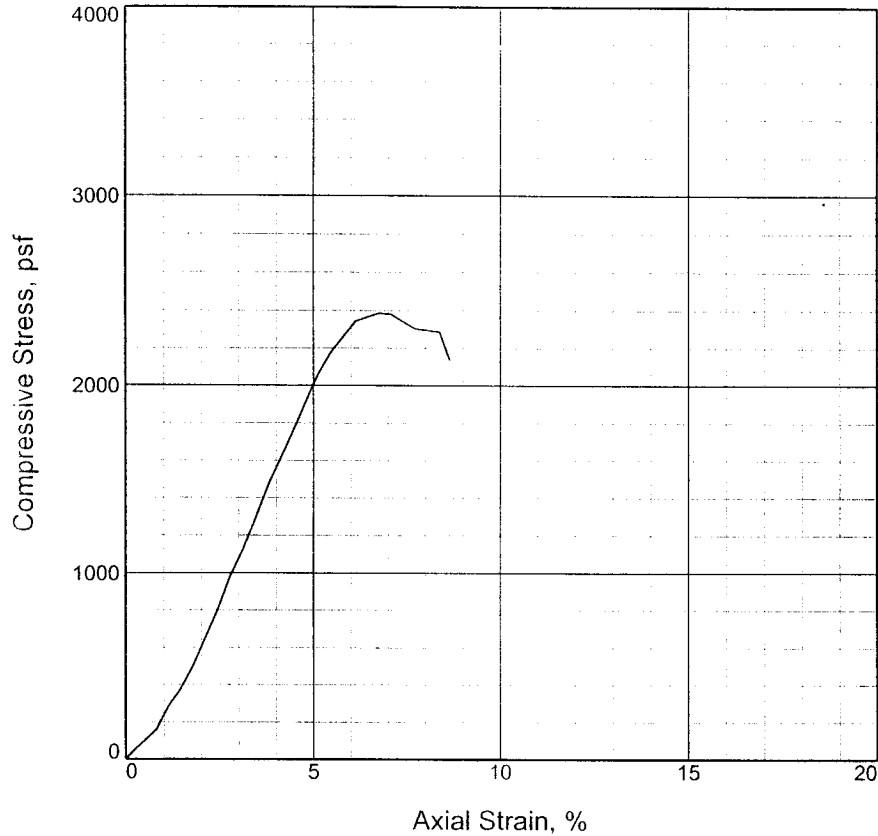


# UNCONFINED COMPRESSION TEST



1

Specimen No.	1			
Unconfined strength, psf	2384.7			
Undrained shear strength, psf	1192.4			
Failure strain, %	6.8			
Strain rate, in./min.	0.056			
Water content, %	21.9			
Wet density, pcf	120.5			
Dry density, pcf	98.9			
Saturation, %	83.8			
Void ratio	0.7040			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** VST GR & T CL6 W/ LYS CH

LL =	PL =	PI =	Assumed GS= 2.7	Type: UNDISTURBED
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**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**

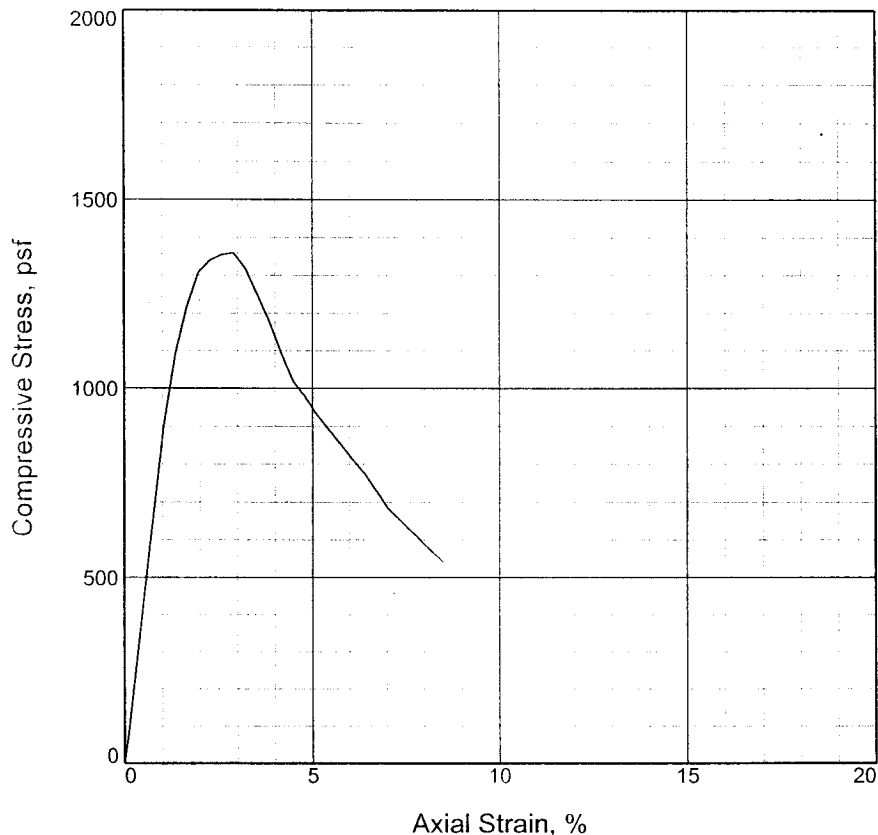
**Figure 1**

**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 0.0  
**Sample Number:** 1

UNCONFINED COMPRESSION TEST  
**EUSTIS ENGINEERING COMPANY, INC.**

**Tested By:** JL      **Checked By:** DP

# UNCONFINED COMPRESSION TEST



Specimen No.	1		
Unconfined strength, psf	1358.4		
Undrained shear strength, psf	679.2		
Failure strain, %	2.9		
Strain rate, in./min.	0.053		
Water content, %	42.3		
Wet density, pcf	101.0		
Dry density, pcf	71.0		
Saturation, %	82.7		
Void ratio	1.3918		
Specimen diameter, in.	1.388		
Specimen height, in.	2.930		
Height/diameter ratio	2.11		

**Description:** M GR & T CH3 W/ ARS ML, TR-WD, SL

LL =      PL =      PI =      Assumed GS= 2.72      Type: UNDISTURBED

**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**  
 TORVANE = 0.470 TSF

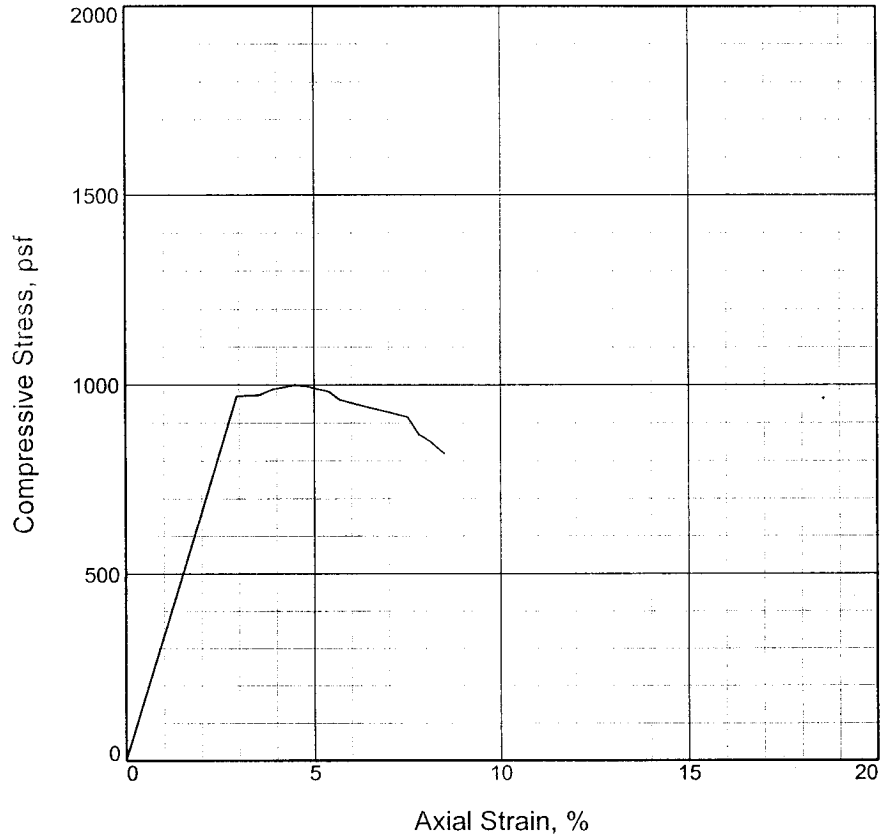
**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 2.5  
**Sample Number:** 2

UNCONFINED COMPRESSION TEST  
**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1

Tested By: JL      Checked By: DP

# UNCONFINED COMPRESSION TEST



Specimen No.	1		
Unconfined strength, psf	999.7		
Undrained shear strength, psf	499.8		
Failure strain, %	4.5		
Strain rate, in./min.	0.079		
Water content, %	50.9		
Wet density, pcf	102.4		
Dry density, pcf	67.8		
Saturation, %	91.7		
Void ratio	1.5222		
Specimen diameter, in.	1.388		
Specimen height, in.	2.930		
Height/diameter ratio	2.11		

**Description:** M GR CH4 W/ SL, TR-WD

LL =      PL =      PI =      Assumed GS= 2.74      Type: UNDISTURBED

**Project No.:** 19082  
**Date:** 12-5-05  
**Remarks:**  
 TORVANE = 0.375 TSF

**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 5.0  
**Sample Number:** 3

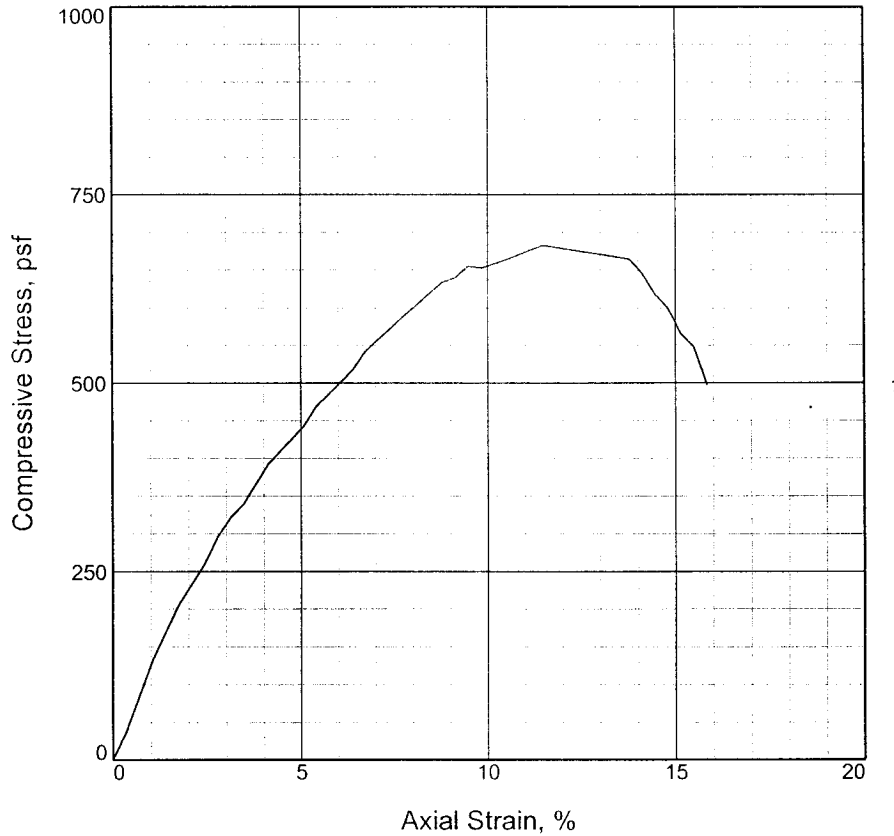
UNCONFINED COMPRESSION TEST

**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1

Tested By: JL      Checked By: JS

# UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	654.7			
Undrained shear strength, psf	327.3			
Failure strain, %	9.5			
Strain rate, in./min.	0.059			
Water content, %	246.2			
Wet density, pcf	69.0			
Dry density, pcf	19.9			
Saturation, %	89.7			
Void ratio	7.1395			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** SO DGR CHOC W/ RT

LL =	PL =	PI =	Assumed GS= 2.6	Type: UNDISTURBED
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**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**  
 TORVANE = 0.200 TSF

**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 12.5  
**Sample Number:** 5

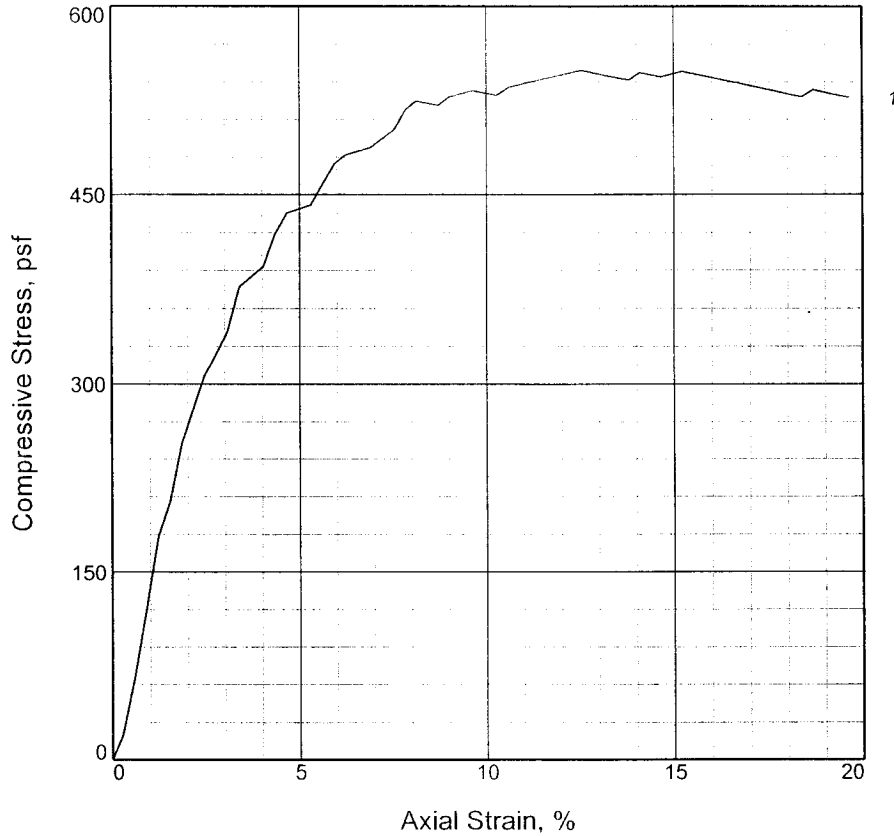
UNCONFINED COMPRESSION TEST

**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1

**Tested By:** JL \_\_\_\_\_ **Checked By:** DP \_\_\_\_\_

# UNCONFINED COMPRESSION TEST



Specimen No.	1		
Unconfined strength, psf	524.6		
Undrained shear strength, psf	262.3		
Failure strain, %	8.1		
Strain rate, in./min.	0.055		
Water content, %	101.2		
Wet density, pcf	87.1		
Dry density, pcf	43.3		
Saturation, %	94.4		
Void ratio	2.8944		
Specimen diameter, in.	1.388		
Specimen height, in.	2.930		
Height/diameter ratio	2.11		

**Description:** SO DGR CHOA W/ WD

**LL =**      **PL =**      **PI =**      **Assumed GS= 2.7**      **Type: UNDISTURBED**

**Project No.:** 19082

**Date:** 11/29/05

**Remarks:**  
TORVANE = 0.170 TSF

**Client:** URS Corporation

**Project:** U.S. Army Corps of Engineers  
Inner Harbor Navigational Canal

**Source of Sample:** B-6G      **Depth:** 17.5

**Sample Number:** 7

UNCONFINED COMPRESSION TEST

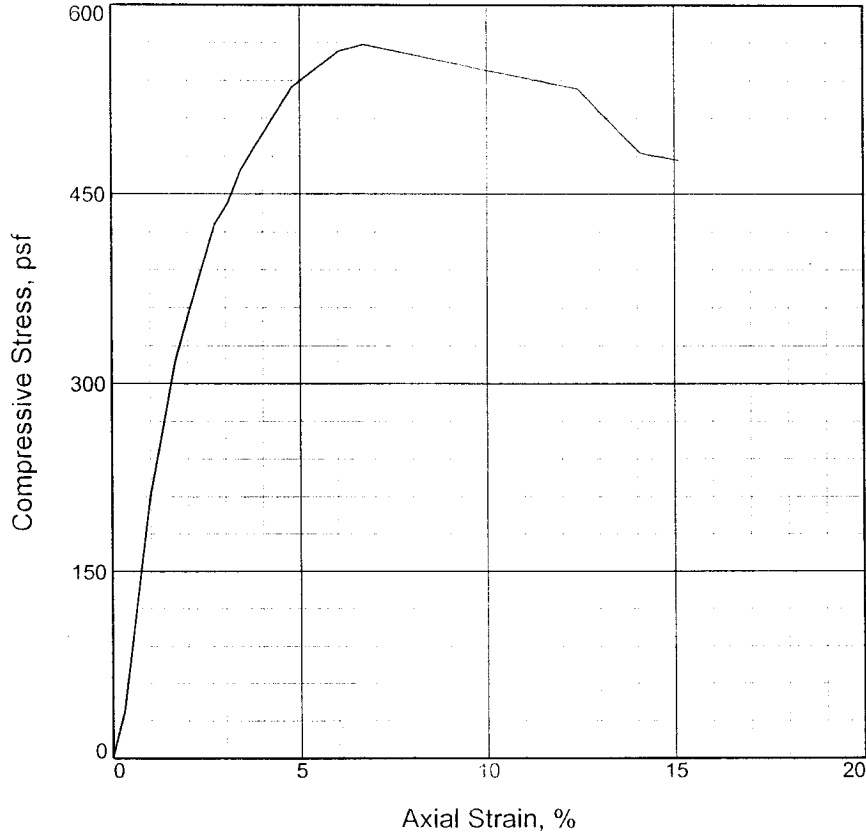
**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1

Tested By: JL

Checked By: DP

# UNCONFINED COMPRESSION TEST



1

Specimen No.	1			
Unconfined strength, psf	568.2			
Undrained shear strength, psf	284.1			
Failure strain, %	6.7			
Strain rate, in./min.	0.059			
Water content, %	77.2			
Wet density, pcf	93.9			
Dry density, pcf	53.0			
Saturation, %	95.0			
Void ratio	2.2281			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** SO GR CH4 W/ LNS & LYS ML

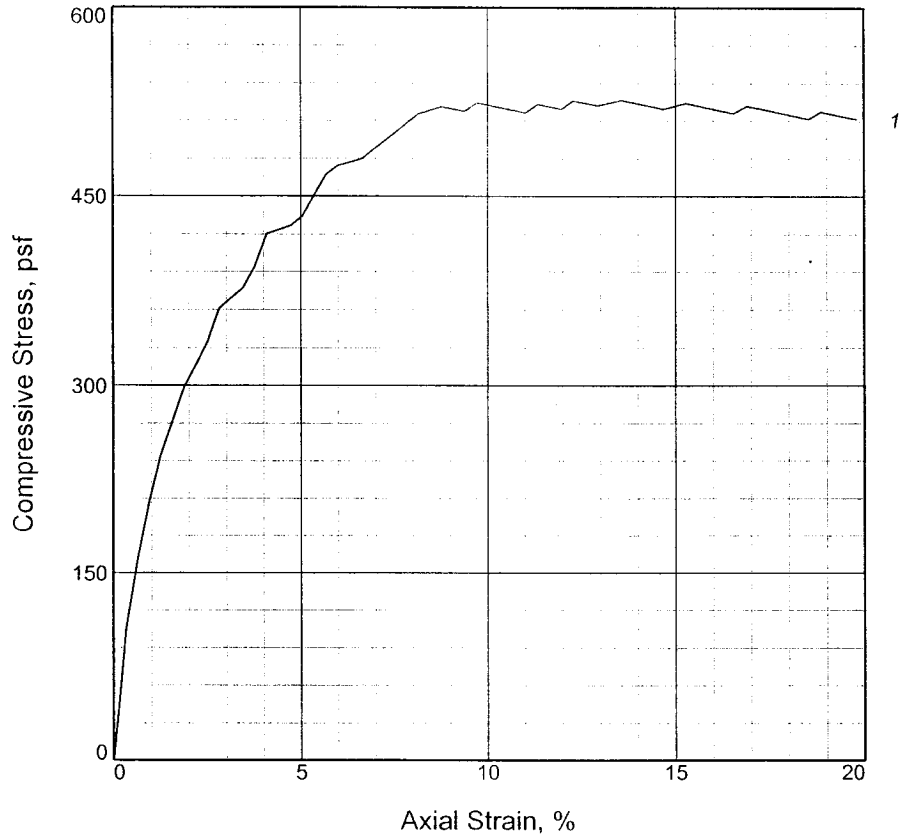
LL =      PL =      PI =      Assumed GS= 2.74      Type: UNDISTURBED

<p><b>Project No.:</b> 19082  <b>Date:</b> 12-15-05  <b>Remarks:</b>          TORVANE = 0.150 TSF</p>	<p><b>Client:</b> URS Corporation  <b>Project:</b> U.S. Army Corps of Engineers          Inner Harbor Navigational Canal  <b>Source of Sample:</b> B-6G      <b>Depth:</b> 22.5  <b>Sample Number:</b> 9</p>
<p>UNCONFINED COMPRESSION TEST</p> <p><b>EUSTIS ENGINEERING COMPANY, INC.</b></p>	

Figure 1

Tested By: JL      Checked By: JS

# UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	520.9			
Undrained shear strength, psf	260.5			
Failure strain, %	8.8			
Strain rate, in./min.	0.054			
Water content, %	68.3			
Wet density, pcf	96.9			
Dry density, pcf	57.6			
Saturation, %	95.3			
Void ratio	1.9477			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** SO GR CH4 W/ LNS ML, SL

LL =	PL =	PI =	Assumed GS= 2.72	Type: UNDISTURBED
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**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**  
 TORVANE = 0.200 TSF

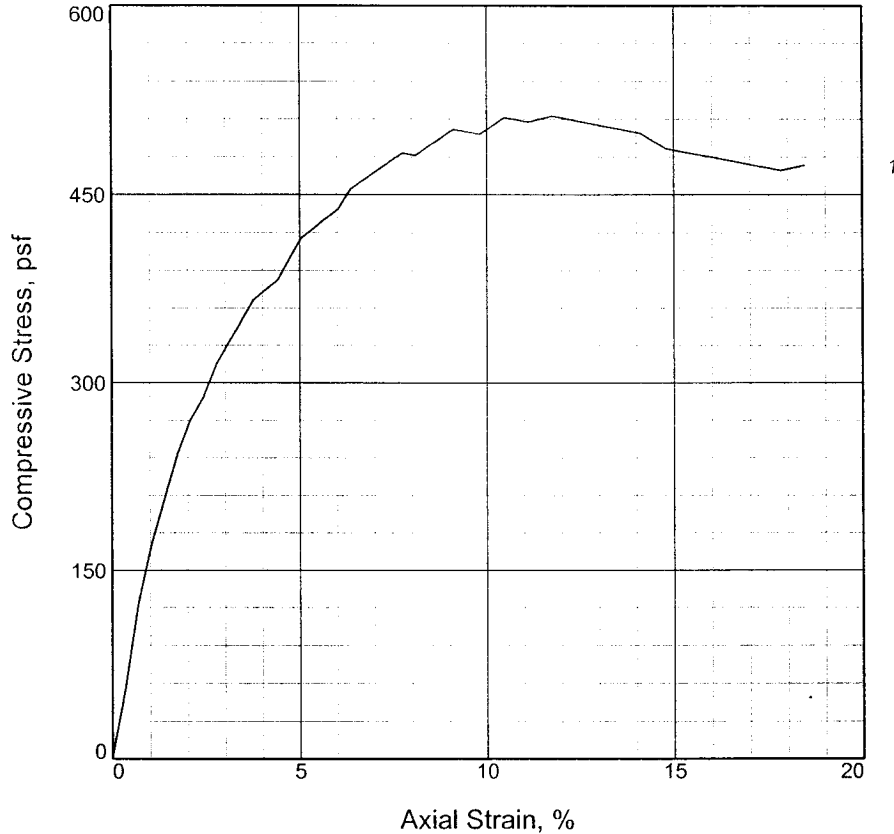
**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 27.5  
**Sample Number:** 11

Figure 1

UNCONFINED COMPRESSION TEST  
**EUSTIS ENGINEERING COMPANY, INC.**

**Tested By:** JL      **Checked By:** DP

# UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	482.9			
Undrained shear strength, psf	241.4			
Failure strain, %	7.7			
Strain rate, in./min.	0.059			
Water content, %	58.9			
Wet density, pcf	100.2			
Dry density, pcf	63.1			
Saturation, %	94.2			
Void ratio	1.7126			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** VSO GR CH4

LL =	PL =	PI =	Assumed GS= 2.74	Type: UNDISTURBED
------	------	------	------------------	-------------------

**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**  
 TORVANE = 0.170 TSF

Figure 1

**Client:** URS Corporation

**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal

**Source of Sample:** B-6G      **Depth:** 32.5

**Sample Number:** 13

UNCONFINED COMPRESSION TEST

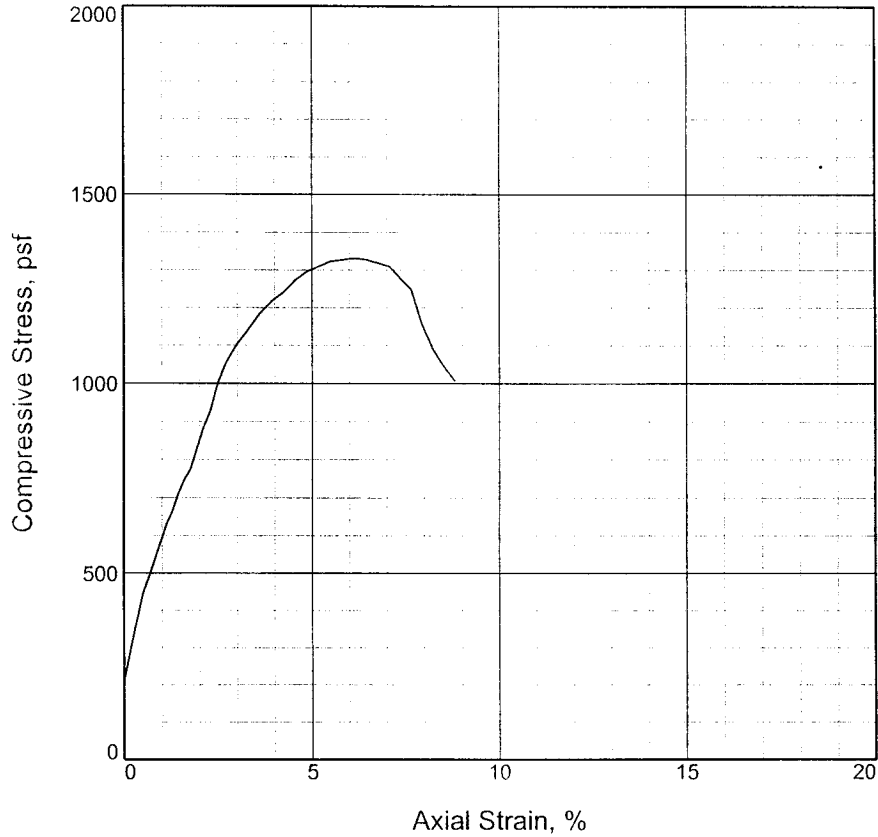
**EUSTIS ENGINEERING COMPANY, INC.**







# UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1330.8			
Undrained shear strength, psf	665.4			
Failure strain, %	6.2			
Strain rate, in./min.	0.041			
Water content, %	54.4			
Wet density, pcf	102.4			
Dry density, pcf	66.3			
Saturation, %	94.8			
Void ratio	1.5605			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** M GR CH4 W/ ARS SM

LL =      PL =      PI =      Assumed GS= 2.72      Type: UNDISTURBED

**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**  
 TORVANE = 0.250 TSF

**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 50.0  
**Sample Number:** 20

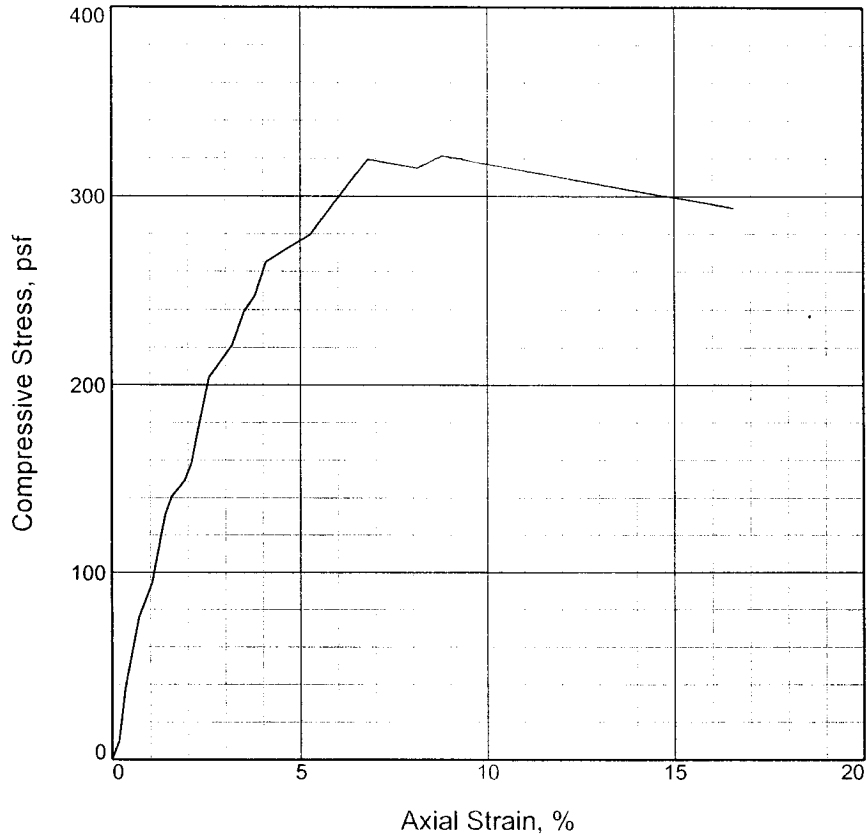
UNCONFINED COMPRESSION TEST

**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1

Tested By: JL      Checked By: DP

# UNCONFINED COMPRESSION TEST



1

Specimen No.	1		
Unconfined strength, psf	319.3		
Undrained shear strength, psf	159.6		
Failure strain, %	6.8		
Strain rate, in./min.	0.046		
Water content, %	49.6		
Wet density, pcf	104.2		
Dry density, pcf	69.6		
Saturation, %	93.8		
Void ratio	1.4388		
Specimen diameter, in.	1.388		
Specimen height, in.	2.930		
Height/diameter ratio	2.11		

**Description:** VSO GR CH4 W/ ARS & LNS SIF

**LL =**      **PL =**      **PI =**      **Assumed GS= 2.72**      **Type: UNDISTURBED**

**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**  
 TORVANE = 0.180 TSF

**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 63.0  
**Sample Number:** 26

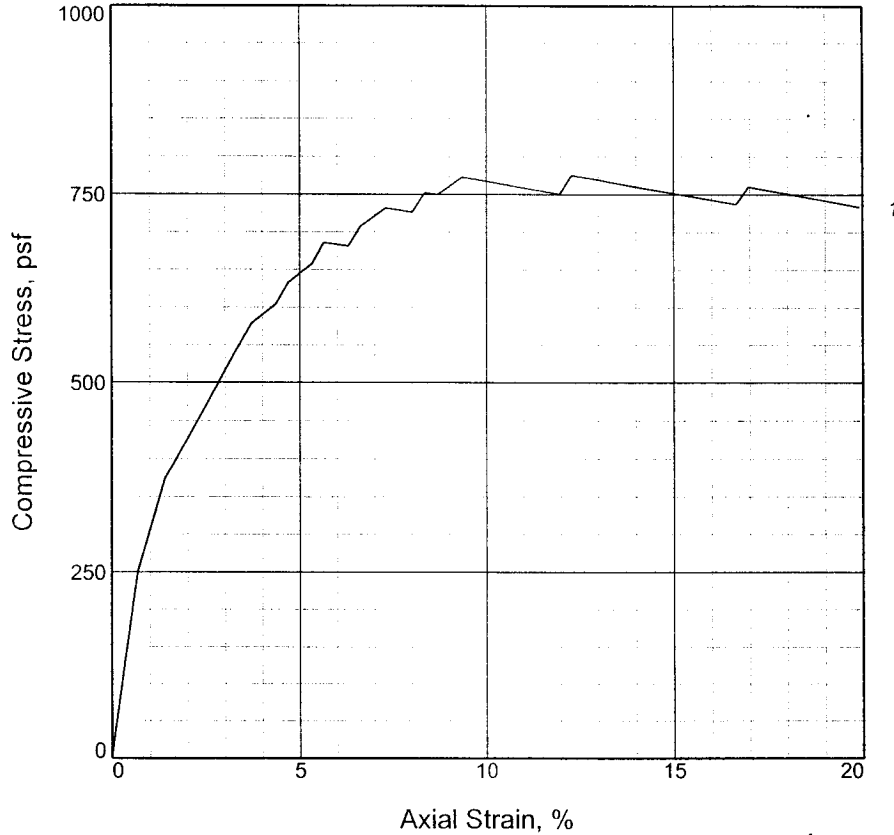
UNCONFINED COMPRESSION TEST

**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1

**Tested By:** JL      **Checked By:** DP

# UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	685.2			
Undrained shear strength, psf	342.6			
Failure strain, %	5.7			
Strain rate, in./min.	0.001			
Water content, %	34.6			
Wet density, pcf	116.3			
Dry density, pcf	86.4			
Saturation, %	96.7			
Void ratio	0.9802			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** SO GR & T CH4 W/ SIF, ARS SM, SL

LL =      PL =      PI =      Assumed GS= 2.74      Type: UNDISTURBED

**Project No.:** 19082  
**Date:** 11-29-05  
**Remarks:**  
 TORVANE = 1.150 TSF

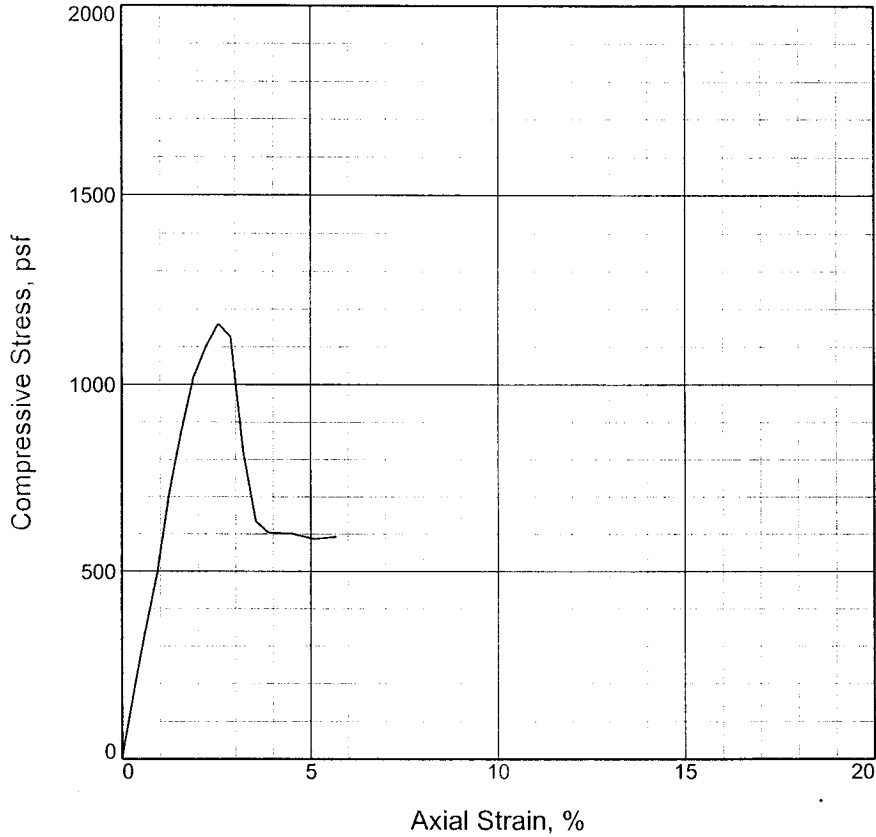
**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 72.5  
**Sample Number:** 30

UNCONFINED COMPRESSION TEST  
**EUSTIS ENGINEERING COMPANY, INC.**

Tested By: JL \_\_\_\_\_ Checked By: JS \_\_\_\_\_

Figure 1

# UNCONFINED COMPRESSION TEST



Specimen No.	1		
Unconfined strength, psf	1159.2		
Undrained shear strength, psf	579.6		
Failure strain, %	2.6		
Strain rate, in./min.	0.056		
Water content, %	42.5		
Wet density, pcf	108.0		
Dry density, pcf	75.8		
Saturation, %	92.7		
Void ratio	1.2557		
Specimen diameter, in.	1.388		
Specimen height, in.	2.930		
Height/diameter ratio	2.11		

**Description:** M LGR & T CH4 W/ CC, SL

LL =      PL =      PI =      Assumed GS= 2.74      Type: UNDISTURBED

**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**  
 TORVANE = 0.625 TSF

**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 77.5  
**Sample Number:** 32

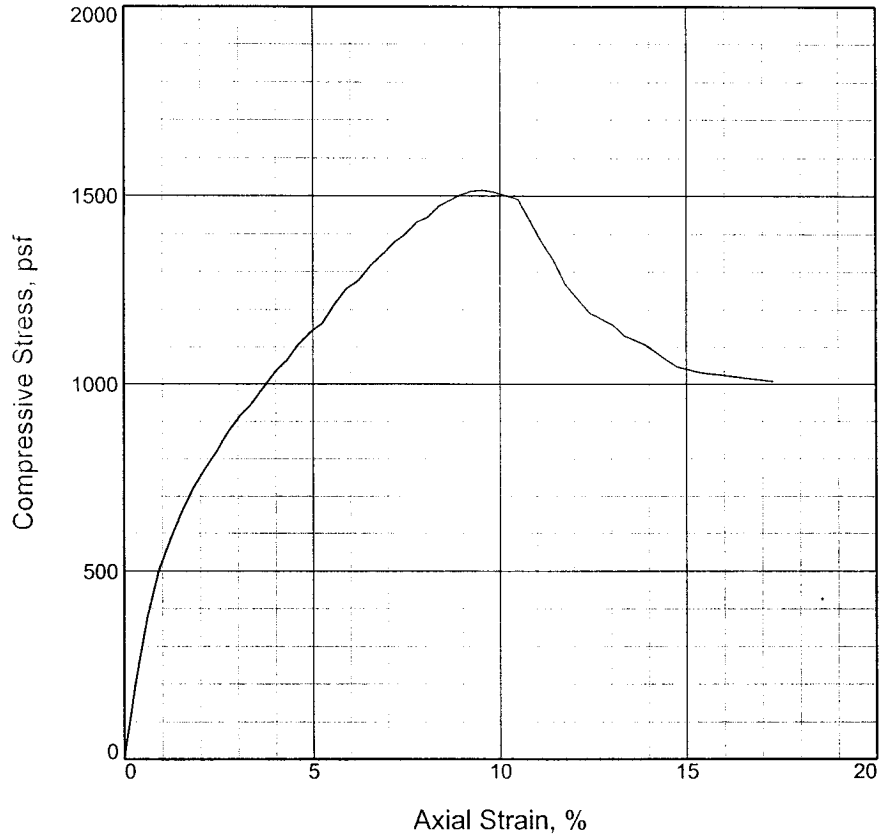
UNCONFINED COMPRESSION TEST

**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1

Tested By: JL      Checked By: DP

# UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1515.3			
Undrained shear strength, psf	757.7			
Failure strain, %	9.5			
Strain rate, in./min.	0.054			
Water content, %	51.2			
Wet density, pcf	103.5			
Dry density, pcf	68.4			
Saturation, %	94.1			
Void ratio	1.4807			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** M GR CH4 W/ ARS & LNS SM  
**LL =**      **PL =**      **PI =**      **Assumed GS= 2.72**      **Type: UNDISTURBED**

**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**  
 TORVANE = 0.250 TSF

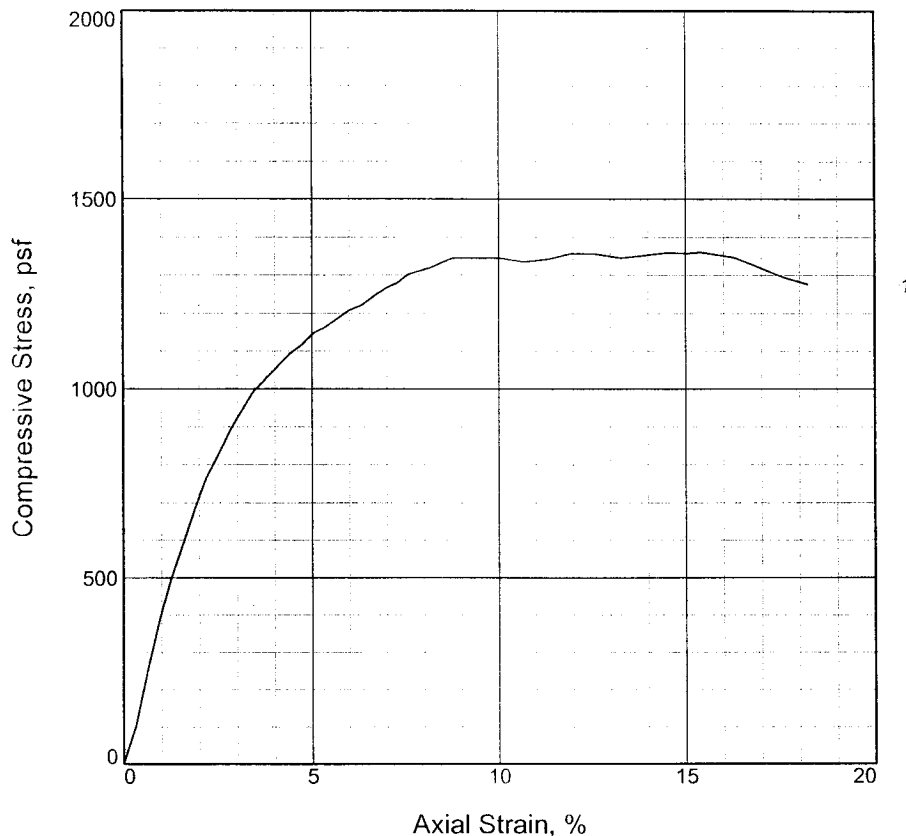
**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 82.5  
**Sample Number:** 34

UNCONFINED COMPRESSION TEST  
**EUSTIS ENGINEERING COMPANY, INC.**

Tested By: JL      Checked By: DP

Figure 1

# UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1345.5			
Undrained shear strength, psf	672.8			
Failure strain, %	8.8			
Strain rate, in./min.	0.055			
Water content, %	35.9			
Wet density, pcf	113.3			
Dry density, pcf	83.4			
Saturation, %	94.2			
Void ratio	1.0367			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** M GR CH4 W/ ARS & LNS SM

LL =      PL =      PI =      Assumed GS= 2.72      Type: UNDISTURBED

**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**

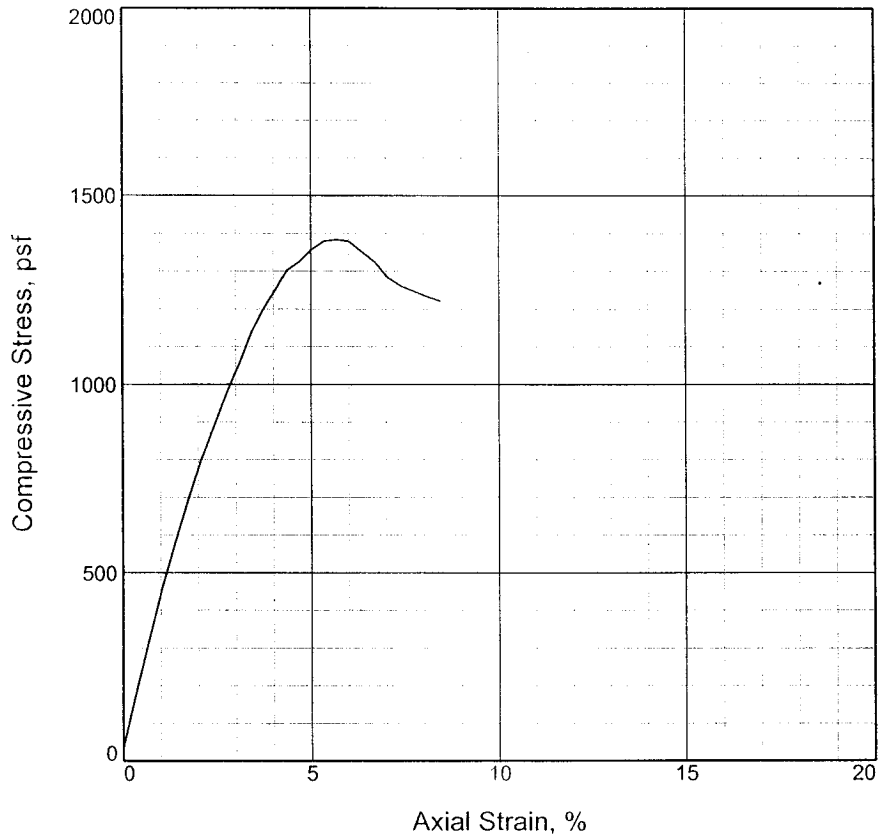
**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 87.5  
**Sample Number:** 36

UNCONFINED COMPRESSION TEST  
**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1



# UNCONFINED COMPRESSION TEST



Specimen No.	1			
Unconfined strength, psf	1382.3			
Undrained shear strength, psf	691.1			
Failure strain, %	5.7			
Strain rate, in./min.	0.000			
Water content, %	51.4			
Wet density, pcf	104.9			
Dry density, pcf	69.3			
Saturation, %	96.4			
Void ratio	1.4520			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** M GR CH4 W/ ARS & LNS ML, TR-WD

LL =      PL =      PI =      Assumed GS= 2.72      Type: UNDISTURBED

**Project No.:** 19082  
**Date:** 11/29/05  
**Remarks:**  
 TORVANE - 0.220 TSF

**Client:** URS Corporation  
**Project:** U.S. Army Corps of Engineers  
 Inner Harbor Navigational Canal  
**Source of Sample:** B-6G      **Depth:** 92.5  
**Sample Number:** 38

UNCONFINED COMPRESSION TEST

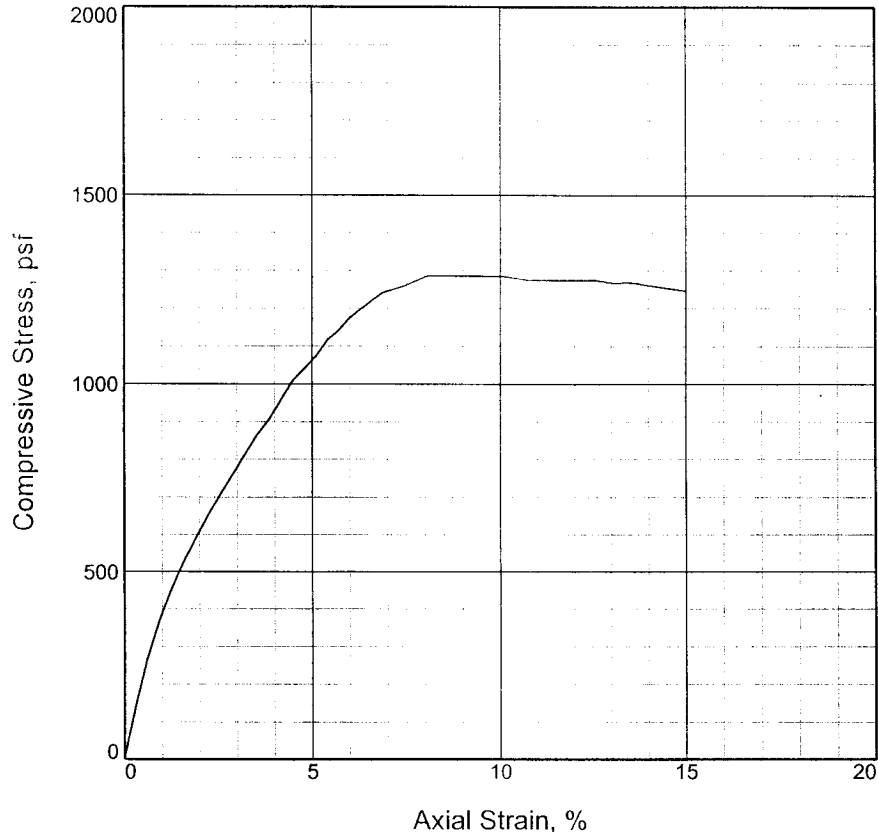
**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1

Tested By: JL

Checked By: DP

# UNCONFINED COMPRESSION TEST



1

Specimen No.	1			
Unconfined strength, psf	1285.5			
Undrained shear strength, psf	642.8			
Failure strain, %	8.1			
Strain rate, in./min.	0.055			
Water content, %	37.2			
Wet density, pcf	113.0			
Dry density, pcf	82.4			
Saturation, %	95.4			
Void ratio	1.0616			
Specimen diameter, in.	1.388			
Specimen height, in.	2.930			
Height/diameter ratio	2.11			

**Description:** M GR CH4 W/ LNS & LYS ML

**LL =**      **PL =**      **PI =**      **Assumed GS= 2.72**      **Type: UNDISTURBED**

**Project No.:** 19082

**Date:** 11/29/05

**Remarks:**

**Client:** URS Corporation

**Project:** U.S. Army Corps of Engineers  
Inner Harbor Navigational Canal

**Source of Sample:** B-6G      **Depth:** 97.5

**Sample Number:** 40

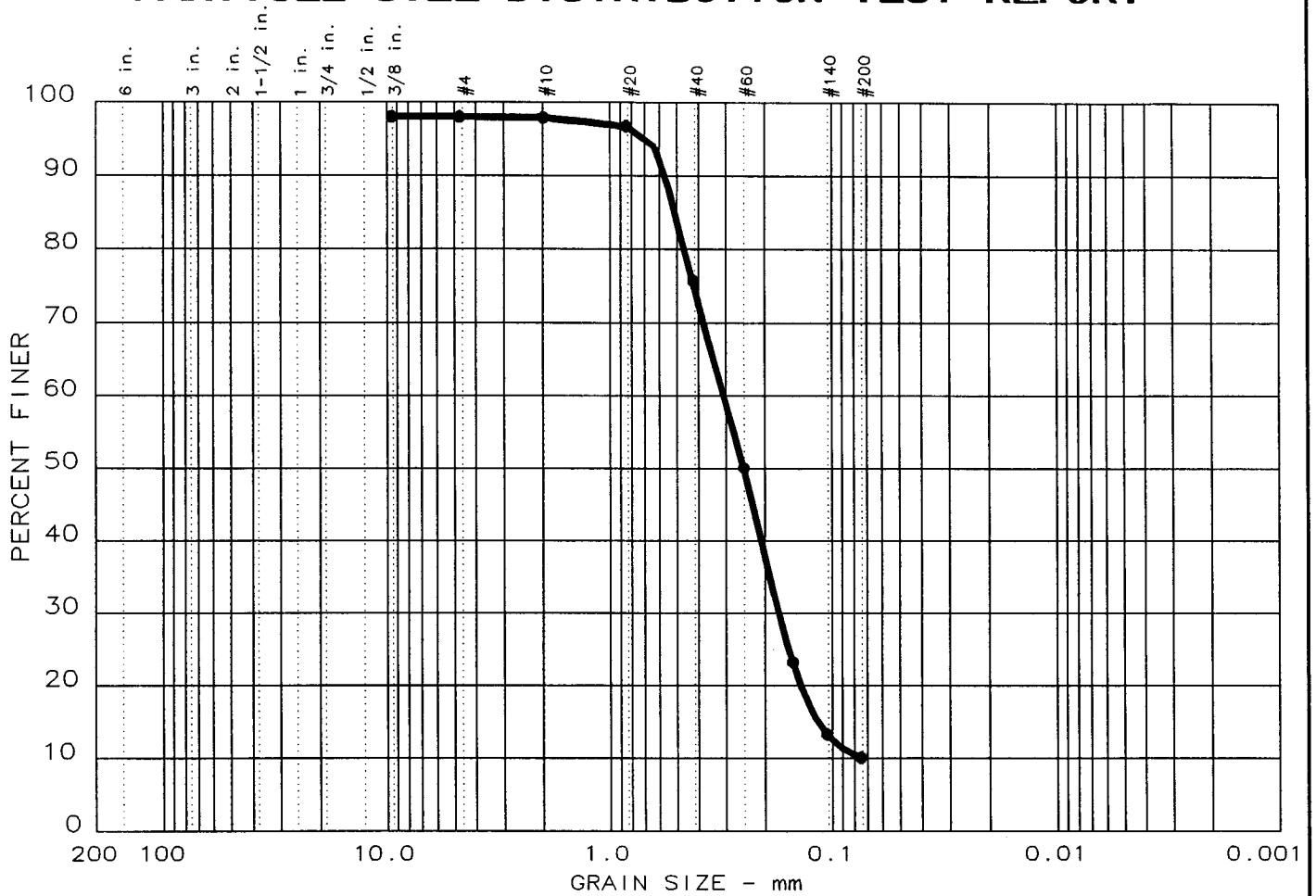
UNCONFINED COMPRESSION TEST

**EUSTIS ENGINEERING COMPANY, INC.**

Figure 1

**Tested By:** JL      **Checked By:** DP

# PARTICLE SIZE DISTRIBUTION TEST REPORT



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	2.0	87.9	10.1		SM1-s		

SIEVE inches size	PERCENT FINER		
	●		
0.375	98.0		
<del>X</del>	GRAIN SIZE		
D <sub>60</sub>	0.31		
D <sub>30</sub>	0.17		
D <sub>10</sub>			
<del>X</del>	COEFFICIENTS		
C <sub>c</sub>			
C <sub>u</sub>			

SIEVE number size	PERCENT FINER		
	●		
4	98.0		
10	97.9		
20	96.7		
40	75.8		
60	50.0		
100	23.2		
140	13.3		
200	10.1		

Sample information:  
 ● Boring 6G, Sample 24  
 Gr SM1-s

Remarks:  
 Sample depth 59.0'