# Consolidation Test Data Sheet

Consolidometer ID: 5

11/21/06

REVISED FORM FOR
NCR NO. 25237-NCR-028
2/12/2007

Schnabel Contract: *06120048*

Project: *Calvert Cliffs Nuclear Power Plant*

Test Method: *ASTM D2435 Method A*

Test Condition: *Inundated @ 4 tsf*

Initial Height of Specimen ($H_o$), in.: 0.7512

Height of Solids ($H_s$), in.: 0.2201

Boring No.: *B-401*

Depth: *243.5-244.4 ft*

Seating Press. (tsf): 0.05

Initial Dial Gauge Reading ($D_o$), in.: 0.0000

Reviewed by: CJS

| Pressure, P (tsf) | Time Readings Required | Date Load Applied | Time Load Applied | Load Applied By | A: Final[1] Dial Reading, $D_{fi}$ x $10^{-4}$ in. | B: Apparatus Correction[2], $D_{ci}$ x $10^{-4}$ in. | C: Cumulative Change in Height[3], $\Delta H_i$ in. | D: Height of Voids[4], $H_{vi}$ in. | Vertical Strain[5], $\varepsilon_i$ (%) | Void Ratio[6], $e_i$ |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.5 | | 10/24/2006 | 9:20 | DWC | 19 | 12 | 0.0007 | 0.5304 | 0.09 | 2.410 |
| 1 | | 10/25/2006 | 9:20 | DWC | 34 | 21 | 0.0013 | 0.5298 | 0.17 | 2.407 |
| 2 | | 10/26/2006 | 9:20 | DWC | 61 | 33 | 0.0028 | 0.5283 | 0.37 | 2.400 |
| 4 | | 10/27/2006 | 9:20 | DWC | 105 | 40 | 0.0065 | 0.5246 | 0.87 | 2.383 |
| 8 | | 10/28/2006 | 9:20 | CJS | 167 | 50 | 0.0117 | 0.5194 | 1.56 | 2.360 |
| 4 | | 10/30/2006 | 9:20 | DWC | 150 | 40 | 0.0110 | 0.5201 | 1.46 | 2.363 |
| 2 | | 10/31/2006 | 9:20 | DWC | 127 | 33 | 0.0094 | 0.5217 | 1.25 | 2.370 |
| 4 | | 11/1/2006 | 9:20 | DWC | 143 | 40 | 0.0103 | 0.5208 | 1.37 | 2.366 |
| 8 | | 11/2/2006 | 9:20 | DWC | 175 | 50 | 0.0125 | 0.5186 | 1.66 | 2.356 |
| 16 | | 11/3/2006 | 9:20 | DWC | 284 | 63 | 0.0221 | 0.5090 | 2.94 | 2.312 |
| 32 | | 11/4/2006 | 9:20 | CJS | 1267 | 76 | 0.1191 | 0.4120 | 15.86 | 1.872 |
| 64 | | 11/6/2006 | 9:20 | DWC | 2452 | 87 | 0.2365 | 0.2946 | 31.48 | 1.338 |
| 16 | | 11/7/2006 | 9:20 | DWC | 2330 | 63 | 0.2267 | 0.3044 | 30.18 | 1.383 |
| 4 | | 11/8/2006 | 9:20 | DWC | 2156 | 40 | 0.2116 | 0.3195 | 28.17 | 1.451 |
| 0.5 | | 11/9/2006 | 9:20 | DWC | 1860 | 12 | 0.1848 | 0.3463 | 24.60 | 1.573 |

Notes:
1. "Final" based on test method; 24 hrs for Method A, end of primary for Method B.
2. Correction value, for the current pressure, from the consolidometer's calibration curve.
3. $\Delta H = D_{fi} - D_o - D_{ci}$ = Col. A - $D_o$ - Col. B
4. $H_{vi} = (H_o - H_s) - \Delta H$
5. $\varepsilon_i = (\Delta H / H_o) \times 100$ = (Col. C / $H_o$) x 100
6. $e_i = H_{vi} / Hs$ = Col. D / Hs

Consol 8/2006 Rev. 1

Schnabel
Schnabel Engineering

# Load Time Readings

11/21/06

Project: Calvert Cliffs Nuclear Power Plant
Schnabel Contract: 06120048
Boring No.: B-401 Depth: 243.5-244.4 ft

Consol. ID: 5 Reviewed by: CJS

| Elapsed Time (min.) | Dial Guage Readings (inches) | | | | | |
|---|---|---|---|---|---|---|
| | 4 tsf Reload 11/1/2006 | 32 tsf Load 11/4/2006 | X tsf Load Date | X tsf Load Date | X tsf Load Date | X tsf Load Date |
| 0.1 | 0.0139 | 0.0408 | | | | |
| 0.25 | 0.0139 | 0.0454 | | | | |
| 0.5 | 0.0140 | 0.0492 | | | | |
| 1 | 0.0140 | 0.0539 | | | | |
| 2 | 0.0140 | 0.0589 | | | | |
| 4 | 0.0140 | 0.0650 | | | | |
| 8 | 0.0140 | 0.0711 | | | | |
| 15 | 0.0140 | 0.0776 | | | | |
| 30 | 0.0140 | 0.0850 | | | | |
| 60 | 0.0141 | 0.0925 | | | | |
| 120 | 0.0142 | 0.1003 | | | | |
| 240 | 0.0142 | 0.1080 | | | | |
| 480 | 0.0143 | 0.1155 | | | | |
| 720 | 0.0143 | 0.1197 | | | | |
| 960 | 0.0143 | 0.1227 | | | | |
| 1200 | 0.0143 | 0.1249 | | | | |
| 1440 | 0.0143 | 0.1267 | | | | |
| 1680 | | 0.1283 | | | | |
| 1920 | | 0.1296 | | | | |
| 2160 | | 0.1308 | | | | |
| 2400 | | 0.1318 | | | | |
| 2640 | | 0.1328 | | | | |
| 2880 | | 0.1341 | | | | |
| | | | | | | |
| | | | | | | |

Schnabel Engineering

# Consolidation Time Curves

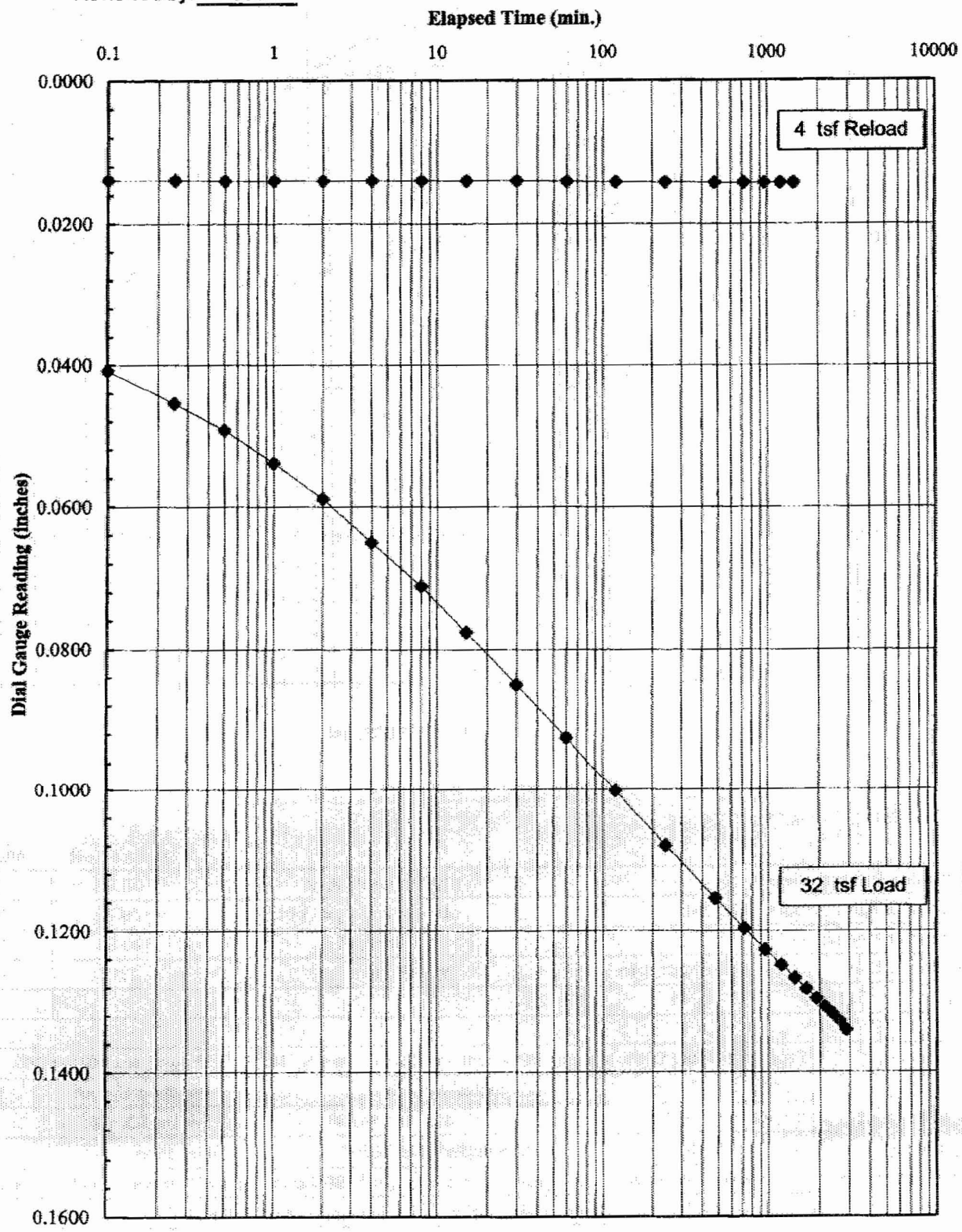
11/21/06

Project: Calvert Cliffs Nuclear Power Plant

Schnabel Contract: 06120048

Boring No.: B-401 Depth: 243.5-244.4 ft

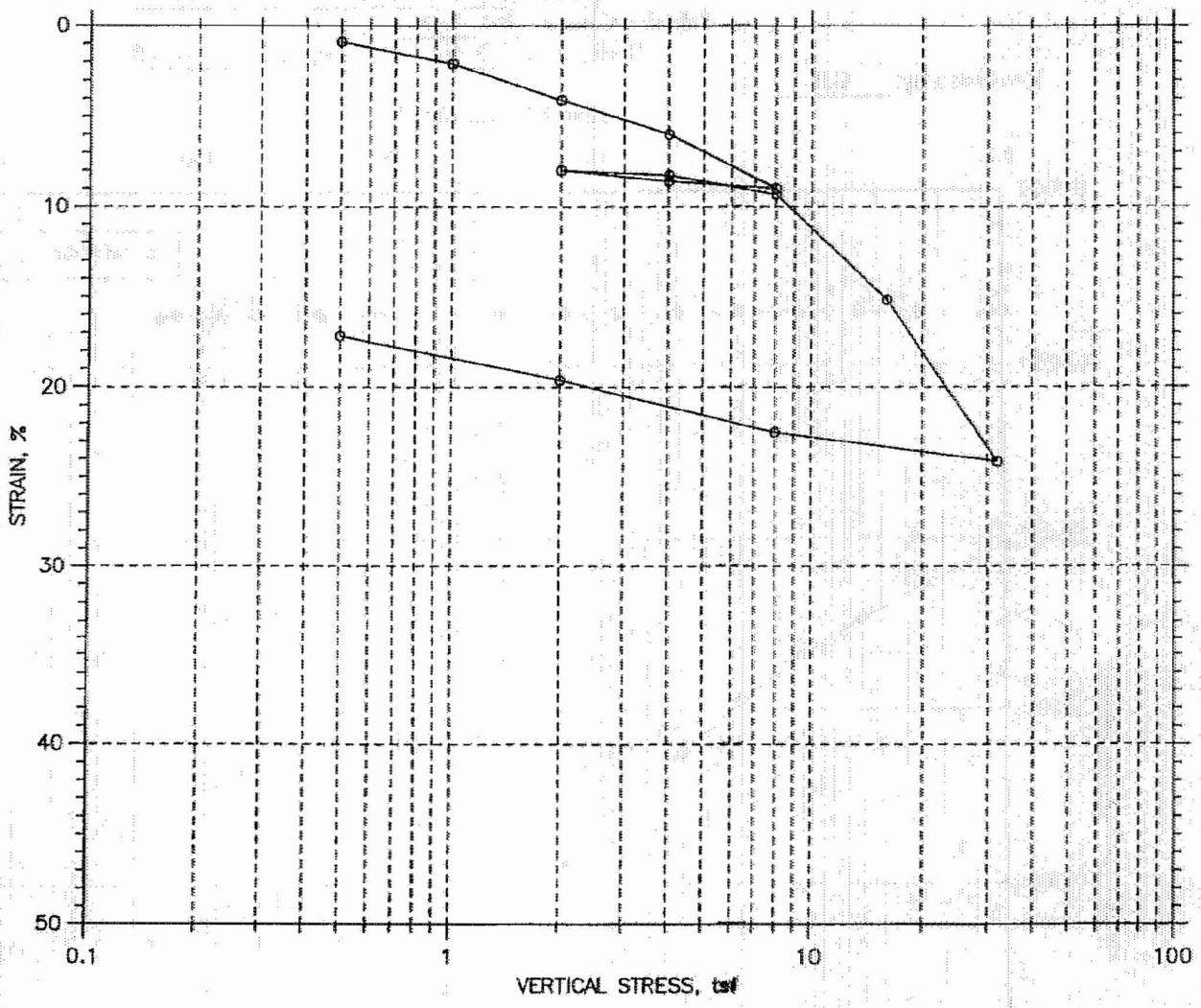
Reviewed by: CJS




Consol 8/2006 Rev. 1

# CONSOLIDATION TEST DATA

SUMMARY REPORT




| | | | | | Before Test | After Test |
|---|---|---|---|---|---|---|
| Overburden Pressure: --- | | | | Water Content, % | 38.93 | 29.19 |
| Preconsolidation Pressure: 10.5 tsf | | | | Dry Unit Weight, pcf | 78.72 | 95.04 |
| Compression Index: --- | | | | Saturation, % | 90.94 | 99.99 |
| Diameter: 2.5 in | | Height: 1 in | | Void Ratio | 1.17 | 0.80 |
| LL: 63 | PL: 19 | PI: 44 | GS: 2.74 | | | |

| | | | |
|---|---|---|---|
| GeoTesting express<br>a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-406 | Tested By: njh | Checked By: jdt |
| | Sample No.: S-16 | Test Date: 10/14/06 | Depth: 63.5-65.5 |
| | Test No.: C-50 | Sample Type: tube | Elevation: --- |
| | Description: Moist, very dark gray organic clay (OH), 90% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System G - Compression Ratio: 0.30, Recompression Ratio: 0.04 | | |

Thu, 09-NOV-2006 18:05:35

# CONSOLIDATION TEST DATA

| | | |
|---|---|---|
| Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| Boring No.: B-406 | Tested By: njh | Checked By: jdt |
| Sample No.: S-16 | Test Date: 10/14/06 | Depth: 63.5-65.5 |
| Test No.: C-50 | Sample Type: tube | Elevation: --- |

Soil Description: Moist, very dark gray organic clay (OH), 90% passing #200 sieve, inundated @ 0.5 tsf
Remarks: System G - Compression Ratio: 0.30, Recompression Ratio: 0.04

| | | |
|---|---|---|
| Measured Specific Gravity: 2.74 | Liquid Limit: 63 | Initial Height: 1.00 in |
| Initial Void Ratio: 1.17 | Plastic Limit: 19 | Specimen Diameter: 2.50 in |
| Final Void Ratio: 0.80 | Plasticity Index: 44 | |

| | Before Consolidation | | After Consolidation | |
|---|---|---|---|---|
| | Trimmings | Specimen+Ring | Specimen+Ring | Trimmings |
| Container ID | lidle | RING | | 1093 |
| Wt. Container + Wet Soil, gm | 54.57 | 357.42 | 347.54 | 140.39 |
| Wt. Container + Dry Soil, gm | 42.28 | 317.93 | 317.93 | 110.51 |
| Wt. Container, gm | 8.13 | 216.5 | 216.5 | 8.14 |
| Wt. Dry Soil, gm | 34.15 | 101.43 | 101.43 | 102.37 |
| Water Content, % | 35.99 | 36.93 | 29.19 | 29.19 |
| Void Ratio | --- | 1.17 | 0.80 | --- |
| Degree of Saturation, % | --- | 90.94 | 99.99 | --- |
| Dry Unit Weight, pcf | --- | 78.721 | 95.04 | --- |

# CONSOLIDATION TEST DATA

Project: Calvert Cliffs Nuclear PP
Boring No.: B-406
Sample No.: S-16
Test No.: C-50

Location: Calvert County, MD
Tested By: njh
Test Date: 10/14/06
Sample Type: tube

Project No.: GTX-6880
Checked By: jdt
Depth: 63.5-65.5
Elevation: ---

Soil Description: Moist, very dark gray organic clay (OH), 90% passing #200 sieve, inundated @ 0.5 tsf
Remarks: System G - Compression Ratio: 0.30, Recompression Ratio: 0.04

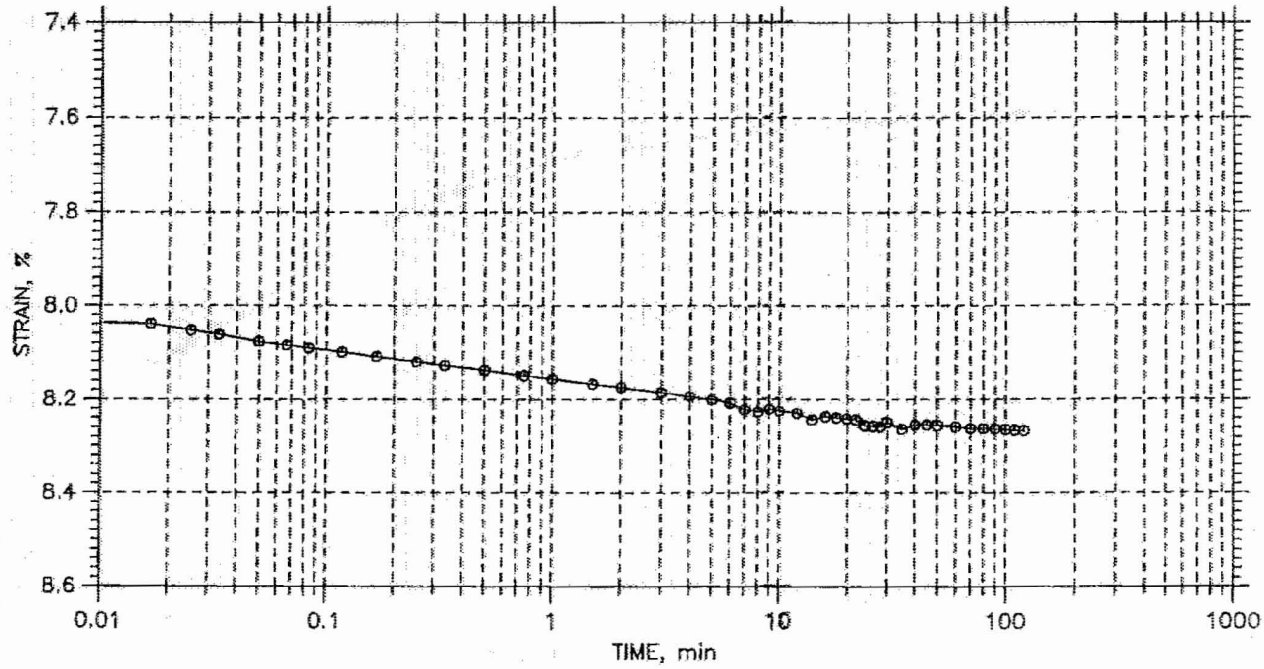
| | Applied Stress tsf | Final Displacement in | Void Ratio | Strain at End % | T50 Fitting Sq.Rt. min | T50 Fitting Log min | Coefficient of Consolidation Sq.Rt. in^2/sec | Coefficient of Consolidation Log in^2/sec | Coefficient of Consolidation Ave. in^2/sec |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.5 | 0.008888 | 1.154 | 0.89 | 0.0 | 0.0 | 2.69e-002 | 0.00e+000 | 2.69e-002 |
| 2 | 1 | 0.02098 | 1.127 | 2.10 | 1.2 | 0.0 | 6.48e-004 | 0.00e+000 | 6.48e-004 |
| 3 | 2 | 0.04106 | 1.084 | 4.11 | 0.1 | 0.0 | 1.09e-002 | 2.54e-002 | 1.53e-002 |
| 4 | 4 | 0.05991 | 1.043 | 5.99 | 0.3 | 0.0 | 2.42e-003 | 0.00e+000 | 2.42e-003 |
| 5 | 8 | 0.08987 | 0.978 | 8.99 | 1.6 | 0.0 | 4.49e-004 | 0.00e+000 | 4.49e-004 |
| 6 | 4 | 0.08599 | 0.986 | 8.60 | 0.3 | 0.0 | 2.22e-003 | 0.00e+000 | 2.22e-003 |
| 7 | 2 | 0.08009 | 0.999 | 8.01 | 1.8 | 0.0 | 3.76e-004 | 0.00e+000 | 3.76e-004 |
| 8 | 4 | 0.08267 | 0.993 | 8.27 | 0.2 | 0.0 | 4.56e-003 | 0.00e+000 | 4.56e-003 |
| 9 | 8 | 0.09308 | 0.971 | 9.31 | 1.5 | 0.0 | 4.69e-004 | 0.00e+000 | 4.69e-004 |
| 10 | 16 | 0.1517 | 0.843 | 15.17 | 7.4 | 11.0 | 8.60e-005 | 5.74e-005 | 6.88e-005 |
| 11 | 32 | 0.2415 | 0.648 | 24.15 | 21.1 | 22.9 | 2.52e-005 | 2.32e-005 | 2.42e-005 |
| 12 | 8 | 0.2251 | 0.684 | 22.51 | 3.3 | 0.0 | 1.45e-004 | 0.00e+000 | 1.45e-004 |
| 13 | 2 | 0.1962 | 0.747 | 19.62 | 39.6 | 0.0 | 1.29e-005 | 0.00e+000 | 1.29e-005 |
| 14 | 0.5 | 0.1717 | 0.800 | 17.17 | 59.8 | 0.0 | 9.16e-006 | 0.00e+000 | 9.16e-006 |

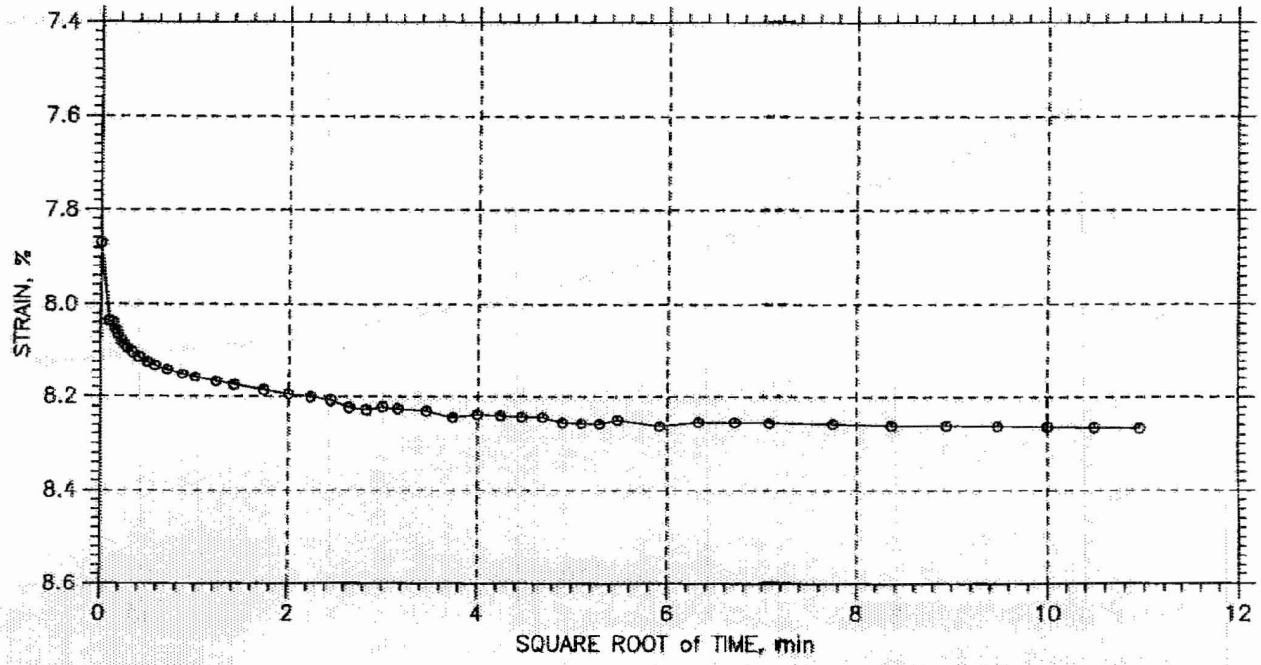
# CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 14

Stress: 4. tsf




| | | | |
|---|---|---|---|
| GeoTesting express<br>a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-406 | Tested By: njh | Checked By: jdt |
| | Sample No.: S-16 | Test Date: 10/14/06 | Depth: 63.5-65.5 |
| | Test No.: C-50 | Sample Type: tube | Elevation: --- |
| | Description: Moist, very dark gray organic clay (OH), 90% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System G - Compression Ratio: 0.30, Recompression Ratio: 0.04 | | |

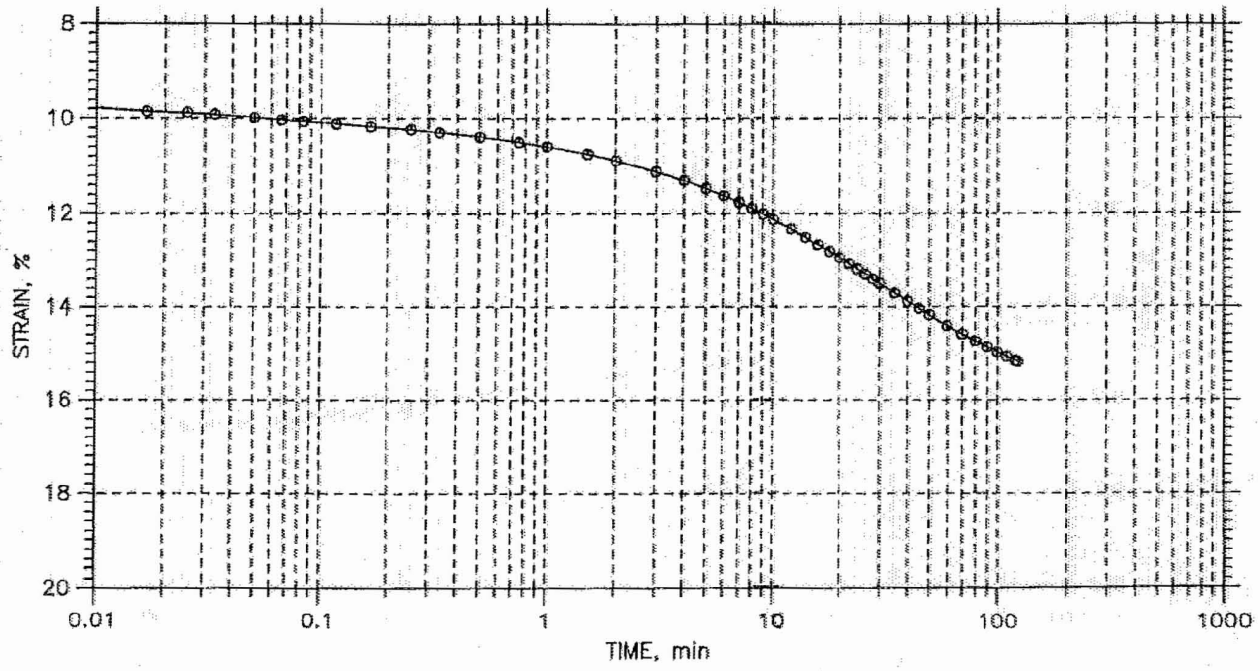
Thu, 09-NOV-2006 18:06:22

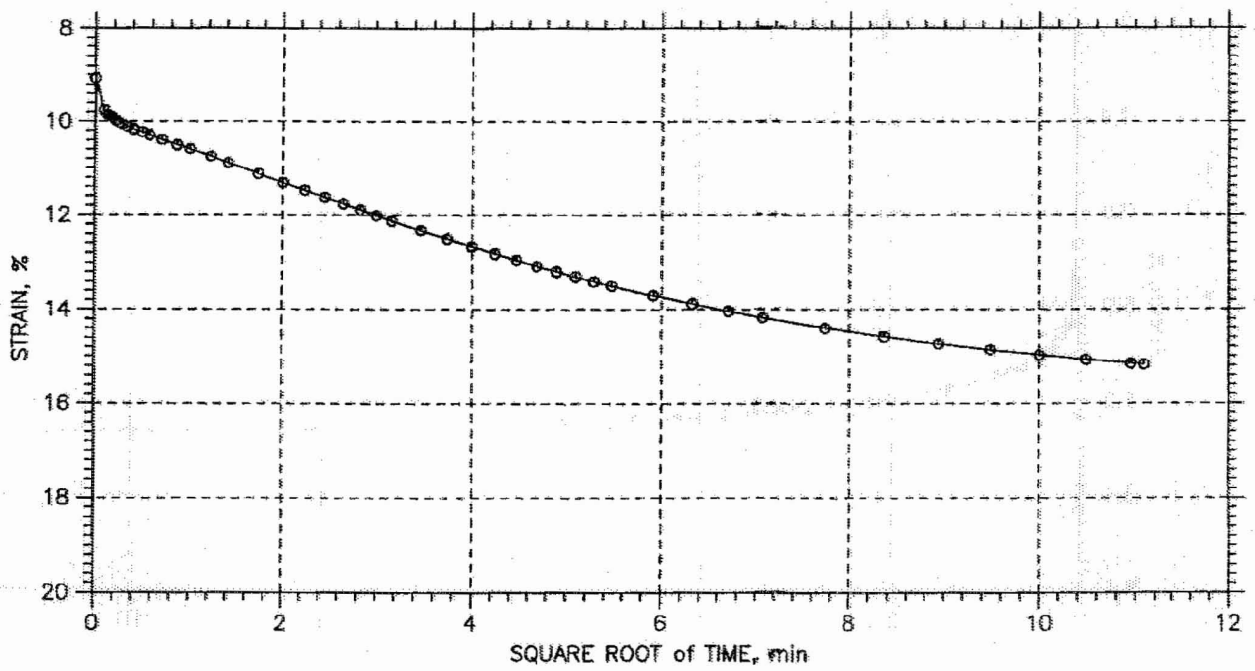
# CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 14

Stress: 16. tsf

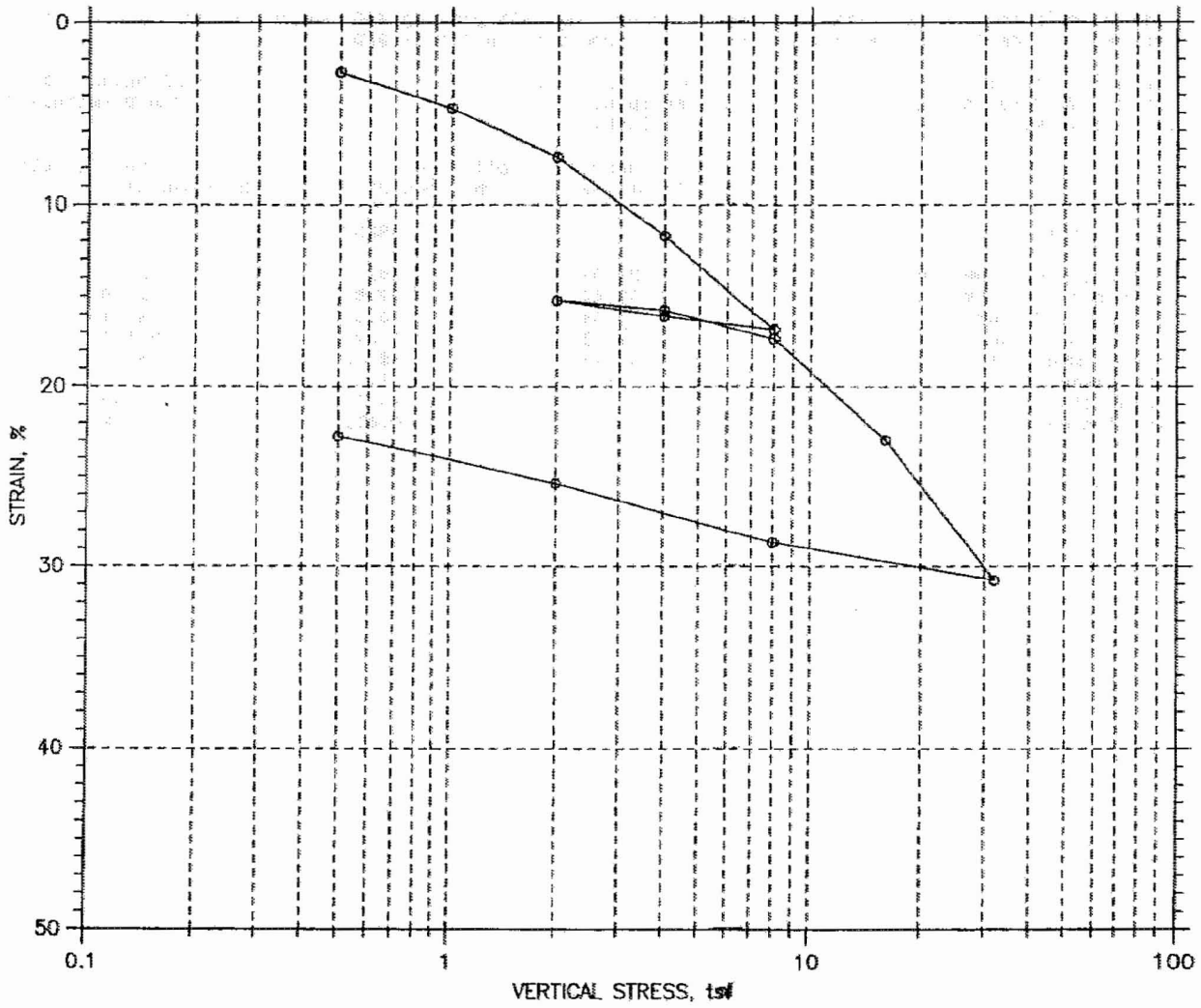



| | | | |
|---|---|---|---|
| GeoTesting express<br>a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-406 | Tested By: njh | Checked By: jdt |
| | Sample No.: S-16 | Test Date: 10/14/06 | Depth: 63.5-65.5 |
| | Test No.: C-50 | Sample Type: tube | Elevation: --- |
| | Description: Moist, very dark gray organic clay (OH), 90% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System G - Compression Ratio: 0.30, Recompression Ratio: 0.04 | | |

Thu, 09-NOV-2006 18:06:36

# CONSOLIDATION TEST DATA
## SUMMARY REPORT




| | | | | | Before Test | After Test |
|---|---|---|---|---|---|---|
| Overburden Pressure: --- | | | | Water Content, % | 54.52 | 35.05 |
| Preconsolidation Pressure: 4.9 tsf | | | | Dry Unit Weight, pcf | 66.49 | 86.1 |
| Compression Index: --- | | | | Saturation, % | 96.61 | 99.99 |
| Diameter: 2.5 in | | Height: 1 in | | Void Ratio | 1.51 | 0.94 |
| LL: 61 | PL: 19 | PI: 42 | GS: 2.67 | | | |

| | | | |
|---|---|---|---|
| GeoTesting express a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-411 | Tested By: md | Checked By: jdt |
| | Sample No.: S-8 | Test Date: 10/17/06 | Depth: 23.5-25.5 |
| | Test No.: C-51 | Sample Type: tube | Elevation: --- |
| | Description: Moist, dark gray organic clay (OH), 95% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System C - Compression Ratio: 0.26, Recompression Ratio: 0.05 | | |

Thu, 09-NOV-2006 19:04:38

# CONSOLIDATION TEST DATA

| | | |
|---|---|---|
| Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| Boring No.: B-411 | Tested By: md | Checked By: jdt |
| Sample No.: S-8 | Test Date: 10/17/06 | Depth: 23.5-25.5 |
| Test No.: C-51 | Sample Type: tube | Elevation: --- |

Soil Description: Moist, dark gray organic clay (OH), 95% passing #200 sieve, inundated @ 0.5 tsf
Remarks: System C - Compression Ratio: 0.26, Recompression Ratio: 0.05

| | | |
|---|---|---|
| Measured Specific Gravity: 2.67 | Liquid Limit: 61 | Initial Height: 1.00 in |
| Initial Void Ratio: 1.51 | Plastic Limit: 19 | Specimen Diameter: 2.50 in |
| Final Void Ratio: 0.94 | Plasticity Index: 42 | |

| | Before Consolidation | | After Consolidation | |
|---|---|---|---|---|
| | Trimmings | Specimen+Ring | Specimen+Ring | Trimmings |
| Container ID | 956 | RING | | 2316 |
| Wt. Container + Wet Soil, gm | 129.04 | 349.3 | 332.62 | 128.24 |
| Wt. Container + Dry Soil, gm | 87.42 | 302.59 | 302.59 | 97.05 |
| Wt. Container, gm | 8.04 | 216.91 | 216.91 | 8.07 |
| Wt. Dry Soil, gm | 79.38 | 85.678 | 85.678 | 88.98 |
| Water Content, % | 52.43 | 54.52 | 35.05 | 35.05 |
| Void Ratio | --- | 1.51 | 0.94 | --- |
| Degree of Saturation, % | --- | 96.61 | 99.99 | --- |
| Dry Unit Weight, pcf | --- | 66.493 | 86.098 | --- |

# CONSOLIDATION TEST DATA

Project: Calvert Cliffs Nuclear PP
Boring No.: B-411
Sample No.: S-8
Test No.: C-51

Location: Calvert County, MD
Tested By: md
Test Date: 10/17/06
Sample Type: tube

Project No.: GTX-6880
Checked By: jdt
Depth: 23.5-25.5
Elevation: ---

Soil Description: Moist, dark gray organic clay (OH), 95% passing #200 sieve, inundated @ 0.5 tsf
Remarks: System C - Compression Ratio: 0.26, Recompression Ratio: 0.05

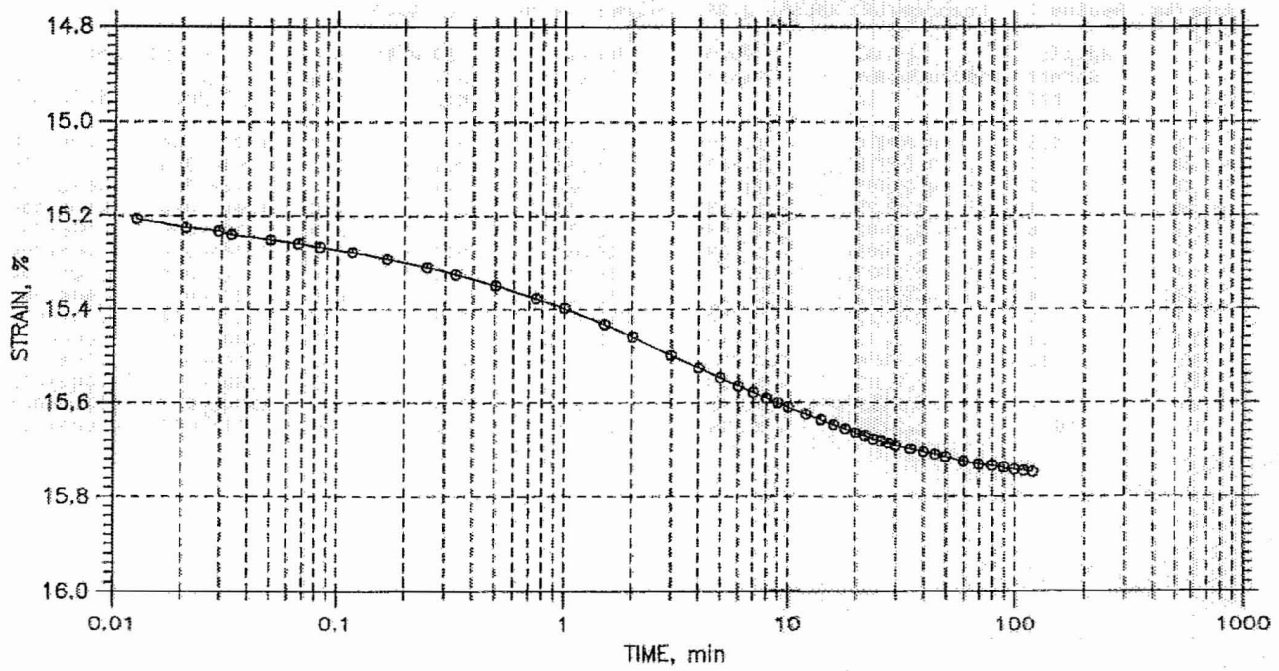
| | Applied Stress tsf | Final Displacement in | Void Ratio | Strain at End % | T50 Fitting Sq.Rt. min | T50 Fitting Log min | Coefficient of Consolidation Sq.Rt. in^2/sec | Coefficient of Consolidation Log in^2/sec | Coefficient of Consolidation Ave. in^2/sec |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.5 | 0.02716 | 1.439 | 2.72 | 2.0 | 0.0 | 4.00e-004 | 0.00e+000 | 4.00e-004 |
| 2 | 1 | 0.04719 | 1.388 | 4.72 | 2.1 | 2.3 | 3.64e-004 | 3.37e-004 | 3.50e-004 |
| 3 | 2 | 0.07409 | 1.321 | 7.41 | 1.1 | 1.2 | 6.72e-004 | 5.84e-004 | 6.25e-004 |
| 4 | 4 | 0.1172 | 1.213 | 11.72 | 1.7 | 0.0 | 3.91e-004 | 0.00e+000 | 3.91e-004 |
| 5 | 8 | 0.1681 | 1.085 | 16.81 | 3.0 | 3.0 | 2.00e-004 | 2.04e-004 | 2.02e-004 |
| 6 | 4 | 0.1609 | 1.103 | 16.09 | 0.9 | 0.0 | 6.24e-004 | 0.00e+000 | 6.24e-004 |
| 7 | 2 | 0.1523 | 1.125 | 15.23 | 4.1 | 0.0 | 1.41e-004 | 0.00e+000 | 1.41e-004 |
| 8 | 4 | 0.1575 | 1.112 | 15.75 | 0.9 | 0.9 | 6.37e-004 | 6.64e-004 | 6.50e-004 |
| 9 | 8 | 0.1733 | 1.072 | 17.33 | 2.6 | 0.0 | 2.18e-004 | 0.00e+000 | 2.18e-004 |
| 10 | 16 | 0.2299 | 0.930 | 22.99 | 18.7 | 0.0 | 2.80e-005 | 0.00e+000 | 2.80e-005 |
| 11 | 32 | 0.3076 | 0.736 | 30.76 | 42.1 | 0.0 | 1.04e-005 | 0.00e+000 | 1.04e-005 |
| 12 | 8 | 0.2867 | 0.788 | 28.67 | 5.6 | 0.0 | 7.30e-005 | 0.00e+000 | 7.30e-005 |
| 13 | 2 | 0.2539 | 0.870 | 25.39 | 51.3 | 0.0 | 8.54e-006 | 0.00e+000 | 8.54e-006 |
| 14 | 0.5 | 0.2277 | 0.936 | 22.77 | 62.0 | 0.0 | 7.64e-006 | 0.00e+000 | 7.64e-006 |

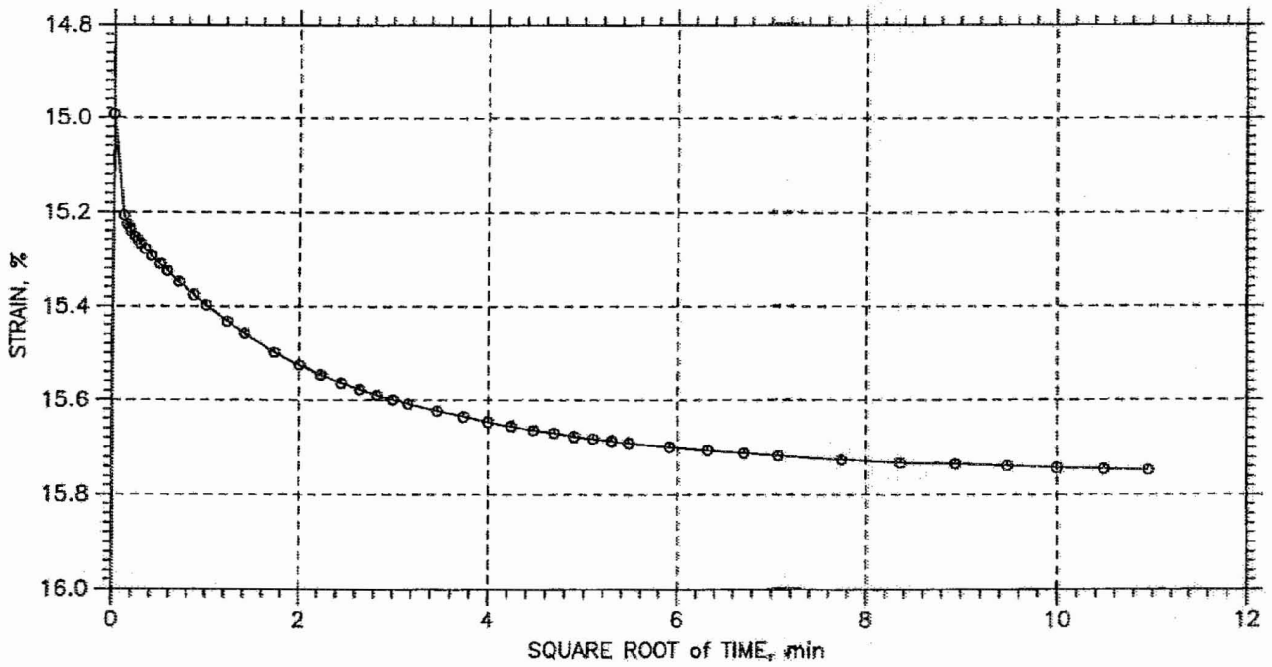
# CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 14

Stress: 4. tsf




| | | | |
|---|---|---|---|
| GeoTesting express<br>a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-411 | Tested By: md | Checked By: jdt |
| | Sample No.: S-8 | Test Date: 10/17/06 | Depth: 23.5-25.5 |
| | Test No.: C-51 | Sample Type: tube | Elevation: --- |
| | Description: Moist, dark gray organic clay (OH), 95% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System C - Compression Ratio: 0.26, Recompression Ratio: 0.05 | | |

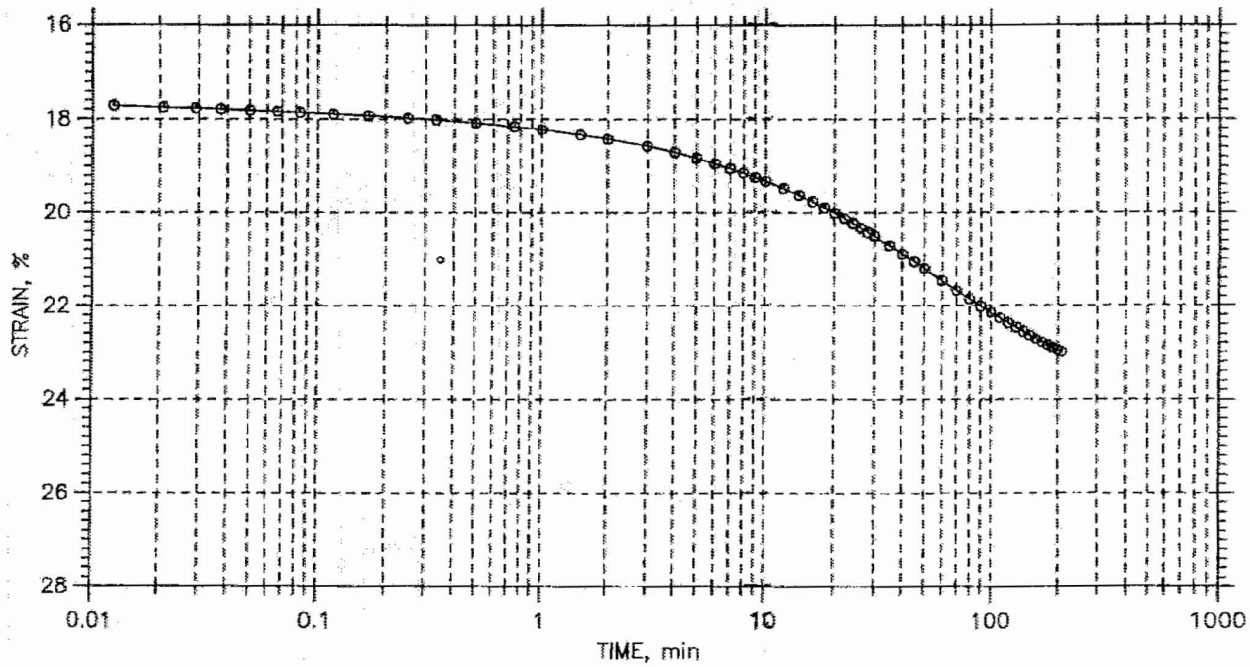
Thu, 09-NOV-2006 19:04:49

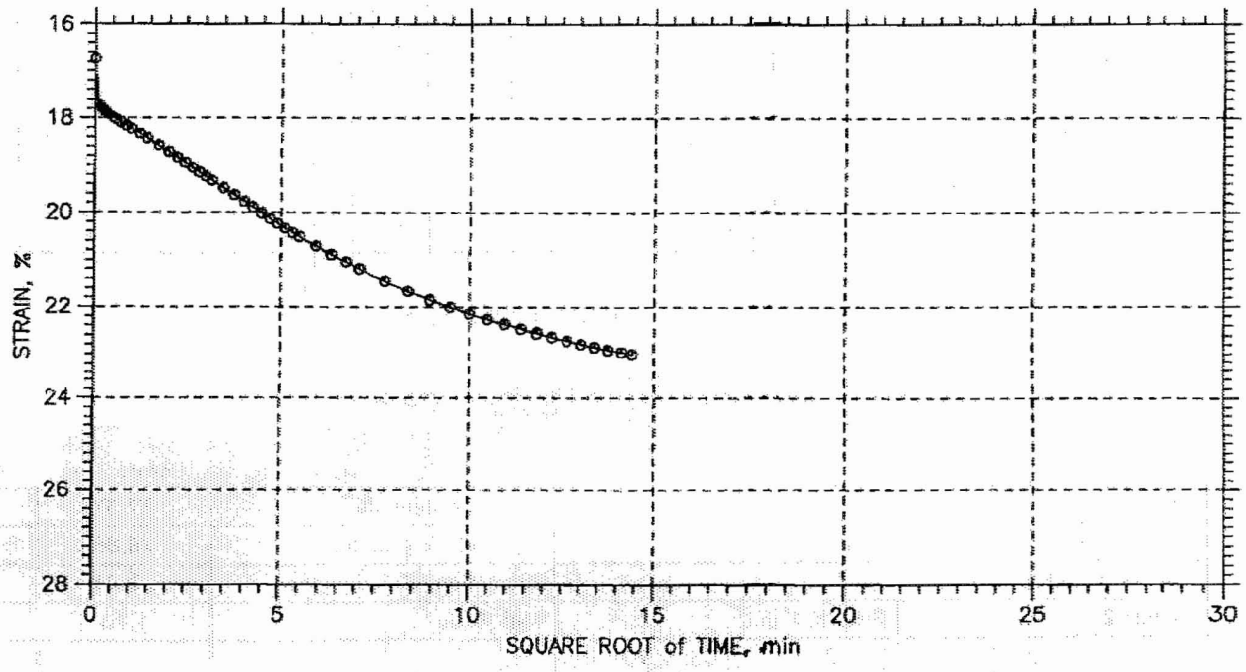
# CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 14

Stress: 16. tsf



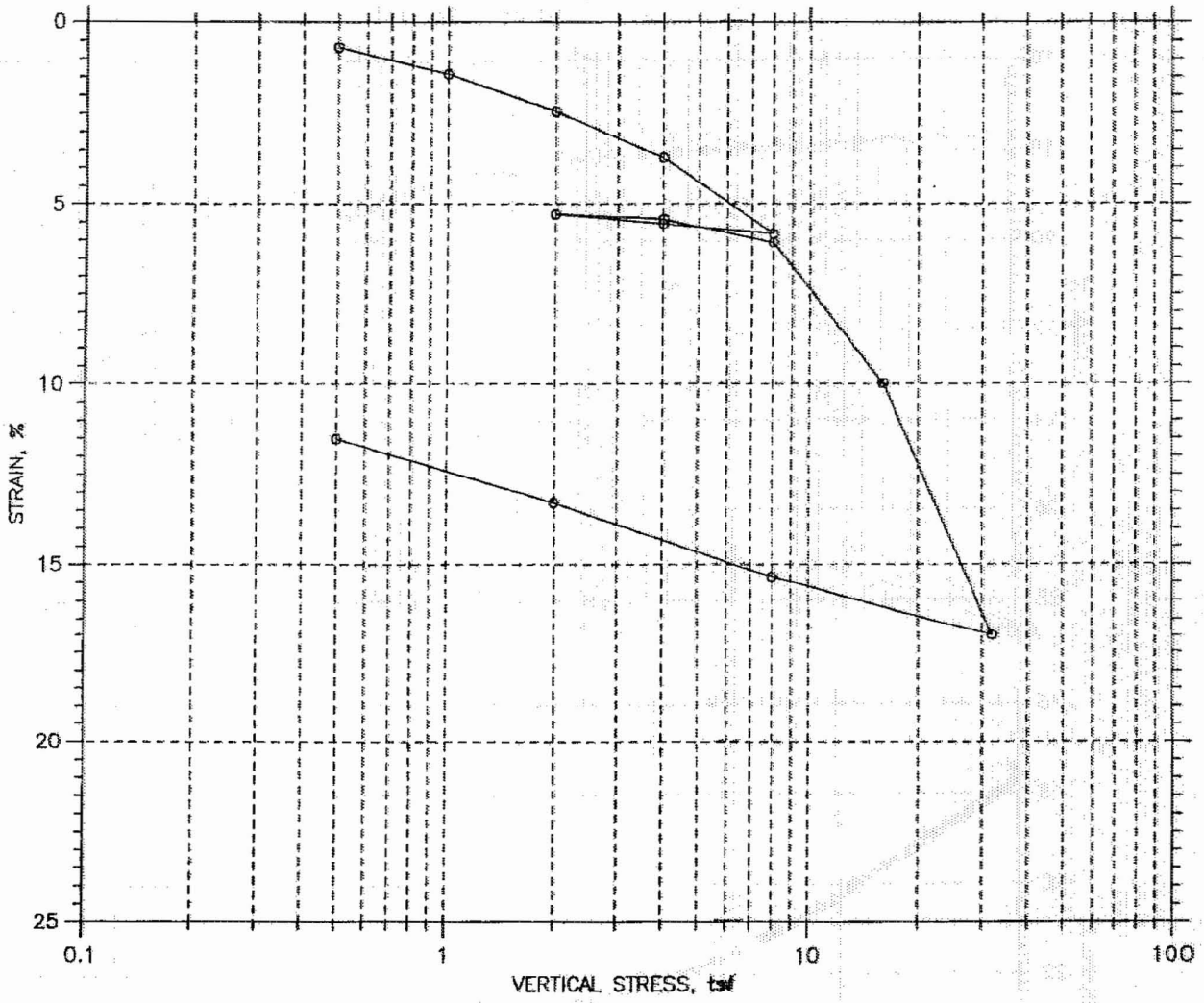




| | | | |
|---|---|---|---|
| GeoTesting express<br>a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-411 | Tested By: md | Checked By: jdt |
| | Sample No.: S-8 | Test Date: 10/17/06 | Depth: 23.5-25.5 |
| | Test No.: C-51 | Sample Type: tube | Elevation: --- |
| | Description: Moist, dark gray organic clay (OH), 95% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System C - Compression Ratio: 0.26, Recompression Ratio: 0.05 | | |

Thu, 09-NOV-2006 19:05:01

# CONSOLIDATION TEST DATA

SUMMARY REPORT




| | | | | Before Test | After Test |
|---|---|---|---|---|---|
| Overburden Pressure: --- | | | | Water Content, % | 37.37 | 32.51 |
| Preconsolidation Pressure: 10.5 tsf | | | | Dry Unit Weight, pcf | 79.89 | 90.29 |
| Compression Index: --- | | | | Saturation, % | 90.01 | 100.00 |
| Diameter: 2.5 in | | Height: 1 in | | Void Ratio | 1.13 | 0.89 |
| LL: 59 | PL: 16 | PI: 43 | GS: 2.73 | | | |

| | | | |
|---|---|---|---|
| GeoTesting express<br>a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-413 | Tested By: md | Checked By: jdt |
| | Sample No.: S-17 | Test Date: 09/27/06 | Depth: 73-75 |
| | Test No.: C-31 | Sample Type: tube | Elevation: --- |
| | Description: Moist, dark greenish gray clay (CH), 98% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System C - Compression Ratio: 0.24, Recompression Ratio: 0.03 | | |

Fri, 10-NOV-2006 14:49:58

# CONSOLIDATION TEST DATA

| | | |
|---|---|---|
| Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| Boring No.: B-413 | Tested By: md | Checked By: jdt |
| Sample No.: S-17 | Test Date: 09/27/06 | Depth: 73-75 |
| Test No.: C-31 | Sample Type: tube | Elevation: --- |

Soil Description: Moist, dark greenish gray clay (CH), 98% passing #200 sieve, inundated @ 0.5 tsf
Remarks: System C - Compression Ratio: 0.24, Recompression Ratio: 0.03

| | | |
|---|---|---|
| Measured Specific Gravity: 2.73 | Liquid Limit: 59 | Initial Height: 1.00 in |
| Initial Void Ratio: 1.13 | Plastic Limit: 16 | Specimen Diameter: 2.50 in |
| Final Void Ratio: 0.89 | Plasticity Index: 43 | |

| | Before Consolidation | | After Consolidation | |
|---|---|---|---|---|
| | Trimmings | Specimen+Ring | Specimen+Ring | Trimmings |
| Container ID | Tube-4-4 | RING | | chase |
| Wt. Container + Wet Soil, gm | 146.83 | 358.31 | 353.31 | 146.91 |
| Wt. Container + Dry Soil, gm | 111.76 | 319.84 | 319.84 | 112.91 |
| Wt. Container, gm | 8 | 216.91 | 216.91 | 8.33 |
| Wt. Dry Soil, gm | 103.76 | 102.93 | 102.93 | 104.58 |
| Water Content, % | 33.80 | 37.37 | 32.51 | 32.51 |
| Void Ratio | --- | 1.13 | 0.89 | --- |
| Degree of Saturation, % | --- | 90.01 | 100.00 | --- |
| Dry Unit Weight, pcf | --- | 79.886 | 90.29 | --- |

# CONSOLIDATION TEST DATA

Project: Calvert Cliffs Nuclear PP
Boring No.: B-413
Sample No.: S-17
Test No.: C-31

Location: Calvert County, MD
Tested By: md
Test Date: 09/27/06
Sample Type: tube

Project No.: GTX-6880
Checked By: jdt
Depth: 73-75
Elevation: ---

Soil Description: Moist, dark greenish gray clay (CH), 98% passing #200 sieve, inundated @ 0.5 tsf
Remarks: System C - Compression Ratio: 0.24, Recompression Ratio: 0.03

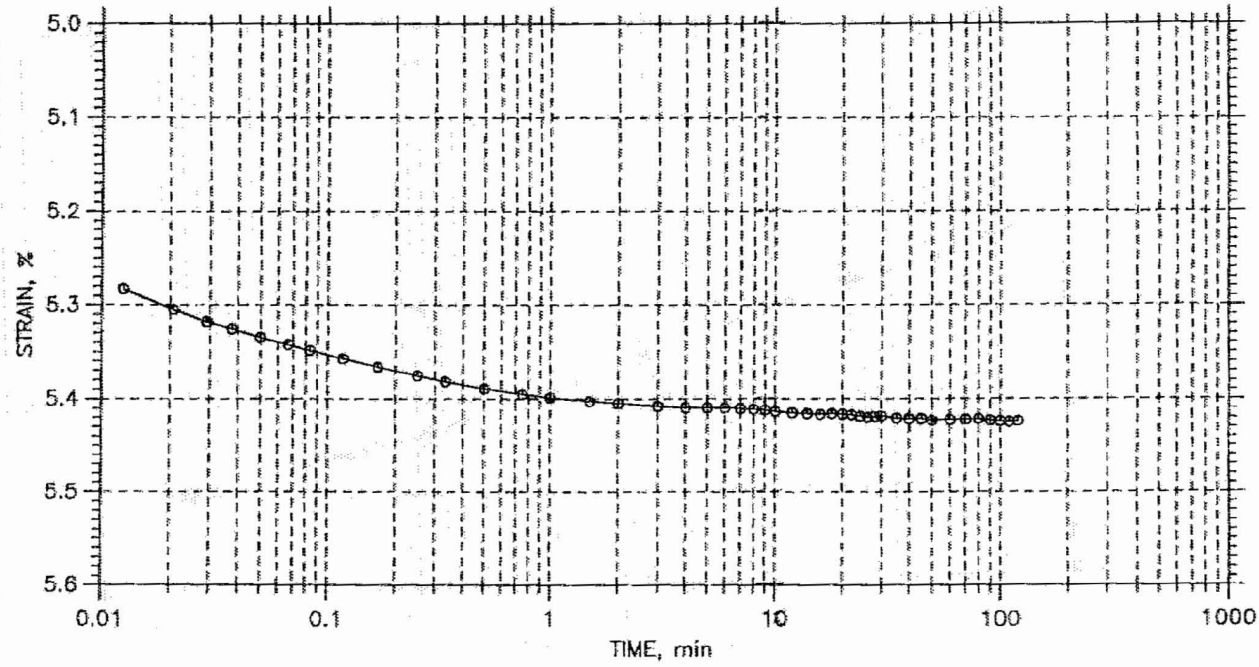
| | Applied Stress tsf | Final Displacement in | Void Ratio | Strain at End % | T50 Fitting Sq.Rt. min | T50 Fitting Log min | Coefficient of Consolidation Sq.Rt. in^2/sec | Coefficient of Consolidation Log in^2/sec | Coefficient of Consolidation Ave. in^2/sec |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.5 | 0.006919 | 1.119 | 0.69 | 0.0 | 0.0 | 3.81e-002 | 0.00e+000 | 3.81e-002 |
| 2 | 1 | 0.0143 | 1.103 | 1.43 | 0.1 | 0.0 | 8.10e-003 | 3.90e-002 | 1.34e-002 |
| 3 | 2 | 0.02449 | 1.081 | 2.45 | 0.1 | 0.0 | 1.51e-002 | 4.38e-002 | 2.25e-002 |
| 4 | 4 | 0.0372 | 1.054 | 3.72 | 0.0 | 0.0 | 3.27e-002 | 4.73e-002 | 3.87e-002 |
| 5 | 8 | 0.05819 | 1.009 | 5.82 | 0.0 | 0.0 | 2.06e-002 | 5.01e-002 | 2.92e-002 |
| 6 | 4 | 0.05549 | 1.015 | 5.55 | 0.0 | 0.0 | 1.02e-001 | 0.00e+000 | 1.02e-001 |
| 7 | 2 | 0.05281 | 1.021 | 5.28 | 0.0 | 0.0 | 2.04e-002 | 2.01e+000 | 4.03e-002 |
| 8 | 4 | 0.05424 | 1.018 | 5.42 | 0.0 | 0.0 | 8.78e-002 | 0.00e+000 | 8.78e-002 |
| 9 | 8 | 0.06062 | 1.004 | 6.06 | 0.0 | 0.0 | 3.12e-002 | 0.00e+000 | 3.12e-002 |
| 10 | 16 | 0.09985 | 0.920 | 9.99 | 0.2 | 0.1 | 3.32e-003 | 1.08e-002 | 5.08e-003 |
| 11 | 32 | 0.1697 | 0.771 | 16.97 | 3.1 | 0.0 | 1.97e-004 | 0.00e+000 | 1.97e-004 |
| 12 | 8 | 0.1535 | 0.806 | 15.35 | 0.2 | 0.0 | 2.62e-003 | 4.64e-002 | 4.95e-003 |
| 13 | 2 | 0.1329 | 0.850 | 13.29 | 4.8 | 0.0 | 1.27e-004 | 0.00e+000 | 1.27e-004 |
| 14 | 0.5 | 0.1152 | 0.888 | 11.52 | 13.4 | 0.0 | 4.72e-005 | 0.00e+000 | 4.72e-005 |

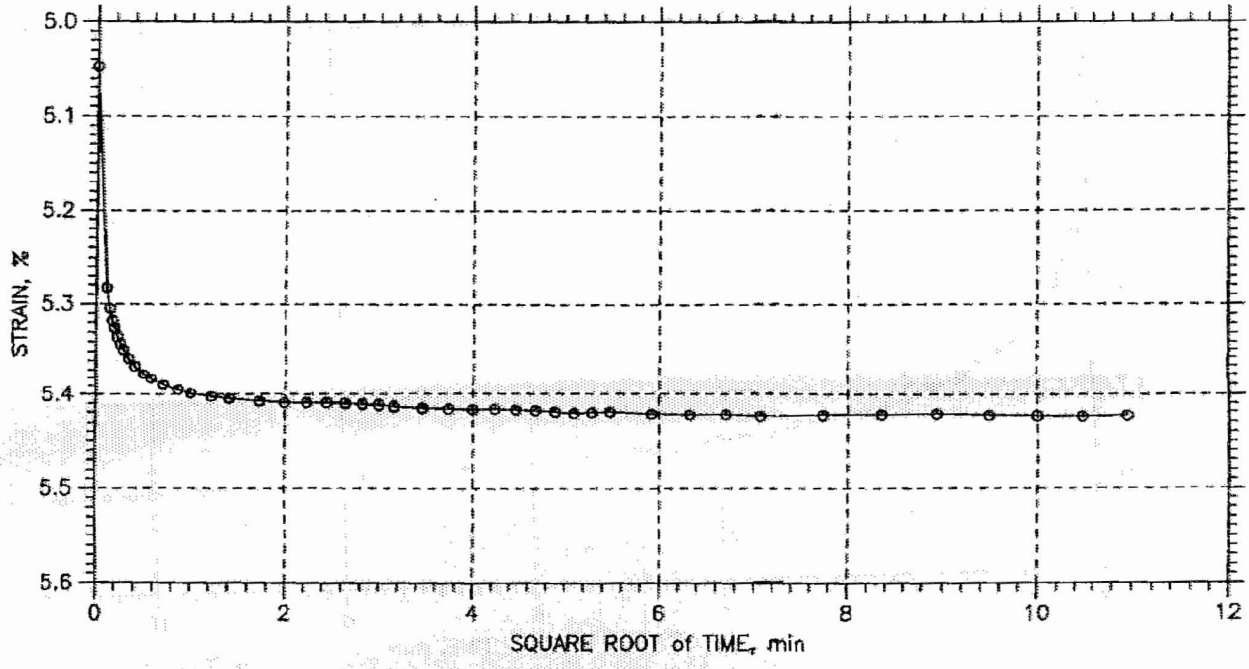
# CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 14

Stress: 4. tsf




| | | | |
|---|---|---|---|
| GeoTesting express<br>a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-413 | Tested By: md | Checked By: jdt |
| | Sample No.: S-17 | Test Date: 09/27/06 | Depth: 73-75 |
| | Test No.: C-31 | Sample Type: tube | Elevation: --- |
| | Description: Moist, dark greenish gray clay (CH), 98% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System C - Compression Ratio: 0.24, Recompression Ratio: 0.03 | | |

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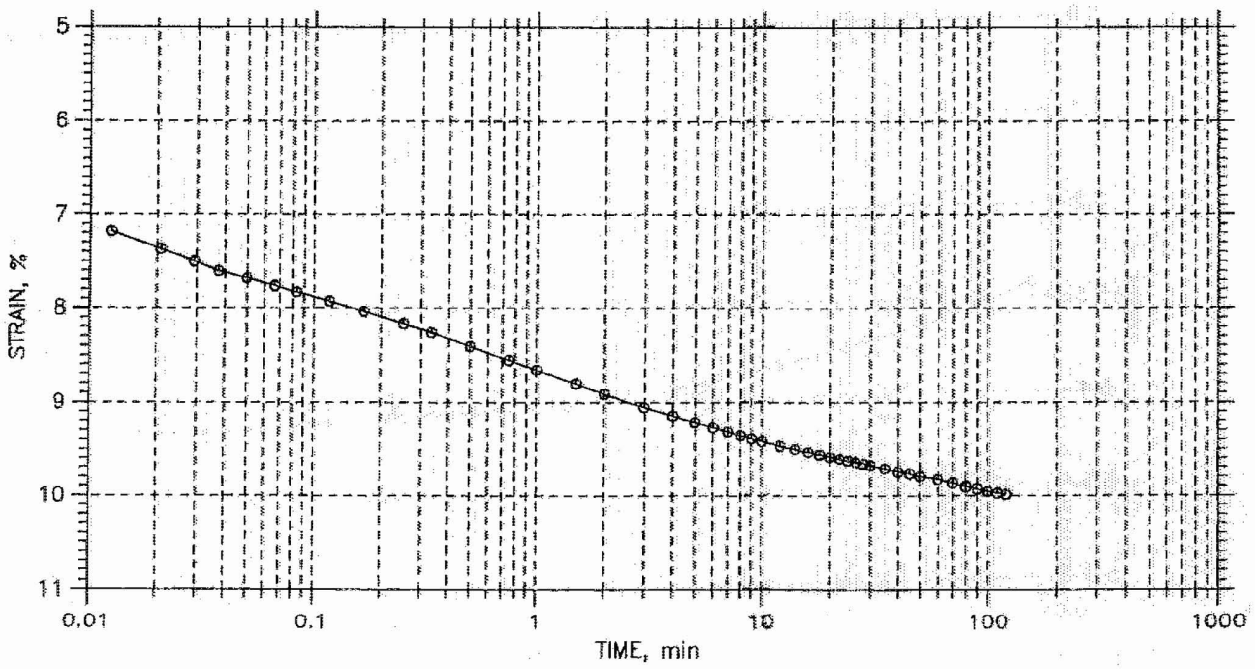
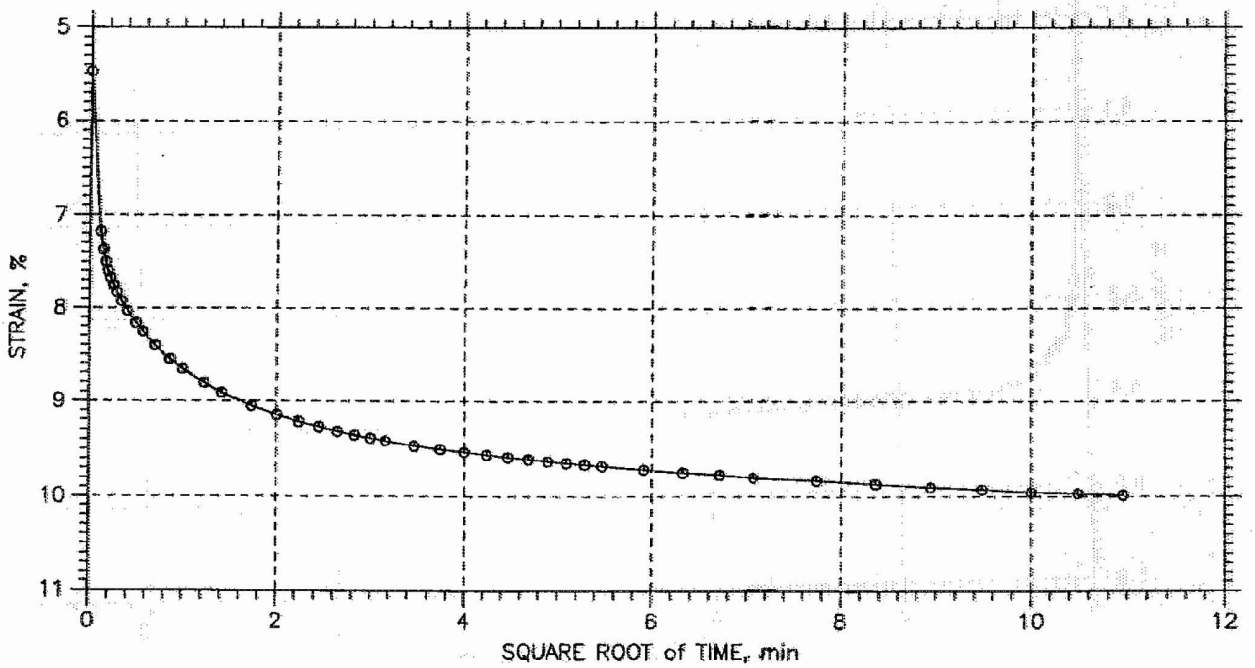
# CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 14

Stress: 16. tsf

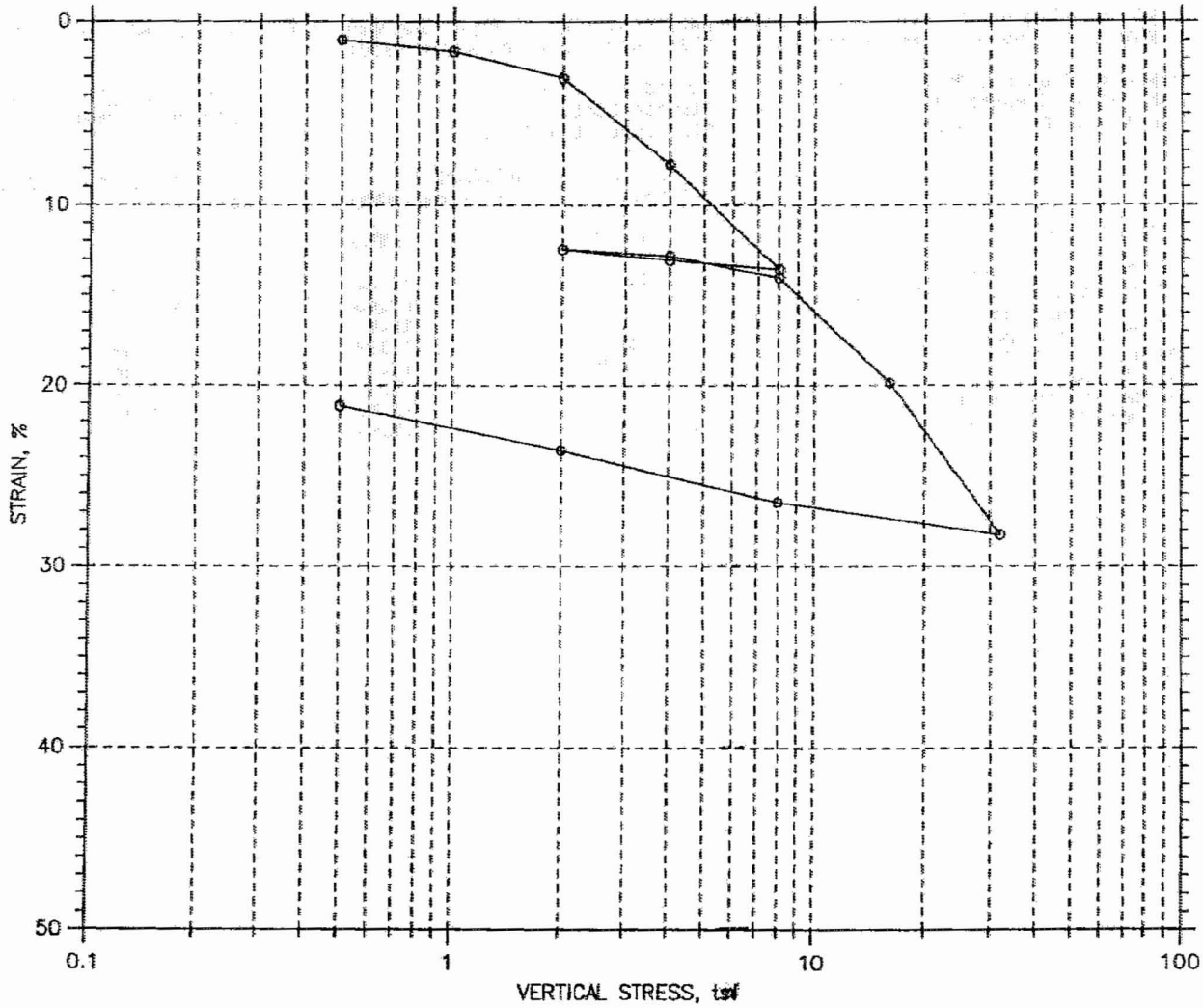



| | | | |
|---|---|---|---|
| GeoTesting express<br>a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-413 | Tested By: md | Checked By: jdt |
| | Sample No.: S-17 | Test Date: 09/27/06 | Depth: 73-75 |
| | Test No.: C-31 | Sample Type: tube | Elevation: --- |
| | Description: Moist, dark greenish gray clay (CH), 98% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System C - Compression Ratio: 0.24, Recompression Ratio: 0.03 | | |

Fri, 10-NOV-2006 14:51:07

# CONSOLIDATION TEST DATA
## SUMMARY REPORT




| | | | | | Before Test | After Test |
|---|---|---|---|---|---|---|
| Overburden Pressure: --- | | | | Water Content, % | 41.44 | 32.84 |
| Preconsolidation Pressure: 4 tsf | | | | Dry Unit Weight, pcf | 71.55 | 90.72 |
| Compression Index: --- | | | | Saturation, % | 80.82 | 99.99 |
| Diameter: 2.5 in | | Height: 1 in | | Void Ratio | 1.43 | 0.91 |
| LL: 51 | PL: 15 | PI: 36 | GS: 2.78 | | | |

| | | | |
|---|---|---|---|
| GeoTesting express<br>a subsidiary of Geocomp Corporation | Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| | Boring No.: B-414 | Tested By: md | Checked By: jdt |
| | Sample No.: S-17 | Test Date: 09/26/06 | Depth: 68-70 |
| | Test No.: C-30 | Sample Type: tube | Elevation: --- |
| | Description: Moist, dark greenish gray clay (CH), 97% passing #200 sieve, inundated @ 0.5 tsf | | |
| | Remarks: System G - Compression Ratio: 0.28, Recompression Ratio: 0.04 | | |

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# CONSOLIDATION TEST DATA

| | | |
|---|---|---|
| Project: Calvert Cliffs Nuclear PP | Location: Calvert County, MD | Project No.: GTX-6880 |
| Boring No.: B-414 | Tested By: md | Checked By: jdt |
| Sample No.: S-17 | Test Date: 09/26/06 | Depth: 68-70 |
| Test No.: C-30 | Sample Type: tube | Elevation: --- |

Soil Description: Moist, dark greenish gray clay (CH), 97% passing #200 sieve, inundated @ 0.5 tsf
Remarks: System G - Compression Ratio: 0.28, Recompression Ratio: 0.04

| | | |
|---|---|---|
| Measured Specific Gravity: 2.78 | Liquid Limit: 51 | Initial Height: 1.00 in |
| Initial Void Ratio: 1.43 | Plastic Limit: 15 | Specimen Diameter: 2.50 in |
| Final Void Ratio: 0.91 | Plasticity Index: 36 | |

| | Before Consolidation | | After Consolidation | |
|---|---|---|---|---|
| | Trimmings | Specimen+Ring | Specimen+Ring | Trimmings |
| Container ID | B-107 | RING | | 2020 |
| Wt. Container + Wet Soil, gm | 122.75 | 346.86 | 338.93 | 133.08 |
| Wt. Container + Dry Soil, gm | 91.73 | 308.65 | 308.65 | 102.2 |
| Wt. Container, gm | 8.09 | 216.46 | 216.46 | 8.17 |
| Wt. Dry Soil, gm | 83.64 | 92.193 | 92.193 | 94.03 |
| Water Content, % | 37.09 | 41.44 | 32.84 | 32.84 |
| Void Ratio | --- | 1.43 | 0.91 | --- |
| Degree of Saturation, % | --- | 80.82 | 99.99 | --- |
| Dry Unit Weight, pcf | --- | 71.55 | 90.72 | --- |