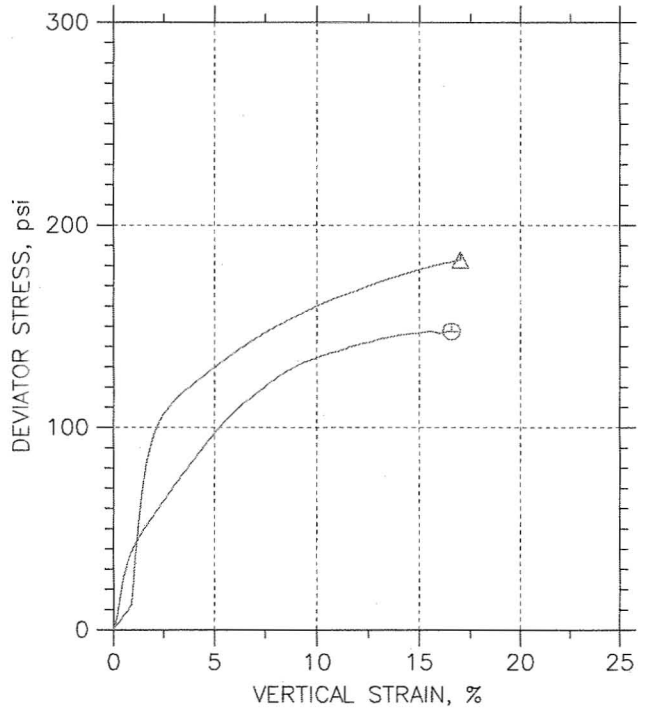
Mon, 30-JUL-2007 17:58:39

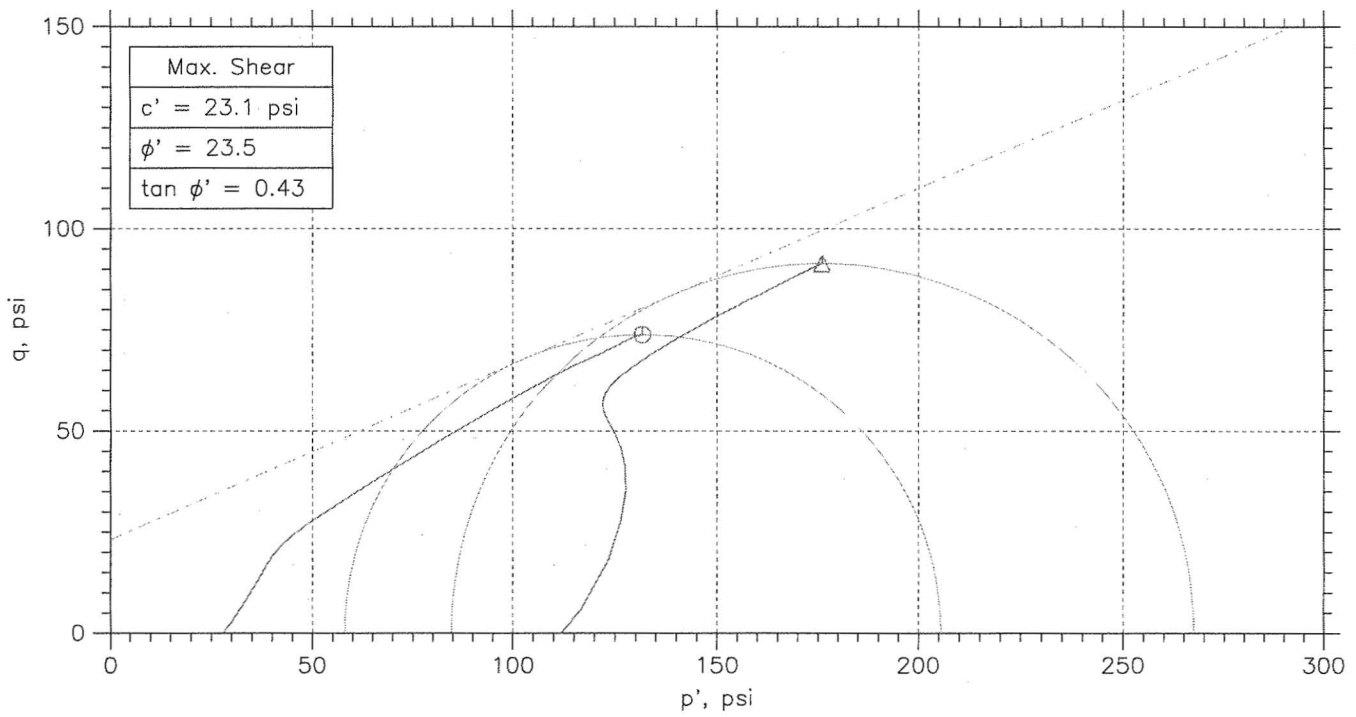
Phase calculations based on start and end of test.

* Saturation is set to 100% for phase calculations.

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⦶ | UD-3 | 7612.1 | 38.5 ft | HJ | 7/13/07 | JW | JW 7/31/07 | 7612.1_2583a.dat |
| △ | UD-3 | 7612.3 | 38.5 ft | HJ | 7/13/07 | JW | | 7612.3_2582a.dat |
| | | | | | | | | |
| | | | | | | | | |

MACTEC

| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4031 | Project No.: 6141060286 |
| Boring No.: B-4031 | Sample Type: Undisturbed | |
| Description: SAND, silty (SM) (Visual) | | |
| Remarks: | | |



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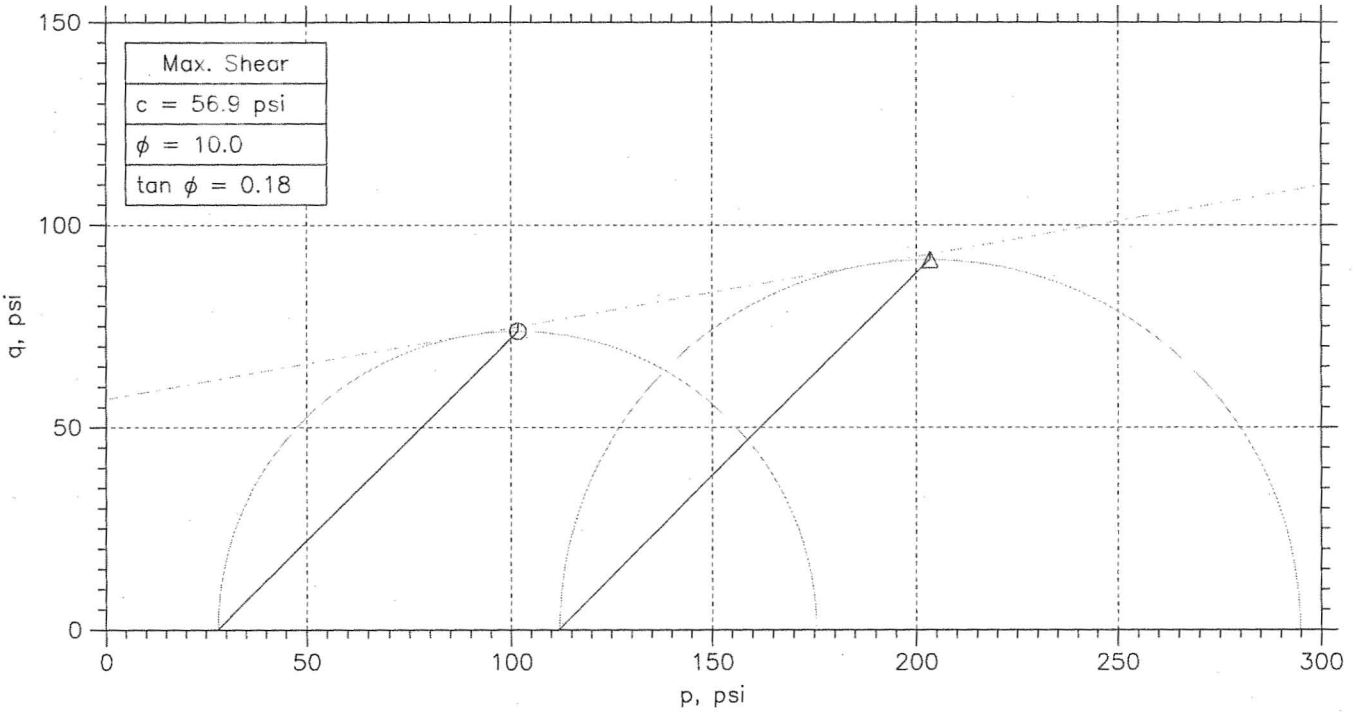
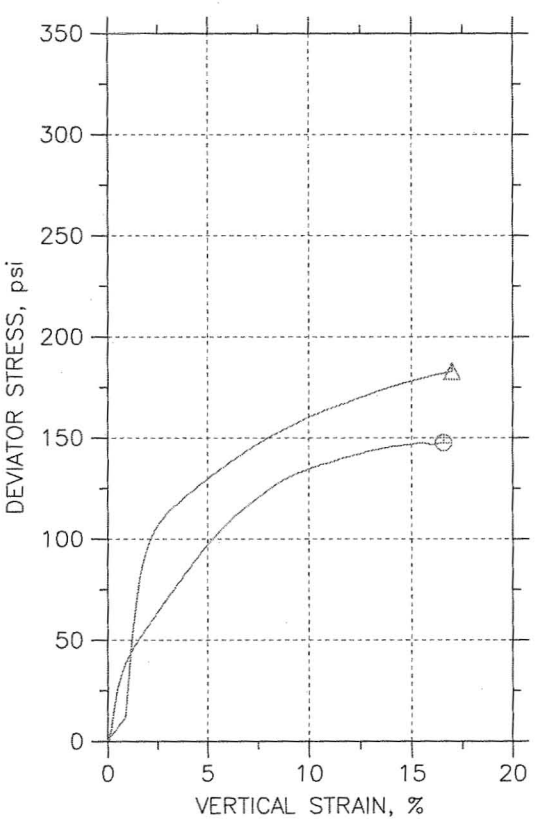
# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | | | | | |
|---|---|---|---|---|---|
| Symbol | | ⦶ | △ | | |
| Sample No. | | UD-3 | UD-3 | | |
| Test No. | | 7612.1 | 7612.3 | | |
| Depth | | 38.5 ft | 38.5 ft | | |
| Initial | Diameter, in | 2.82 | 2.822 | | |
| | Height, in | 5.606 | 5.607 | | |
| | Water Content, % | 21.1 | 17.6 | | |
| | Dry Density, pcf | 96.69 | 94.74 | | |
| | Saturation, % | 78.6 | 62.6 | | |
| | Void Ratio | 0.711 | 0.746 | | |
| Before Shear | Water Content, % | 23.9 | 25.1 | | |
| | Dry Density, pcf | 101.2 | 99.29 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.634 | 0.666 | | |
| | Back Press., psi | 40.01 | 69.99 | | |
| Ver. Eff. Cons. Stress, psi | | 27.98 | 112. | | |
| Shear Strength, psi | | 73.76 | 91.42 | | |
| Strain at Failure, % | | 16.6 | 17 | | |
| Strain Rate, %/min | | 0.1 | 0.1 | | |
| B-Value | | 1.11 | 0.92 | | |
| Estimated Specific Gravity | | 2.65 | 2.65 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

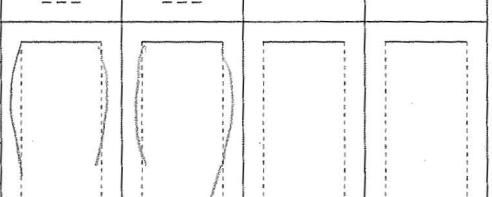
Project: Vogtle COL

Location: B-4031

Project No.: 6141060286

Boring No.: B-4031

Sample Type: Undisturbed



Description: SAND, silty (SM) (Visual)

Remarks:

Phase calculations based on start and end of test.

* Saturation is set to 100% for phase calculations.



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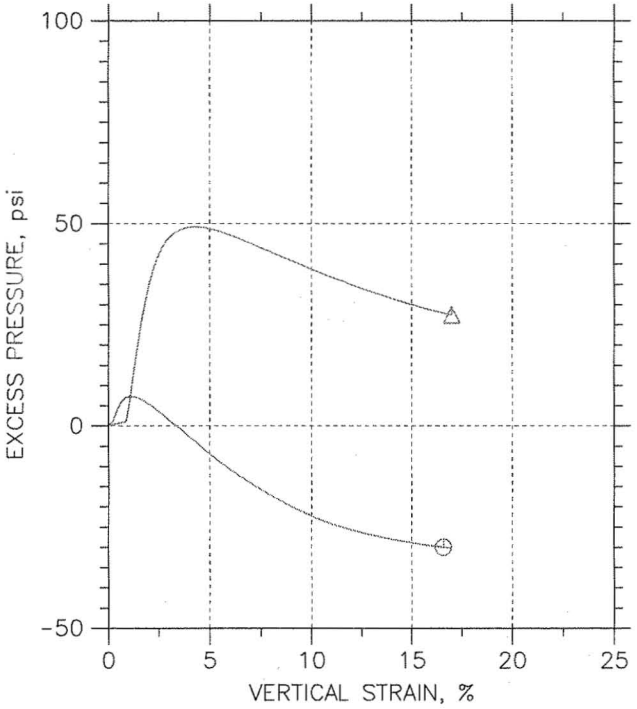
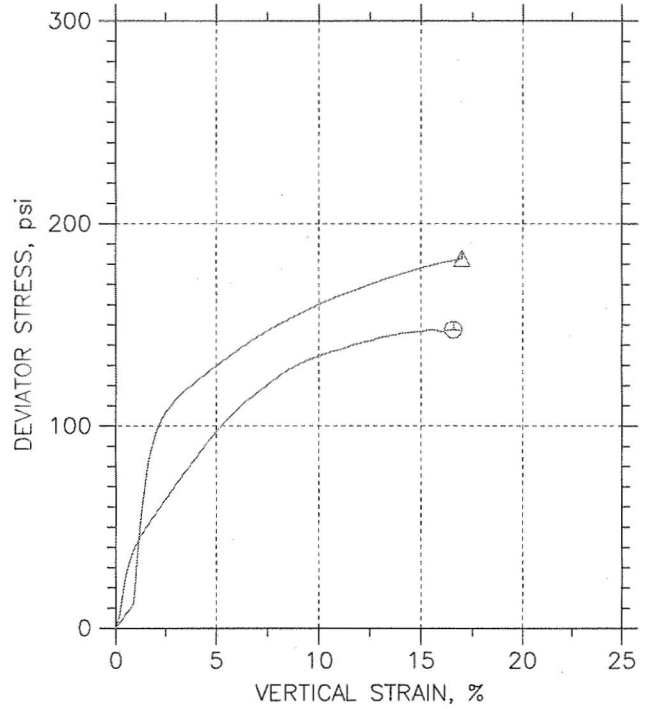
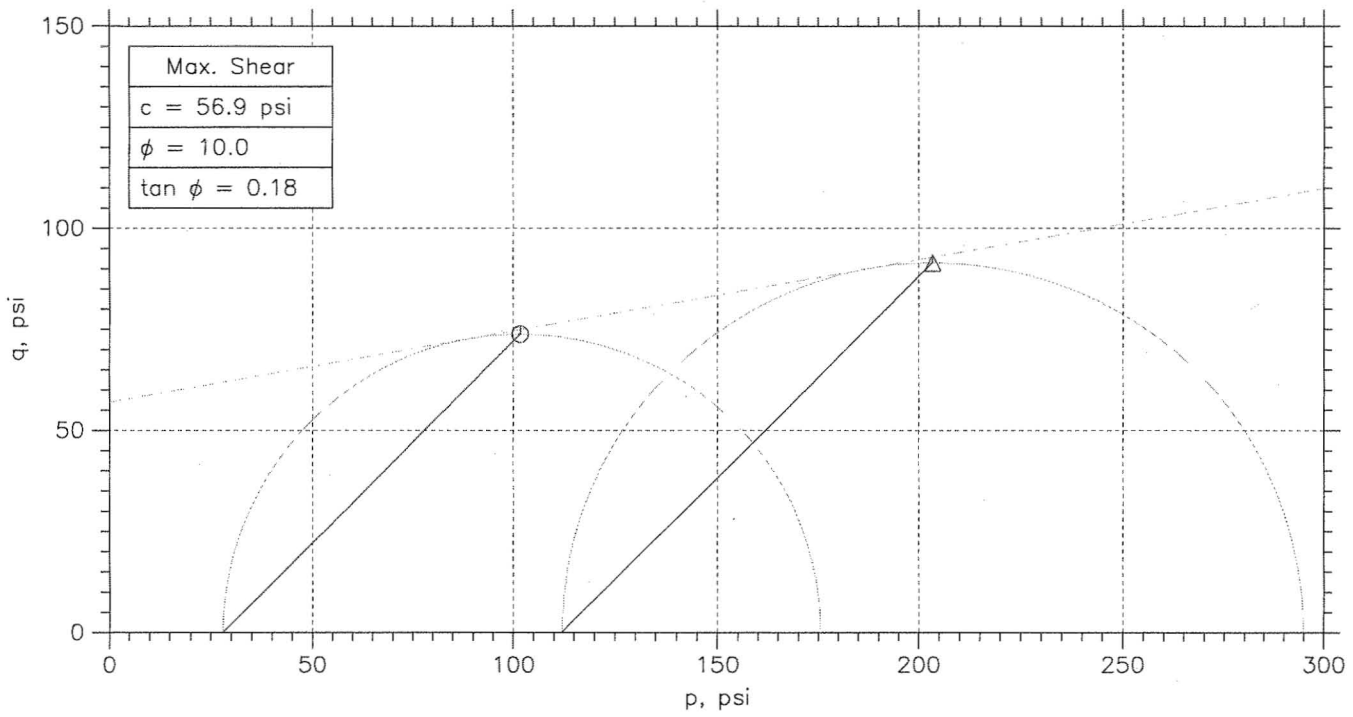
# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⦶ | UD-3 | 7612.1 | 38.5 ft | HJ | 7/13/07 | JW | JW 7/31/07 | 7612.1_2583a.dat |
| △ | UD-3 | 7612.3 | 38.5 ft | HJ | 7/13/07 | JW | | 7612.3_2582a.dat |
| | | | | | | | | |
| | | | | | | | | |

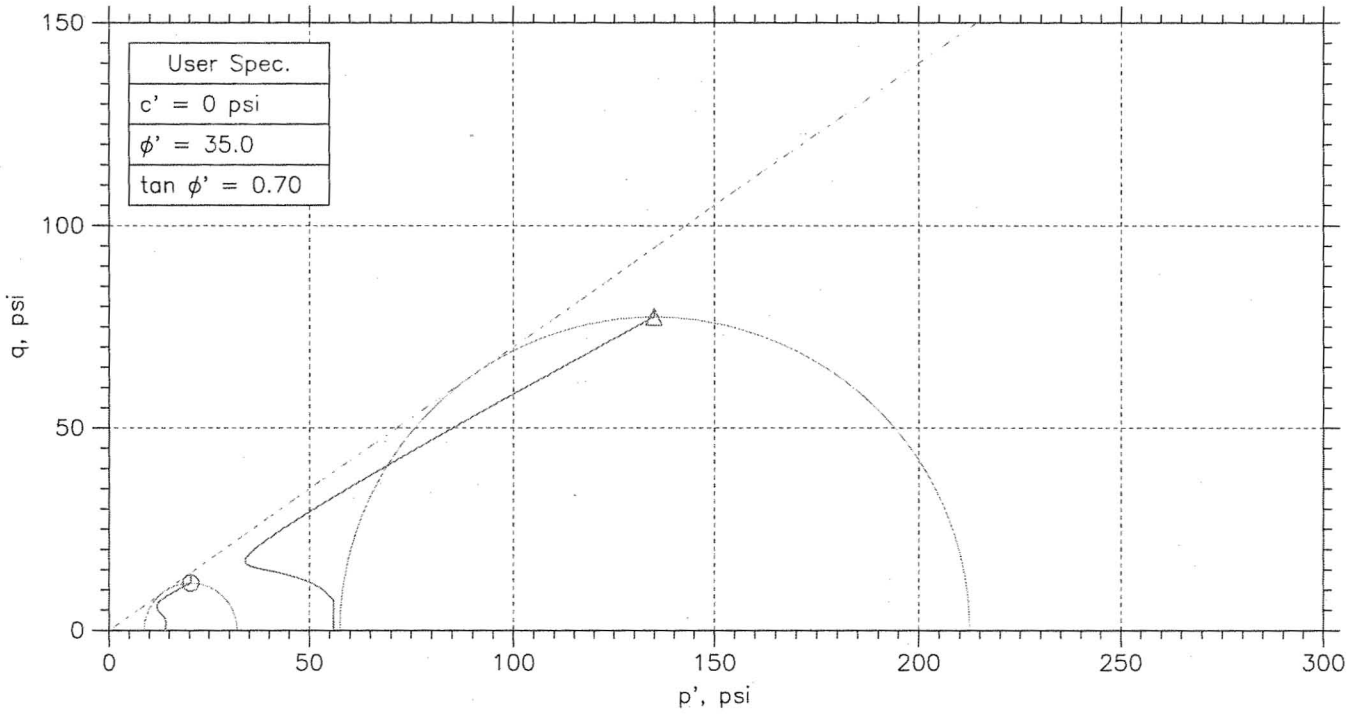
MACTEC

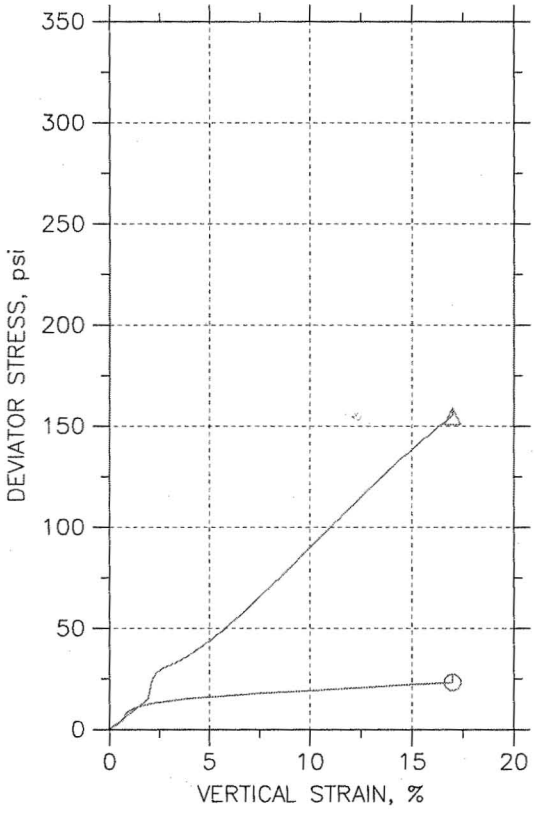
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4031 | Project No.: 6141060286 |
| Boring No.: B-4031 | Sample Type: Undisturbed | |
| Description: SAND, silty (SM) (Visual) | | |
| Remarks: | | |



Mon, 30-JUL-2007 17:58:46

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | | | | | |
|---|---|---|---|---|---|
| Symbol | | ⦶ | △ | | |
| Sample No. | | UD-2 | UD-2 | | |
| Test No. | | 7614.1 | 7614.3 | | |
| Depth | | 33.5 ft | 33.5 ft | | |
| Initial | Diameter, in | 2.867 | 2.878 | | |
| | Height, in | 5.982 | 5.982 | | |
| | Water Content, % | 27.3 | 11.6 | | |
| | Dry Density, pcf | 96.29 | 108.1 | | |
| | Saturation, % | 100.9 | 57.9 | | |
| | Void Ratio | 0.718 | 0.53 | | |
| Before Shear | Water Content, % | 22.7 | 17.3 | | |
| | Dry Density, pcf | 103.4 | 113.4 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.6 | 0.459 | | |
| | Back Press., psi | 67.99 | 77.99 | | |
| Ver. Eff. Cons. Stress, psi | | 14. | 56.01 | | |
| Shear Strength, psi | | 11.65 | 77.42 | | |
| Strain at Failure, % | | 17 | 17 | | |
| Strain Rate, %/min | | 0.05 | 0.05 | | |
| B-Value | | 0.98 | 0.98 | | |
| Estimated Specific Gravity | | 2.65 | 2.65 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

Project: Vogtle COL

Location: B-4032

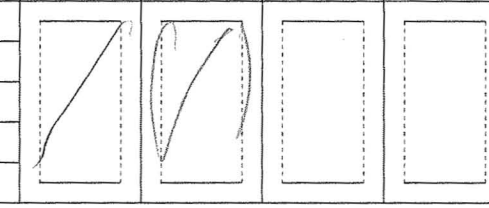
Project No.: 6141060286

Boring No.: B-4032

Sample Type: Undisturbed

Description: Sand, silty (SM) (Visual)

Remarks:



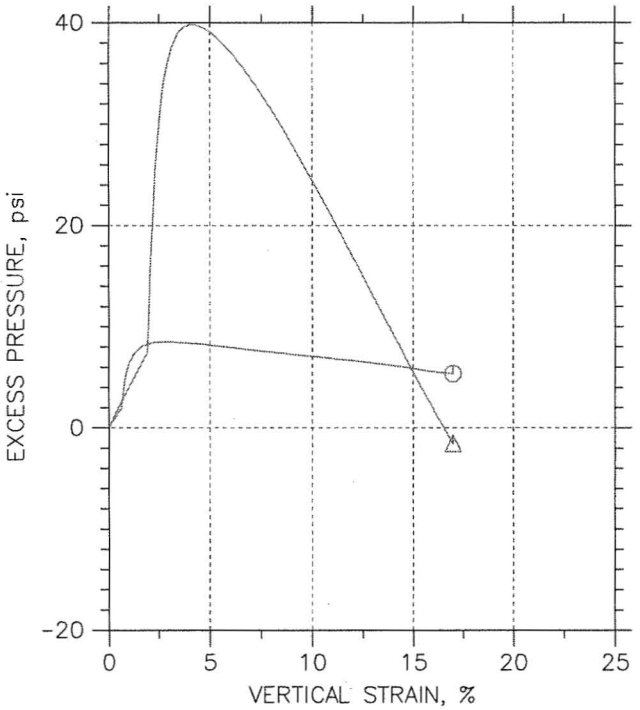
Phase calculations based on start and end of test.

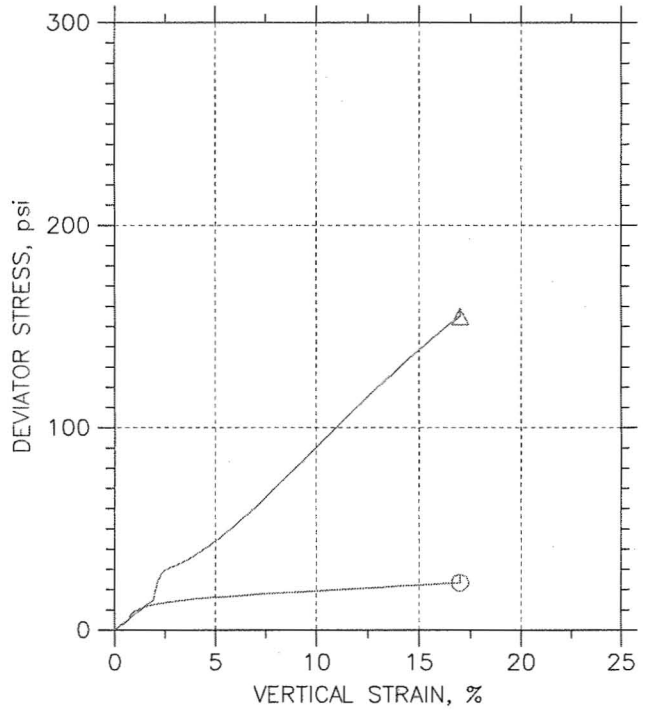
Saturation is set to 100% for phase calculations.

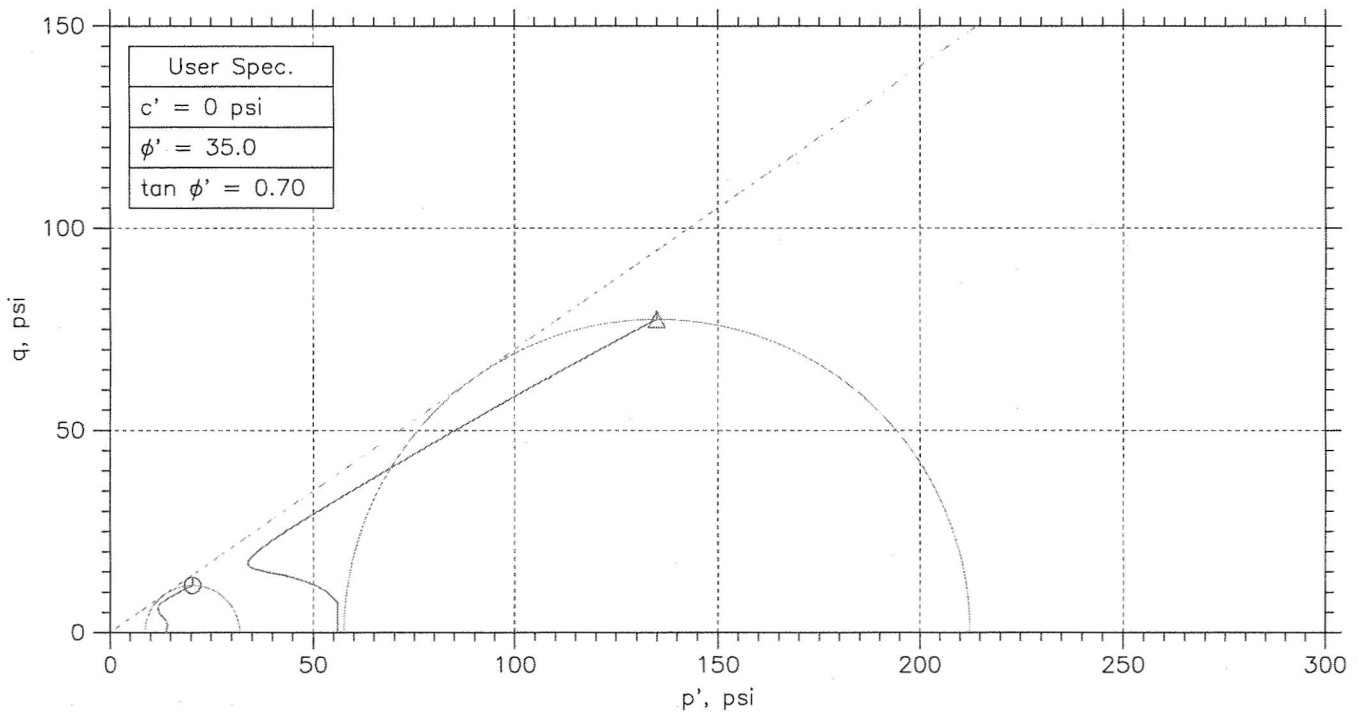


Mon, 30-JUL-2007 18:02:09

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⏲ | UD-2 | 7614.1 | 33.5 ft | HJ | 6/21/07 | JW | JW 7/31/07 | 7614.1_2547a.dat |
| △ | UD-2 | 7614.3 | 33.5 ft | HJ | 6/21/07 | JW | | 7614.3_2545a.dat |
| | | | | | | | | |
| | | | | | | | | |

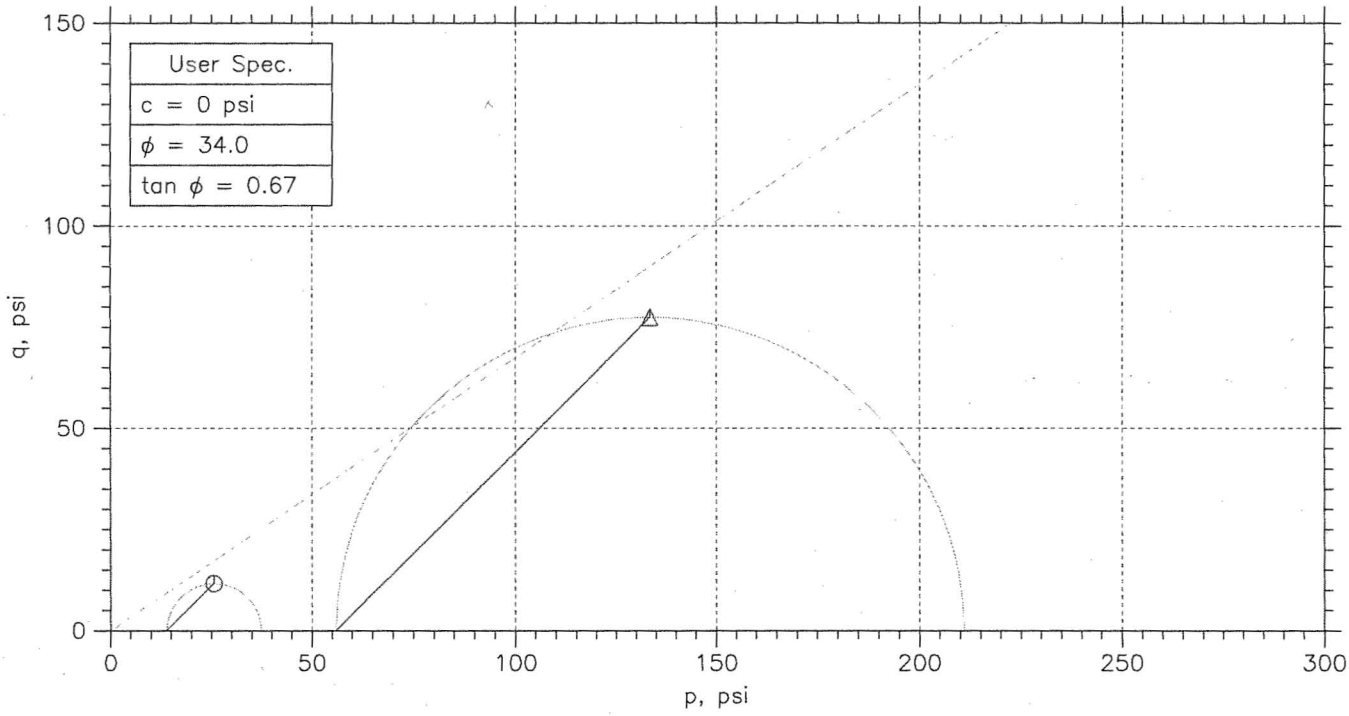
MACTEC

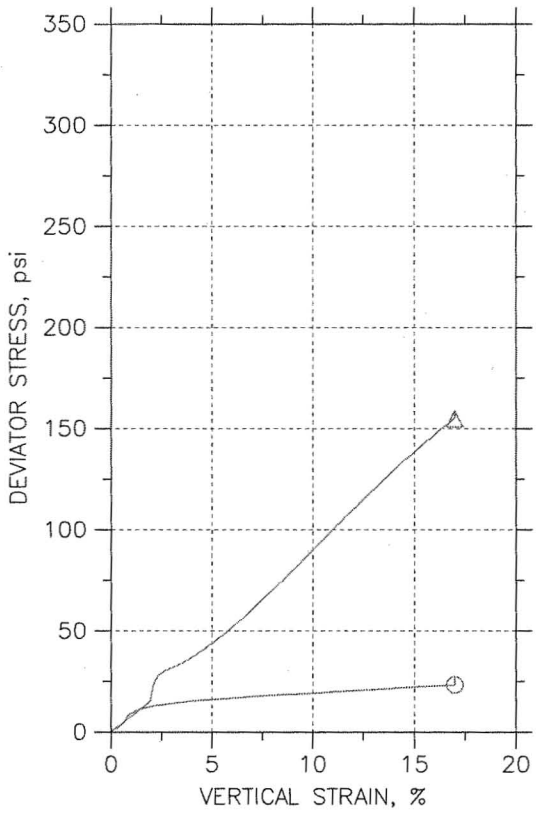
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4032 | Project No.: 6141060286 |
| Boring No.: B-4032 | Sample Type: Undisturbed | |
| Description: Sand, silty (SM) (Visual) | | |
| Remarks: | | |



Mon, 30-JUL-2007 18:02:09

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | | | | | |
|---|---|---|---|---|---|
| Symbol | | ⦶ | △ | | |
| Sample No. | | UD-2 | UD-2 | | |
| Test No. | | 7614.1 | 7614.3 | | |
| Depth | | 33.5 ft | 33.5 ft | | |
| Initial | Diameter, in | 2.867 | 2.878 | | |
| | Height, in | 5.982 | 5.982 | | |
| | Water Content, % | 27.3 | 11.6 | | |
| | Dry Density, pcf | 96.29 | 108.1 | | |
| | Saturation, % | 100.9 | 57.9 | | |
| | Void Ratio | 0.718 | 0.53 | | |
| Before Shear | Water Content, % | 22.7 | 17.3 | | |
| | Dry Density, pcf | 103.4 | 113.4 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.6 | 0.459 | | |
| | Back Press., psi | 67.99 | 77.99 | | |
| Ver. Eff. Cons. Stress, psi | | 14. | 56.01 | | |
| Shear Strength, psi | | 11.65 | 77.42 | | |
| Strain at Failure, % | | 17 | 17 | | |
| Strain Rate, %/min | | 0.05 | 0.05 | | |
| B-Value | | 0.98 | 0.98 | | |
| Estimated Specific Gravity | | 2.65 | 2.65 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

Project: Vogtle COL

Location: B-4032

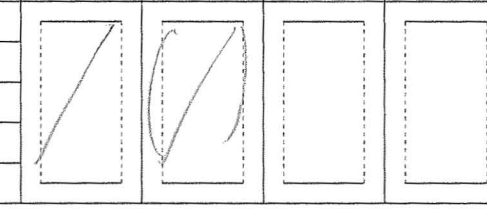
Project No.: 6141060286

Boring No.: B-4032

Sample Type: Undisturbed

Description: Sand, silty (SM) (Visual)

Remarks:



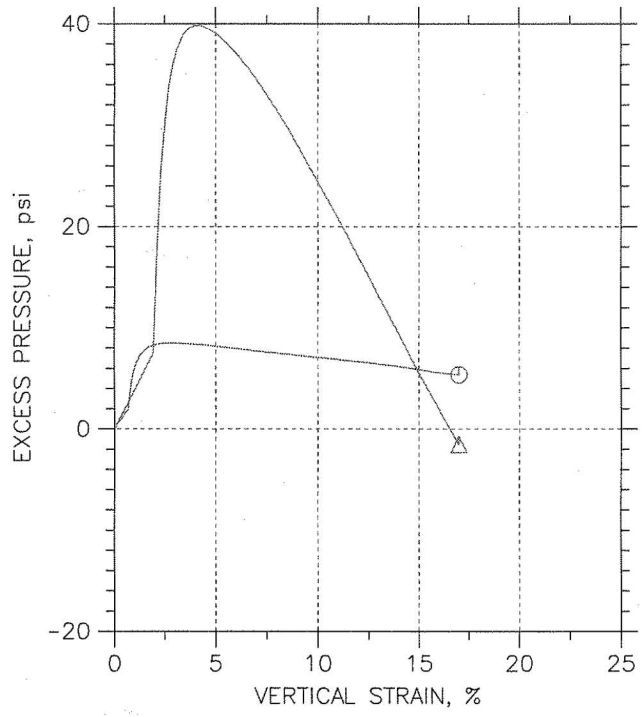
Phase calculations based on start and end of test.

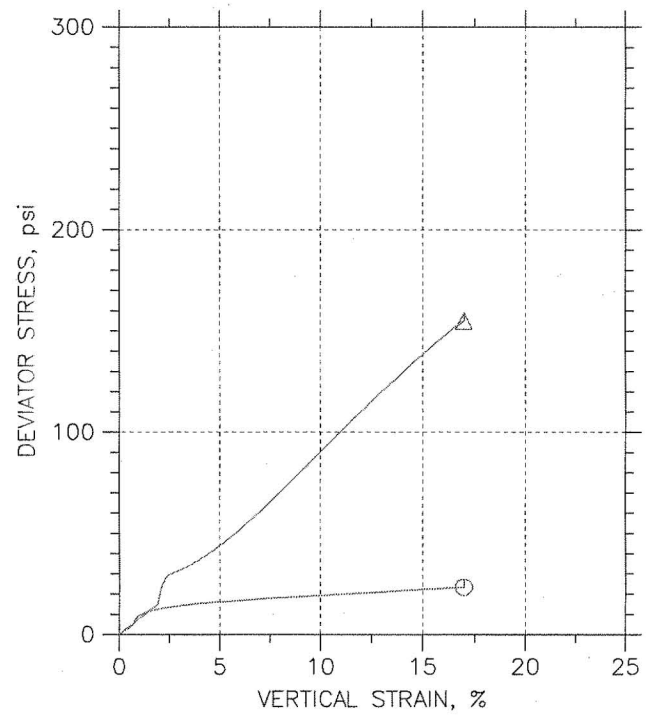
* Saturation is set to 100% for phase calculations.

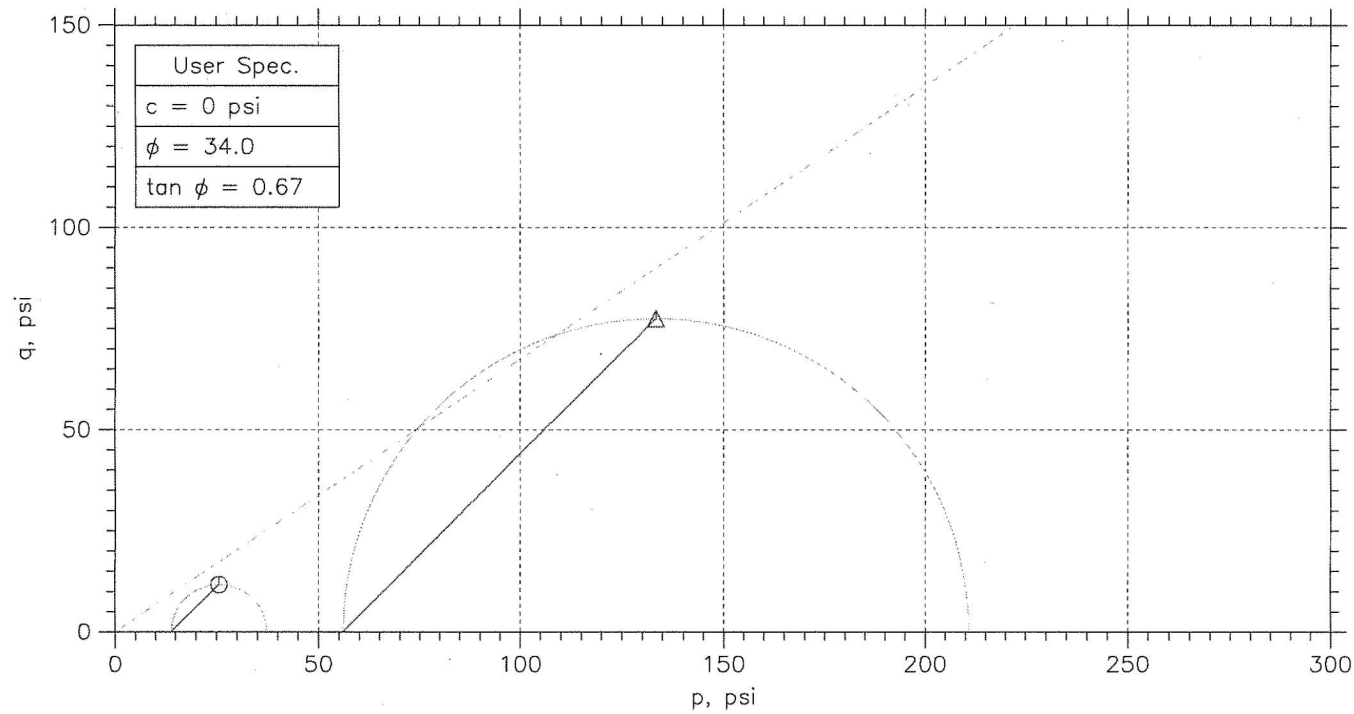


Mon, 30-JUL-2007 18:02:32

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⏲ | UD-2 | 7614.1 | 33.5 ft | HJ | 6/21/07 | JW | JW 7/31/07 | 7614.1_2547a.dat |
| △ | UD-2 | 7614.3 | 33.5 ft | HJ | 6/21/07 | JW | | 7614.3_2545a.dat |
| | | | | | | | | |
| | | | | | | | | |

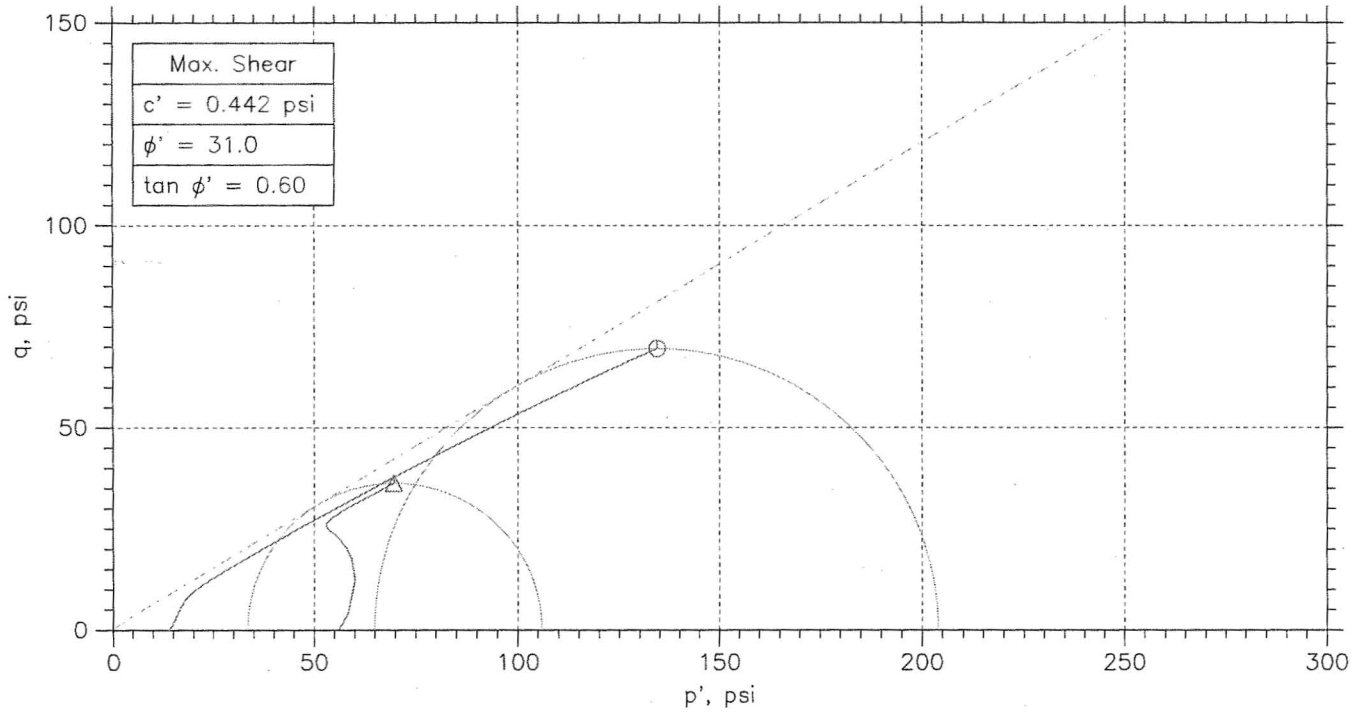
MACTEC

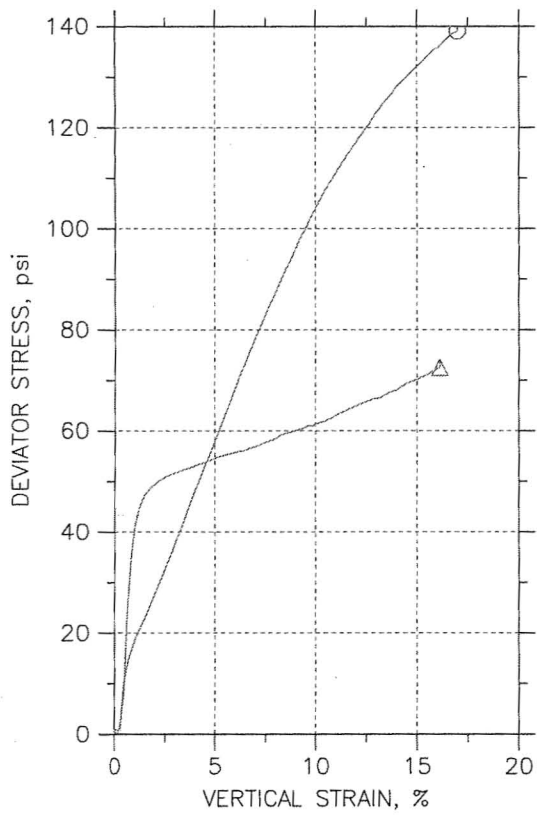
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4032 | Project No.: 6141060286 |
| Boring No.: B-4032 | Sample Type: Undisturbed | |
| Description: Sand, silty (SM) (Visual) | | |
| Remarks: | | |



Mon, 30-JUL-2007 18:02:33

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | | |
|---|---|---|---|---|---|
| Sample No. | | UD-1 | UD-1 | | |
| Test No. | | 7616.1 | 7616.3 | | |
| Depth | | 28.5 ft | 28.5 ft | | |
| Initial | Diameter, in | 2.842 | 2.869 | | |
| | Height, in | 5.977 | 5.566 | | |
| | Water Content, % | 15.7 | 19.4 | | |
| | Dry Density, pcf | 92.23 | 90.22 | | |
| | Saturation, % | 52.3 | 61.6 | | |
| | Void Ratio | 0.794 | 0.834 | | |
| Before Shear | Water Content, % | 25.3 | 28.0 | | |
| | Dry Density, pcf | 98.97 | 94.93 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.672 | 0.743 | | |
| | Back Press., psi | 126. | 140. | | |
| Ver. Eff. Cons. Stress, psi | | 14. | 56. | | |
| Shear Strength, psi | | 69.54 | 36.24 | | |
| Strain at Failure, % | | 17 | 16.1 | | |
| Strain Rate, %/min | | 0.1 | 0.1 | | |
| B-Value | | 0.97 | 0.97 | | |
| Estimated Specific Gravity | | 2.65 | 2.65 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

Project: Votgle COL

Location: B-4033

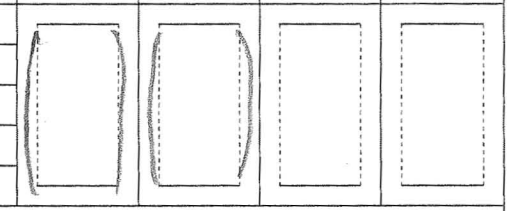
Project No.: 6141060286

Boring No.: B-4033

Sample Type: Undisturbed

Description: SAND, with silty (SP-SM) (Visual)

Remarks:



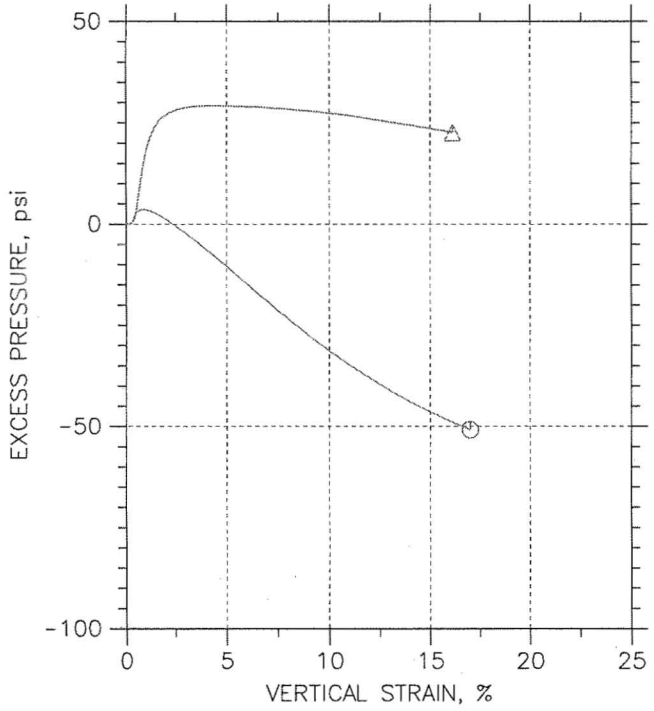
Phase calculations based on start and end of test.

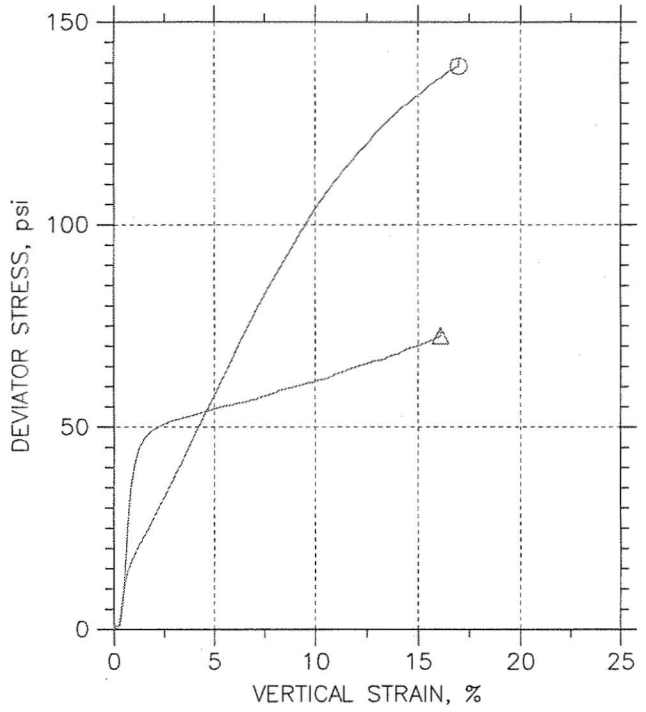
* Saturation is set to 100% for phase calculations.

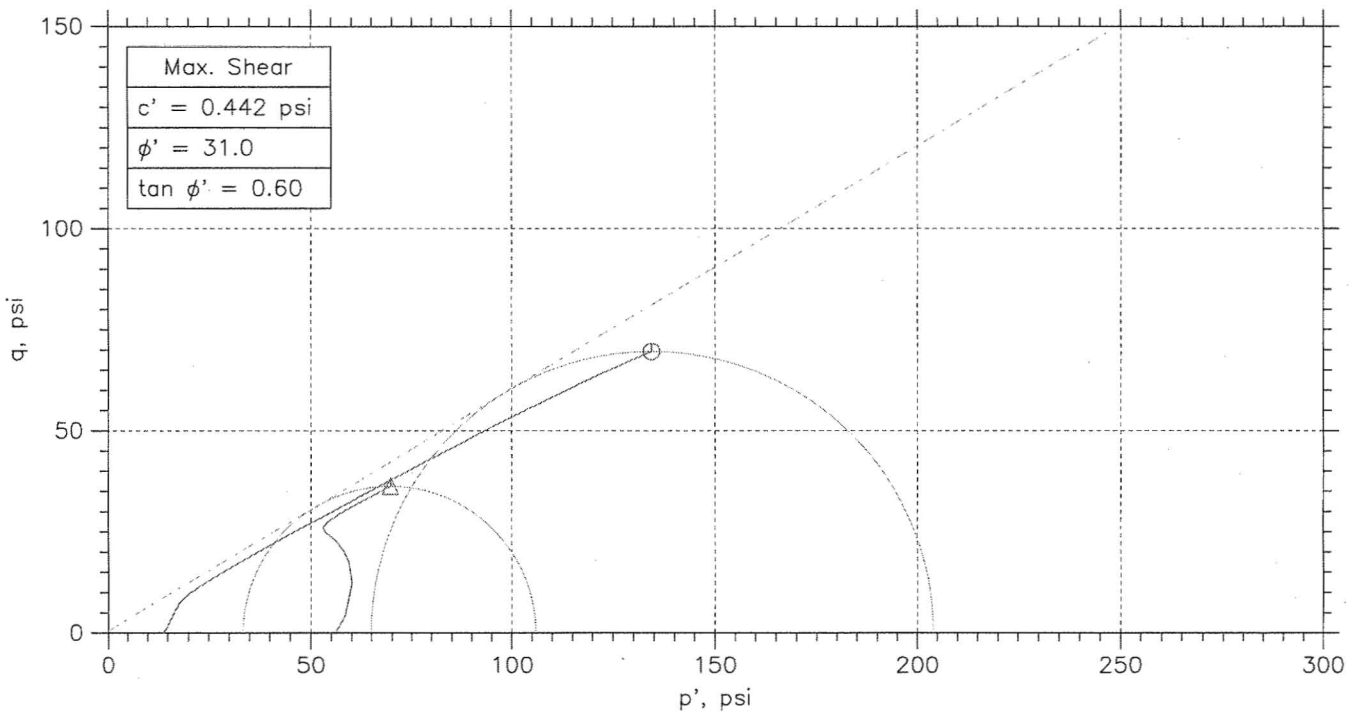


Tue, 31-JUL-2007 10:27:25

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⦶ | UD-1 | 7616.1 | 28.5 ft | HJ | 7/26/07 | JW | JW 7/31/07 | 7616.1_2583.dat |
| △ | UD-1 | 7616.3 | 28.5 ft | HJ | 7/27/07 | JW | | 7616.3_2582.dat |
| | | | | | | | | |
| | | | | | | | | |

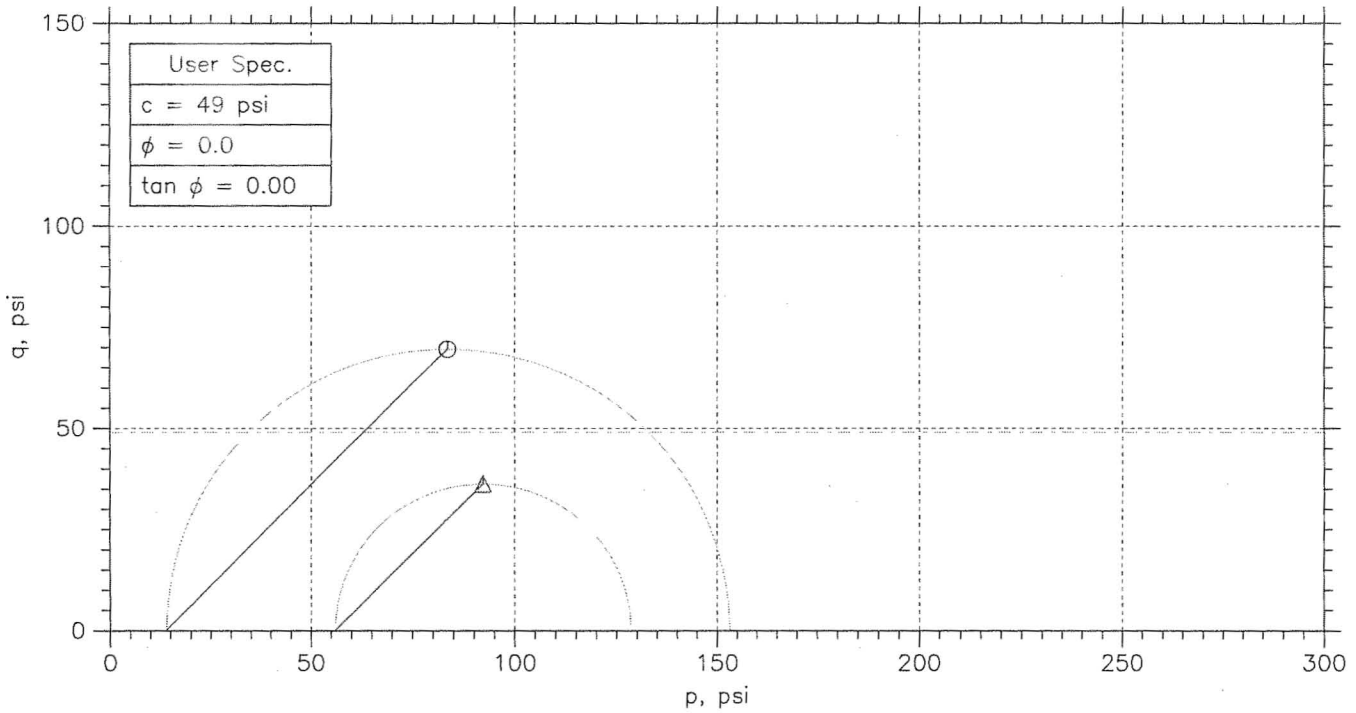
MACTEC

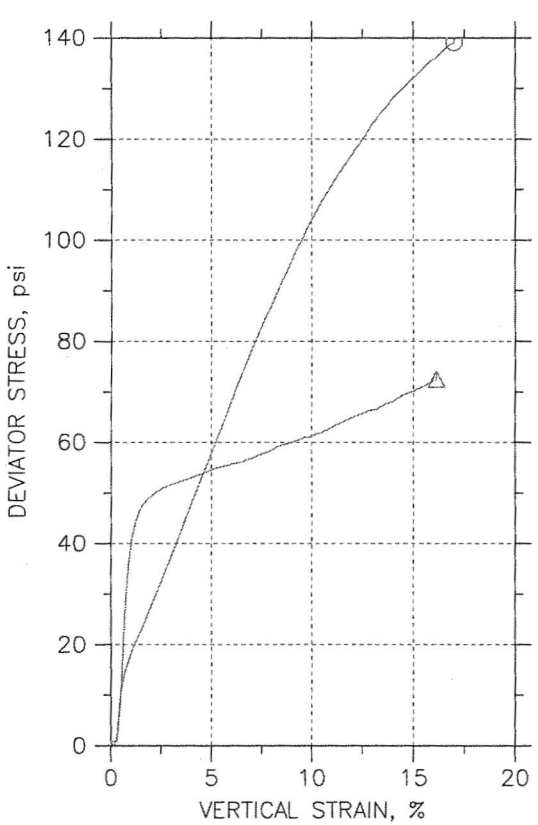
| | | |
|---|---|---|
| Project: Votgle COL | Location: B-4033 | Project No.: 6141060286 |
| Boring No.: B-4033 | Sample Type: Undisturbed | |
| Description: SAND, with silty (SP-SM) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 10:27:25

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | | |
|---|---|---|---|---|---|
| Sample No. | | UD-1 | UD-1 | | |
| Test No. | | 7616.1 | 7616.3 | | |
| Depth | | 28.5 ft | 28.5 ft | | |
| Initial | Diameter, in | 2.842 | 2.869 | | |
| | Height, in | 5.977 | 5.566 | | |
| | Water Content, % | 15.7 | 19.4 | | |
| | Dry Density, pcf | 92.23 | 90.22 | | |
| | Saturation, % | 52.3 | 61.6 | | |
| | Void Ratio | 0.794 | 0.834 | | |
| Before Shear | Water Content, % | 25.3 | 28.0 | | |
| | Dry Density, pcf | 98.97 | 94.93 | | |
| | Saturation*, % | 100.0 | 100.0 | | |
| | Void Ratio | 0.672 | 0.743 | | |
| | Back Press., psi | 126. | 140. | | |
| Ver. Eff. Cons. Stress, psi | | 14. | 56. | | |
| Shear Strength, psi | | 69.54 | 36.24 | | |
| Strain at Failure, % | | 17 | 16.1 | | |
| Strain Rate, %/min | | 0.1 | 0.1 | | |
| B-Value | | 0.97 | 0.97 | | |
| Estimated Specific Gravity | | 2.65 | 2.65 | | |
| Liquid Limit | | --- | --- | | |
| Plastic Limit | | --- | --- | | |

MACTEC

Project: Votgle COL

Location: B-4033

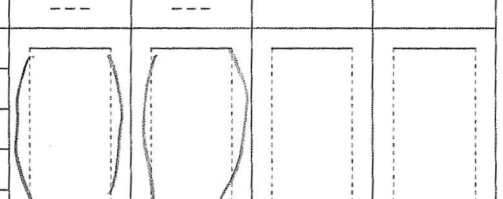
Project No.: 6141060286

Boring No.: B-4033

Sample Type: Undisturbed

Description: SAND, with silty (SP-SM) (Visual)

Remarks:

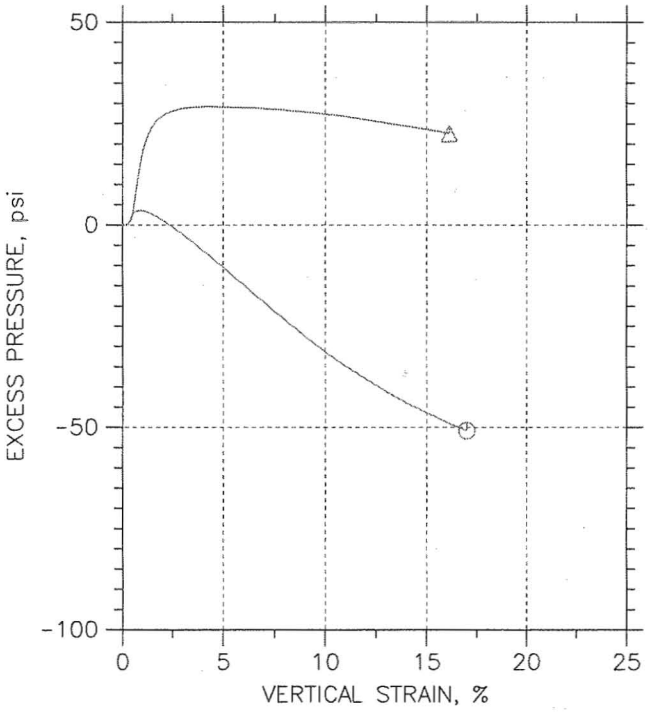


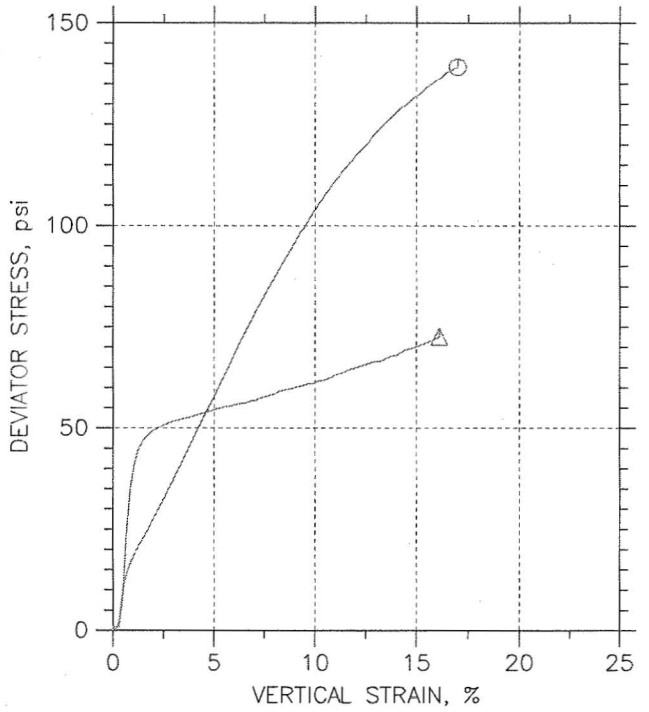
Phase calculations based on start and end of test.

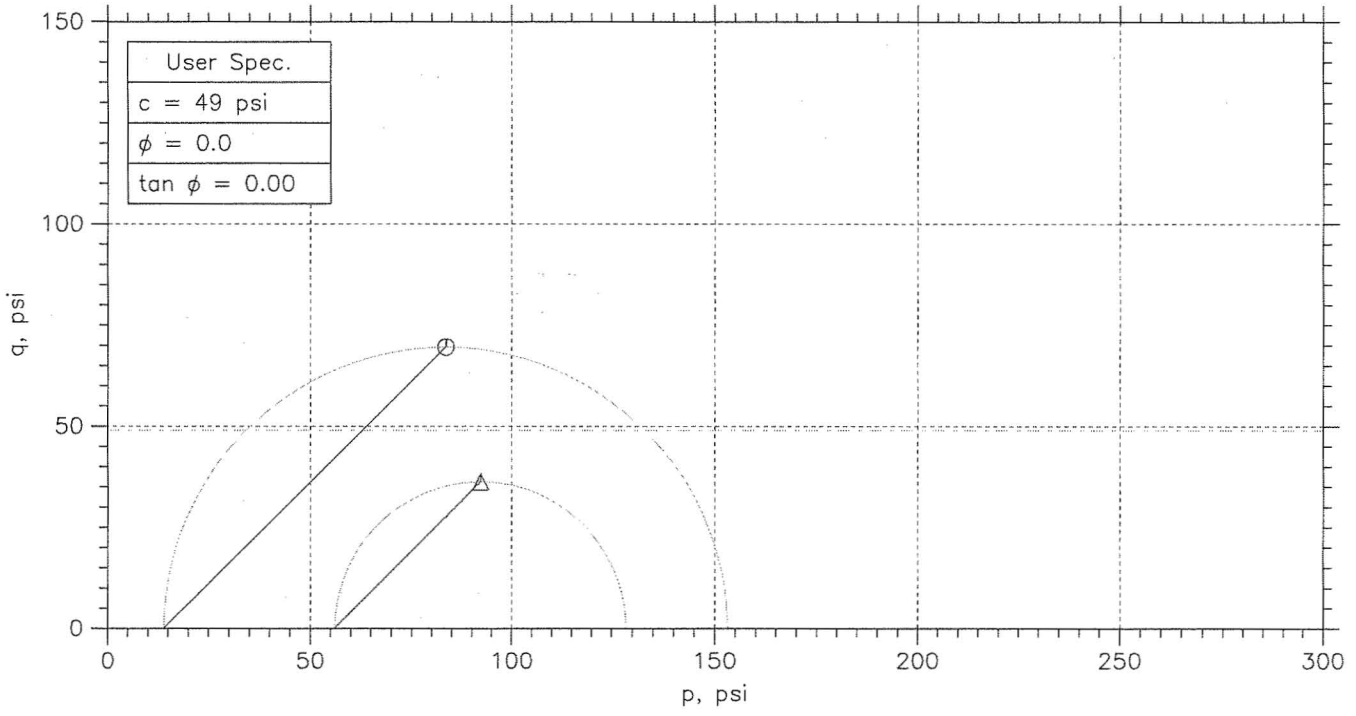
* Saturation is set to 100% for phase calculations.

Tue, 31-JUL-2007 10:28:26

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⦶ | UD-1 | 7616.1 | 28.5 ft | HJ | 7/26/07 | JW | SW 7/31/07 | 7616.1_2583.dat |
| △ | UD-1 | 7616.3 | 28.5 ft | HJ | 7/27/07 | JW | | 7616.3_2582.dat |
| | | | | | | | | |
| | | | | | | | | |

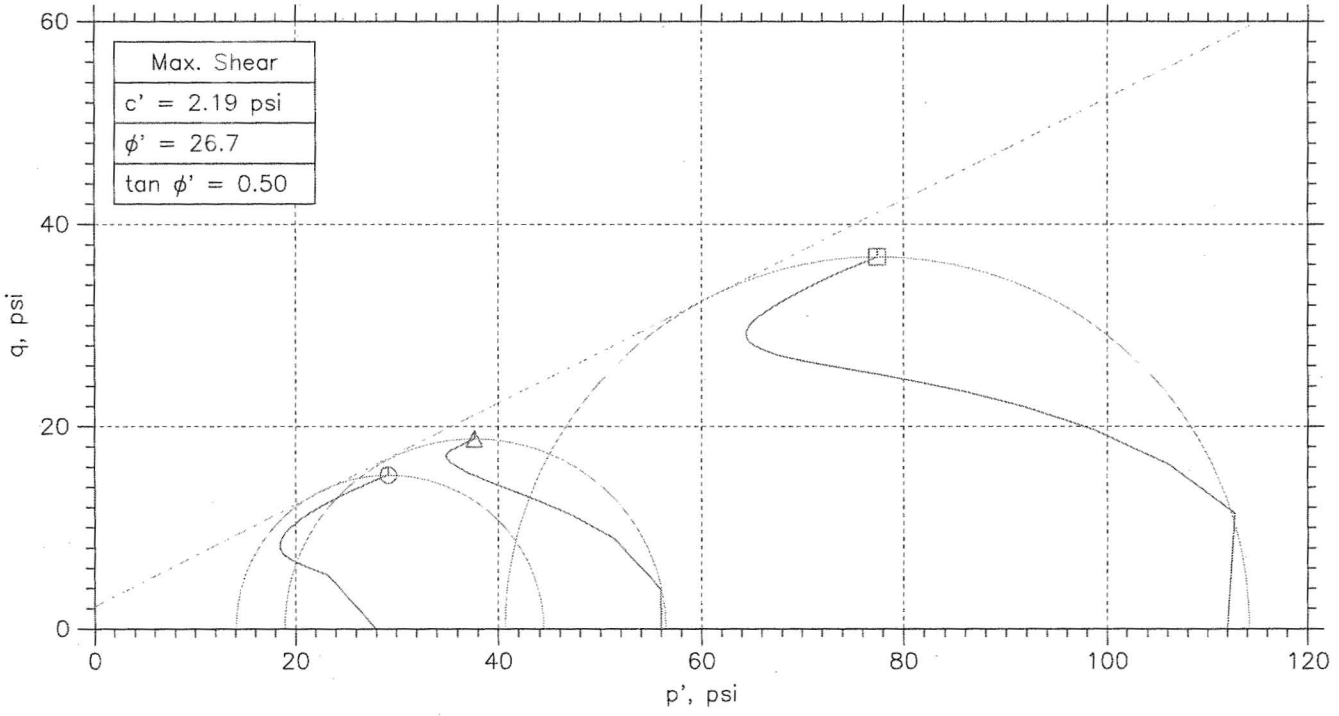
MACTEC

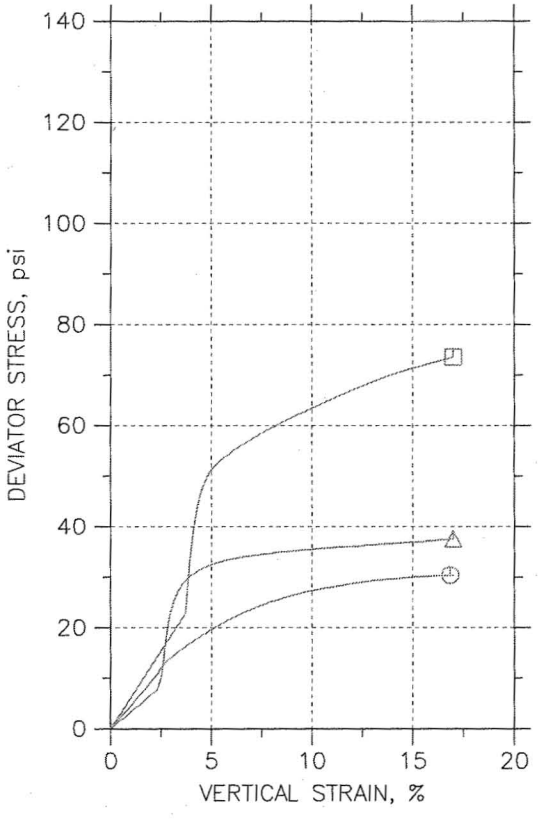
| | | |
|---|---|---|
| Project: Votgle COL | Location: B-4033 | Project No.: 6141060286 |
| Boring No.: B-4033 | Sample Type: Undisturbed | |
| Description: SAND, with silty (SP-SM) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 10:28:26

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

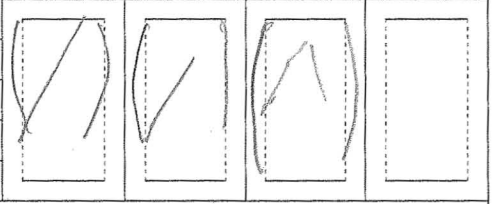



| Symbol | | ⦶ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-3 | UD-3 | UD-3 | |
| Test No. | | 7618.1 | 7618.2 | 7618.3 | |
| Depth | | 38.5 ft | 38.5 ft | 38.5 ft | |
| Initial | Diameter, in | 2.853 | 2.824 | 2.84 | |
| | Height, in | 6.004 | 6.003 | 6.004 | |
| | Water Content, % | 26.8 | 26.0 | 22.4 | |
| | Dry Density, pcf | 82.06 | 81.53 | 87.99 | |
| | Saturation, % | 69.9 | 67.0 | 67.5 | |
| | Void Ratio | 1.02 | 1.03 | 0.88 | |
| Before Shear | Water Content, % | 30.0 | 29.3 | 21.5 | |
| | Dry Density, pcf | 92.15 | 93.14 | 105.4 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.795 | 0.776 | 0.57 | |
| | Back Press., psi | 120. | 102. | 79.99 | |
| Ver. Eff. Cons. Stress, psi | | 27.99 | 56. | 112. | |
| Shear Strength, psi | | 15.18 | 18.77 | 36.76 | |
| Strain at Failure, % | | 16.9 | 17 | 17 | |
| Strain Rate, %/min | | 0.1 | 0.1 | 0.1 | |
| B-Value | | 0.99 | 0.98 | 0.95 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

Project: Vogtle COL
Location: B-4033
Project No.: 6141060286
Boring No.: B-4033
Sample Type: Undisturbed



Description: SAND, with silty clay (SP-SC) (Visual)

Remarks:

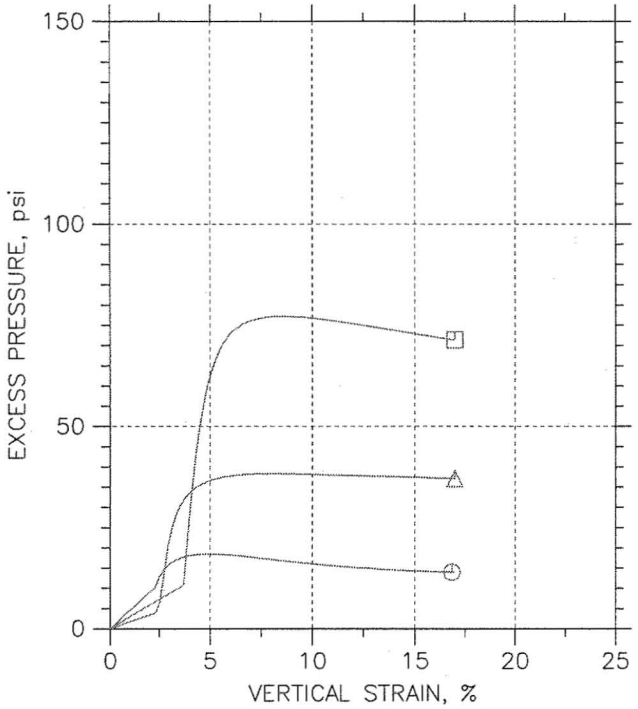
Phase calculations based on start and end of test.

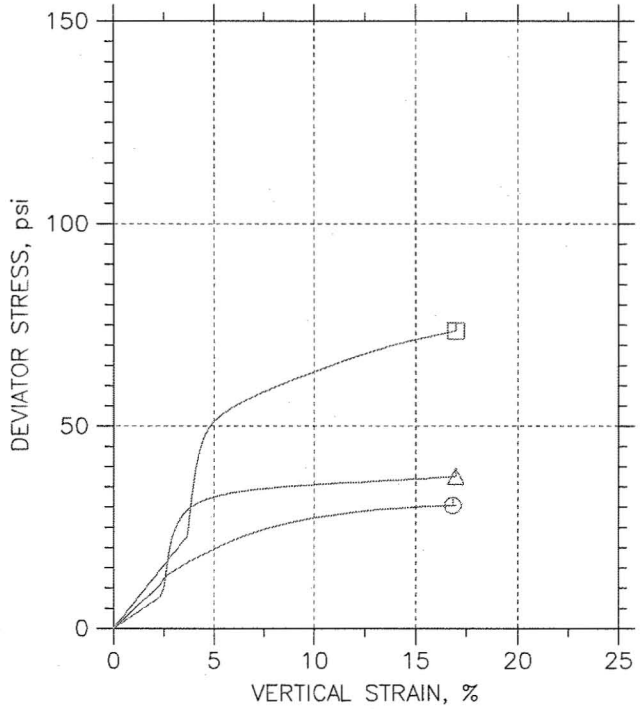
Saturation is set to 100% for phase calculations.

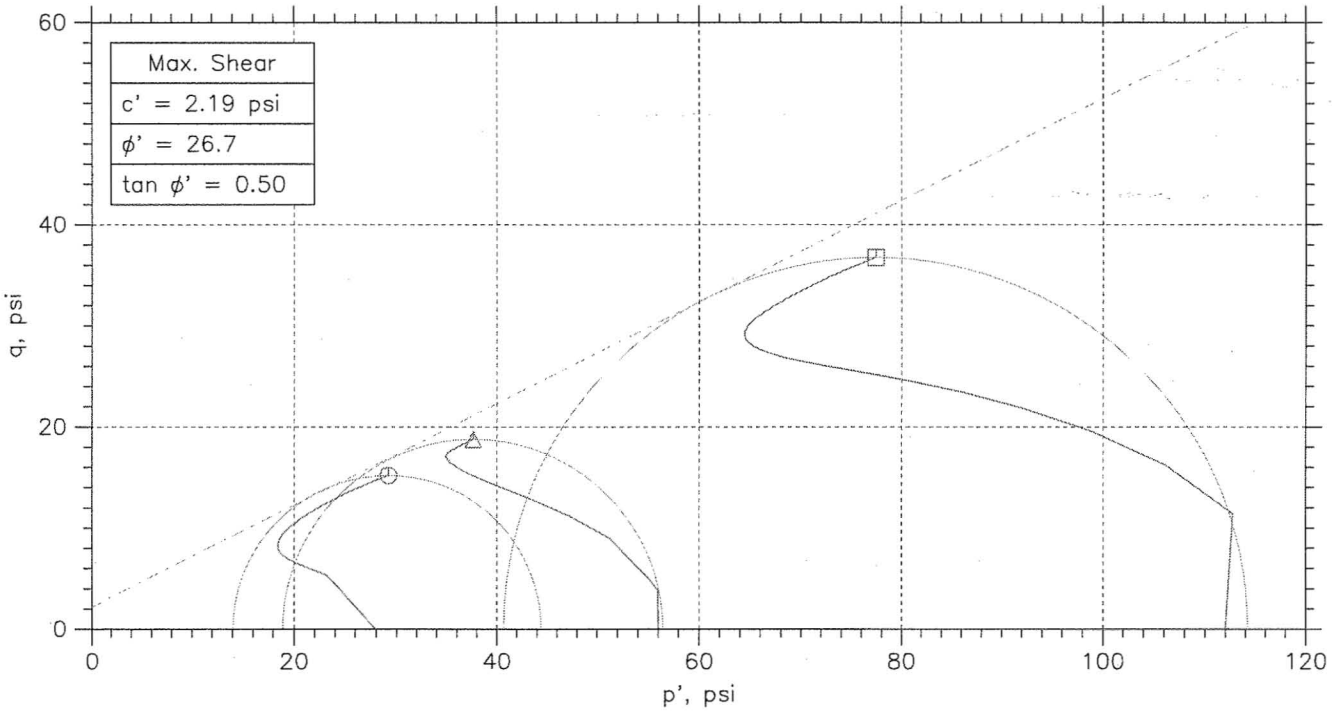


Tue 31-JUL-2007 10:54:36

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⦶ | UD-3 | 7618.1 | 38.5 ft | HJ | 7/16/07 | JW | | 7618.1_2583a.dat |
| △ | UD-3 | 7618.2 | 38.5 ft | HJ | 7/16/07 | JW | JW 7/31/07 | 7618.2_2581a.dat |
| ⊡ | UD-3 | 7618.3 | 38.5 ft | HJ | 7/16/07 | JW | | 7618.3_2582a.dat |
| | | | | | | | | |

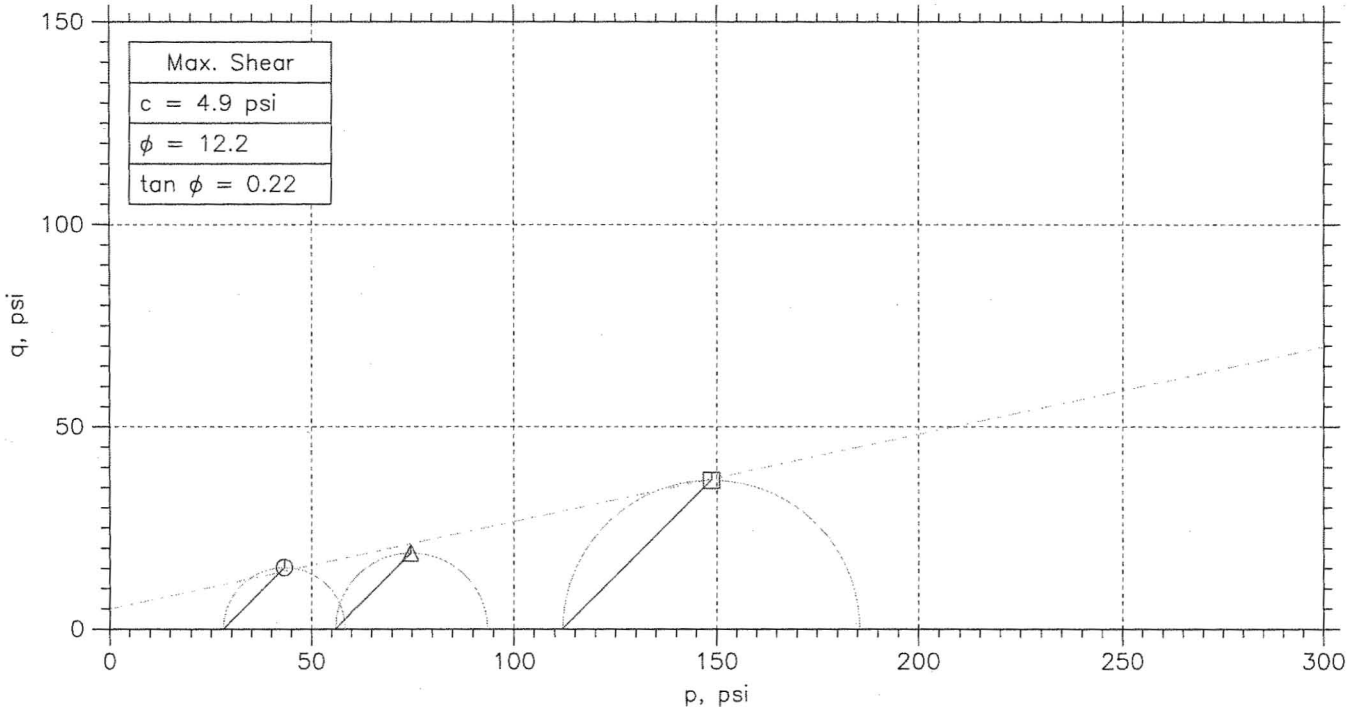
MACTEC

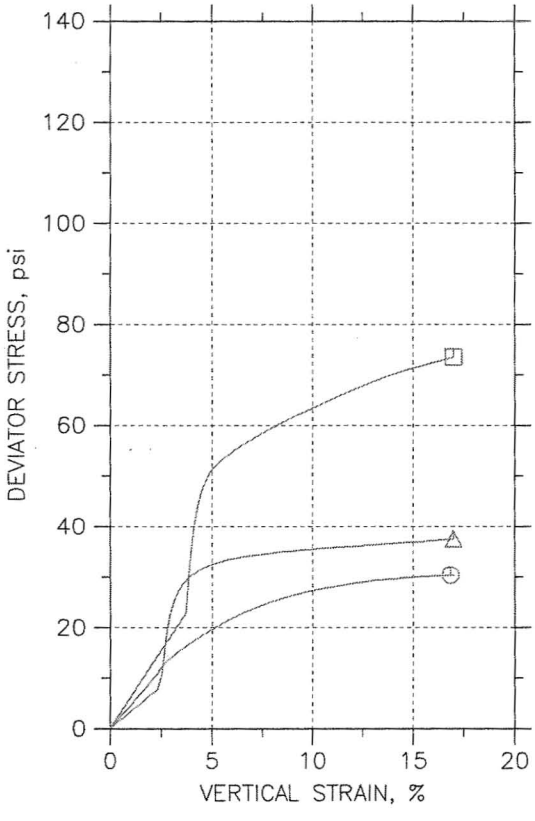
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4033 | Project No.: 6141060286 |
| Boring No.: B-4033 | Sample Type: Undisturbed | |
| Description: SAND, with silty clay (SP-SC) (Visual) | | |
| Remarks: | | |



Tue 31-JUL-2007 10:54:36

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | | | | | |
|---|---|---|---|---|---|
| Symbol | | ⊙ | △ | ⊡ | |
| Sample No. | | UD-3 | UD-3 | UD-3 | |
| Test No. | | 7618.1 | 7618.2 | 7618.3 | |
| Depth | | 38.5 ft | 38.5 ft | 38.5 ft | |
| Initial | Diameter, in | 2.853 | 2.824 | 2.84 | |
| | Height, in | 6.004 | 6.003 | 6.004 | |
| | Water Content, % | 26.8 | 26.0 | 22.4 | |
| | Dry Density, pcf | 82.06 | 81.53 | 87.99 | |
| | Saturation, % | 69.9 | 67.0 | 67.5 | |
| | Void Ratio | 1.02 | 1.03 | 0.88 | |
| Before Shear | Water Content, % | 30.0 | 29.3 | 21.5 | |
| | Dry Density, pcf | 92.15 | 93.14 | 105.4 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.795 | 0.776 | 0.57 | |
| | Back Press., psi | 120. | 102. | 79.99 | |
| Ver. Eff. Cons. Stress, psi | | 27.99 | 56. | 112. | |
| Shear Strength, psi | | 15.18 | 18.77 | 36.76 | |
| Strain at Failure, % | | 16.9 | 17 | 17 | |
| Strain Rate, %/min | | 0.1 | 0.1 | 0.1 | |
| B-Value | | 0.99 | 0.98 | 0.95 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

Project: Vogtle COL

Location: B-4033

Project No.: 6141060286

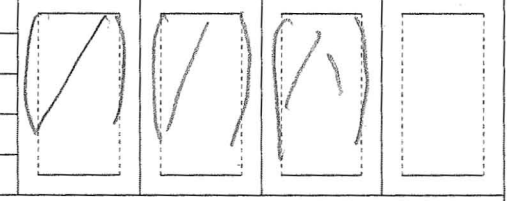
Boring No.: B-4033

Sample Type: Undisturbed

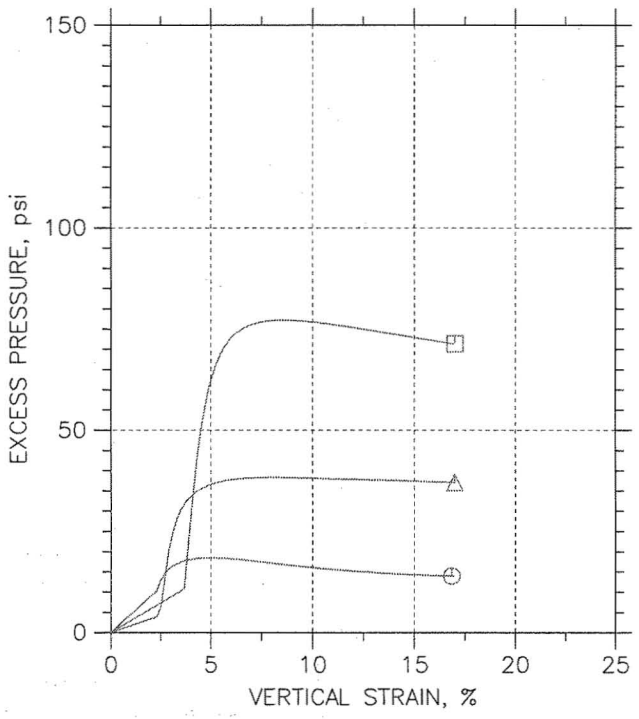
Description: SAND, with silty clay (SP-SC) (Visual)

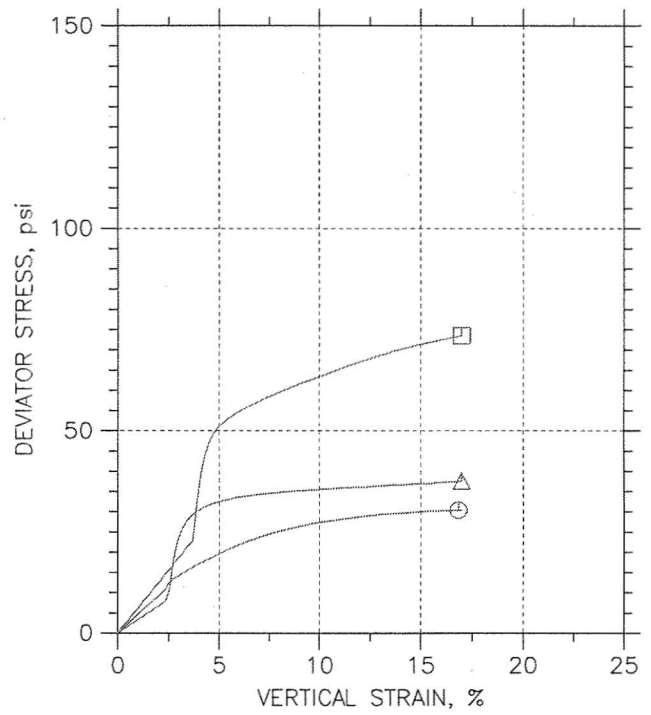
Remarks:

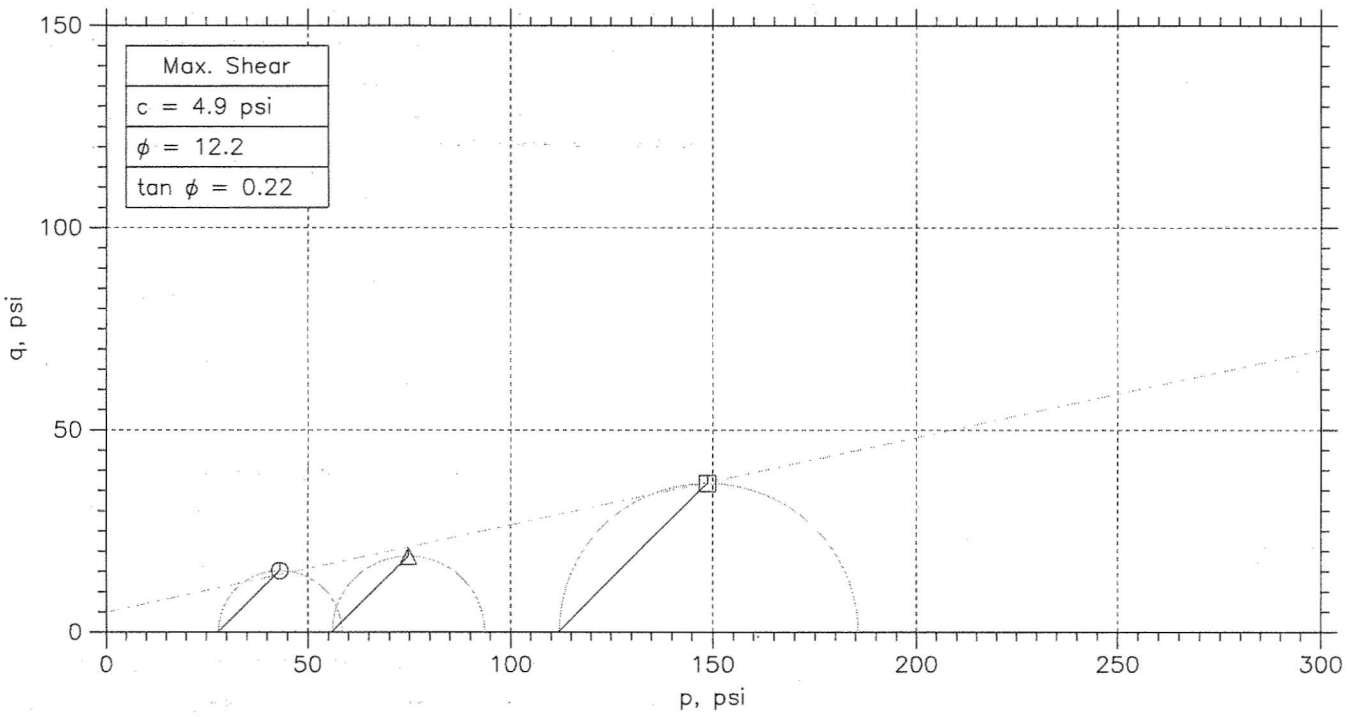
Phase calculations based on start and end of test.



# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-3 | 7618.1 | 38.5 ft | HJ | 7/16/07 | JW | | 7618.1_2583a.dat |
| △ | UD-3 | 7618.2 | 38.5 ft | HJ | 7/16/07 | JW | JW 7/31/07 | 7618.2_2581a.dat |
| ⊡ | UD-3 | 7618.3 | 38.5 ft | HJ | 7/16/07 | JW | | 7618.3_2582a.dat |
| | | | | | | | | |

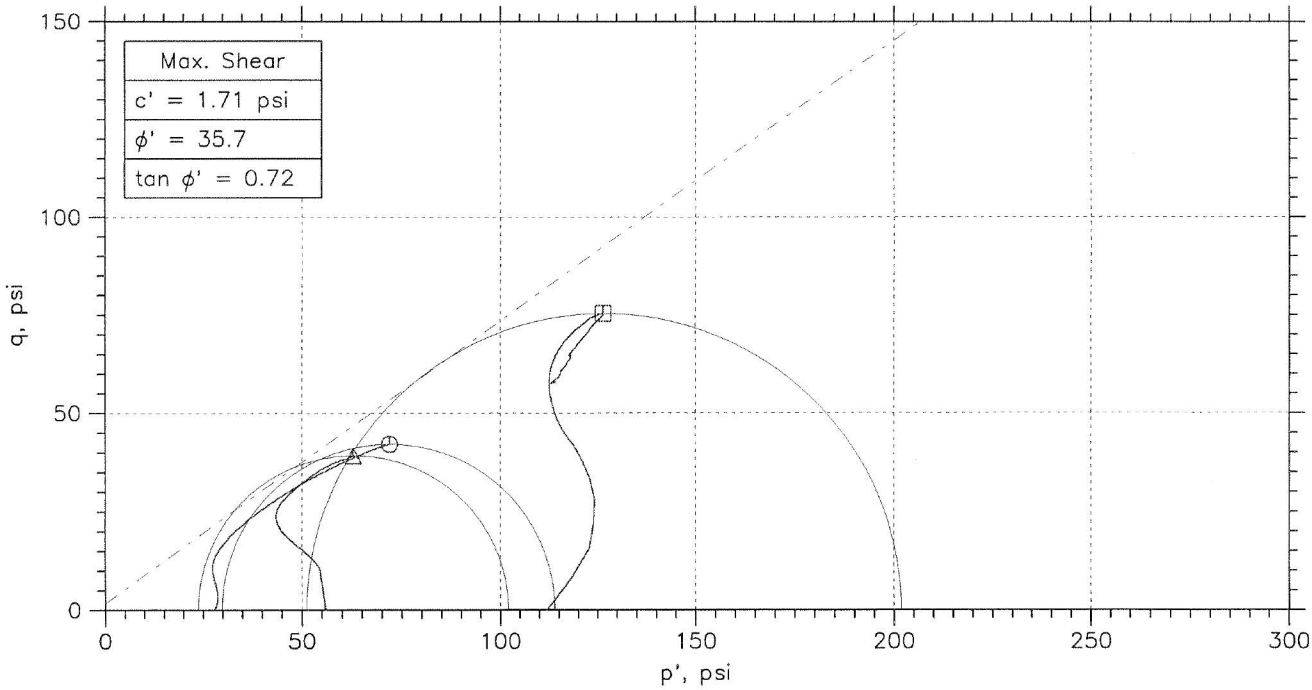
MACTEC

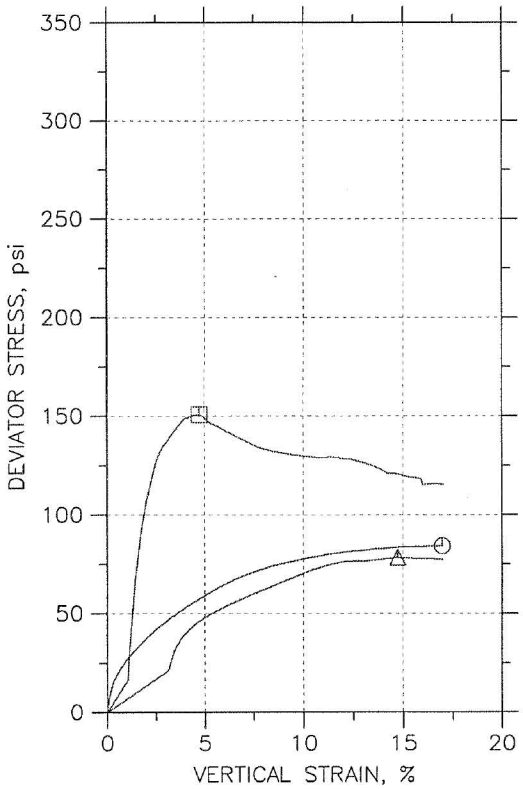
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4033 | Project No.: 6141060286 |
| Boring No.: B-4033 | Sample Type: Undisturbed | |
| Description: SAND, with silty clay (SP-SC) (Visual) | | |
| Remarks: | | |



Tue 31-JUL-2007 10:54:29

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⏲ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-5 | UD-5 | UD-5 | |
| Test No. | | 7623.1 | 7623.2 | 7623.3 | |
| Depth | | 113.5 ft | 113.5 ft | 113.5 ft | |
| Initial | Diameter, in | 2.819 | 2.847 | 2.863 | |
| | Height, in | 6 | 6.002 | 6.001 | |
| | Water Content, % | 33.5 | 29.7 | 20.5 | |
| | Dry Density, pcf | 87.08 | 90.15 | 108.4 | |
| | Saturation, % | 98.7 | 94.1 | 103.4 | |
| | Void Ratio | 0.9 | 0.835 | 0.526 | |
| Before Shear | Water Content, % | 30.2 | 26.1 | 16.6 | |
| | Dry Density, pcf | 91.89 | 97.8 | 114.9 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.8 | 0.692 | 0.44 | |
| | Back Press., psi | 35.95 | 90. | 37.99 | |
| Ver. Eff. Cons. Stress, psi | | 28. | 56. | 112. | |
| Shear Strength, psi | | 42.04 | 39.14 | 75.31 | |
| Strain at Failure, % | | 17 | 14.7 | 4.73 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.97 | 0.98 | 0.96 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | 53 | 53 | 53 | |
| Plastic Limit | | 31 | 31 | 31 | |

MACTEC

Project: Vogtle COL

Location: B-4034

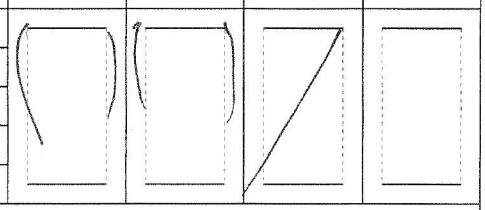
Project No.: 6141060286

Boring No.: B-4034

Sample Type: Undisturbed

Description: SILT, with shell hash and sand (MH)

Remarks:



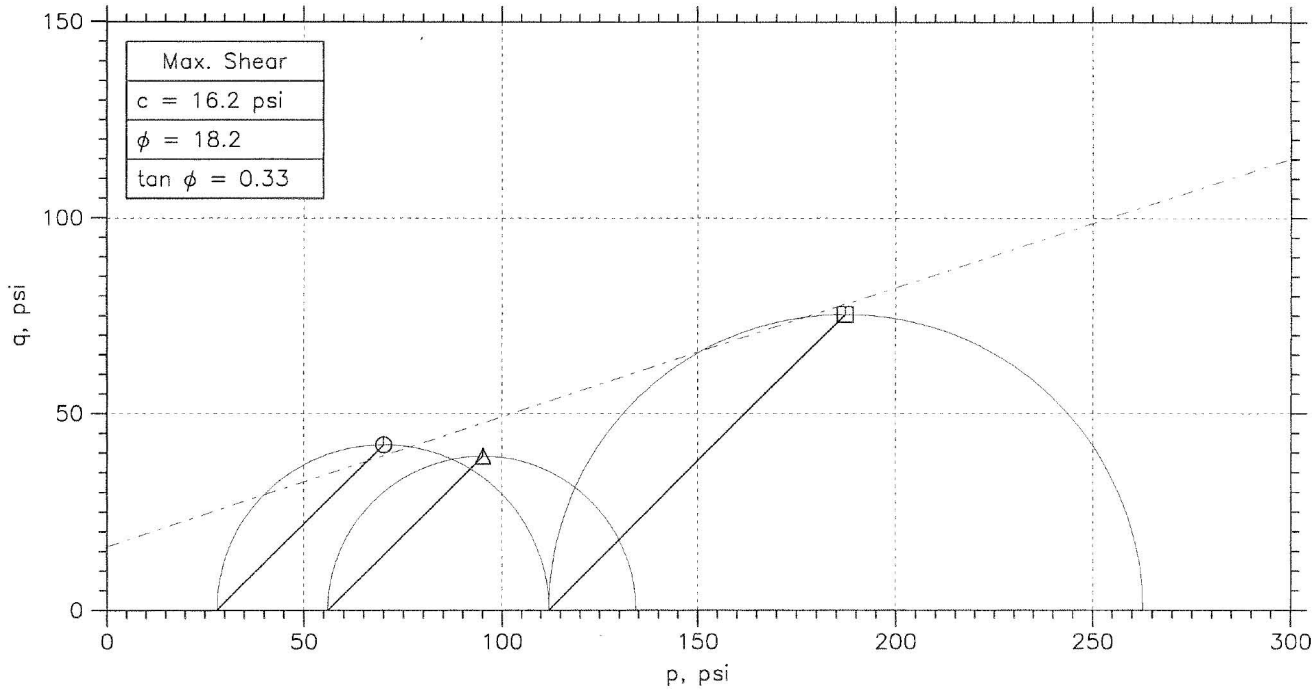
Phase calculations based on start and end of test.

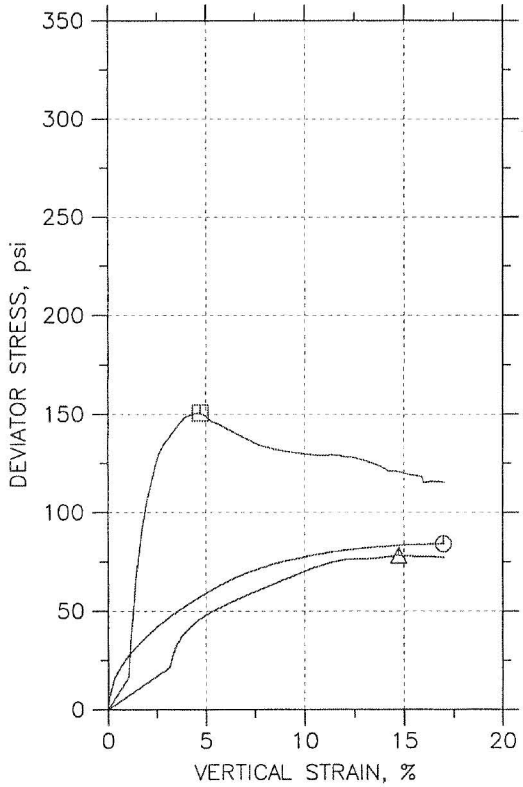
* Saturation is set to 100% for phase calculations.



Fri, 19-OCT-2007 15:35:08

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-5 | UD-5 | UD-5 | |
| Test No. | | 7623.1 | 7623.2 | 7623.3 | |
| Depth | | 113.5 ft | 113.5 ft | 113.5 ft | |
| Initial | Diameter, in | 2.819 | 2.847 | 2.863 | |
| | Height, in | 6 | 6.002 | 6.001 | |
| | Water Content, % | 33.5 | 29.7 | 20.5 | |
| | Dry Density, pcf | 87.08 | 90.15 | 108.4 | |
| | Saturation, % | 98.7 | 94.1 | 103.4 | |
| | Void Ratio | 0.9 | 0.835 | 0.526 | |
| Before Shear | Water Content, % | 30.2 | 26.1 | 16.6 | |
| | Dry Density, pcf | 91.89 | 97.8 | 114.9 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 0.8 | 0.692 | 0.44 | |
| | Back Press., psi | 35.95 | 90. | 37.99 | |
| Ver. Eff. Cons. Stress, psi | | 28. | 56. | 112. | |
| Shear Strength, psi | | 42.04 | 39.14 | 75.31 | |
| Strain at Failure, % | | 17 | 14.7 | 4.73 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.97 | 0.98 | 0.96 | |
| Estimated Specific Gravity | | 2.65 | 2.65 | 2.65 | |
| Liquid Limit | | 53 | 53 | 53 | |
| Plastic Limit | | 31 | 31 | 31 | |

MACTEC

Project: Vogtle COL

Location: B-4034

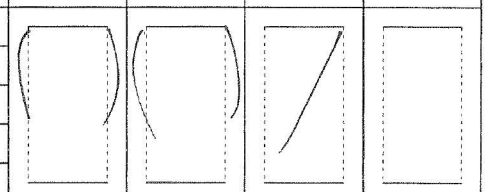
Project No.: 6141060286

Boring No.: B-4034

Sample Type: Undisturbed

Description: SILT, with shell hash and sand (MH)

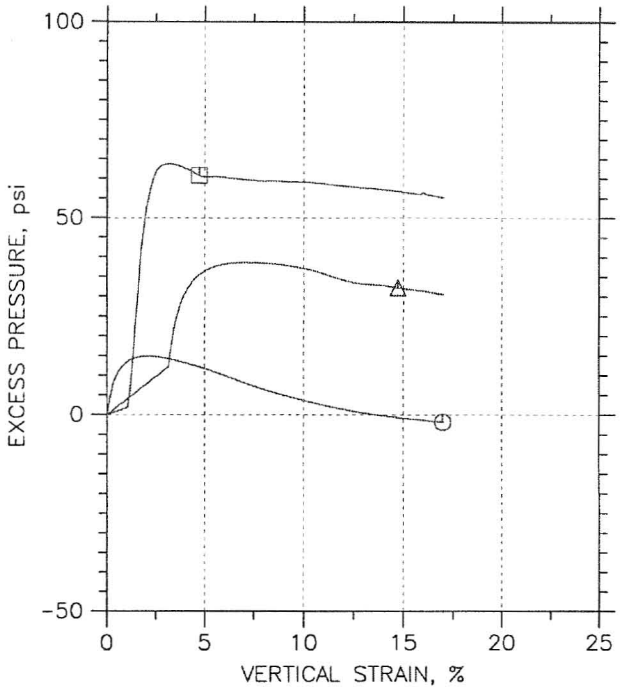
Remarks:

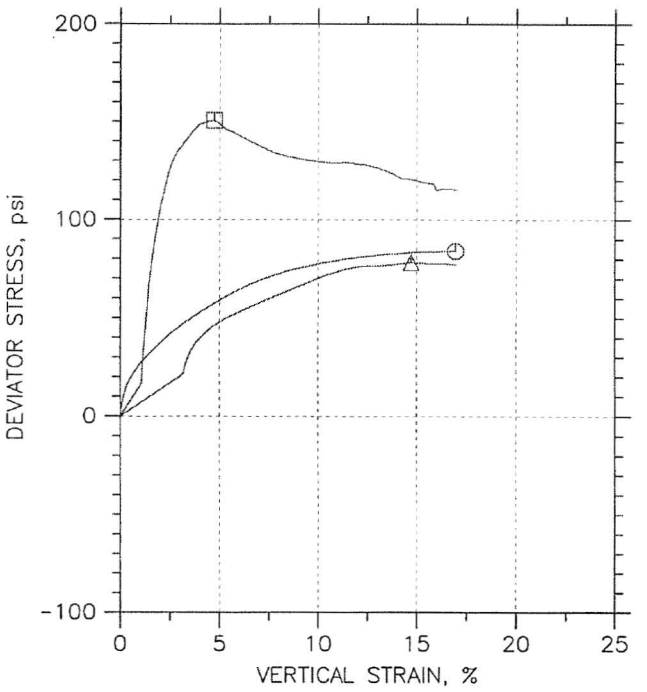


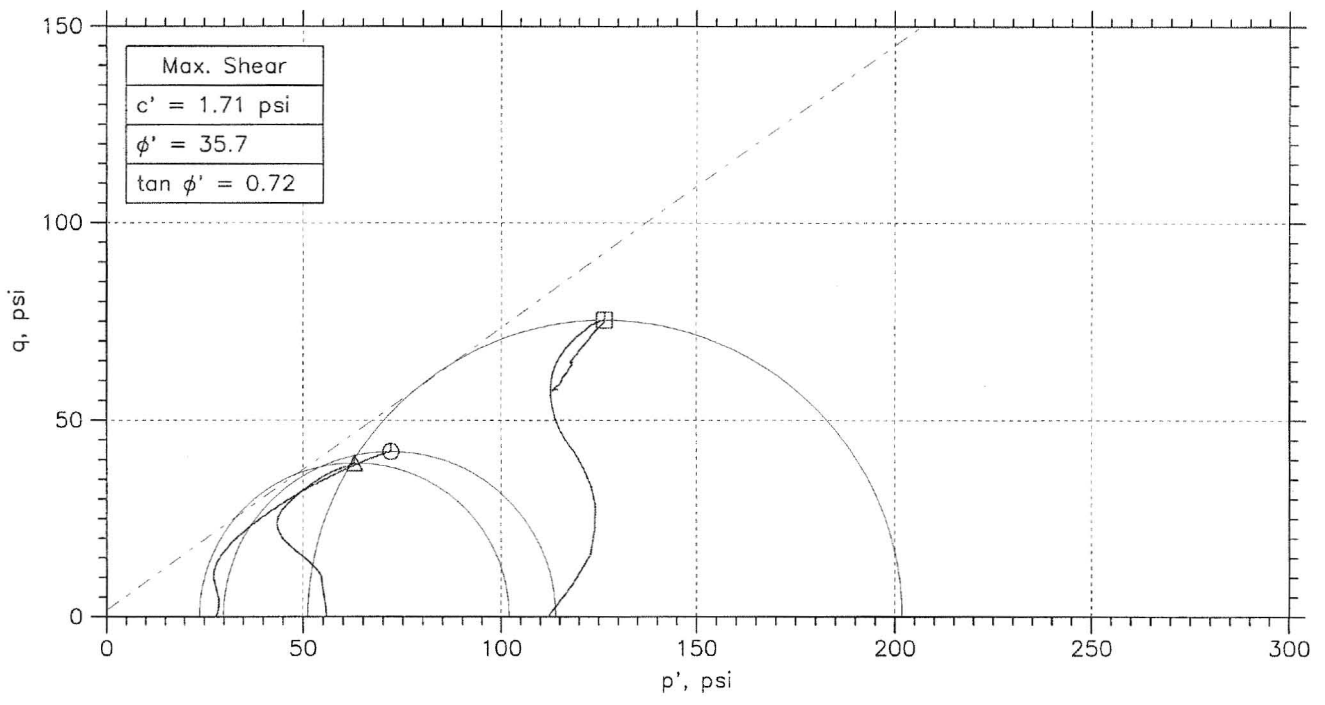
Phase calculations based on start and end of test.

* Saturation is set to 100% for phase calculations.

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⏲ | UD-5 | 7623.1 | 113.5 ft | HJ | 6/27/07 | JW | | 7623.1_2583.dat |
| △ | UD-5 | 7623.2 | 113.5 ft | HJ | 6/27/07 | JW | JW 10/22/07 | 7623.2_2582a.dat |
| ⊡ | UD-5 | 7623.3 | 113.5 ft | HJ | 6/27/07 | JW | | 7623.3_2581a.dat |
| | | | | | | | | |

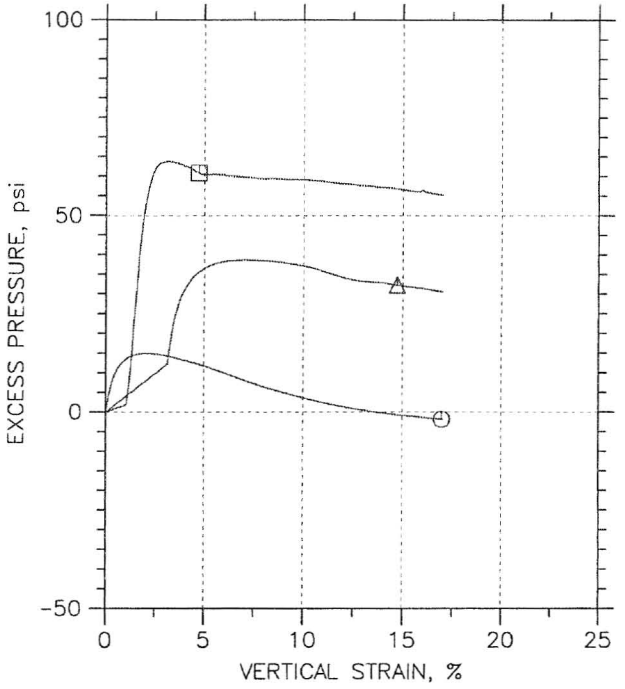
MACTEC

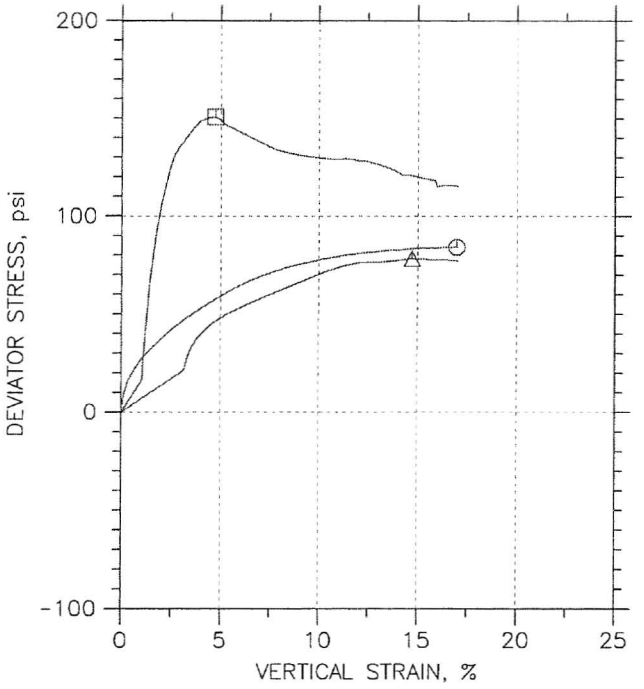
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4034 | Project No.: 6141060286 |
| Boring No.: B-4034 | Sample Type: Undisturbed | |
| Description: SILT, with shell hash and sand (MH) | | |
| Remarks: | | |

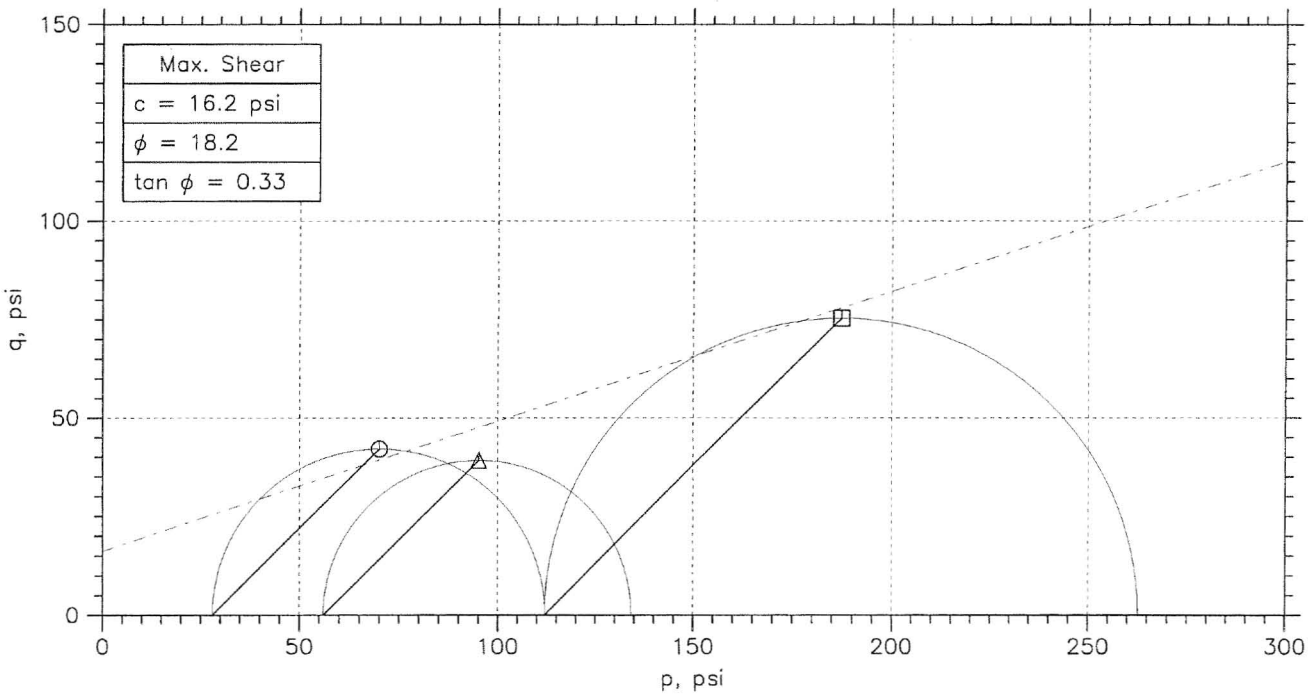


Fri, 19-OCT-2007 15:30:22

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



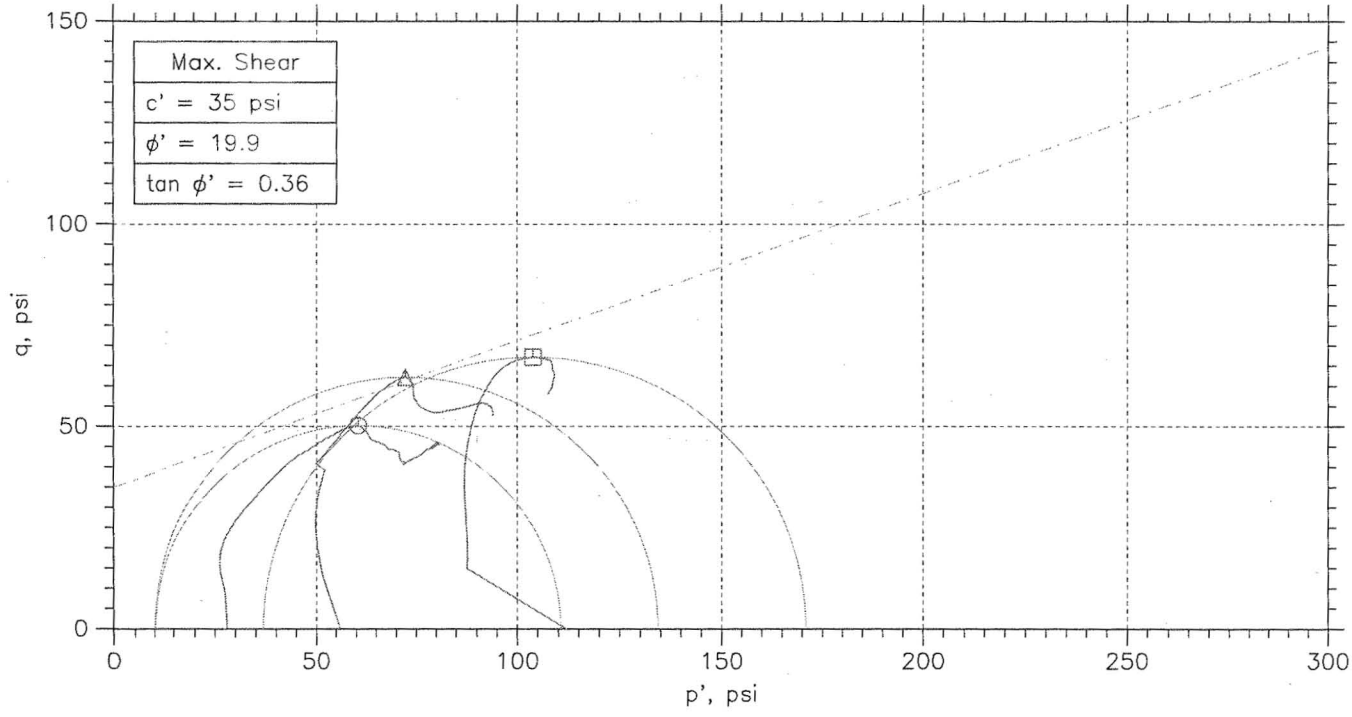



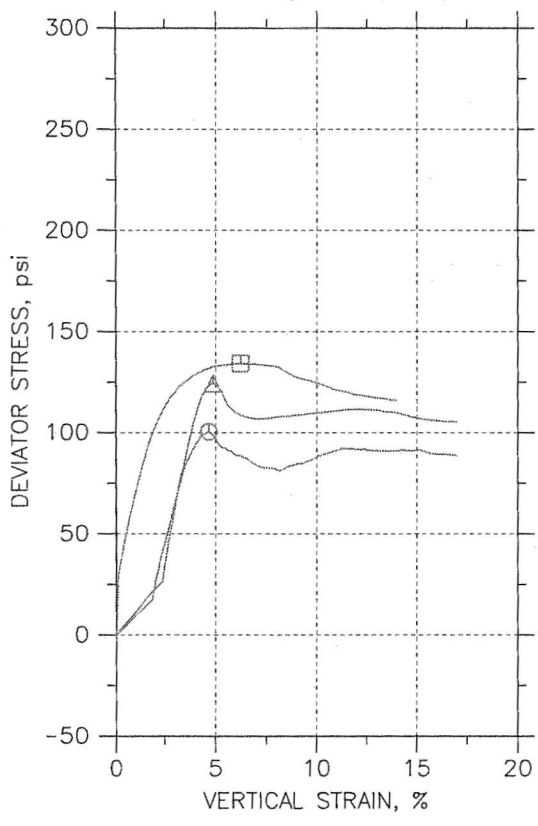

| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-5 | 7623.1 | 113.5 ft | HJ | 6/27/07 | JW | | 7623.1_2583.dat |
| △ | UD-5 | 7623.2 | 113.5 ft | HJ | 6/27/07 | JW | JW 10/22/07 | 7623.2_2582a.dat |
| ⊡ | UD-5 | 7623.3 | 113.5 ft | HJ | 6/27/07 | JW | | 7623.3_2581a.dat |
| | | | | | | | | |

MACTEC

| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4034 | Project No.: 6141060286 |
| Boring No.: B-4034 | Sample Type: Undisturbed | |
| Description: SILT, with shell hash and sand (MH) | | |
| Remarks: | | |

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

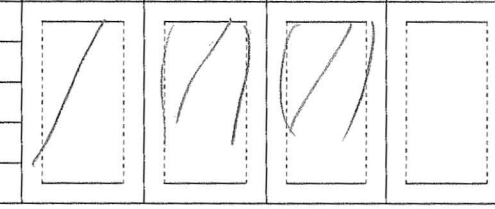



| Symbol | | ⦶ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-1 | UD-1 | UD-1 | |
| Test No. | | 7586.1 | 7586.2 | 7586.3 | |
| Depth | | 98.5 ft | 98.5 ft | 98.5 ft | |
| Initial | Diameter, in | 2.877 | 2.87 | 2.865 | |
| | Height, in | 5.961 | 5.962 | 5.962 | |
| | Water Content, % | 46.3 | 43.1 | 37.3 | |
| | Dry Density, pcf | 70.51 | 74.09 | 79.87 | |
| | Saturation, % | 89.9 | 91.2 | 90.8 | |
| | Void Ratio | 1.39 | 1.28 | 1.11 | |
| Before Shear | Water Content, % | 52.4 | 44.7 | 37.5 | |
| | Dry Density, pcf | 69.8 | 76.36 | 83.78 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 1.41 | 1.21 | 1.01 | |
| | Back Press., psi | 91.99 | 86. | 35.01 | |
| Ver. Eff. Cons. Stress, psi | | 28.01 | 56. | 112. | |
| Shear Strength, psi | | 50.17 | 62.13 | 67.07 | |
| Strain at Failure, % | | 4.66 | 4.86 | 6.21 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.95 | 0.97 | 0.96 | |
| Estimated Specific Gravity | | 2.7 | 2.7 | 2.7 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

Project: Vogtle COL
Location: B-4035
Project No.: 6141060286
Boring No.: B-4035
Sample Type: Undisturbed
Description: Clay, silty (CL-ML) (Visual)
Remarks:

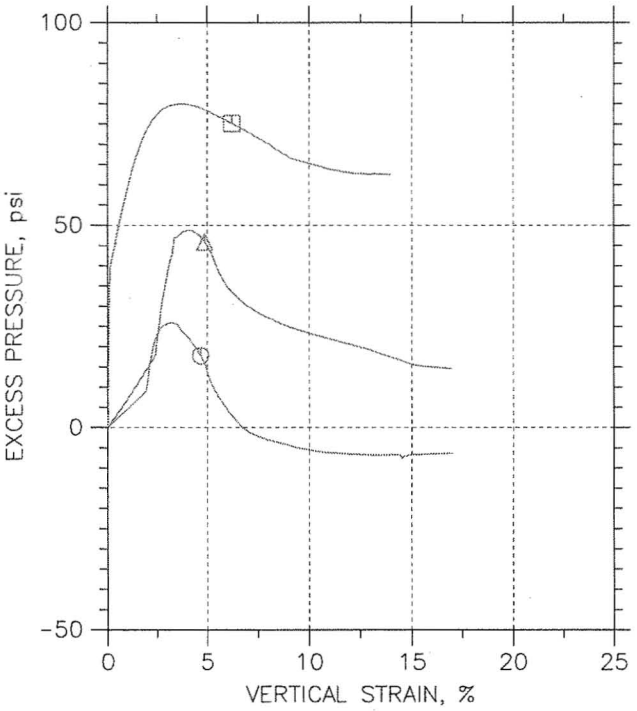


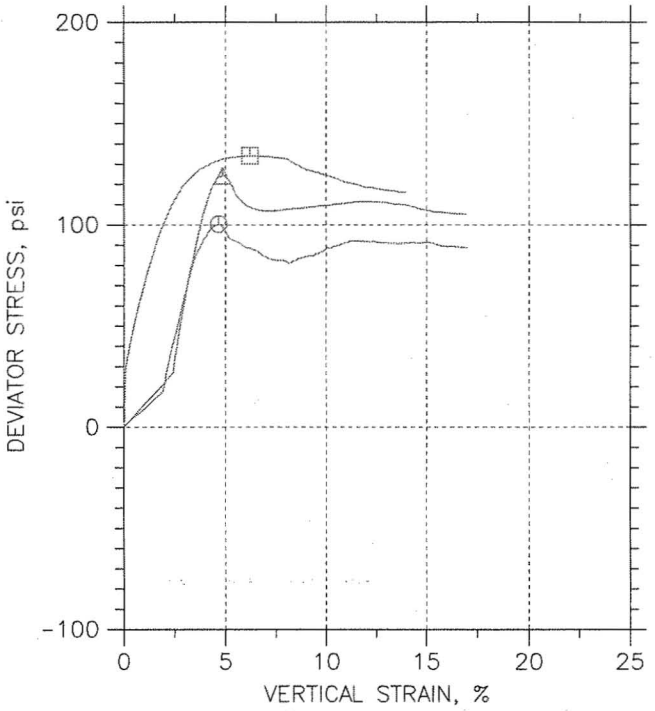
Phase calculations based on start and end of test.
Saturation is set to 100% for phase calculations.

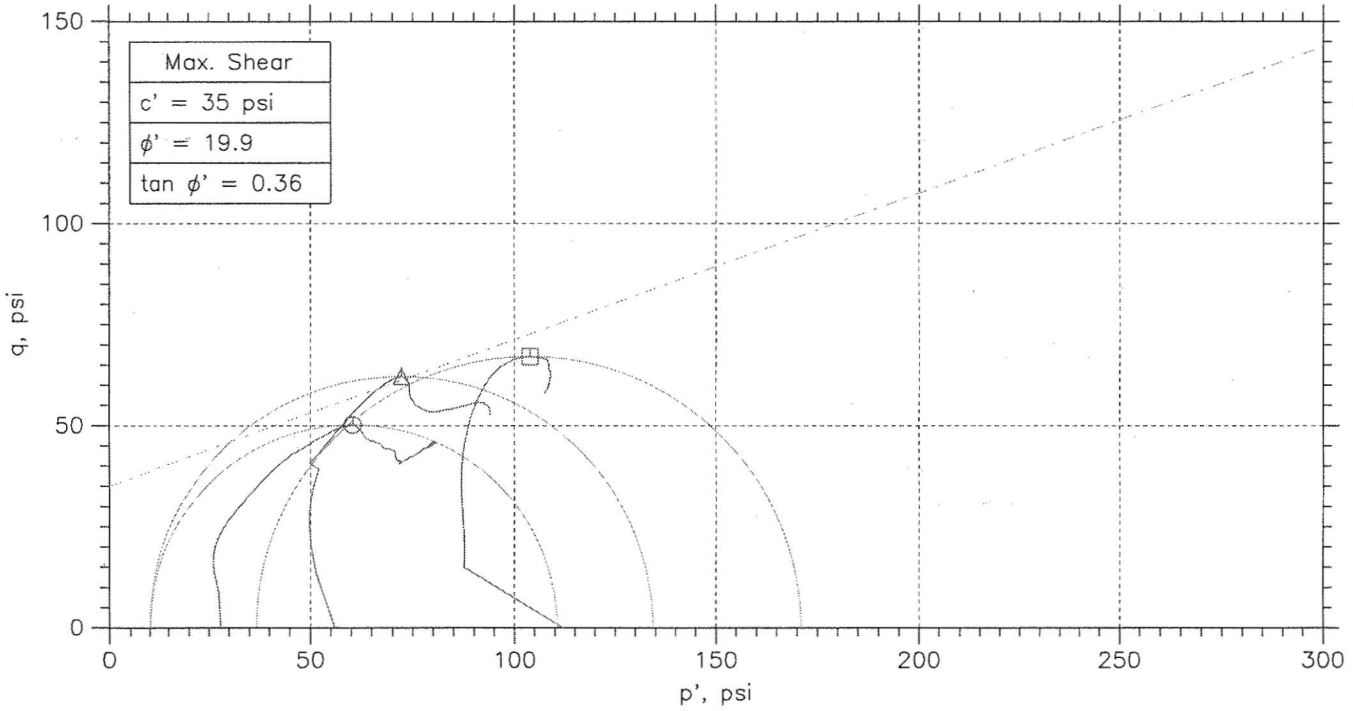


Tue 31-JUL-2007 11:07:07

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⦶ | UD-1 | 7586.1 | 98.5 ft | HJ | 6/18/07 | JW | | 7586.1_2546a.dat |
| △ | UD-1 | 7586.2 | 98.5 ft | HJ | 6/18/07 | JW | JW 7/31/07 | 7586.2_2545a.dat |
| ⊡ | UD-1 | 7586.3 | 98.5 ft | HJ | 6/18/07 | JW | | 7586.3_2547a.dat |
| | | | | | | | | |

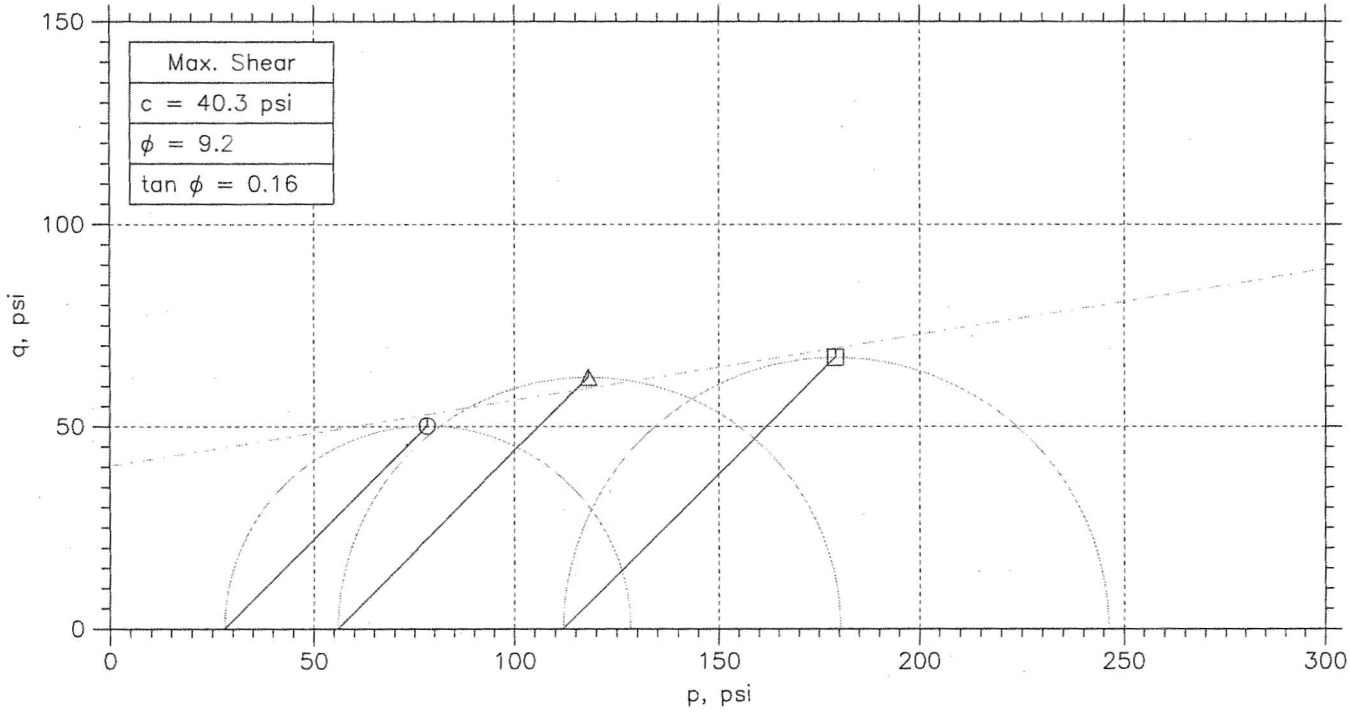
MACTEC

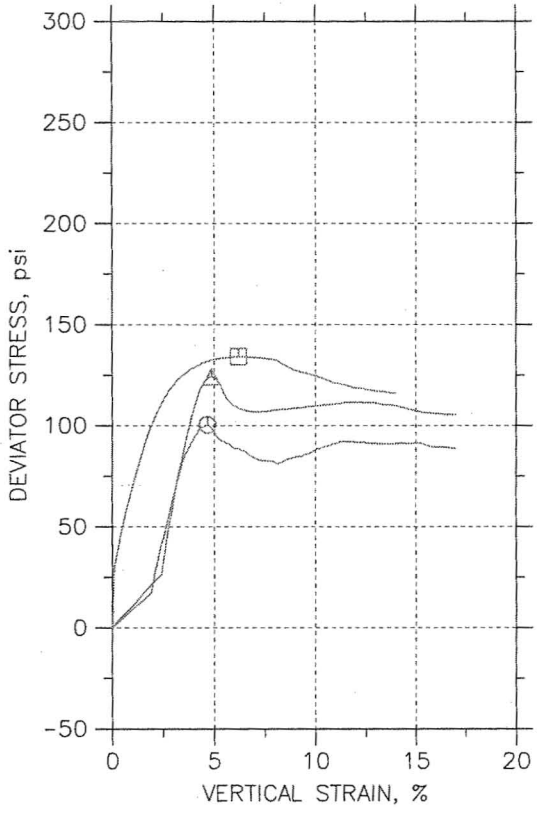
| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4035 | Project No.: 6141060286 |
| Boring No.: B-4035 | Sample Type: Undisturbed | |
| Description: Clay, silty (CL-ML) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 11:07:07

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767




| Symbol | | ⦶ | △ | ⊡ | |
|---|---|---|---|---|---|
| Sample No. | | UD-1 | UD-1 | UD-1 | |
| Test No. | | 7586.1 | 7586.2 | 7586.3 | |
| Depth | | 98.5 ft | 98.5 ft | 98.5 ft | |
| Initial | Diameter, in | 2.877 | 2.87 | 2.865 | |
| | Height, in | 5.961 | 5.962 | 5.962 | |
| | Water Content, % | 46.3 | 43.1 | 37.3 | |
| | Dry Density, pcf | 70.51 | 74.09 | 79.87 | |
| | Saturation, % | 89.9 | 91.2 | 90.8 | |
| | Void Ratio | 1.39 | 1.28 | 1.11 | |
| Before Shear | Water Content, % | 52.4 | 44.7 | 37.5 | |
| | Dry Density, pcf | 69.8 | 76.36 | 83.78 | |
| | Saturation*, % | 100.0 | 100.0 | 100.0 | |
| | Void Ratio | 1.41 | 1.21 | 1.01 | |
| | Back Press., psi | 91.99 | 86. | 35.01 | |
| Ver. Eff. Cons. Stress, psi | | 28.01 | 56. | 112. | |
| Shear Strength, psi | | 50.17 | 62.13 | 67.07 | |
| Strain at Failure, % | | 4.66 | 4.86 | 6.21 | |
| Strain Rate, %/min | | 0.05 | 0.05 | 0.05 | |
| B-Value | | 0.95 | 0.97 | 0.96 | |
| Estimated Specific Gravity | | 2.7 | 2.7 | 2.7 | |
| Liquid Limit | | --- | --- | --- | |
| Plastic Limit | | --- | --- | --- | |

MACTEC

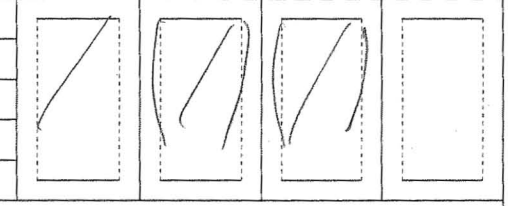
Project: Vogtle COL

Location: B-4035

Project No.: 6141060286

Boring No.: B-4035

Sample Type: Undisturbed



Description: Clay, silty (CL-ML) (Visual)

Remarks:

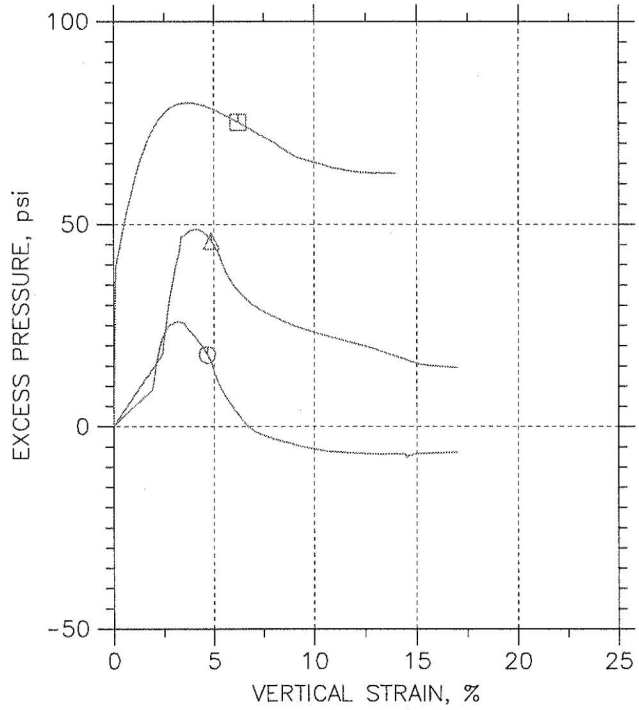
Phase calculations based on start and end of test.

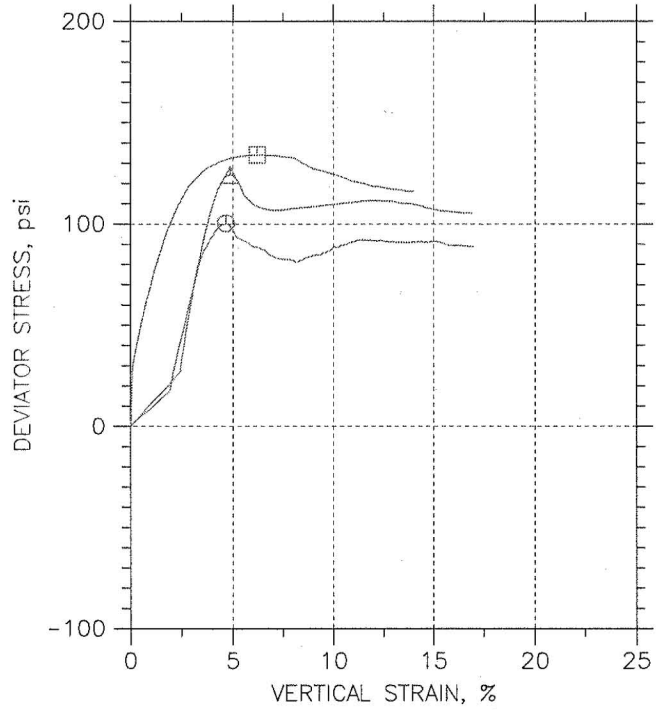
Saturation is set to 100% for phase calculations.

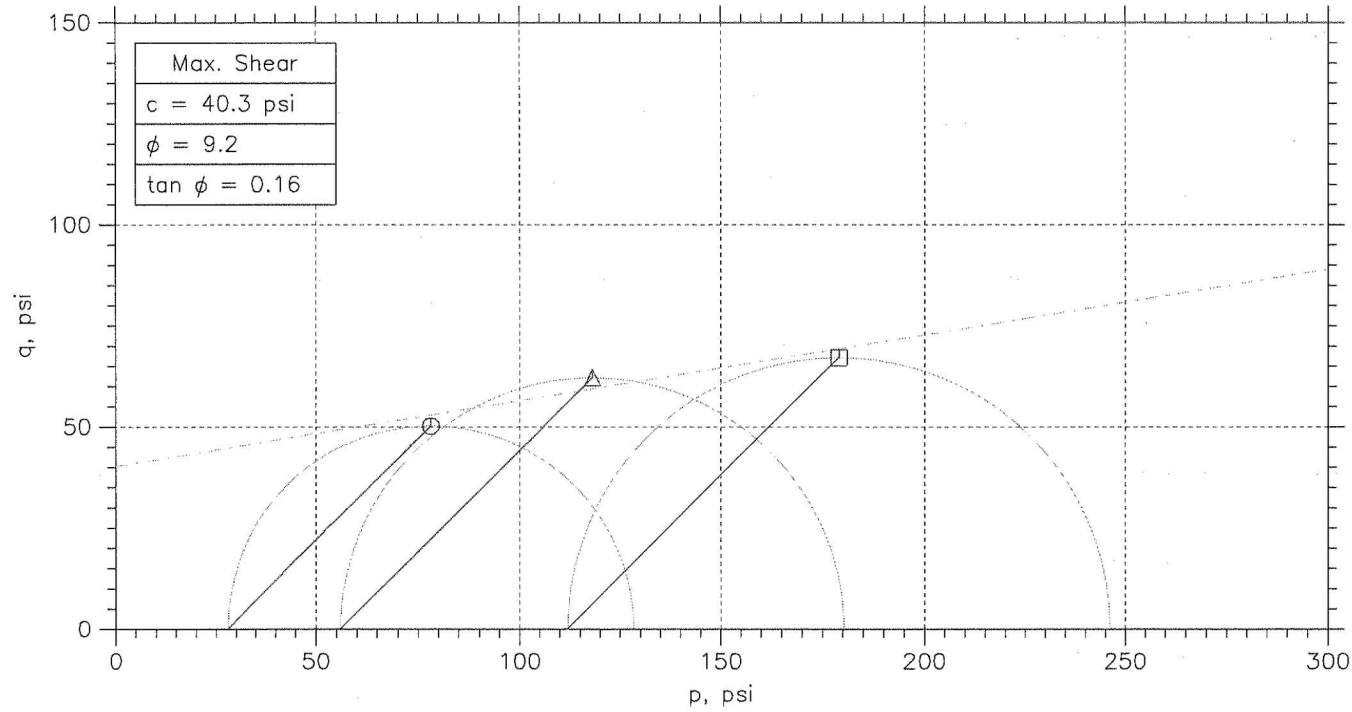


Tue. 31-JUL-2007 11:07:13

# CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



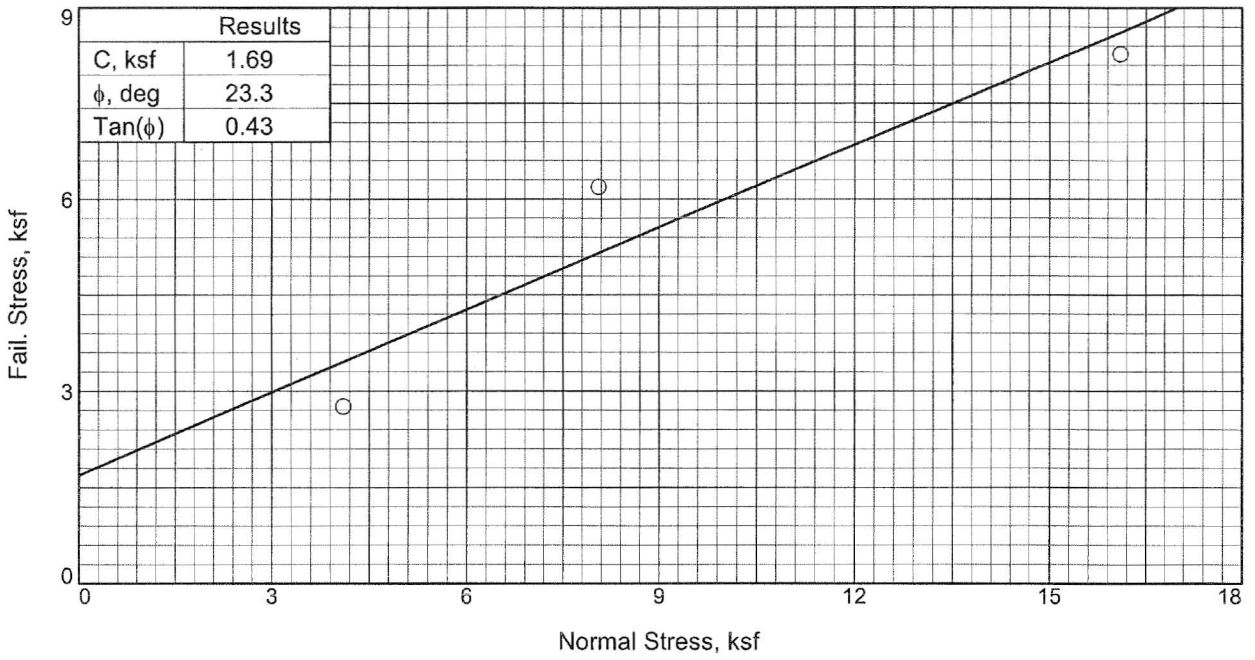

| | Sample No. | Test No. | Depth | Tested By | Test Date | Checked By | Check Date | Test File |
|---|---|---|---|---|---|---|---|---|
| ⊙ | UD-1 | 7586.1 | 98.5 ft | HJ | 6/18/07 | JW | | 7586.1_2546a.dat |
| △ | UD-1 | 7586.2 | 98.5 ft | HJ | 6/18/07 | JW | JW 7/31/07 | 7586.2_2545a.dat |
| ⊡ | UD-1 | 7586.3 | 98.5 ft | HJ | 6/18/07 | JW | | 7586.3_2547a.dat |
| | | | | | | | | |

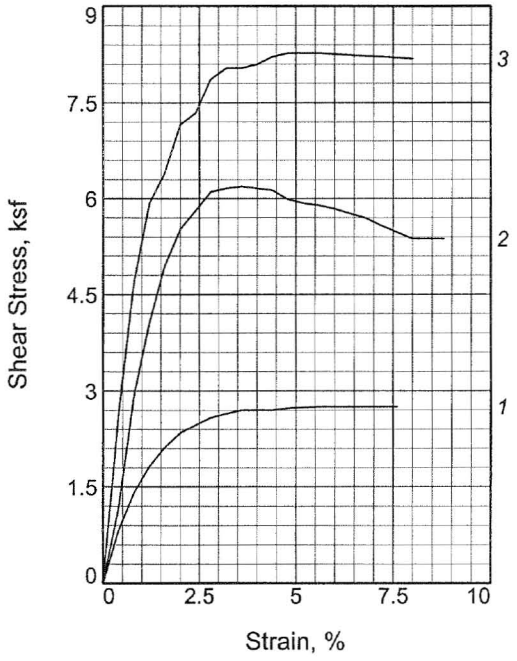
MACTEC

| | | |
|---|---|---|
| Project: Vogtle COL | Location: B-4035 | Project No.: 6141060286 |
| Boring No.: B-4035 | Sample Type: Undisturbed | |
| Description: Clay, silty (CL-ML) (Visual) | | |
| Remarks: | | |



Tue, 31-JUL-2007 11:07:13




| Sample No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 27.0 | 23.8 | 23.7 |
| | Dry Density, pcf | 93.8 | 96.0 | 96.3 |
| | Saturation, % | 91.3 | 84.9 | 85.3 |
| | Void Ratio | 0.7974 | 0.7555 | 0.7502 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 25.5 | 25.4 | 25.4 |
| At Test | Water Content, % | 25.8 | 23.9 | 23.8 |
| | Dry Density, pcf | 99.4 | 102.4 | 102.6 |
| | Saturation, % | 100.0 | 100.0 | 100.0 |
| | Void Ratio | 0.6953 | 0.6467 | 0.6435 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 24.0 | 23.8 | 23.9 |
| Normal Stress, ksf | | 4.10 | 8.06 | 16.10 |
| Fail. Stress, ksf | | 2.76 | 6.19 | 8.27 |
| Strain, % | | 5.6 | 3.6 | 4.8 |
| Ult. Stress, ksf | | | | |
| Strain, % | | | | |
| Strain rate, mm./min. | | 0.2 | 0.2 | 0.2 |

**Sample Type:** Undisturbed
**Description:** SAND, silty (SM)

**LL=** **PL=** **PI=**
**Specific Gravity=** 2.7
**Remarks:** Lab no. 7627

**Figure** _____

**Client:** GPC c/o SNOC

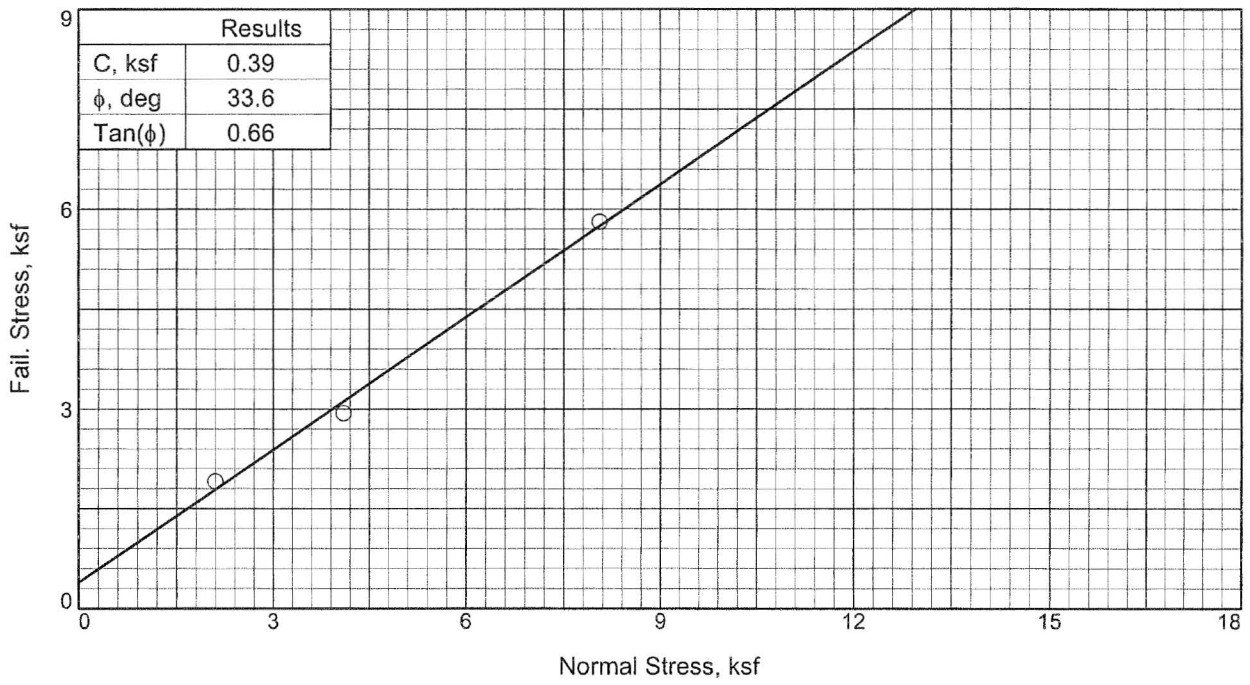
**Project:** Vogtle Units 3 & 4 COL Project

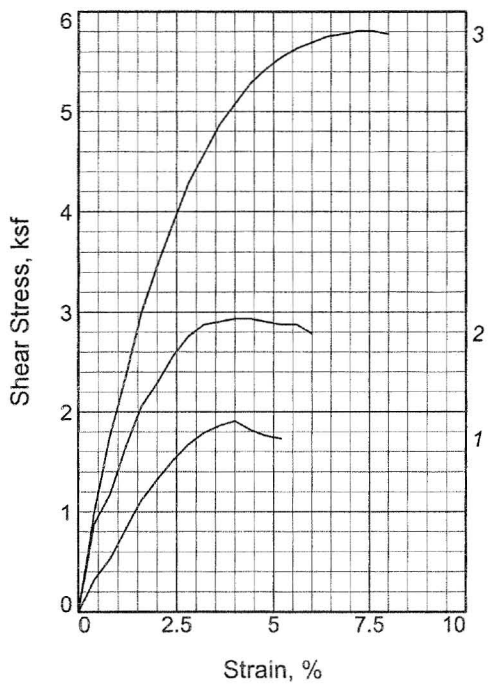
**Location:** B-1162
**Sample Number:** UD-3 **Depth:** 58.5/27.05
**Proj. No.:** 6141-06-0286 **Date:** 12/12/2006

DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.

**Tested By:** HJ **Checked By:** HJ




| | Sample No. | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 13.7 | 14.4 | 16.9 |
| | Dry Density, pcf | 96.6 | 95.6 | 93.9 |
| | Saturation, % | 49.6 | 50.9 | 57.5 |
| | Void Ratio | 0.7453 | 0.7625 | 0.7957 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 25.5 | 25.5 | 25.5 |
| At Test | Water Content, % | 25.5 | 26.2 | 26.2 |
| | Dry Density, pcf | 99.9 | 98.7 | 98.7 |
| | Saturation, % | 100.0 | 100.0 | 100.0 |
| | Void Ratio | 0.6879 | 0.7080 | 0.7080 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 24.7 | 24.7 | 24.3 |
| | Normal Stress, ksf | 2.10 | 4.10 | 8.06 |
| | Fail. Stress, ksf | 1.91 | 2.93 | 5.81 |
| | Strain, % | 4.0 | 4.0 | 7.2 |
| | Ult. Stress, ksf | | | |
| | Strain, % | | | |
| | Strain rate, mm./min. | 0.2 | 0.2 | 0.2 |

**Sample Type:** Undisturbed
**Description:** SAND, with clay (SP-SC)

**LL=** 95 **PL=** 25 **PI=** 70
**Specific Gravity=** 2.7
**Remarks:** Lab no. 7630

**Figure** _____

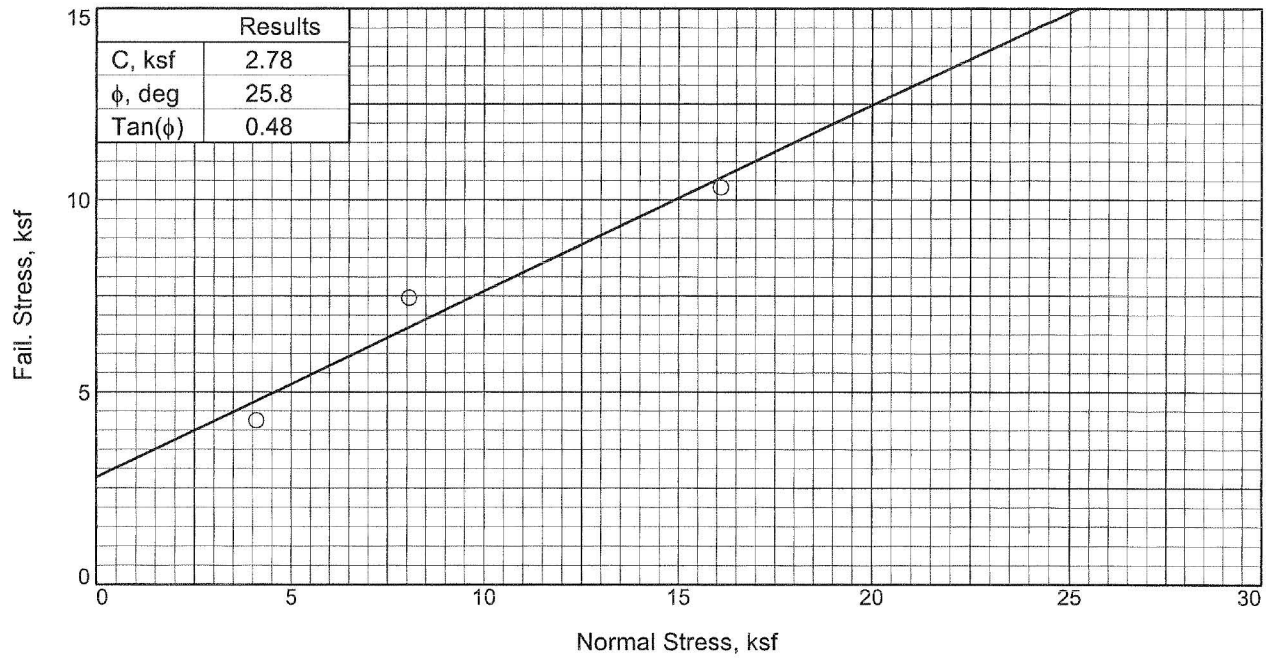
**Client:** GPC c/o SNOC

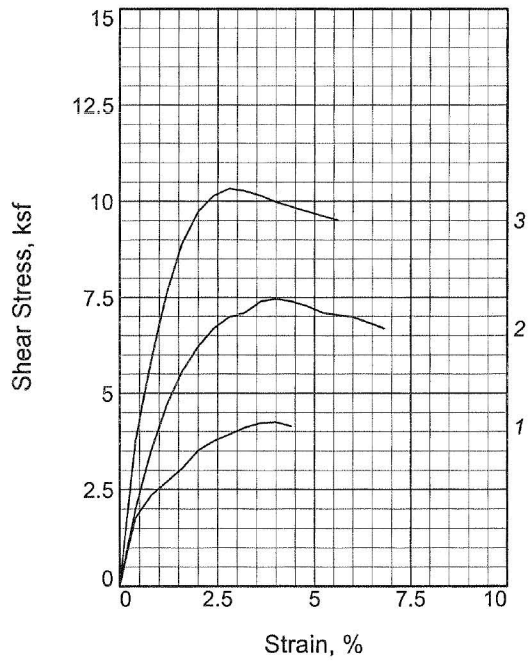
**Project:** Vogtle Units 3 & 4 COL Project

**Location:** B-1164
**Sample Number:** UD-1 **Depth:** 28.0/192.05 ft.
**Proj. No.:** 6141-06-0286 **Date:** 1/12/2007

DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.




| Sample No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 32.8 | 26.9 | 25.0 |
| | Dry Density, pcf | 85.8 | 98.0 | 100.5 |
| | Saturation, % | 91.8 | 100.8 | 99.6 |
| | Void Ratio | 0.9640 | 0.7205 | 0.6770 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 25.5 | 25.5 | 25.5 |
| At Test | Water Content, % | 27.5 | 20.5 | 17.0 |
| | Dry Density, pcf | 96.8 | 108.3 | 115.5 |
| | Saturation, % | 100.0 | 99.7 | 100.2 |
| | Void Ratio | 0.7419 | 0.5558 | 0.4596 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 22.6 | 23.0 | 22.2 |
| Normal Stress, ksf | | 4.10 | 8.06 | 16.10 |
| Fail. Stress, ksf | | 4.25 | 7.45 | 10.33 |
| Strain, % | | 4.0 | 4.0 | 2.8 |
| Ult. Stress, ksf | | | | |
| Strain, % | | | | |
| Strain rate, mm./min. | | 0.0 | 0.0 | 0.0 |

**Sample Type:** Undisturbed
**Description:** Clay (CL)

**LL=** NV **PL=** **PI=** NP
**Specific Gravity=** 2.7
**Remarks:** Lab no. 7501

**Figure** _____

**Client:** GPC c/o SNOC

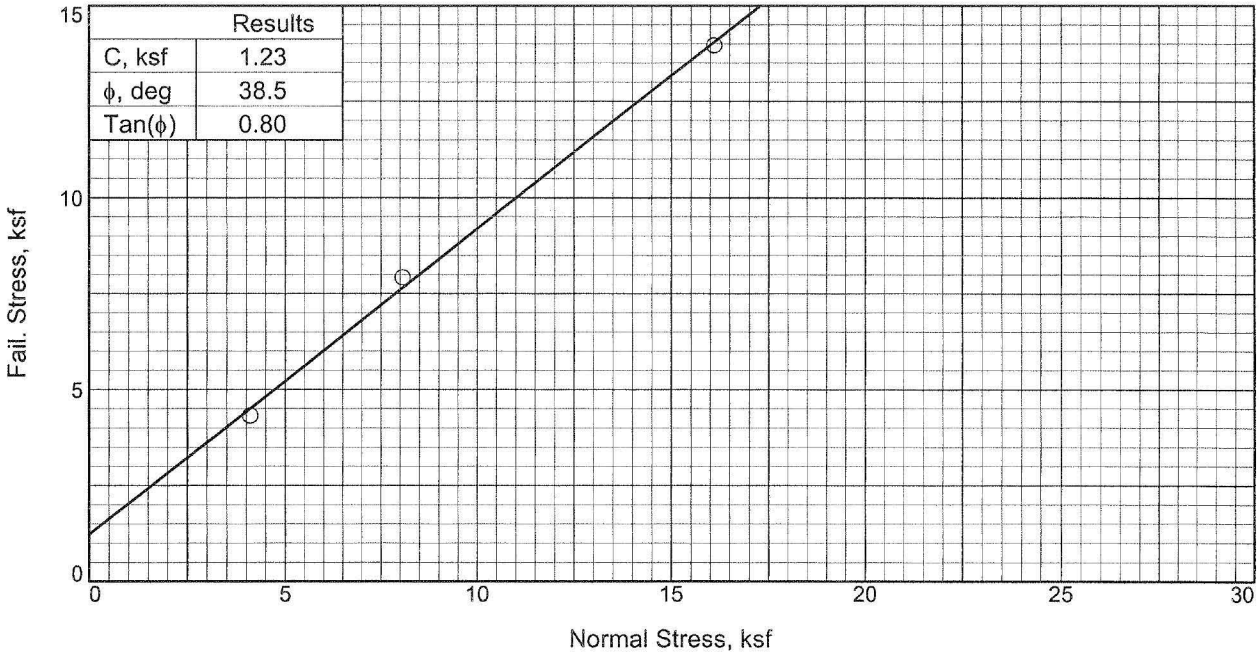
**Project:** Vogtle Units 3 & 4 COL Project

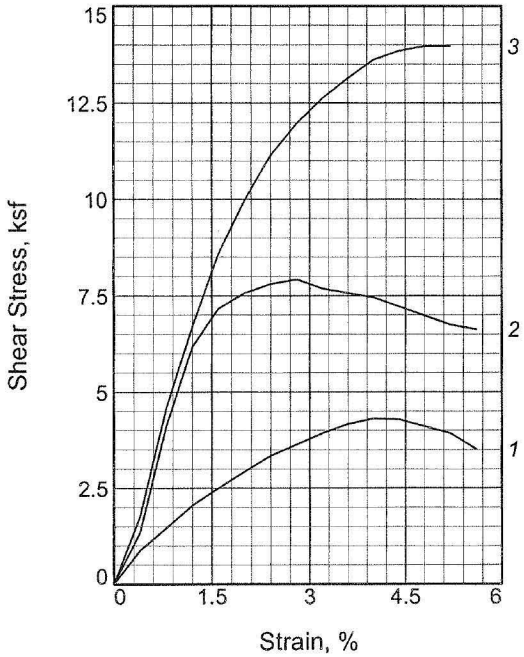
**Location:** B-3001
**Sample Number:** UD-14 **Depth:** 388.5/-170.10
**Proj. No.:** 6141-06-0286 **Date:** 2/4/07

DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.

**Tested By:** SW **Checked By:** HJ




| Sample No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 20.7 | 15.8 | 16.0 |
| | Dry Density, pcf | 98.1 | 101.8 | 98.0 |
| | Saturation, % | 78.0 | 65.1 | 59.9 |
| | Void Ratio | 0.7185 | 0.6560 | 0.7207 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 25.5 | 25.5 | 25.6 |
| At Test | Water Content, % | 24.3 | 21.4 | 22.1 |
| | Dry Density, pcf | 101.7 | 106.8 | 105.5 |
| | Saturation, % | 100.0 | 100.0 | 100.0 |
| | Void Ratio | 0.6570 | 0.5785 | 0.5975 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 24.6 | 24.3 | 23.7 |
| Normal Stress, ksf | | 4.10 | 8.06 | 16.10 |
| Fail. Stress, ksf | | 4.31 | 7.92 | 13.96 |
| Strain, % | | 4.0 | 2.8 | 4.8 |
| Ult. Stress, ksf | | | | |
| Strain, % | | | | |
| Strain rate, mm./min. | | 0.2 | 0.2 | 0.2 |

**Sample Type:** Undisturbed
**Description:** SAND, with silt (SP-SM)

**LL=** **PL=** **PI=**
**Specific Gravity=** 2.7
**Remarks:** Lab no. 7533

**Figure** _____

**Client:** GPC c/o SNOC

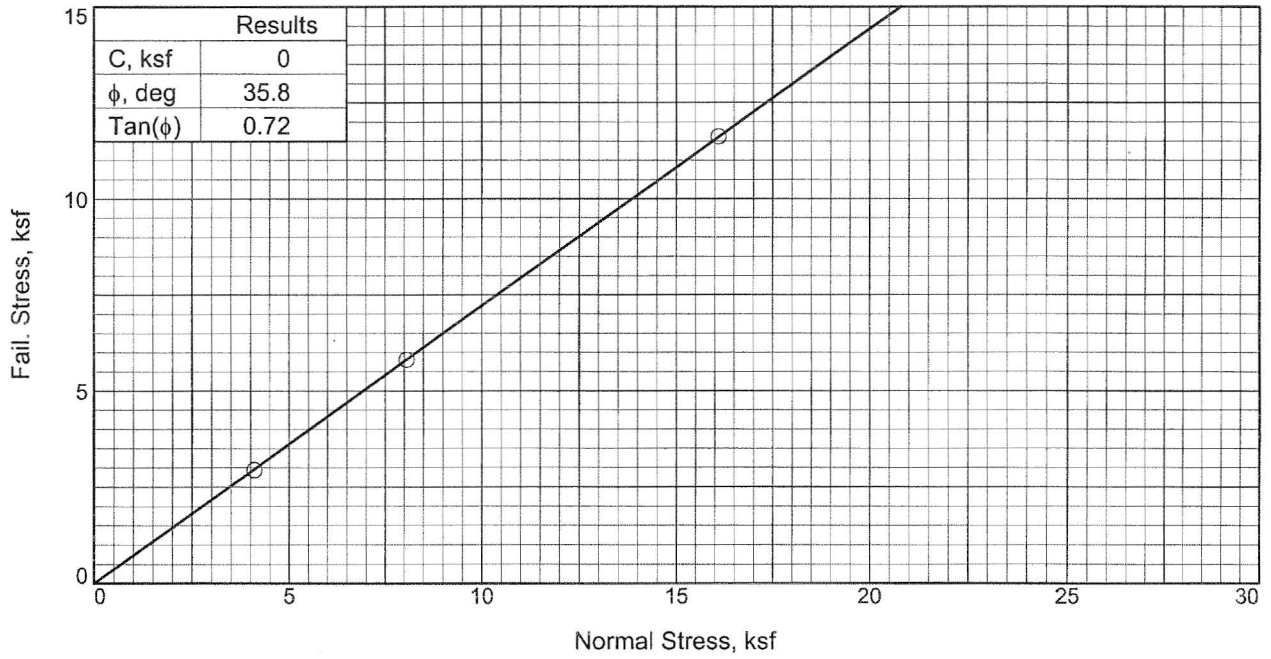
**Project:** Vogtle Units 3 & 4 COL Project

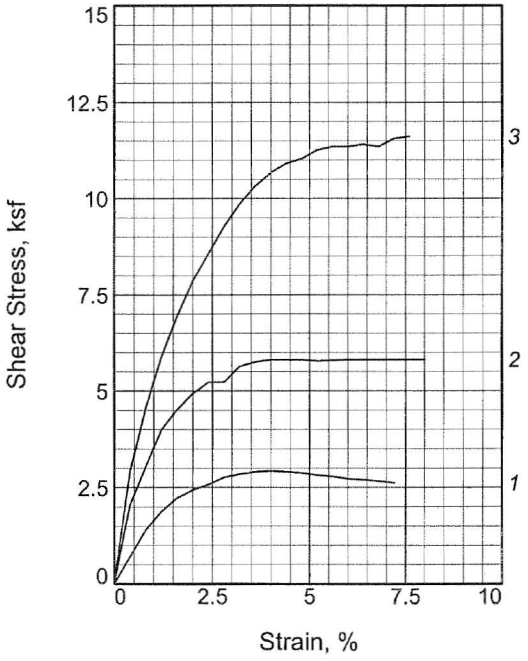
**Location:** B-3021
**Sample Number:** UD-2 **Depth:** 148.5/74.69
**Proj. No.:** 6141-06-0286 **Date:** 3/13/2007

DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.

**Tested By:** SW **Checked By:** HJ




| Sample No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 16.9 | 14.7 | 14.6 |
| | Dry Density, pcf | 104.6 | 107.3 | 101.1 |
| | Saturation, % | 74.8 | 69.6 | 59.0 |
| | Void Ratio | 0.6108 | 0.5712 | 0.6669 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 25.5 | 25.5 | 25.5 |
| At Test | Water Content, % | 20.4 | 18.9 | 19.2 |
| | Dry Density, pcf | 108.8 | 111.6 | 110.9 |
| | Saturation, % | 100.0 | 100.0 | 100.0 |
| | Void Ratio | 0.5499 | 0.5102 | 0.5193 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 24.6 | 24.5 | 23.3 |
| Normal Stress, ksf | | 4.10 | 8.06 | 16.10 |
| Fail. Stress, ksf | | 2.93 | 5.81 | 11.62 |
| Strain, % | | 4.0 | 4.0 | 7.6 |
| Ult. Stress, ksf | | | | |
| Strain, % | | | | |
| Strain rate, mm./min. | | 0.2 | 0.2 | 0.2 |

**Sample Type:** Undisturbed
**Description:** SAND, clayey (SC)

**LL=** **PL=** **PI=**
**Specific Gravity=** 2.7
**Remarks:** Lab no. 7591

**Figure** _____

**Client:** GPC c/o SNOC

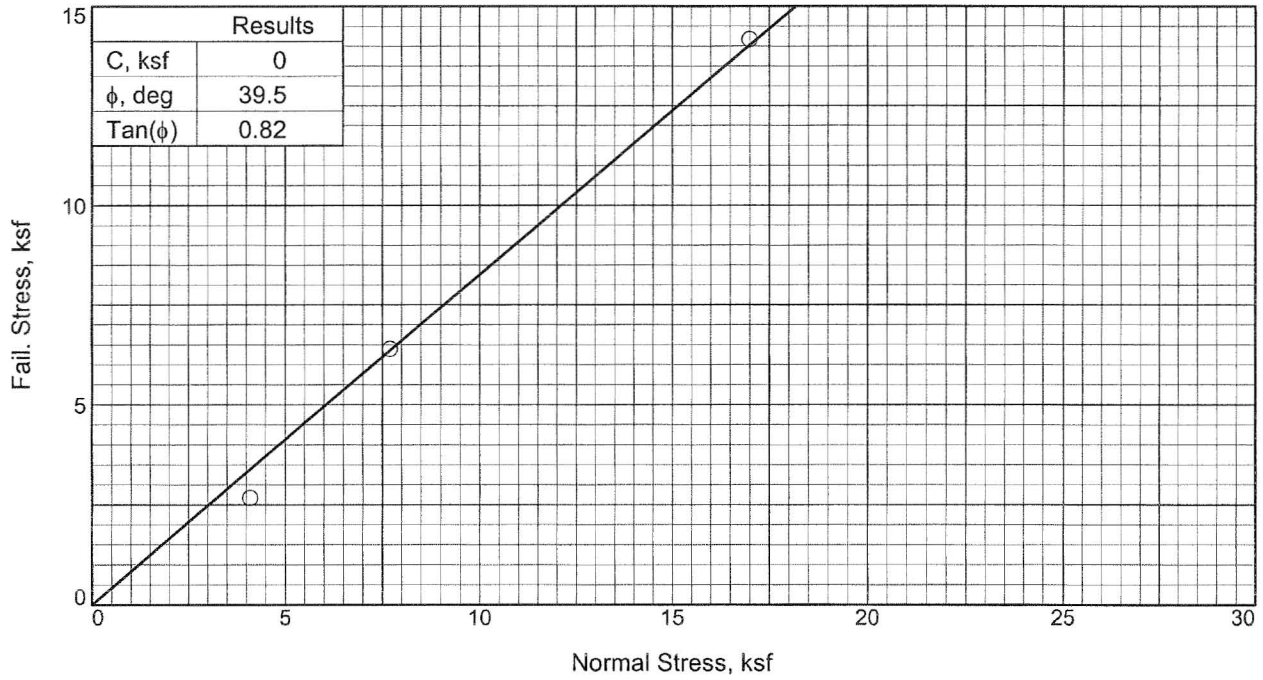
**Project:** Vogtle Units 3 & 4 COL Project

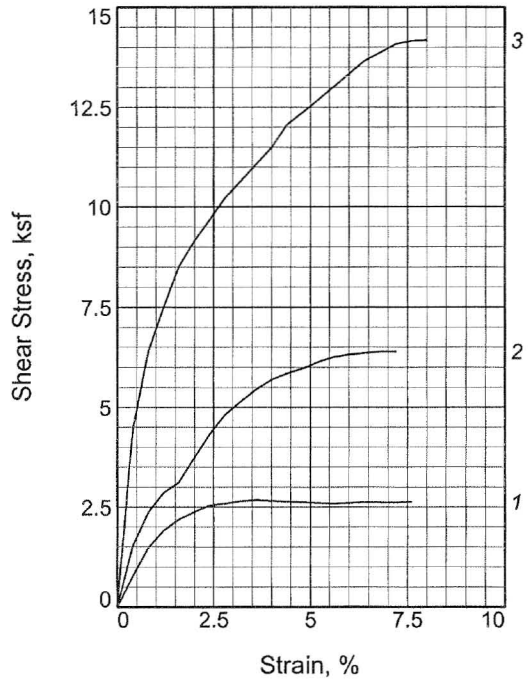
**Location:** B-3030
**Sample Number:** UD-3 **Depth:** 40/181.99
**Proj. No.:** 6141-06-0286 **Date:** 1/19/2007

DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.

**Tested By:** SW **Checked By:** HJ




| Sample No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 18.6 | 18.0 | 25.2 |
| | Dry Density, pcf | 90.6 | 91.3 | 85.8 |
| | Saturation, % | 58.5 | 57.5 | 70.7 |
| | Void Ratio | 0.8600 | 0.8468 | 0.9634 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 25.5 | 25.5 | 25.5 |
| At Test | Water Content, % | 27.9 | 28.4 | 26.7 |
| | Dry Density, pcf | 96.1 | 95.5 | 97.9 |
| | Saturation, % | 100.0 | 100.0 | 100.0 |
| | Void Ratio | 0.7545 | 0.7659 | 0.7209 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 24.1 | 24.4 | 22.4 |
| Normal Stress, ksf | | 4.10 | 7.70 | 17.00 |
| Fail. Stress, ksf | | 2.67 | 6.39 | 14.17 |
| Strain, % | | 3.6 | 7.2 | 8.0 |
| Ult. Stress, ksf | | | | |
| Strain, % | | | | |
| Strain rate, mm./min. | | 0.2 | 0.2 | 0.2 |

**Sample Type:** Undisturbed
**Description:** SAND, with silt (SP-SM)

**LL=** **PL=** **PI=**
**Specific Gravity=** 2.7
**Remarks:** Lab no. 7594

**Figure** _____

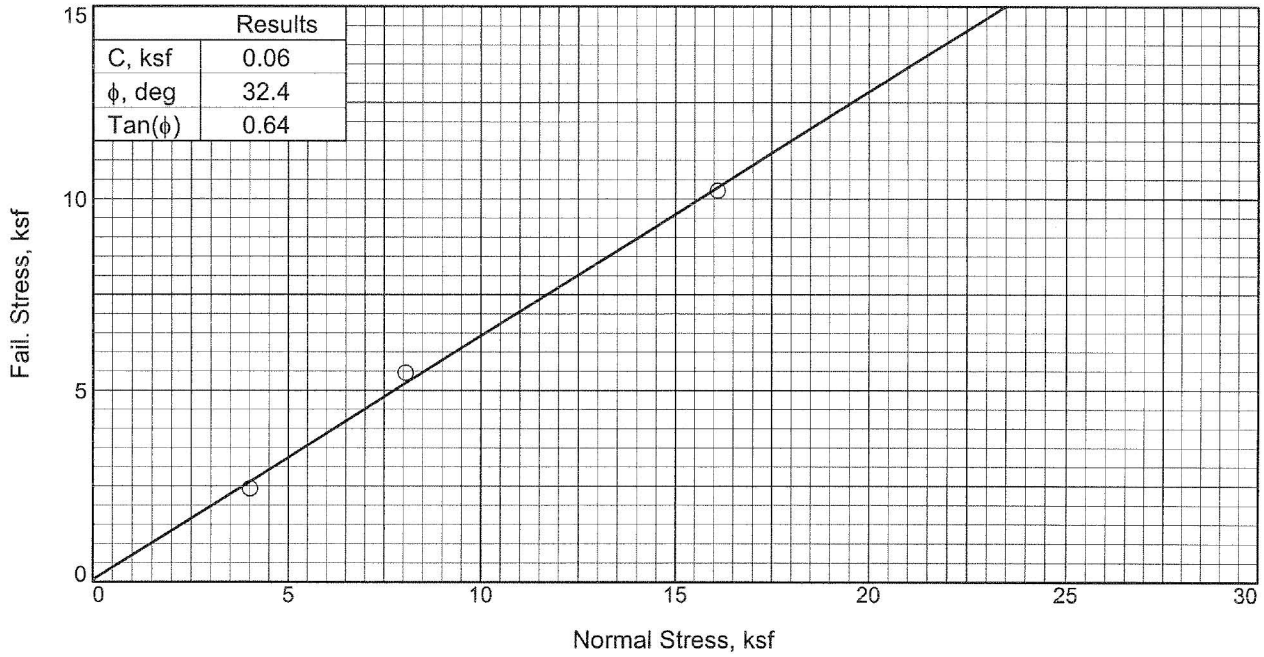
**Client:** GPC c/o SNOC

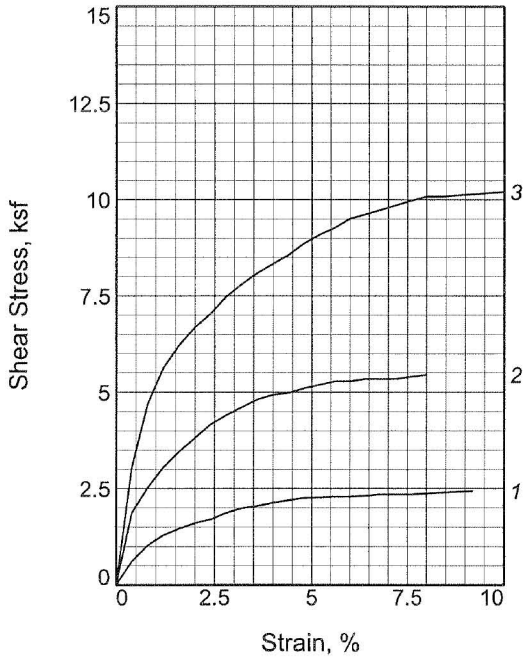
**Project:** Vogtle Units 3 & 4 COL Project

**Location:** B-3031
**Sample Number:** UD-3 **Depth:** 38.5/184.20
**Proj. No.:** 6141-06-0286 **Date:** 1/24/2007

DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.




| Sample No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 24.8 | 16.5 | 18.1 |
| | Dry Density, pcf | 90.9 | 86.7 | 85.5 |
| | Saturation, % | 77.6 | 46.8 | 50.0 |
| | Void Ratio | 0.8659 | 0.9554 | 0.9826 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 25.5 | 25.5 | 25.5 |
| At Test | Water Content, % | 23.5 | 25.8 | 24.6 |
| | Dry Density, pcf | 103.6 | 99.7 | 101.6 |
| | Saturation, % | 100.1 | 100.0 | 100.0 |
| | Void Ratio | 0.6373 | 0.7005 | 0.6689 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 22.4 | 22.2 | 21.5 |
| Normal Stress, ksf | | 4.01 | 8.06 | 16.10 |
| Fail. Stress, ksf | | 2.43 | 5.46 | 10.21 |
| Strain, % | | 9.2 | 8.0 | 10.0 |
| Ult. Stress, ksf | | | | |
| Strain, % | | | | |
| Strain rate, mm./min. | | 0.2 | 0.2 | 0.2 |

**Sample Type:** Undisturbed
**Description:** SAND, silty (SM)

**LL=** **PL=** **PI=**
**Specific Gravity=** 2.716
**Remarks:** Lab no. 7598

**Figure** _____

**Client:** GPC c/o SNOC

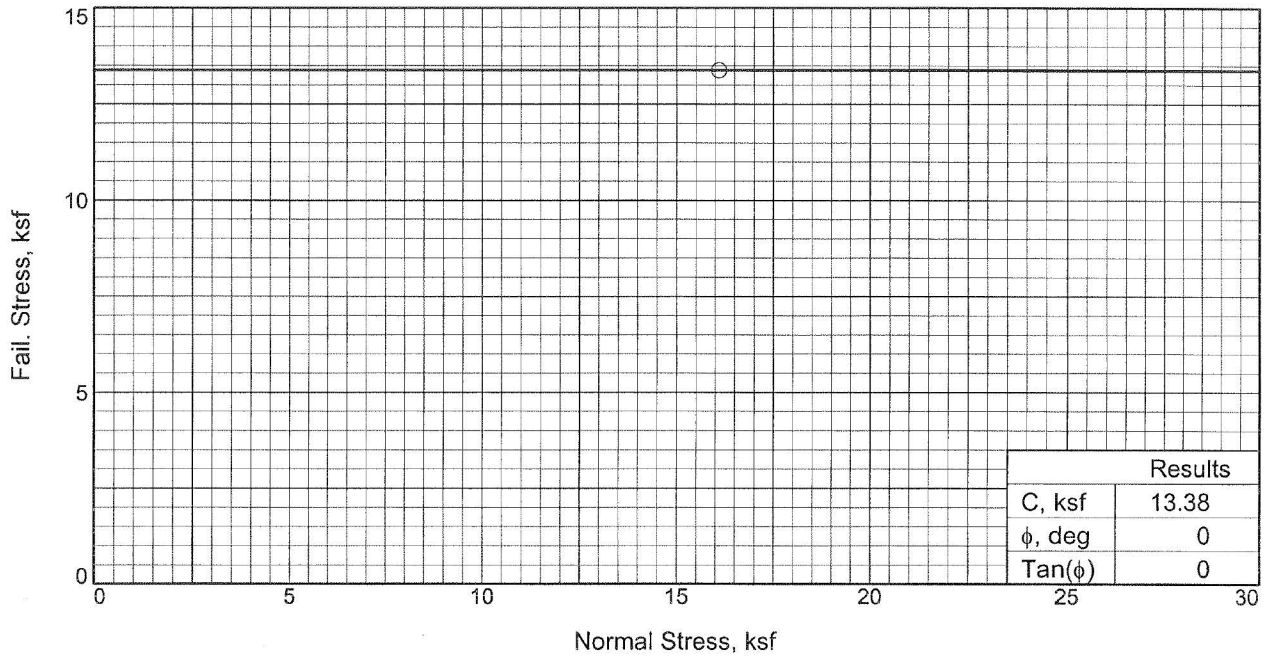
**Project:** Vogtle Units 3 & 4 COL Project

**Location:** B-3033
**Sample Number:** UD-4 **Depth:** 38.5/183.76
**Proj. No.:** 6141-06-0286 **Date:** 1/18/2007

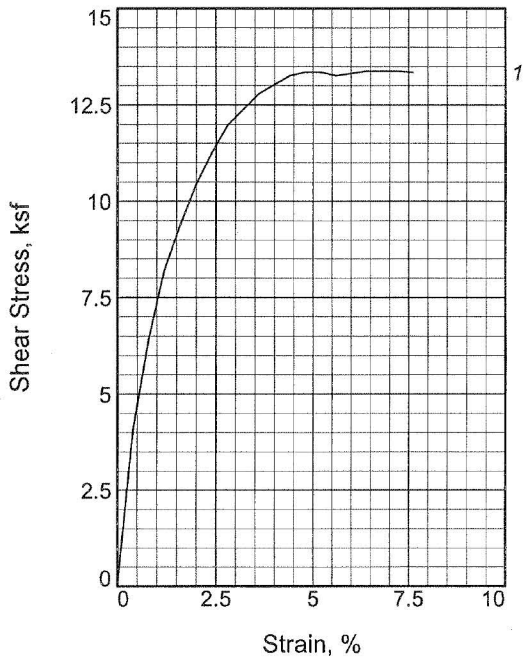
DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.

**Tested By:** SW **Checked By:** HJ




| | Results |
|---|---|
| C, ksf | 13.38 |
| $\phi$, deg | 0 |
| Tan($\phi$) | 0 |




| | | |
|---|---|---|
| Sample No. | | 1 |
| Initial | Water Content, % | 12.6 |
| | Dry Density, pcf | 101.3 |
| | Saturation, % | 51.2 |
| | Void Ratio | 0.6645 |
| | Diameter, mm. | 63.5 |
| | Height, mm. | 25.6 |
| At Test | Water Content, % | 20.4 |
| | Dry Density, pcf | 108.6 |
| | Saturation, % | 100.0 |
| | Void Ratio | 0.5520 |
| | Diameter, mm. | 63.5 |
| | Height, mm. | 23.8 |
| Normal Stress, ksf | | 16.10 |
| Fail. Stress, ksf | | 13.38 |
| Strain, % | | 6.4 |
| Ult. Stress, ksf | | |
| Strain, % | | |
| Strain rate, mm./min. | | 0.2 |

**Sample Type:** Undisturbed
**Description:** SAND, silty (SM)

**LL=** **PL=** **PI=**
**Specific Gravity=** 2.7
**Remarks:** Lab no. 7557

**Figure** _____

**Client:** GPC c/o SNOC

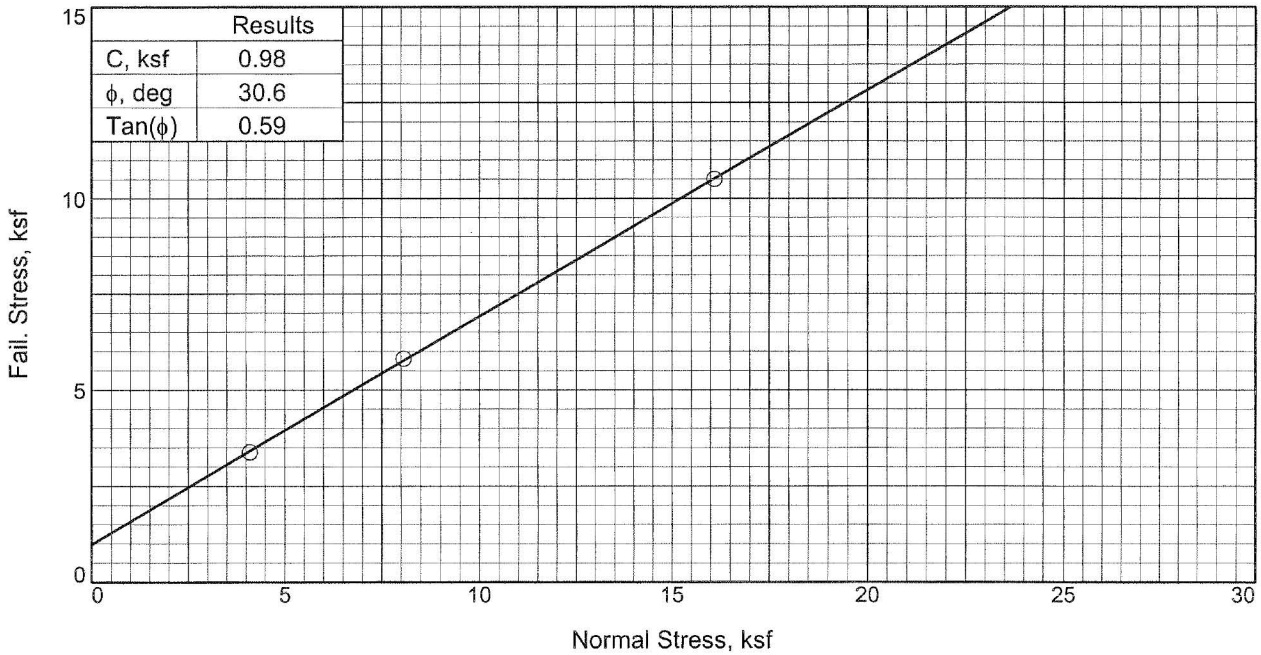
**Project:** Vogtle Units 3 & 4 COL Project

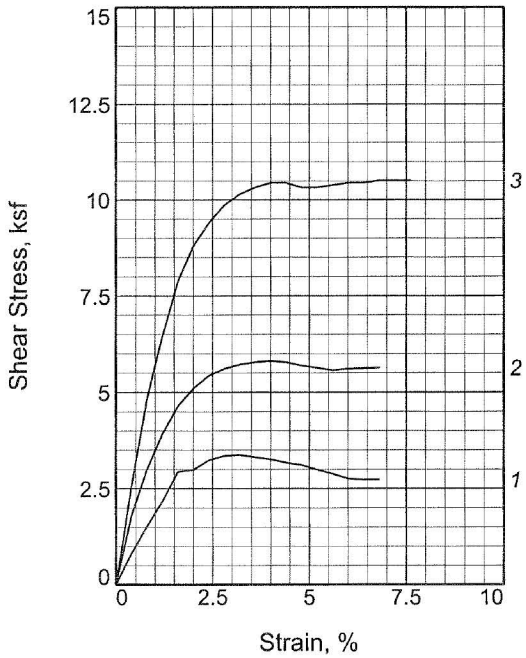
**Location:** B-4001
**Sample Number:** UD-12 **Depth:** 298.5/-79.62
**Proj. No.:** 6141-06-0286 **Date:** 12/19/2006

DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.

**Tested By:** SW **Checked By:** HJ




| Sample No. | | 1 | 2 | 3 |
|---|---|---|---|---|
| Initial | Water Content, % | 29.7 | 31.6 | 32.3 |
| | Dry Density, pcf | 88.2 | 88.3 | 82.7 |
| | Saturation, % | 88.0 | 93.9 | 84.0 |
| | Void Ratio | 0.9116 | 0.9080 | 1.0382 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 25.5 | 25.5 | 25.5 |
| At Test | Water Content, % | 31.0 | 29.9 | 32.7 |
| | Dry Density, pcf | 91.7 | 93.3 | 89.5 |
| | Saturation, % | 100.0 | 100.0 | 100.0 |
| | Void Ratio | 0.8374 | 0.8072 | 0.8839 |
| | Diameter, mm. | 63.5 | 63.5 | 63.5 |
| | Height, mm. | 24.5 | 24.1 | 23.6 |
| Normal Stress, ksf | | 4.10 | 8.06 | 16.10 |
| Fail. Stress, ksf | | 3.37 | 5.81 | 10.50 |
| Strain, % | | 3.2 | 4.0 | 6.8 |
| Ult. Stress, ksf | | | | |
| Strain, % | | | | |
| Strain rate, mm./min. | | 0.2 | 0.2 | 0.2 |

**Sample Type:** Undisturbed
**Description:** SAND, silty (SM)

**LL=** **PL=** **PI=**
**Specific Gravity=** 2.7
**Remarks:** Lab no. 7566

**Figure** _____

**Client:** GPC c/o SNOC

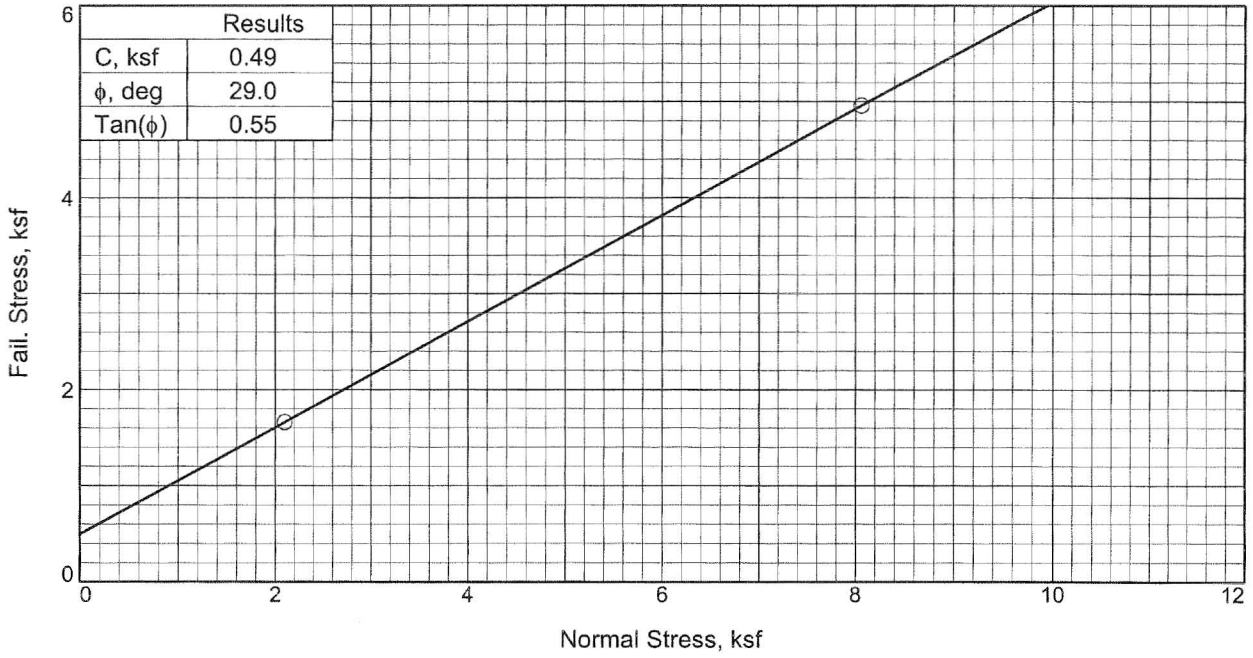
**Project:** Vogtle Units 3 & 4 COL Project

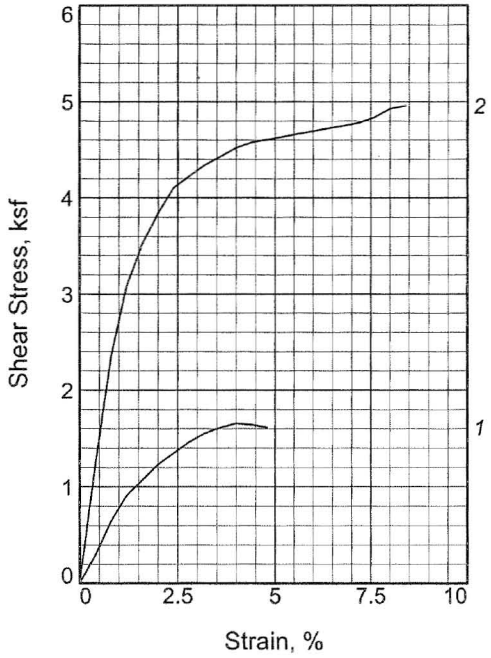
**Location:** B-4003
**Sample Number:** UD-5 **Depth:** 201.0/17.99
**Proj. No.:** 6141-06-0286 **Date:** 12/8/2006

DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.

**Tested By:** SW **Checked By:** HJ




| Sample No. | | 1 | 2 |
|---|---|---|---|
| Initial | Water Content, % | 22.8 | 31.6 |
| | Dry Density, pcf | 101.3 | 89.6 |
| | Saturation, % | 92.4 | 96.9 |
| | Void Ratio | 0.6647 | 0.8816 |
| | Diameter, mm. | 63.5 | 63.5 |
| | Height, mm. | 25.6 | 25.6 |
| At Test | Water Content, % | 22.5 | 24.5 |
| | Dry Density, pcf | 104.9 | 101.4 |
| | Saturation, % | 100.0 | 100.0 |
| | Void Ratio | 0.6068 | 0.6616 |
| | Diameter, mm. | 63.5 | 63.5 |
| | Height, mm. | 24.7 | 22.6 |
| Normal Stress, ksf | | 2.10 | 8.06 |
| Fail. Stress, ksf | | 1.66 | 4.96 |
| Strain, % | | 4.0 | 8.4 |
| Ult. Stress, ksf | | | |
| Strain, % | | | |
| Strain rate, mm./min. | | 0.2 | 0.2 |

**Sample Type:** Undisturbed
**Description:** SAND, silty (SM)

**LL=** **PL=** **PI=**
**Specific Gravity=** 2.7
**Remarks:** Lab no. 7613

**Figure** _____

**Client:** GPC c/o SNOC

**Project:** Vogtle Units 3 & 4 COL Project

**Location:** B-4032
**Sample Number:** UD-1 **Depth:** 28.5/191.74
**Proj. No.:** 6141-06-0286 **Date:** 2/13/2007

DIRECT SHEAR TEST REPORT

MACTEC ENGINEERING AND CONSULTING, INC.

**Tested By:** SW **Checked By:** HJ

# ANALYTICAL REPORT

Job Number: 680-25209-1

Job Description: Vogtle COL Project

For:
MACTEC Engineering and Consulting Inc
396 Plasters Avenue, NE
Atlanta, GA 30324

Attention: James Lane

Kathryn Smith

Kathryn Smith
Project Manager I
kesmith@stl-inc.com
03/29/2007

Project Manager: Kathryn Smith

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the STL Project Manager who signed this report.

# METHOD SUMMARY

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-25209-1

| Description | Lab Location | Method | Preparation Method |
|---|---|---|---|
| **Matrix: Solid** | | | |
| Soil and Waste pH | STL SAV | SW846 9045C | |
| Anions by Ion Chromatography | STL SAV | SW846 9056 | |
| Deionized Water Leaching Procedure (Routine) | STL SAV | | ASTM NONE |
| Percent Moisture | STL SAV | EPA PercentMoisture | |

**LAB REFERENCES:**

STL SAV = STL Savannah

**METHOD REFERENCES:**

EPA - US Environmental Protection Agency

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986
And Its Updates.

# SAMPLE SUMMARY

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-25209-1

| Lab Sample ID | Client Sample ID | Client Matrix | Date/Time Sampled | Date/Time Received |
|---|---|---|---|---|
| 680-25209-1 | 6810 | Solid | 03/20/2007 0000 | 03/21/2007 0910 |
| 680-25209-2 | 6811 | Solid | 03/20/2007 0000 | 03/21/2007 0910 |
| 680-25209-3 | 6813 | Solid | 03/20/2007 0000 | 03/21/2007 0910 |
| 680-25209-4 | 6817 | Solid | 03/20/2007 0000 | 03/21/2007 0910 |
| 680-25209-5 | 6819 | Solid | 03/20/2007 0000 | 03/21/2007 0910 |
| 680-25209-6 | 6820 | Solid | 03/20/2007 0000 | 03/21/2007 0910 |
| 680-25209-7 | 6822 | Solid | 03/20/2007 0000 | 03/21/2007 0910 |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-25209-1

**General Chemistry**

**Client Sample ID:** **6810**

Lab Sample ID: 680-25209-1
Client Matrix: Solid

Date Sampled: 03/20/2007 0000
Date Received: 03/21/2007 0910

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 140 | | mg/Kg | 0.95 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0143 | | | DryWt Corrected: N | |
| Sulfate-S | 19 | J | mg/Kg | 4.4 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0143 | | | DryWt Corrected: N | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 5.09 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-70649 | Date Analyzed | 03/23/2007 1620 | DryWt Corrected: N | |

**Client Sample ID:** **6811**

Lab Sample ID: 680-25209-2
Client Matrix: Solid

Date Sampled: 03/20/2007 0000
Date Received: 03/21/2007 0910

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 390 | | mg/Kg | 0.95 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0211 | | | DryWt Corrected: N | |
| Sulfate-S | 14 | J | mg/Kg | 4.4 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0211 | | | DryWt Corrected: N | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 5.53 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-70649 | Date Analyzed | 03/23/2007 1620 | DryWt Corrected: N | |

**General Chemistry**

**Client Sample ID:** **6813**

Lab Sample ID: 680-25209-3
Client Matrix: Solid

Date Sampled: 03/20/2007 0000
Date Received: 03/21/2007 0910

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 150 | | mg/Kg | 0.97 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0239 | | | DryWt Corrected: N | |
| Sulfate-S | 2400 | | mg/Kg | 23 | 100 | 5.0 | 9056 |
| | Anly Batch: 680-70861 | Date Analyzed | 03/26/2007 1523 | | | DryWt Corrected: N | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 7.49 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-70649 | Date Analyzed | 03/23/2007 1620 | DryWt Corrected: N | |

**Client Sample ID:** **6817**

Lab Sample ID: 680-25209-4
Client Matrix: Solid

Date Sampled: 03/20/2007 0000
Date Received: 03/21/2007 0910

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 150 | | mg/Kg | 0.97 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0308 | | | DryWt Corrected: N | |
| Sulfate-S | 20 | U | mg/Kg | 4.5 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0308 | | | DryWt Corrected: N | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 5.47 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-70649 | Date Analyzed | 03/23/2007 1620 | DryWt Corrected: N | |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-25209-1

**General Chemistry**

**Client Sample ID:** **6819**

Lab Sample ID: 680-25209-5
Client Matrix: Solid

Date Sampled: 03/20/2007 0000
Date Received: 03/21/2007 0910

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 130 | | mg/Kg | 0.95 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0336 | | | DryWt Corrected: N | |
| Sulfate-S | 20 | U | mg/Kg | 4.4 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0336 | | | DryWt Corrected: N | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 8.89 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-70649 | Date Analyzed | 03/23/2007 1620 | DryWt Corrected: N | |

**Client Sample ID:** **6820**

Lab Sample ID: 680-25209-6
Client Matrix: Solid

Date Sampled: 03/20/2007 0000
Date Received: 03/21/2007 0910

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 130 | | mg/Kg | 0.95 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0405 | | | DryWt Corrected: N | |
| Sulfate-S | 30 | | mg/Kg | 4.4 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0405 | | | DryWt Corrected: N | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 9.24 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-70649 | Date Analyzed | 03/23/2007 1620 | DryWt Corrected: N | |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-25209-1

**General Chemistry**

**Client Sample ID:** **6822**

Lab Sample ID: 680-25209-7
Client Matrix: Solid

Date Sampled: 03/20/2007 0000
Date Received: 03/21/2007 0910

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 150 | | mg/Kg | 0.97 | 20 | 1.0 | 9056 |
| | Anly Batch: 680-70856 | Date Analyzed | 03/24/2007 0433 | | | DryWt Corrected: N | |
| Sulfate-S | 2600 | | mg/Kg | 23 | 100 | 5.0 | 9056 |
| | Anly Batch: 680-70861 | Date Analyzed | 03/26/2007 1551 | | | DryWt Corrected: N | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 7.62 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-70649 | Date Analyzed | 03/23/2007 1620 | DryWt Corrected: N | |

# DATA REPORTING QUALIFIERS

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-25209-1

| Lab Section | Qualifier | Description |
|---|---|---|
| General Chemistry | | |
| | U | Indicates the analyte was analyzed for but not detected. |
| | J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-25209-1

**Lab Control Spike/**
**Lab Control Spike Duplicate Recovery Report - Batch: 680-70649**

**Method: 9045C**
**Preparation: N/A**

LCS Lab Sample ID: LCS 680-70649/10
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/23/2007 1620
Date Prepared: N/A

Analysis Batch: 680-70649
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20.00 mL
Final Weight/Volume: 20 mL

LCSD Lab Sample ID: LCSD 680-70649/11
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/23/2007 1620
Date Prepared: N/A

Analysis Batch: 680-70649
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20.00 mL
Final Weight/Volume: 20 mL

| Analyte | % Rec. LCS | % Rec. LCSD | Limit | RPD | RPD Limit | LCS Qual | LCSD Qual |
|---|---|---|---|---|---|---|---|
| pH | 100 | 101 | 63 - 158 | 0 | 40 | | |

**Duplicate - Batch: 680-70649**

**Method: 9045C**
**Preparation: N/A**

Lab Sample ID: 680-25209-7
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 03/23/2007 1620
Date Prepared: N/A

Analysis Batch: 680-70649
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20.00 mL
Final Weight/Volume: 20 mL

| Analyte | Sample Result/Qual | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|
| pH | 7.62 | 7.60 | | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-25209-1

**Method Blank - Batch: 680-70856**

**Method: 9056**
**Preparation: N/A**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | MB 680-70853/1-AA | Analysis Batch: | 680-70856 | Instrument ID: | ICCS200 |
| Client Matrix: | Solid | Prep Batch: | N/A | Lab File ID: | 0015.d |
| Dilution: | 1.0 | Units: | mg/Kg | Initial Weight/Volume: | mL |
| Date Analyzed: | 03/24/2007 0046 | | | Final Weight/Volume: | 5 mL |
| Date Prepared: | N/A | | | | |
| Date Leached: | 03/23/2007 1200 | Leachate Batch: | 680-70853 | | |

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Chloride-S | 20 | U | 0.97 | 20 |
| Sulfate-S | 20 | U | 4.5 | 20 |

**Lab Control Spike - Batch: 680-70856**

**Method: 9056**
**Preparation: N/A**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LCS 680-70853/2-AA | Analysis Batch: | 680-70856 | Instrument ID: | ICCS200 |
| Client Matrix: | Solid | Prep Batch: | N/A | Lab File ID: | 0016.d |
| Dilution: | 1.0 | Units: | mg/Kg | Initial Weight/Volume: | mL |
| Date Analyzed: | 03/24/2007 0114 | | | Final Weight/Volume: | 5 mL |
| Date Prepared: | N/A | | | | |
| Date Leached: | 03/23/2007 1200 | Leachate Batch: | 680-70853 | | |

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Chloride-S | 200 | 203 | 101 | 75 - 125 | |
| Sulfate-S | 200 | 202 | 101 | 75 - 125 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Attachment 4 TP-1, Rev. 4 (09/02/03)

# CHAIN OF CUSTODY

MACTEC

Project Number: 6141-06-0286 Task:
Project Name: Vogtle COL Project
Task Name:
APC Number: 73868 Lab Record Number: 489
Contact Name: HARRY JOHNSON Phone #: 404 817 0257

| Sample Information | | | | | Parameters Requested | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID# | Client Sample ID | Boring # | Depth (ft) | Sample Matrix | Chorides (EPA Method SW-846 9056/300.0) | Sulfates (EPA Method SW-846 9056/300.0) | pH (EPA Method SW-846 9045) | | | | Number of Jars |
| 6810 | | B-3008 | 11-12.5 | Bag | X | X | X | | | | 1 |
| 6811 | | B-3008 | 58.5-60 | Bag | X | X | X | | | | 1 |
| 6813 | | B-3008 | 123.5-125 | Bag | X | X | X | | | | 1 |
| 6817 | | B-4004 | 48.5-50 | Bag | X | X | X | | | | 1 |
| 6819 | | B-4004 | 73.5-75.0 | Bag | X | X | X | | | | 1 |
| 6820 | | B-4004 | 88.5-90 | Bag | X | X | X | | | | 1 |
| 6822 | | B-4004 | 118.5-120 | Bag | X | X | X | | | | 1 |

TEMP: 16.4

680-252 09

| Turn Around Time | | Send Results To: | | Lab Use: | |
|---|---|---|---|---|---|
| Standard (14 days) | | MACTEC Engineering and Consulting, Inc. | | Cooler Temp: | |
| Rush: | | 396 Plasters Avenue | | Custody Seals: | |
| 5 Days | X | Atlanta, GA 30324 | | Intact | |
| 48 Hours | | Attention: | | Broken | |
| 24 Hours | | Fax Number: | 404-817-0221 | Not Present | |

**Special Instructions:** Please return a copy of the chain of custody. Dispose of excess material when testing has been completed and released by Mactec.

| Relinquished By: | Date: | Time: |
|---|---|---|
| James F. Lane | 3/20/07 | 5:00 pm |
| JAMES F. LANE | | |

| Received By: | Date: | Time: |
|---|---|---|
| | | |
| | | |

SEVERN TRENT STL

# ANALYTICAL REPORT

Job Number: 680-26053-1

Job Description: Vogtle COL Project

For:
MACTEC Engineering and Consulting Inc
396 Plasters Avenue, NE
Atlanta, GA 30324

Attention: Mr. Harry Johnson

Kathryn Smith

Kathryn Smith
Project Manager I
kesmith@stl-inc.com
04/26/2007

Project Manager: Kathryn Smith

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the STL Project Manager who signed this report.



ACCREDITED IN ACCORDANCE WITH nelac

# METHOD SUMMARY

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-26053-1

| Description | Lab Location | Method | Preparation Method |
|---|---|---|---|
| **Matrix: Solid** | | | |
| Soil and Waste pH | STL SAV | SW846 9045C | |
| Anions by Ion Chromatography | STL SAV | SW846 9056 | |
| Deionized Water Leaching Procedure (Routine) | STL SAV | | ASTM NONE |
| Percent Moisture | STL SAV | EPA PercentMoisture | |

**LAB REFERENCES:**

STL SAV = STL Savannah

**METHOD REFERENCES:**

EPA - US Environmental Protection Agency

SW846 - "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986
And Its Updates.

## SAMPLE SUMMARY

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-26053-1

| Lab Sample ID | Client Sample ID | Client Matrix | Date/Time Sampled | Date/Time Received |
|---|---|---|---|---|
| 680-26053-1 | 7347 | Solid | 04/18/2007 0000 | 04/19/2007 0920 |
| 680-26053-2 | 7348 | Solid | 04/18/2007 0000 | 04/19/2007 0920 |
| 680-26053-3 | 7349 | Solid | 04/18/2007 0000 | 04/19/2007 0920 |
| 680-26053-4 | 7350 | Solid | 04/18/2007 0000 | 04/19/2007 0920 |
| 680-26053-5 | 7351 | Solid | 04/18/2007 0000 | 04/19/2007 0920 |
| 680-26053-6 | 7352 | Solid | 04/18/2007 0000 | 04/19/2007 0920 |
| 680-26053-7 | 7353 | Solid | 04/18/2007 0000 | 04/19/2007 0920 |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-26053-1

## General Chemistry

**Client Sample ID:** 7347

Lab Sample ID: 680-26053-1
Client Matrix: Solid
% Moisture: 11.9
Date Sampled: 04/18/2007 0000
Date Received: 04/19/2007 0920

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 450 | | mg/Kg | 1.1 | 23 | 1.0 | 9056 |
| | Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 1831 | | | DryWt Corrected: Y | |
| Sulfate-S | 13 | J | mg/Kg | 5.1 | 23 | 1.0 | 9056 |
| | Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 1831 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 6.40 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-73268 | Date Analyzed | 04/24/2007 1000 | DryWt Corrected: N | |

**Client Sample ID:** 7348

Lab Sample ID: 680-26053-2
Client Matrix: Solid
% Moisture: 4.0
Date Sampled: 04/18/2007 0000
Date Received: 04/19/2007 0920

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 71 | | mg/Kg | 1.0 | 21 | 1.0 | 9056 |
| | Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 1900 | | | DryWt Corrected: Y | |
| Sulfate-S | 11 | J | mg/Kg | 4.7 | 21 | 1.0 | 9056 |
| | Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 1900 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 5.30 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-73268 | Date Analyzed | 04/24/2007 1000 | DryWt Corrected: N | |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-26053-1

## General Chemistry

**Client Sample ID:** **7349**

Lab Sample ID: 680-26053-3
Client Matrix: Solid
% Moisture: 6.5
Date Sampled: 04/18/2007 0000
Date Received: 04/19/2007 0920

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 71 | | mg/Kg | 1.0 | 21 | 1.0 | 9056 |
| Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 1928 | | | | DryWt Corrected: Y | |
| Sulfate-S | 8.1 | J | mg/Kg | 4.8 | 21 | 1.0 | 9056 |
| Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 1928 | | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 7.89 | | SU | 1.0 | 9045C |
| Anly Batch: 680-73268 | Date Analyzed | 04/24/2007 1000 | | DryWt Corrected: N | |

**Client Sample ID:** **7350**

Lab Sample ID: 680-26053-4
Client Matrix: Solid
% Moisture: 5.3
Date Sampled: 04/18/2007 0000
Date Received: 04/19/2007 0920

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 250 | | mg/Kg | 1.0 | 21 | 1.0 | 9056 |
| Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 1956 | | | | DryWt Corrected: Y | |
| Sulfate-S | 15 | J | mg/Kg | 4.8 | 21 | 1.0 | 9056 |
| Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 1956 | | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 5.69 | | SU | 1.0 | 9045C |
| Anly Batch: 680-73268 | Date Analyzed | 04/24/2007 1000 | | DryWt Corrected: N | |

**General Chemistry**

**Client Sample ID:** **7351**

Lab Sample ID: 680-26053-5 | Date Sampled: 04/18/2007 0000
Client Matrix: Solid | % Moisture: 11.9 | Date Received: 04/19/2007 0920

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 80 | | mg/Kg | 1.1 | 22 | 1.0 | 9056 |
| | Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 2025 | | | DryWt Corrected: Y | |
| Sulfate-S | 8.6 | J | mg/Kg | 5.0 | 22 | 1.0 | 9056 |
| | Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 2025 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 5.14 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-73268 | Date Analyzed | 04/24/2007 1000 | DryWt Corrected: N | |

**Client Sample ID:** **7352**

Lab Sample ID: 680-26053-6 | Date Sampled: 04/18/2007 0000
Client Matrix: Solid | % Moisture: 4.1 | Date Received: 04/19/2007 0920

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 74 | | mg/Kg | 1.0 | 21 | 1.0 | 9056 |
| | Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 2053 | | | DryWt Corrected: Y | |
| Sulfate-S | 18 | J | mg/Kg | 4.7 | 21 | 1.0 | 9056 |
| | Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 2053 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 5.23 | | SU | 1.0 | 9045C |
| | Anly Batch: 680-73268 | Date Analyzed | 04/24/2007 1000 | DryWt Corrected: N | |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-26053-1

**General Chemistry**

**Client Sample ID:** 7353

Lab Sample ID: 680-26053-7
Client Matrix: Solid
% Moisture: 13.0
Date Sampled: 04/18/2007 0000
Date Received: 04/19/2007 0920

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 91 | | mg/Kg | 1.1 | 23 | 1.0 | 9056 |
| Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 2122 | | | | DryWt Corrected: Y | |
| Sulfate-S | 16 | J | mg/Kg | 5.2 | 23 | 1.0 | 9056 |
| Anly Batch: 680-73461 | Date Analyzed | 04/25/2007 2122 | | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | | | Dil | Method |
|---|---|---|---|---|---|---|---|
| pH | 5.25 | | SU | | | 1.0 | 9045C |
| Anly Batch: 680-73268 | Date Analyzed | 04/24/2007 1000 | | | | DryWt Corrected: N | |

## DATA REPORTING QUALIFIERS

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-26053-1

| Lab Section | Qualifier | Description |
|---|---|---|
| General Chemistry | | |
| | U | Indicates the analyte was analyzed for but not detected. |
| | J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-26053-1

**Lab Control Spike - Batch: 680-73268**

**Method: 9045C**
**Preparation: N/A**

Lab Sample ID: LCS 680-73268/1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/24/2007 1000
Date Prepared: N/A

Analysis Batch: 680-73268
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20.00 g
Final Weight/Volume: 20.00 mL

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| pH | 7.00 | 7.010 | 100 | 63 - 158 | |

**Duplicate - Batch: 680-73268**

**Method: 9045C**
**Preparation: N/A**

Lab Sample ID: 680-26053-7
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 04/24/2007 1000
Date Prepared: N/A

Analysis Batch: 680-73268
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20.01 g
Final Weight/Volume: 20.00 mL

| Analyte | Sample Result/Qual | Result | RPD | Limit | Qual |
|---|---|---|---|---|---|
| pH | 5.25 | 5.31 | | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-26053-1

**Method Blank - Batch: 680-73461**

**Method: 9056**
**Preparation: N/A**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | MB 680-73420/1-AA | Analysis Batch: | 680-73461 | Instrument ID: | ICCS200 |
| Client Matrix: | Solid | Prep Batch: | N/A | Lab File ID: | 0015.d |
| Dilution: | 1.0 | Units: | mg/Kg | Initial Weight/Volume: | mL |
| Date Analyzed: | 04/25/2007 1734 | | | Final Weight/Volume: | 5 mL |
| Date Prepared: | N/A | | | | |
| Date Leached: | 04/24/2007 1200 | Leachate Batch: | 680-73420 | | |

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Chloride-S | 20 | U | 0.97 | 20 |
| Sulfate-S | 20 | U | 4.5 | 20 |

**Lab Control Spike - Batch: 680-73461**

**Method: 9056**
**Preparation: N/A**

| | | | | | |
|---|---|---|---|---|---|
| Lab Sample ID: | LCS 680-73420/2-AA | Analysis Batch: | 680-73461 | Instrument ID: | ICCS200 |
| Client Matrix: | Solid | Prep Batch: | N/A | Lab File ID: | 0016.d |
| Dilution: | 1.0 | Units: | mg/Kg | Initial Weight/Volume: | mL |
| Date Analyzed: | 04/25/2007 1803 | | | Final Weight/Volume: | 5 mL |
| Date Prepared: | N/A | | | | |
| Date Leached: | 04/24/2007 1200 | Leachate Batch: | 680-73420 | | |

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Chloride-S | 200 | 207 | 104 | 75 - 125 | |
| Sulfate-S | 200 | 199 | 99 | 75 - 125 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-26053-1

**Matrix Spike/**
**Matrix Spike Duplicate Recovery Report - Batch: 680-73461**

**Method: 9056**
**Preparation: N/A**

| | | | | | |
|---|---|---|---|---|---|
| MS Lab Sample ID: | 680-26053-7 | Analysis Batch: | 680-73461 | Instrument ID: | ICCS200 |
| Client Matrix: | Solid | Prep Batch: N/A | | Lab File ID: | 0024.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | mL |
| Date Analyzed: | 04/25/2007 2150 | | | Final Weight/Volume: | 5 mL |
| Date Prepared: | N/A | | | | 100 uL |
| Date Leached: | 04/24/2007 1200 | Leachate Batch: | 680-73420 | | |

| | | | | | |
|---|---|---|---|---|---|
| MSD Lab Sample ID: | 680-26053-7 | Analysis Batch: | 680-73461 | Instrument ID: | ICCS200 |
| Client Matrix: | Solid | Prep Batch: N/A | | Lab File ID: | 0025.d |
| Dilution: | 1.0 | | | Initial Weight/Volume: | mL |
| Date Analyzed: | 04/25/2007 2218 | | | Final Weight/Volume: | 5 mL |
| Date Prepared: | N/A | | | | 100 uL |
| Date Leached: | 04/24/2007 1200 | Leachate Batch: | 680-73420 | | |

| | % Rec. | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyte | MS | MSD | Limit | RPD | RPD Limit | MS Qual | MSD Qual |
| Chloride-S | 100 | 94 | 75 - 125 | 4 | 30 | | |
| Sulfate-S | 96 | 96 | 75 - 125 | 0 | 30 | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Attachment 4 TP-1, Rev. 4 (09/02/03)

# CHAIN OF CUSTODY

MACTEC

Project Number: 6141-06-0286 Task:
Project Name: Vogtle COL Project
Task Name:
APC Number: 73868 Lab Record Number: 489
Contact Name: Harry Johnson Phone #: 404-873-4761

| Sample Information | | | | | Parameters Requested | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID# | Client Sample ID | Boring # | Depth (ft) | Sample Matrix | Chorides (EPA Method SW-846 9056/300.0) | Sulfates (EPA Method SW-846 9056/300.0) | pH (EPA Method SW-846 9045) | | | | Number of Jars |
| 7347 | | TP-B1121 | 6-7 | Bag | x | x | x | | | | 1 |
| 7348 | | TP-B-1117 | 6-7 | Bag | x | x | x | | | | 1 |
| 7349 | | TP-B-1125 | 6-9 | Bag | x | x | x | | | | 1 |
| 7350 | | TP-B-1197 | 5-11 | Bag | x | x | x | | | | 1 |
| 7351 | | TP-B-1108 | 8-12 | Bag | x | x | x | | | | 1 |
| 7352 | | TP-B-1194 | 5-6 | Bag | x | x | x | | | | 1 |
| 7353 | | TP-B-1194 | 8-11 | Bag | x | x | x | | | | 1 |
| 7354 | | TP-B-1185 | 6-7 | Bag | x | x | x | | | | |

TEMP.: 20.2
680-26053

| Turn Around Time | | Send Results To: | Lab Use: | |
|---|---|---|---|---|
| Standard (14 days) | | MACTEC Engineering and Consulting, Inc. | Cooler Temp: | |
| Rush: | | 396 Plasters Avenue | Custody Seals: | |
| 5 Days | x | Atlanta, GA 30324 | Intact | |
| 48 Hours | | Attention: Harry Johnson | Broken | |
| 24 Hours | | Fax Number: 404-817-0221 | Not Present | |

**Special Instructions:** Please return a copy of the chain of custody. Dispose of excess material when testing has been completed and released by MACTEC.

| Relinquished By: | Date: | Time: |
|---|---|---|
| Harry Johnson | 4/18/2007 | 11:00am |
| | | |

| Received By: | Date: | Time: |
|---|---|---|
| KL | 4/18/07 | 0920 |
| | | |

# CHAIN OF CUSTODY

MACTEC

Project Number: 6141-06-0286 Task:
Project Name: Vogtle COL Project
Task Name:
APC Number: 73868 Lab Record Number: 489
Contact Name: Harry Johnson Phone #: 404-873-4761

| Sample Information | | | | | Parameters Requested | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID# | Client Sample ID | Boring # | Depth (ft) | Sample Matrix | Chorides (EPA Method SW-846 9056/300.0) | Sulfates (EPA Method SW-846 9056/300.0) | pH (EPA Method SW-846 9045) | | | | Number of Jars |
| 7347 | | TP-B1121 | 6-7 | Bag | x | x | x | | | | 1 |
| 7348 | | TP-B-1117 | 6-7 | Bag | x | x | x | | | | 1 |
| 7349 | | TP-B-1125 | 6-9 | Bag | x | x | x | | | | 1 |
| 7350 | | TP-B-1197 | 5-11 | Bag | x | x | x | | | | 1 |
| 7351 | | TP-B-1108 | 8-12 | Bag | x | x | x | | | | 1 |
| 7352 | | TP-B-1194 | 5-6 | Bag | x | x | x | | | | 1 |
| 7353 | | TP-B-1194 | 8-11 | Bag | x | x | x | | | | 1 |
| 7354 | | TP-B-1185 | 6-7 | Bag | x | x | x | — did not rec. sample | | | |
| | | | | | | | | | | KS 4/26/07 | |

TEMP: 20.2
680-26053

| Turn Around Time | | Send Results To: | Lab Use: | |
|---|---|---|---|---|
| Standard (14 days) | | MACTEC Engineering and Consulting, Inc. | Cooler Temp: | |
| Rush: | | 396 Plasters Avenue | Custody Seals: | |
| 5 Days | x | Atlanta, GA 30324 | Intact | |
| 48 Hours | | Attention: Harry Johnson | Broken | |
| 24 Hours | | Fax Number: 404-817-0221 | Not Present | |

**Special Instructions:** Please return a copy of the chain of custody. Dispose of excess material when testing has been completed and released by MACTEC.

| Relinquished By: | Date: | Time: |
|---|---|---|
| Harry Johnson | 4/18/2007 | 11:00am |
| | | |

| Received By: | Date: | Time: |
|---|---|---|
| KL | 4/18/07 | 0920 |
| | | |

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

Job Number: 680-29167-1

Job Description: Project Vogtle COL

For:
MACTEC Engineering and Consulting Inc
396 Plasters Avenue, NE
Atlanta, GA 30324

Attention: Mr. Harry Johnson

Kathryn Smith

Kathryn Smith
Project Manager I
kathye.smith@testamericainc.com
08/22/2007

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager who signed this report.

# METHOD SUMMARY

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-29167-1

| Description | Lab Location | Method | Preparation Method |
|---|---|---|---|
| **Matrix: Solid** | | | |
| Soil and Waste pH | TAL SAV | SW846 9045C | |
| Anions by Ion Chromatography | TAL SAV | SW846 9056 | |
| Deionized Water Leaching Procedure (Routine) | TAL SAV | | ASTM NONE |

**Lab References:**

TAL SAV = TestAmerica Savannah

**Method References:**

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

# SAMPLE SUMMARY

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-29167-1

| Lab Sample ID | Client Sample ID | Client Matrix | Date/Time Sampled | Date/Time Received |
|---|---|---|---|---|
| 680-29167-1 | 7431 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-2 | 7432 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-3 | 7441 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-4 | 7742 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-5 | 7443 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-6 | 7445 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-7 | 7590 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-8 | 7594 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-9 | 7595 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-10 | 7600 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-11 | 7616 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |
| 680-29167-12 | 7618 | Solid | 08/10/2007 0000 | 08/13/2007 0930 |

## General Chemistry

**Client Sample ID: 7431**

Lab Sample ID: 680-29167-1
Client Matrix: Solid
% Moisture: 0.2
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 100 | U | mg/Kg | 25 | 100 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed 08/21/2007 1649 | | | | | DryWt Corrected: Y | |
| Sulfate-S | 100 | U | mg/Kg | 25 | 100 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed 08/21/2007 1649 | | | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 8.52 | HF | SU | 1.0 | 9045C |
| Anly Batch: 680-83258 | Date Analyzed 08/19/2007 1600 | | | DryWt Corrected: N | |

**Client Sample ID: 7432**

Lab Sample ID: 680-29167-2
Client Matrix: Solid
% Moisture: 2.8
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 170 | | mg/Kg | 26 | 100 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed 08/21/2007 1702 | | | | | DryWt Corrected: Y | |
| Sulfate-S | 100 | U | mg/Kg | 26 | 100 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed 08/21/2007 1702 | | | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 8.22 | HF | SU | 1.0 | 9045C |
| Anly Batch: 680-83258 | Date Analyzed 08/19/2007 1600 | | | DryWt Corrected: N | |

## General Chemistry

**Client Sample ID: 7441**

Lab Sample ID: 680-29167-3
Client Matrix: Solid
% Moisture: 0.1
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 130 | | mg/Kg | 25 | 99 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1714 | | | DryWt Corrected: Y | |
| Sulfate-S | 99 | U | mg/Kg | 25 | 99 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1714 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 6.91 | HF | SU | 1.0 | 9045C |
| | Anly Batch: 680-83207 | Date Analyzed | 08/16/2007 0345 | DryWt Corrected: N | |

**Client Sample ID: 7742**

Lab Sample ID: 680-29167-4
Client Matrix: Solid
% Moisture: 0.1
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 98 | U | mg/Kg | 25 | 98 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1726 | | | DryWt Corrected: Y | |
| Sulfate-S | 98 | U | mg/Kg | 25 | 98 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1726 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 6.47 | HF | SU | 1.0 | 9045C |
| | Anly Batch: 680-83207 | Date Analyzed | 08/16/2007 0345 | DryWt Corrected: N | |

## General Chemistry

**Client Sample ID: 7443**

Lab Sample ID: 680-29167-5
Client Matrix: Solid
% Moisture: 2.5
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 180 | | mg/Kg | 26 | 100 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1739 | | | DryWt Corrected: Y | |
| Sulfate-S | 100 | U | mg/Kg | 26 | 100 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1739 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 6.36 | HF | SU | 1.0 | 9045C |
| | Anly Batch: 680-83207 | Date Analyzed | 08/16/2007 0345 | DryWt Corrected: N | |

**Client Sample ID: 7445**

Lab Sample ID: 680-29167-6
Client Matrix: Solid
% Moisture: 12.6
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 110 | U | mg/Kg | 28 | 110 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1751 | | | DryWt Corrected: Y | |
| Sulfate-S | 65 | J | mg/Kg | 28 | 110 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1751 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 6.97 | HF | SU | 1.0 | 9045C |
| | Anly Batch: 680-83207 | Date Analyzed | 08/16/2007 0345 | DryWt Corrected: N | |

## General Chemistry

**Client Sample ID: 7590**

Lab Sample ID: 680-29167-7
Client Matrix: Solid
% Moisture: 13.3
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 120 | U | mg/Kg | 29 | 120 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed 08/21/2007 1804 | | | | | DryWt Corrected: Y | |
| Sulfate-S | 120 | U | mg/Kg | 29 | 120 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed 08/21/2007 1804 | | | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 7.51 | HF | SU | 1.0 | 9045C |
| Anly Batch: 680-83207 | Date Analyzed 08/16/2007 0345 | | | DryWt Corrected: N | |

**Client Sample ID: 7594**

Lab Sample ID: 680-29167-8
Client Matrix: Solid
% Moisture: 13.6
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 120 | U | mg/Kg | 29 | 120 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed 08/21/2007 1841 | | | | | DryWt Corrected: Y | |
| Sulfate-S | 120 | U | mg/Kg | 29 | 120 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed 08/21/2007 1841 | | | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 4.74 | HF | SU | 1.0 | 9045C |
| Anly Batch: 680-83207 | Date Analyzed 08/16/2007 0345 | | | DryWt Corrected: N | |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-29167-1

## General Chemistry

**Client Sample ID: 7595**

Lab Sample ID: 680-29167-9
Client Matrix: Solid
% Moisture: 11.4
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 110 | U | mg/Kg | 28 | 110 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1853 | | | | DryWt Corrected: Y | |
| Sulfate-S | 110 | U | mg/Kg | 28 | 110 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1853 | | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 5.96 | HF | SU | 1.0 | 9045C |
| Anly Batch: 680-83207 | Date Analyzed | 08/16/2007 0345 | | DryWt Corrected: N | |

**Client Sample ID: 7600**

Lab Sample ID: 680-29167-10
Client Matrix: Solid
% Moisture: 14.7
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 120 | U | mg/Kg | 30 | 120 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1906 | | | | DryWt Corrected: Y | |
| Sulfate-S | 120 | U | mg/Kg | 30 | 120 | 1.0 | 9056 |
| Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1906 | | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 8.80 | HF | SU | 1.0 | 9045C |
| Anly Batch: 680-83258 | Date Analyzed | 08/19/2007 1600 | | DryWt Corrected: N | |

## General Chemistry

**Client Sample ID: 7616**

Lab Sample ID: 680-29167-11
Client Matrix: Solid
% Moisture: 11.2
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 140 | | mg/Kg | 28 | 110 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1943 | | | DryWt Corrected: Y | |
| Sulfate-S | 110 | U | mg/Kg | 28 | 110 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1943 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 6.26 | HF | SU | 1.0 | 9045C |
| | Anly Batch: 680-83258 | Date Analyzed | 08/19/2007 1600 | DryWt Corrected: N | |

**Client Sample ID: 7618**

Lab Sample ID: 680-29167-12
Client Matrix: Solid
% Moisture: 18.3
Date Sampled: 08/10/2007 0000
Date Received: 08/13/2007 0930

| Analyte | Result | Qual | Units | MDL | RL | Dil | Method |
|---|---|---|---|---|---|---|---|
| Chloride-S | 120 | U | mg/Kg | 31 | 120 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1955 | | | DryWt Corrected: Y | |
| Sulfate-S | 120 | U | mg/Kg | 31 | 120 | 1.0 | 9056 |
| | Anly Batch: 680-83561 | Date Analyzed | 08/21/2007 1955 | | | DryWt Corrected: Y | |

| Analyte | Result | Qual | Units | Dil | Method |
|---|---|---|---|---|---|
| pH | 6.73 | HF | SU | 1.0 | 9045C |
| | Anly Batch: 680-83258 | Date Analyzed | 08/19/2007 1600 | DryWt Corrected: N | |

# DATA REPORTING QUALIFIERS

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-29167-1

| Lab Section | Qualifier | Description |
|---|---|---|
| General Chemistry | | |
| | HF | Field parameter with a holding time of 15 minutes |
| | U | Indicates the analyte was analyzed for but not detected. |
| | J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-29167-1

**Lab Control Spike - Batch: 680-83207**

**Method: 9045C**
**Preparation: N/A**

Lab Sample ID: LCS 680-83207/1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/16/2007 0345
Date Prepared: N/A

Analysis Batch: 680-83207
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20.00 g
Final Weight/Volume: 20.00 mL

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| pH | 7.00 | 6.930 | 99 | 63 - 158 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-29167-1

**Lab Control Spike - Batch: 680-83258**

**Method: 9045C**
**Preparation: N/A**

Lab Sample ID: LCS 680-83258/1
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/19/2007 1600
Date Prepared: N/A

Analysis Batch: 680-83258
Prep Batch: N/A
Units: SU

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 20.00 g
Final Weight/Volume: 20.00 mL

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| pH | 7.00 | 7.000 | 100 | 63 - 158 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-29167-1

**Method Blank - Batch: 680-83561**

**Method: 9056**
**Preparation: N/A**

Lab Sample ID: MB 680-83254/1-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/21/2007 1624
Date Prepared: N/A
Date Leached: 08/19/2007 0900

Analysis Batch: 680-83561
Prep Batch: N/A
Units: mg/Kg

Leachate Batch: 680-83254

Instrument ID: ICCS200
Lab File ID: 0013.d
Initial Weight/Volume: 1 mL
Final Weight/Volume: 5 mL

| Analyte | Result | Qual | MDL | RL |
|---|---|---|---|---|
| Chloride-S | 99 | U | 25 | 99 |
| Sulfate-S | 99 | U | 25 | 99 |

**Lab Control Spike - Batch: 680-83561**

**Method: 9056**
**Preparation: N/A**

Lab Sample ID: LCS 680-83254/2-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 08/21/2007 1637
Date Prepared: N/A
Date Leached: 08/19/2007 0900

Analysis Batch: 680-83561
Prep Batch: N/A
Units: mg/Kg

Leachate Batch: 680-83254

Instrument ID: ICCS200
Lab File ID: 0014.d
Initial Weight/Volume: 1 mL
Final Weight/Volume: 5 mL

| Analyte | Spike Amount | Result | % Rec. | Limit | Qual |
|---|---|---|---|---|---|
| Chloride-S | 994 | 1070 | 107 | 75 - 125 | |
| Sulfate-S | 994 | 993 | 100 | 75 - 125 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: MACTEC Engineering and Consulting Inc

Job Number: 680-29167-1

**Matrix Spike/**
**Matrix Spike Duplicate Recovery Report - Batch: 680-83561**

**Method: 9056**
**Preparation: N/A**

| | | | |
|---|---|---|---|
| MS Lab Sample ID: | 680-29167-10 | Analysis Batch: 680-83561 | Instrument ID: ICCS200 |
| Client Matrix: | Solid | Prep Batch: N/A | Lab File ID: 0027.d |
| Dilution: | 1.0 | | Initial Weight/Volume: 1 mL |
| Date Analyzed: | 08/21/2007 1918 | | Final Weight/Volume: 5 mL |
| Date Prepared: | N/A | | 100 uL |
| Date Leached: | 08/19/2007 0900 | Leachate Batch: 680-83254 | |

| | | | |
|---|---|---|---|
| MSD Lab Sample ID: | 680-29167-10 | Analysis Batch: 680-83561 | Instrument ID: ICCS200 |
| Client Matrix: | Solid | Prep Batch: N/A | Lab File ID: 0028.d |
| Dilution: | 1.0 | | Initial Weight/Volume: 1 mL |
| Date Analyzed: | 08/21/2007 1930 | | Final Weight/Volume: 5 mL |
| Date Prepared: | N/A | | 100 uL |
| Date Leached: | 08/19/2007 0900 | Leachate Batch: 680-83254 | |

| | % Rec. | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyte | MS | MSD | Limit | RPD | RPD Limit | MS Qual | MSD Qual |
| Chloride-S | 98 | 101 | 75 - 125 | 2 | 30 | | |
| Sulfate-S | 104 | 112 | 75 - 125 | 6 | 30 | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

# CHAIN OF CUSTODY

MACTEC

Project Number: 6141-06-0286 Task:
Project Name: Vogtle COL Project
Task Name:
APC Number: 73868 Lab Record Number: 489
Contact Name: Harry Johnson Phone #: 404-873-4761

| Sample Information | | | | | Parameters Requested | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab ID# | Client Sample ID | Boring # | Depth (ft) | Sample Matrix | Chorides (EPA Method SW-846 9056/300.0) | Sulfates (EPA Method SW-846 9056/300.0) | pH (EPA Method SW-846 9045) | | | | Number of Jars |
| 7431 | | B-6027 | 7-Jan | Bag | x | x | x | | | | 1 |
| 7432 | | B-6027 | 12.5 | Bag | x | x | x | | | | 1 |
| 7441 | | B-6028 | 3.5 | Bag | x | x | x | | | | 1 |
| 7742 | | B-6028 | 8.5 | Bag | x | x | x | | | | 1 |
| 7443 | | B-6028 | 11 | Bag | x | x | x | | | | 1 |
| 7445 | | B-6028 | 28.5 | Bag | x | x | x | | | | 1 |
| 7590 | | B-3030 | 36.3 | Bag | x | x | x | | | | 1 |
| 7594 | | B-301 | 40 | Bag | x | x | x | | | | |
| 7595 | | B-3033 | 15.5 | Bag | x | x | x | | | | |
| 7600 | | B-3034 | 35.5 | Bag | x | x | x | | | | |
| 7616 | | B-4033 | 30.5 | Bag | x | x | x | | | | |
| 7618 | | B-4033 | 40.5 | Bag | x | x | x | | | | |

TEMP: 25°C

680-29167

| Turn Around Time | | Send Results To: | | Lab Use: | |
|---|---|---|---|---|---|
| Standard (14 days) | | MACTEC Engineering and Consulting, Inc. | | Cooler Temp: | |
| Rush: | x | 396 Plasters Avenue | | Custody Seals: | |
| 5 Days | | Atlanta, GA 30324 | | Intact | |
| 48 Hours | | Attention: Harry Johnson | | Broken | |
| 24 Hours | | Fax Number: | 404-817-0221 | Not Present | |

Special Instructions: Please return a copy of the chain of custody. Dispose of excess material when testing has been completed and released by MACTEC.

| Relinquished By: | Date: | Time: |
|---|---|---|
| Harry Johnson | 8/10/2007 | 2:00 PM |
| | | |

| Received By: | Date: | Time: |
|---|---|---|
| KL | 8/13/07 | 0930 |
| | | |