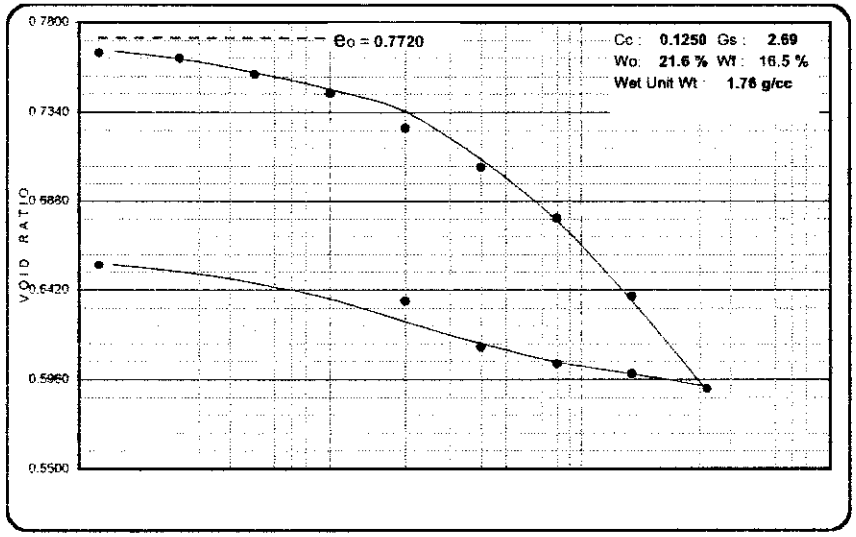
Consolidation Test

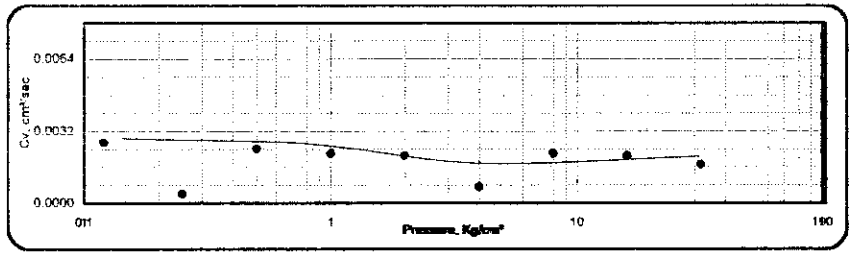
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17812
LOCATION		DATE TESTED	SEPT. 14, 2002

CONSOLIDATION TEST

(ASTM - D4767)

TEST PIT NO.	ATP-12	SAMPLE NO.	S-2	DEPTH (M)	1.30-2.00
DESCRIPTION	Clayey SILT				



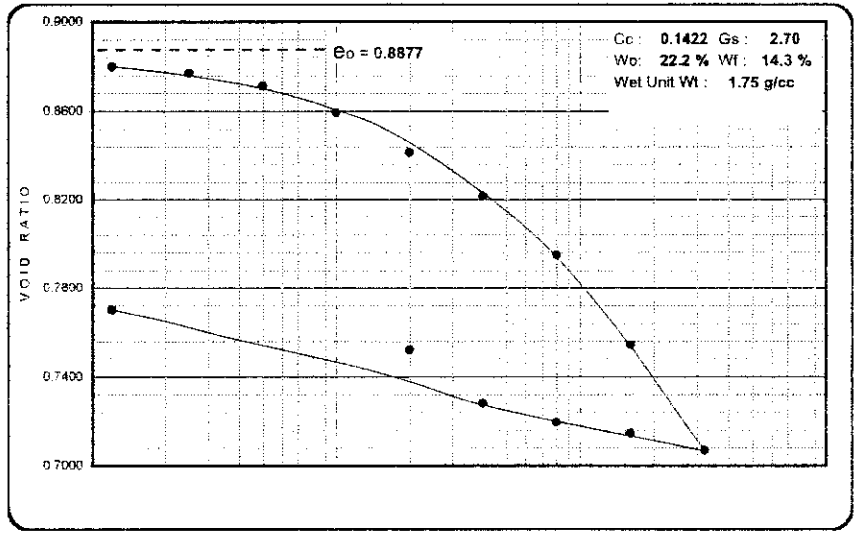


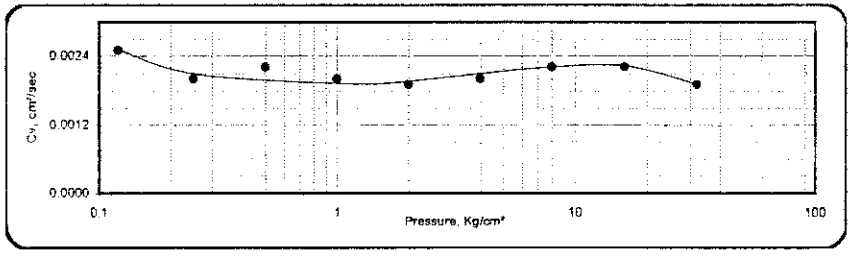
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17812
LOCATION		DATE TESTED	SEPT. 14, 2002

CONSOLIDATION TEST

(ASTM - D4767)

TEST PIT NO.	ATP-13	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				



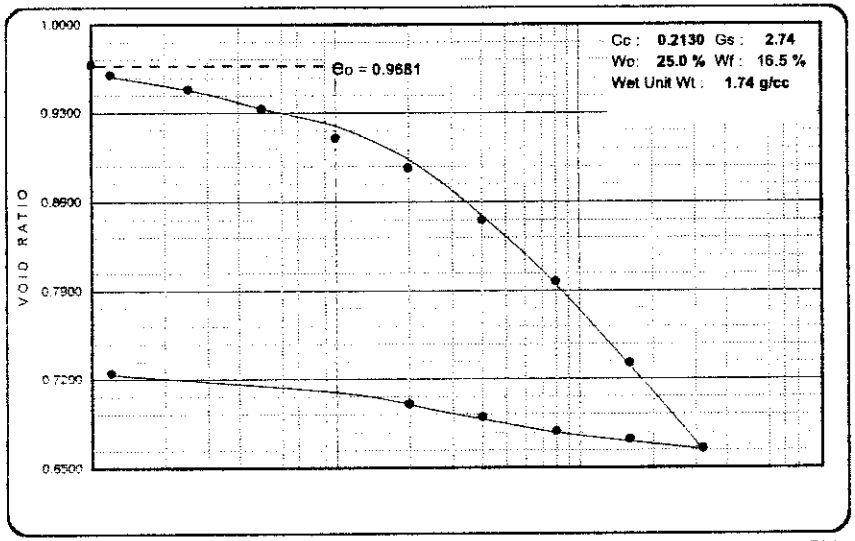


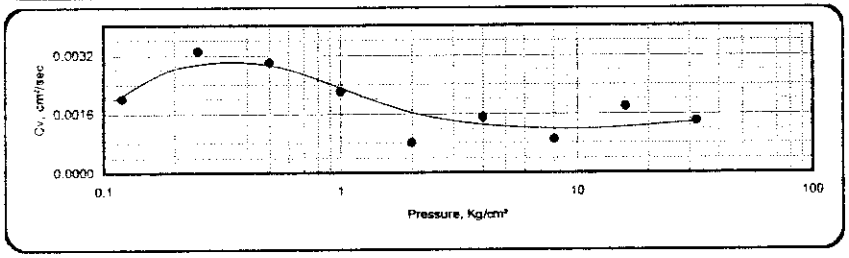
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17813
LOCATION		DATE TESTED	SEPT. 14, 2002

CONSOLIDATION TEST

(ASTM - D4767)

TEST PIT NO.	ATP-14	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				



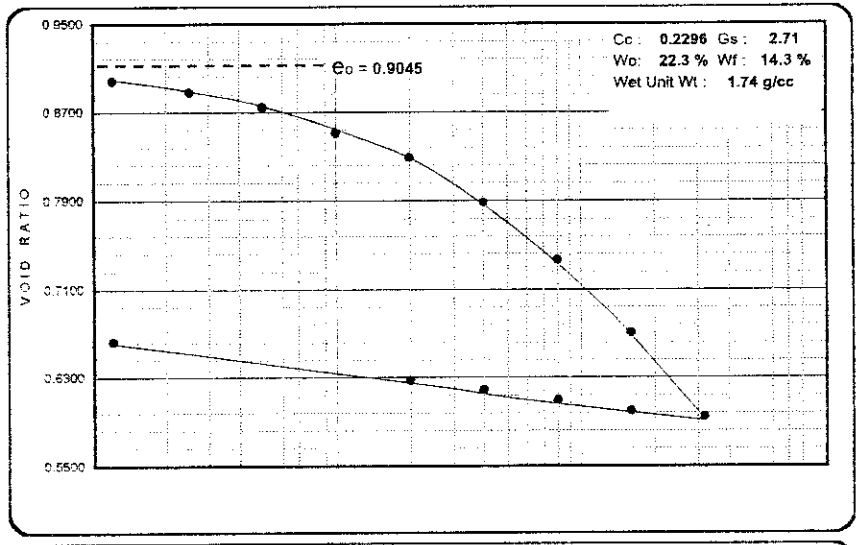


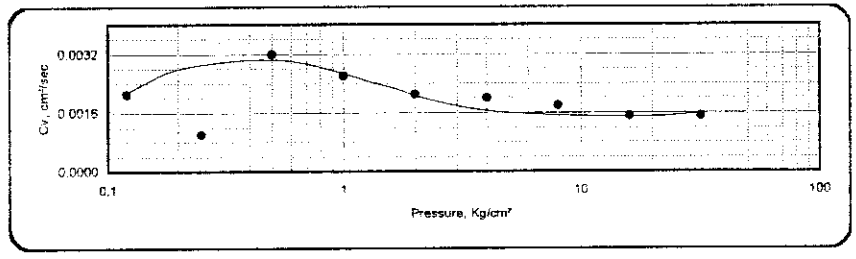
PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17814
LOCATION		DATE TESTED	SEPT. 14, 2002

CONSOLIDATION TEST

(ASTM - D4767)

TEST PIT NO.	ATP-15	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				



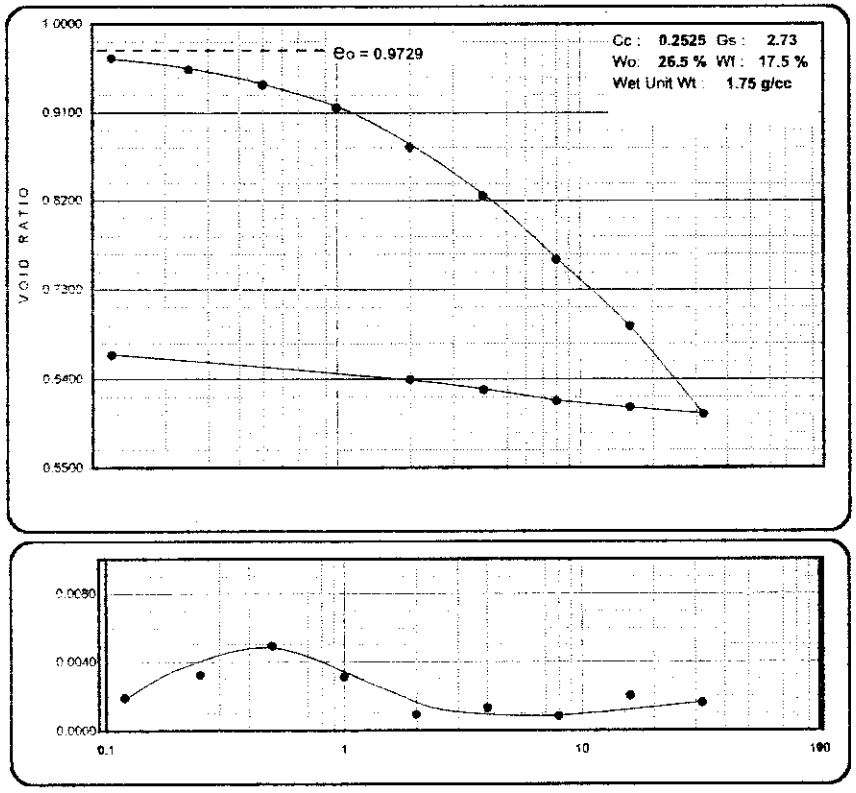


PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL. NO	ADL02-TCU-17815
LOCATION		DATE TESTED	SEPT. 14, 2002

CONSOLIDATION TEST

(ASTM - D4767)

TEST PIT NO.	KTP-8	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

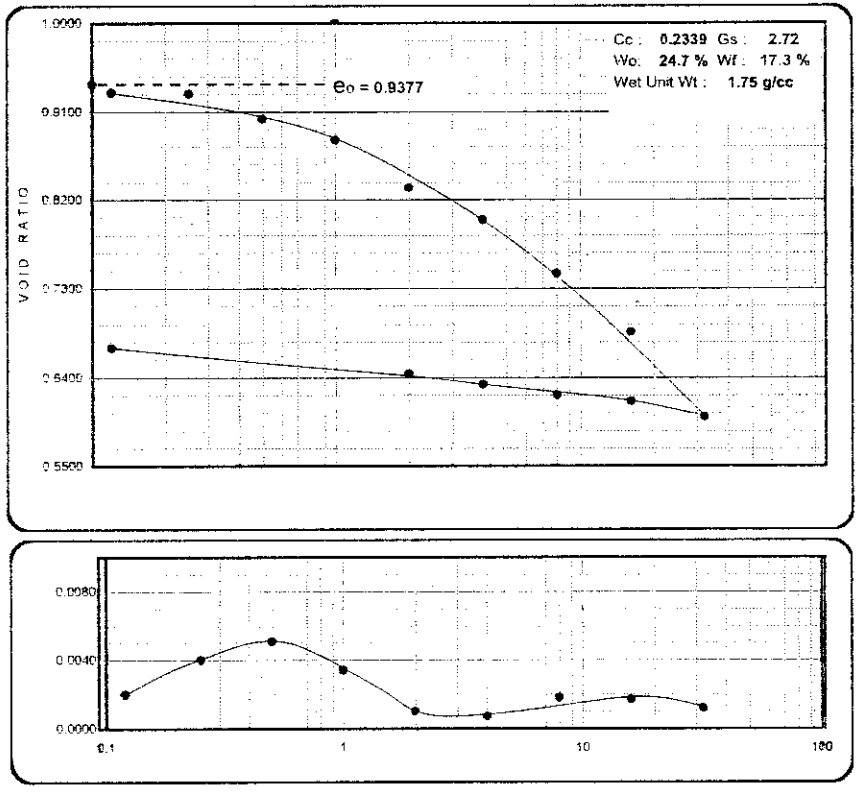


PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL. NO	ADL02-TCU-17816
LOCATION		DATE TESTED	SEPT. 15, 2002

CONSOLIDATION TEST

(ASTM - D4767)

TEST PIT NO.	KTP-9	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				



Permeability Test

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL. NO	ADL02-FHP-17838
LOCATION		DATE TESTED	SEPT. 14, 2002

FALLING HEAD PERMEABILITY

TEST PIT NO.	ATP-12	SAMPLE NUMBER	S-2	DEPTH	1.30-3.00
DESCRIPTION	Clayey SILT				

CO-EFFICIENT OF PERMEABILTY

$$k = \frac{a}{At} \times Log_e \left(\frac{H_o}{h_1} \right) \text{ cm/sec}$$

			TEST 1	TEST 2
a	AREA OF STANDPIPE	sq.cm.	0.3217	
l	LENGTH OF SPECIMEN	cm	7.60	
A	AREA OF SPECIMEN	sq.cm	5.31	
H o	INITIAL HEAD	cm	96.00	
H1	FINAL HEAD	cm	95.20	
t	TIME OF TEST	min/sec	3600	
CO-EFFICIENT OF PERMEABILITY		K =	1.07×10^{-07} cm /sec.	cm./sec.

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL. NO	ADL02-FHP-17836
LOCATION		DATE TESTED	SEPT. 20, 2002

FALLING HEAD PERMEABILITY

TEST PIT NO.	ATP-13	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Silty CLAY				

CO-EFFICIENT OF PERMEABILTY

$$k = \frac{a}{At} \times Log_e \left(\frac{H_o}{h_1} \right) \text{ cm/sec}$$

			TEST 1	TEST 2
a	AREA OF STANDPIPE	sq.cm.	0.3217	
l	LENGTH OF SPECIMEN	cm	7.60	
A	AREA OF SPECIMEN	sq.cm	5.31	
H o	INITIAL HEAD	cm	98.40	
H1	FINAL HEAD	cm	98.00	
t	TIME OF TEST	min/sec	3600	
CO-EFFICIENT OF PERMEABILITY		K =	5.20×10^{-07} cm./sec	cm./sec.

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17837
LOCATION		DATE TESTED	SEPT. 15, 2002

FALLING HEAD PERMEABILITY

TEST PIT NO.	ATP-14	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Silty CLAY				

CO-EFFICIENT OF PERMEABILTY

$$k = \frac{a}{At} \times Log_e \left(\frac{H_o}{h_t} \right) \text{ cm/sec}$$

			TEST 1	TEST 2
a	AREA OF STANDPIPE	sq.cm.	0.3217	
l	LENGTH OF SPECIMEN	cm	7.60	
A	AREA OF SPECIMEN	sq.cm	5.31	
H o	INITIAL HEAD	cm	98.40	
H1	FINAL HEAD	cm	98.00	
t	TIME OF TEST	min/sec	3600	
CO-EFFICIENT OF PERMEABILITY		K =	5.20×10^{-07} cm /sec	cm./sec.

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17838
LOCATION		DATE TESTED	SEPT. 14, 2002

FALLING HEAD PERMEABILITY

TEST PIT NO.	ATP-15	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Silty CLAY				

CO-EFFICIENT OF PERMEABILTY

$$k = \frac{a}{At} \times Log_e \left(\frac{H_o}{h_t} \right) \text{ cm/sec}$$

			TEST 1	TEST 2
a	AREA OF STANDPIPE	sq.cm.	0.3217	
l	LENGTH OF SPECIMEN	cm	7.60	
A	AREA OF SPECIMEN	sq.cm	5.31	
H o	INITIAL HEAD	cm	94.00	
H1	FINAL HEAD	cm	93.40	
t	TIME OF TEST	min/sec	3600	
CO-EFFICIENT OF PERMEABILITY		K =	8.19×10^{-07} cm./sec.	cm./sec.

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17836
LOCATION		DATE TESTED	SEPT. 18, 2002

FALLING HEAD PERMEABILITY

TEST PIT NO.	KTP-8	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Silty CLAY				

CO-EFFICIENT OF PERMEABILTY

$$k = \frac{a}{At} \times Log_e \left(\frac{H_o}{h_1} \right) \text{ cm/sec}$$

			TEST 1	TEST 2
a	AREA OF STANDPIPE	sq.cm.	0.3217	
l	LENGTH OF SPECIMEN	cm	7.60	
A	AREA OF SPECIMEN	sq.cm	5.31	
H o	INITIAL HEAD	cm	97.50	
H1	FINAL HEAD	cm	97.10	
t	TIME OF TEST	min/sec	3600	
CO-EFFICIENT OF PERMEABILITY		K =	5.26 X 10 $^{-07}$ cm./sec	cm./sec.

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17835
LOCATION		DATE TESTED	SEPT. 17, 2002

FALLING HEAD PERMEABILITY

TEST PIT NO.	KTP-9	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Silty CLAY				

CO-EFFICIENT OF PERMEABILTY

$$k = \frac{a}{At} \times Log_e \left(\frac{H_o}{h_1} \right) \text{ cm/sec}$$

			TEST 1	TEST 2
a	AREA OF STANDPIPE	sq.cm.	0.3217	
l	LENGTH OF SPECIMEN	cm	7.60	
A	AREA OF SPECIMEN	sq.cm	531	
H o	INITIAL HEAD	cm	94.00	
H1	FINAL HEAD	cm	93.40	
t	TIME OF TEST	min/sec	3600	
CO-EFFICIENT OF PERMEABILITY		K =	8.19 X 10 $^{-07}$ cm./sec	cm./sec.

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17837
LOCATION		DATE TESTED	SEPT. 18, 2002

CONSTANT HEAD PERMEABILITY

ASTM-D2434

TEST PIT NO.	ATP-4	SAMPLE NUMBER	S-1 & S-2	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

HEIGHT	(cm)	20.32	SAMPLE WT.	(gm)	1947.1
AREA	(cm^2)	45.60	DRY DENSITY	(g/cc)	2.10
VOLUME	(cm^3)	926.70	n_t / n_{20}		0.9443

VOLUME NUMBER	t (sec)	Q (cm^3)	T (°C)
1	180.00	792.00	23.00
2	180.00	780.00	22.10
3	180.00	783.00	22.00
Average	180.00	785.00	22.37
K_T, cm/sec	0.022	K_{20}, cm/sec	0.021

COEFFICIENT OF PERMEABILITY, K (cm/sec)

$$K_T = \frac{QL}{Aht}$$

$$K_{20} = K_T \frac{n_t}{n_{20}}$$

WHERE:

Q = Volume of water collected in cylinder / Duration of test, cc/sec

L = Height of Sample, cm

h = Head difference between adjacent set of manometer tubes 87.00, cm

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17838
LOCATION		DATE TESTED	SEPT. 18, 2002

CONSTANT HEAD PERMEABILITY

ASTM-D2434

TEST PIT NO.	ATP-5	SAMPLE NUMBER	S-1 & S-2	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

HEIGHT	(cm)	20.32	SAMPLE WT.	(gm)	1964.9
AREA	(cm^2)	45.60	DRY DENSITY	(g/cc)	2.12
VOLUME	(cm^3)	926.70	n_t / n_{20}		0.9738

VOLUME NUMBER	t (sec)	Q (cm^3)	T (°C)
1	180.00	685.00	21.50
2	180.00	702.00	20.90
3	180.00	699.00	21.00
Average	180.00	695.33	21.13
K_T, cm/sec	0.020	K_{20}, cm/sec	0.019

COEFFICIENT OF PERMEABILITY, K (cm/sec)

$$K_T = \frac{QL}{Aht}$$

$$K_{20} = K_T \frac{n_t}{n_{20}}$$

WHERE:

Q = Volume of water collected in cylinder / Duration of test, cc/sec

L = Height of Sample, cm

h = Head difference between adjacent set of manometer tubes 87.00, cm

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17840
LOCATION		DATE TESTED	SEPT. 19, 2002

CONSTANT HEAD PERMEABILITY

ASTM-D2434

TEST PIT NO.	ATP-6	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

HEIGHT	(cm)	20.32	SAMPLE WT.	(gm)	1936.8
AREA	(cm^2)	45.60	DRY DENSITY	(g/cc)	2.09
VOLUME	(cm^3)	926.70	n_t / n_{20}		0.9785

VOLUME NUMBER	t (sec)	Q (cm^3)	T (°C)
1	180.00	725.00	20.90
2	180.00	738.00	21.00
3	180.00	720.00	20.80
Average	180.00	727.67	20.90
K_T, cm/sec	0.021	K_{20}, cm/sec	0.020

COEFFICIENT OF PERMEABILITY, K (cm/sec)

WHERE:

$$K_T = \frac{QL}{Aht}$$

$$K_{20} = K_T \frac{n_t}{n_{20}}$$

Q = Volume of water collected in cylinder / Duration of test, cc/sec

L = Height of Sample, cm

h = Head difference between adjacent set of manometer tubes 87.00, cm

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17840
LOCATION		DATE TESTED	SEPT. 19, 2002

CONSTANT HEAD PERMEABILITY

ASTM-D2434

TEST PIT NO.	ATP-9	SAMPLE NUMBER	S-1 & S-2	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

HEIGHT	(cm)	20.32	SAMPLE WT.	(gm)	1993
AREA	(cm^2)	45.60	DRY DENSITY	(g/cc)	2.15
VOLUME	(cm^3)	926.70	n_t / n_{20}		0.9531

VOLUME NUMBER	t (sec)	Q (cm^3)	T (°C)
1	180.00	830.00	23.00
2	180.00	828.00	22.00
3	180.00	833.00	22.00
Average	180.00	830.33	22.33
K_T, cm/sec	0.024	K_{20}, cm/sec	0.023

COEFFICIENT OF PERMEABILITY, K (cm/sec)

WHERE:

$$K_T = \frac{QL}{Aht}$$

$$K_{20} = K_T \frac{n_t}{n_{20}}$$

Q = Volume of water collected in cylinder / Duration of test, cc/sec

L = Height of Sample, cm

h = Head difference between adjacent set of manometer tubes 87.00, cm

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17835
LOCATION		DATE TESTED	SEPT. 17, 2002

CONSTANT HEAD PERMEABILITY

ASTM-D2434

TEST PIT NO.	KTP-1	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

HEIGHT (cm)	20.32	SAMPLE WT. (gm)	1899.5
AREA (cm^2)	45.60	DRY DENSITY (g/cc)	2.05
VOLUME (cm^3)	926.70	n_t / n_{20}	0.9577

VOLUME NUMBER	t (sec)	Q (cm^3)	T (°C)
1	180.00	635.00	22.00
2	180.00	667.00	21.00
3	180.00	642.00	22.30
Average	180.00	648.00	21.77
K_T, cm/sec	0.018	K_{20}, cm/sec	0.017

COEFFICIENT OF PERMEABILITY, K (cm/sec)

$$K_T = \frac{QL}{Aht}$$

$$K_{20} = K_T \frac{n_t}{n_{20}}$$

WHERE:

Q = Volume of water collected in cylinder / Duration of test, cc/sec

L = Height of Sample, cm

h = Head difference between adjacent set of manometer tubes 87.00, cm

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-FHP-17836
LOCATION		DATE TESTED	SEPT. 17, 2002

CONSTANT HEAD PERMEABILITY

ASTM-D2434

TEST PIT NO.	KTP-3	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded SAND				

HEIGHT (cm)	20.32	SAMPLE WT. (gm)	1881.2
AREA (cm^2)	45.60	DRY DENSITY (g/cc)	2.03
VOLUME (cm^3)	926.70	n_t / n_{20}	0.9833

VOLUME NUMBER	t (sec)	Q (cm^3)	T (°C)
1	180.00	711.00	21.90
2	180.00	692.00	20.00
3	180.00	729.00	20.30
Average	180.00	710.67	20.73
K_T, cm/sec	0.020	K_{20}, cm/sec	0.020

COEFFICIENT OF PERMEABILITY, K (cm/sec)

$$K_T = \frac{QL}{Aht}$$

$$K_{20} = K_T \frac{n_t}{n_{20}}$$

WHERE:

Q = Volume of water collected in cylinder / Duration of test, cc/sec

L = Height of Sample, cm

h = Head difference between adjacent set of manometer tubes 87.00, cm

Triaxial Compression

(U-U)

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17848
LOCATION		DATE TESTED	SEPT. 15, 2002

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D2850)

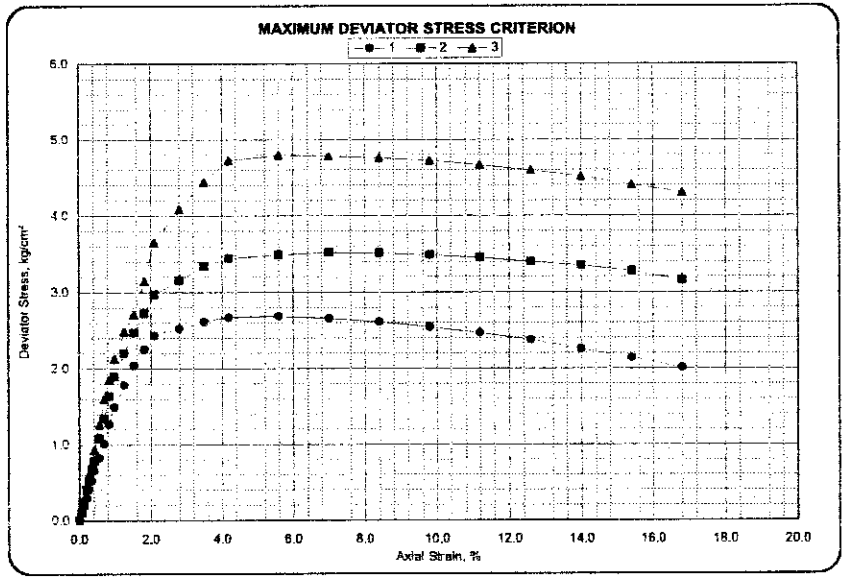
TEST PIT NO.	ATP-12	SAMPLE NO.	S-2	DEPTH (M)	1.30-3.00
DESCRIPTION	Clayey SILT				

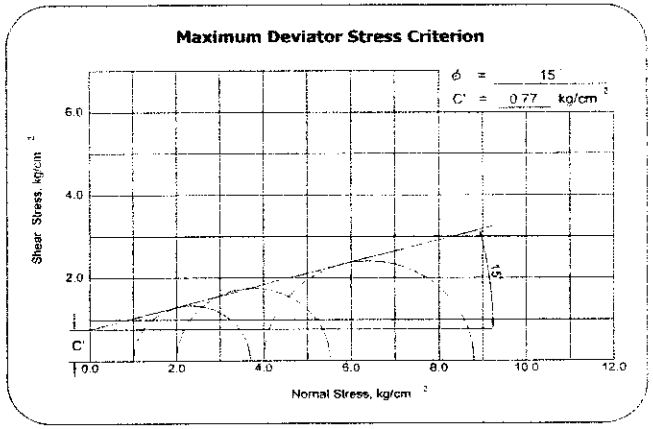
TEST NUMBER		1	2	3
LENGTH	(cm)	7.14	7.14	7.14
DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm^2)	9.90	9.90	9.90
VOLUME	(cu.cm)	70.67	70.67	70.67
WET UNIT WEIGHT	(g/cc)	1.73	1.73	1.73
DRY UNIT WEIGHT	(g/cc)	1.45	1.45	1.45
INITIAL MOISTURE CONTENT	(%)	22.10	22.30	22.30
FINAL MOISTURE CONTENT	(%)	19.40	19.40	19.40
MAXIMUM CONFINING PRESSURE	(kg/cm^2)	1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm^2)	1.00	2.00	4.00
MAJOR STRESS	(kg/cm^2)	3.6857	5.5168	8.7945
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS: _____

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (UU)..... ATP-12 / S-2





PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17848
LOCATION		DATE TESTED	SEPT. 15, 2002

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D2850)

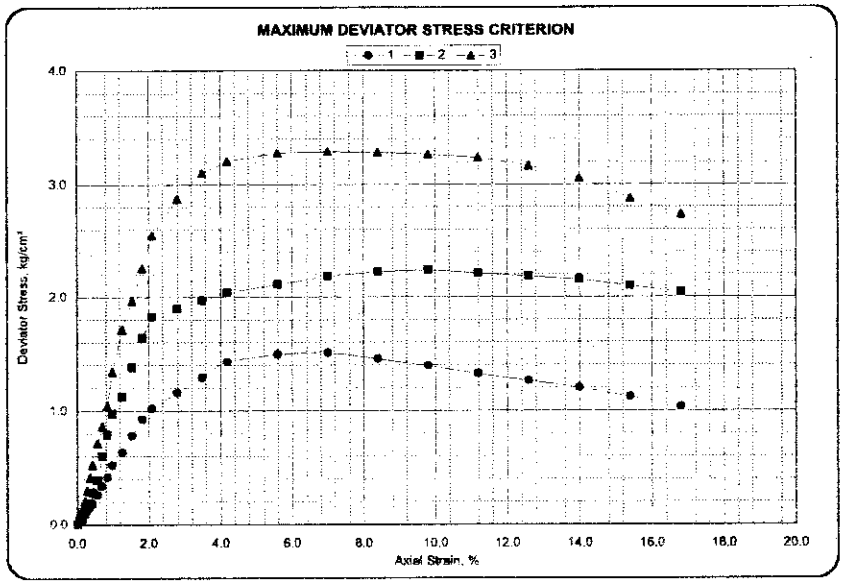
TEST PIT NO.	ATP-13	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

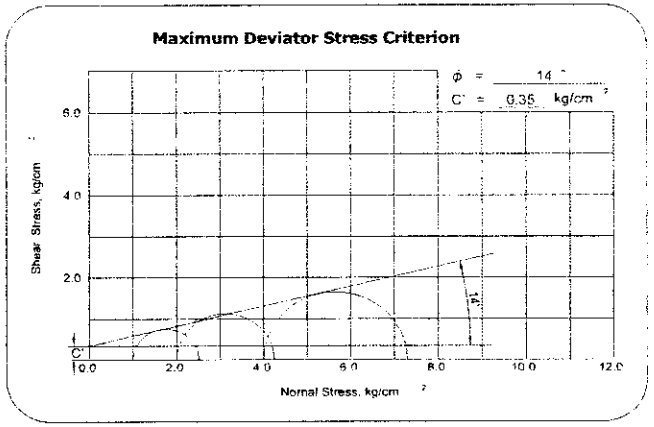
TEST NUMBER		1	2	3
LENGTH	(cm)	7.14	7.14	7.14
DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm²)	9.90	9.90	9.90
VOLUME	(cu.cm)	70.67	70.67	70.67
WET UNIT WEIGHT	(g/cc)	1.73	1.73	1.73
DRY UNIT WEIGHT	(g/cc)	1.40	1.40	1.39
INITIAL MOISTURE CONTENT	(%)	26.60	26.45	26.80
FINAL MOISTURE CONTENT	(%)	23.90	23.60	24.05
MAXIMUM CONFINING PRESSURE	(kg/cm²)	1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm²)	1.00	2.00	4.00
MAJOR STRESS	(kg/cm²)	2.5049	4.2414	7.2909
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS: _____

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (UU)..... ATP-13 / S-1





G6-65

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17846
LOCATION		DATE TESTED	SEPT. 17, 2002

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D2850)

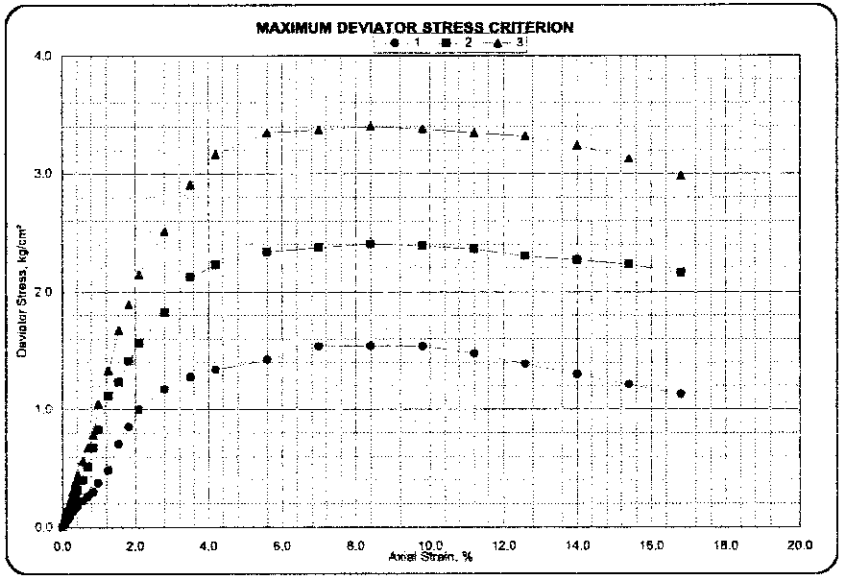
TEST PIT NO.	ATP-14	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

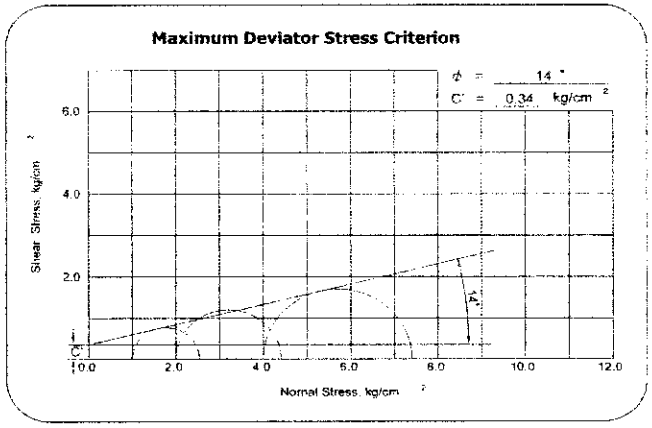
TEST NUMBER		1	2	3
LENGTH	(cm)	7.14	7.14	7.14
DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm²)	9.90	9.90	9.90
VOLUME	(cu.cm)	70.67	70.67	70.67
WET UNIT WEIGHT	(g/cc)	1.74	1.74	1.74
DRY UNIT WEIGHT	(g/cc)	1.43	1.43	1.43
INITIAL MOISTURE CONTENT	(%)	25.10	25 00	25.20
FINAL MOISTURE CONTENT	(%)	22.00	21.80	22.00
MAXIMUM CONFINING PRESSURE	(kg/cm²)	1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm²)	1.00	2.00	4.00
MAJOR STRESS	(kg/cm²)	2.5374	4.4012	7.4012
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS: _____

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (UU)..... ATP-14 / S-1





PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17849
LOCATION		DATE TESTED	SEPT. 12, 2002

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D2850)

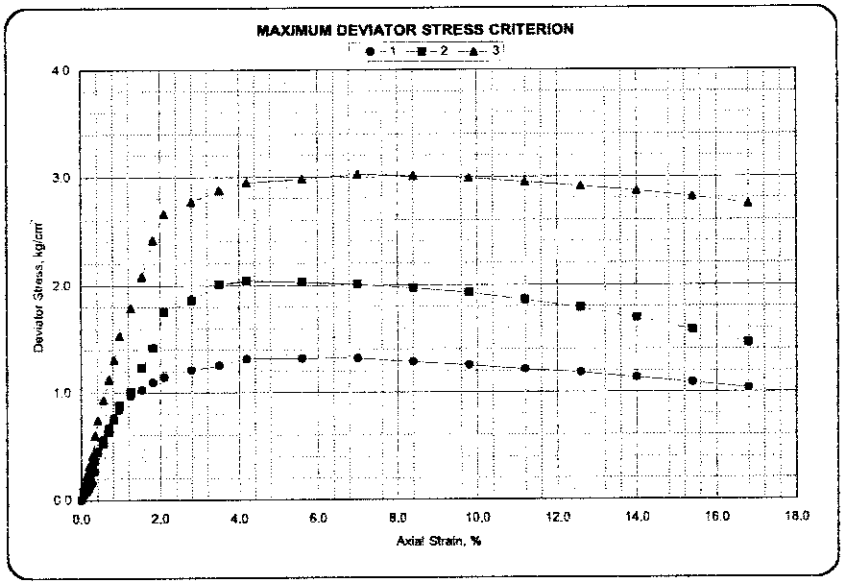
TEST PIT NO.	ATP-15	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

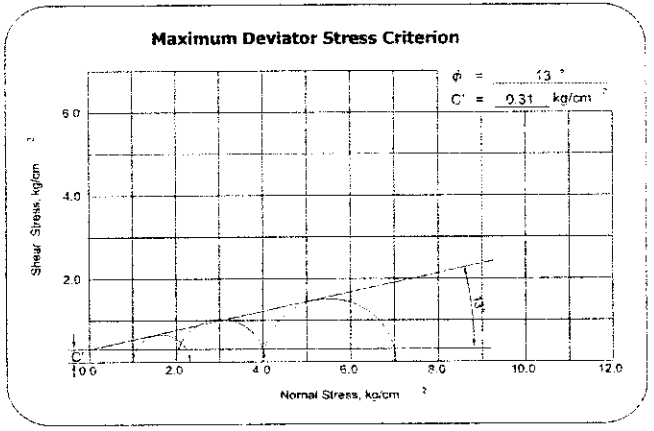
TEST NUMBER		1	2	3
LENGTH	(cm)	7.14	7.14	7.14
DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm^2)	9.90	9.90	9.90
VOLUME	(cu.cm)	70.67	70.67	70.67
WET UNIT WEIGHT	(g/cc)	1.74	1.74	1.74
DRY UNIT WEIGHT	(g/cc)	1.46	1.45	1.47
INITIAL MOISTURE CONTENT	(%)	22.40	22.30	22.20
FINAL MOISTURE CONTENT	(%)	19.30	19.40	18.70
MAXIMUM CONFINING PRESSURE	(kg/cm^2)	1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm^2)	1.00	2.00	4.00
MAJOR STRESS	(kg/cm^2)	2.3159	4.0427	7.0241
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS: _____

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (UU)..... ATP-15 / S-1





PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17844
LOCATION		DATE TESTED	SEPT. 16, 2002

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D2850)

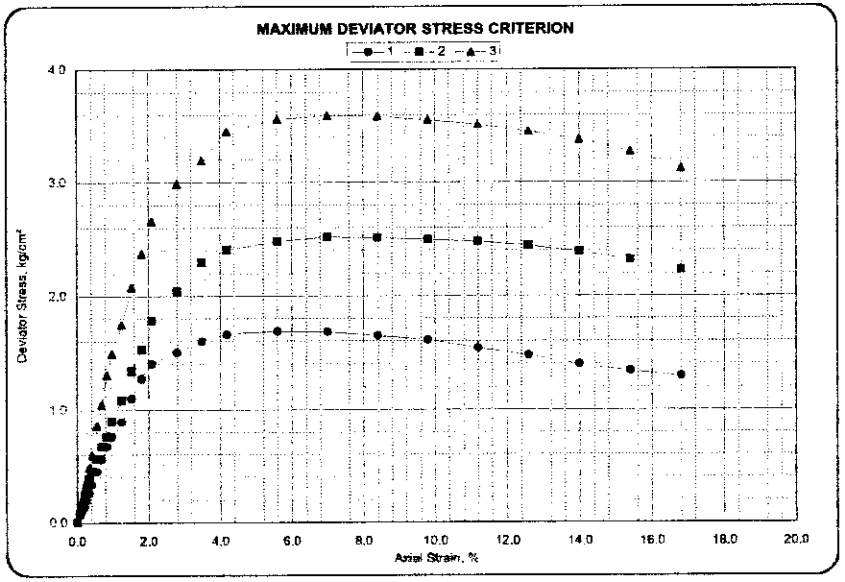
TEST PIT NO.	KTP-8	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

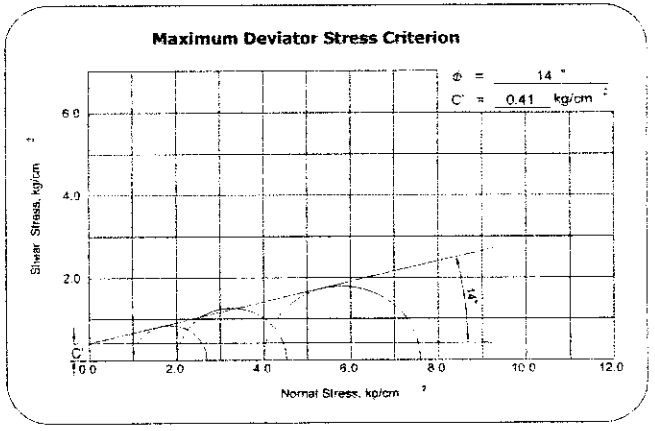
TEST NUMBER		1	2	3
LENGTH	(cm)	7.14	7.14	7.14
DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm²)	9.90	9.90	9.90
VOLUME	(cu.cm)	70.67	70.67	70.67
WET UNIT WEIGHT	(g/cc)	1.75	1.75	1.75
DRY UNIT WEIGHT	(g/cc)	1.41	1.42	1.42
INITIAL MOISTURE CONTENT	(%)	26.50	26.40	26.55
FINAL MOISTURE CONTENT	(%)	23.70	23.65	23.10
MAXIMUM CONFINING PRESSURE	(kg/cm²)	1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm²)	1.00	2.00	4.00
MAJOR STRESS	(kg/cm²)	2.6839	4.5161	7.5882
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS: _____

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (UU)..... KTP-8 / S-1





PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17845
LOCATION		DATE TESTED	SEPT. 16, 2002

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D2850)

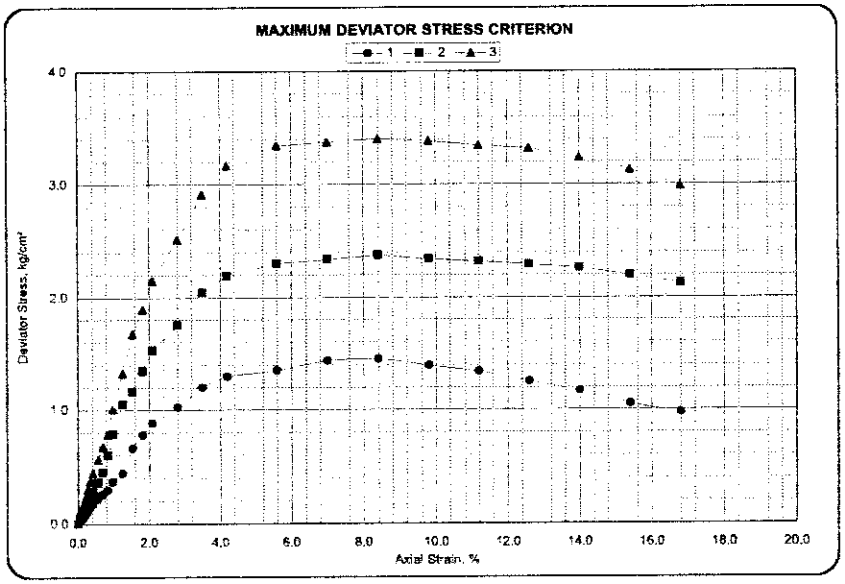
TEST PIT NO.	KTP-9	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

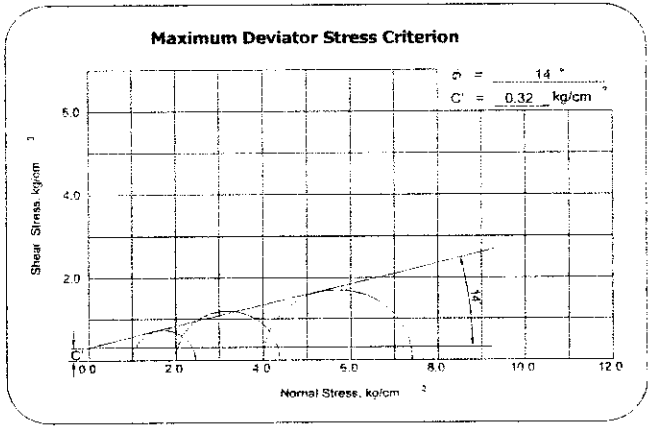
TEST NUMBER		1	2	3
LENGTH	(cm)	7.14	7.14	7.14
DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm^2)	9.90	9.90	9.90
VOLUME	(cu.cm)	70.67	70.67	70.67
WET UNIT WEIGHT	(g/cc)	1.72	1.72	1.72
DRY UNIT WEIGHT	(g/cc)	1.42	1.42	1.41
INITIAL MOISTURE CONTENT	(%)	24.75	24.70	24.75
FINAL MOISTURE CONTENT	(%)	21.45	21.40	21.60
MAXIMUM CONFINING PRESSURE	(kg/cm^2)	1.00	2.00	4.00
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm^2)	1.00	2.00	4.00
MAJOR STRESS	(kg/cm^2)	2.4478	4.3737	7.4022
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS: REMOULDED

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (UU)..... KTP-9 / S-1





Triaxial Compression

(C-U)

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL. NO	ADL02-TCU-17812
LOCATION		DATE TESTED	SEPT. 14, 2002

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D4767)

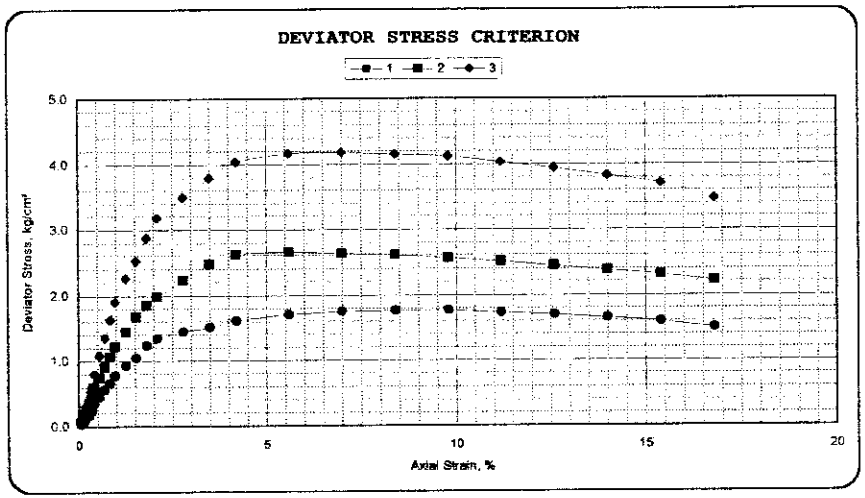
TEST PIT NO.	ATP-12	SAMPLE NO.	S-2	DEPTH (M)	1.30-3.00
DESCRIPTION	Clayey SILT				

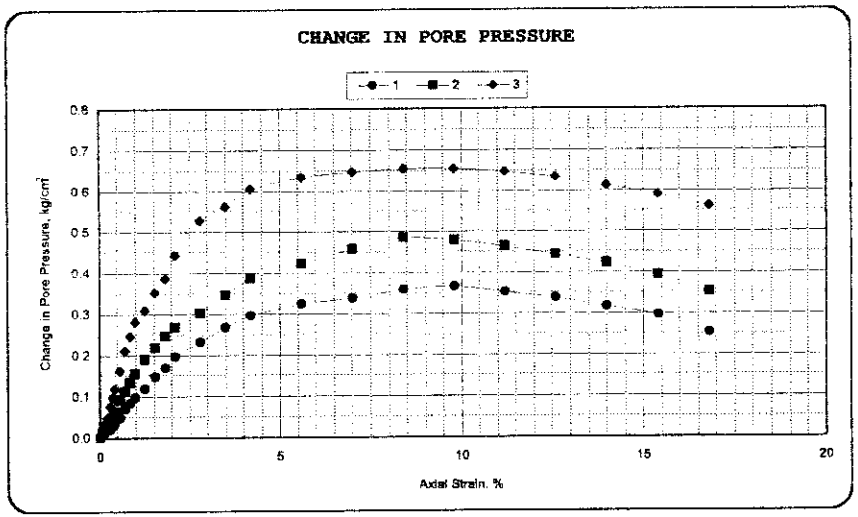
TEST NUMBER		1	2	3
INITIAL LENGTH	(cm)	7.14	7.14	7.14
INITIAL DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm²)	9.90	9.90	9.90
INITIAL VOLUME	(cu.cm)	70.67	70.67	70.67
MOISTURE CONTENT (BEFORE TEST)	(%)	26.70	26.80	26.80
MOISTURE CONTENT (AFTER TEST)	(%)	23.80	23.50	23.10
WET UNIT WEIGHT	(g/cc)	1.78	1.79	1.79
MAXIMUM CONFINING PRESSURE	(kg/cm²)	1.00	2.00	4.00
MAXIMUM BACK PRESSURE	(kg/cm²)	0.50	0.50	0.50
MAXIMUM DEVIATOR STPESS CRITERION				
MINOR STRESS	(kg/cm²)	**0.6344**	**1.5782**	**3.3533**
MAJOR SRESS	(kg/cm²)	**2.4032**	**4.2286**	**7.5333**
MAXIMUM STRESS RATIO CRITERION				
MINOR STRESS	(kg/cm²)	**0.6344**	**1.5149**	**3.3533**
MAJOR SRESS	(kg/cm²)	**2.4032**	**4.1229**	**7.5333**
SPECIMEN PROPERTIES				
VOLUME CHANGE	(cu.cm)	4.20	5.00	6.40
CHANGE IN HEIGHT	(cm)	0.14	0.17	0.22
CORRECTED HEIGHT	(cm)	7.00	6.97	6.92
CORRECTED AREA	(cm²)	9.50	9.42	9.28
CORRECTED VOLUME	(cu.cm)	66.47	65.67	64.27
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS _____

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

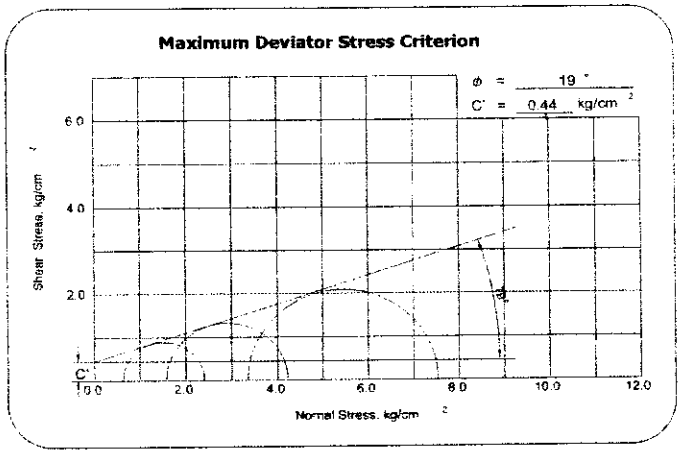
Triaxial (CU)..... ATP-12 / S-2



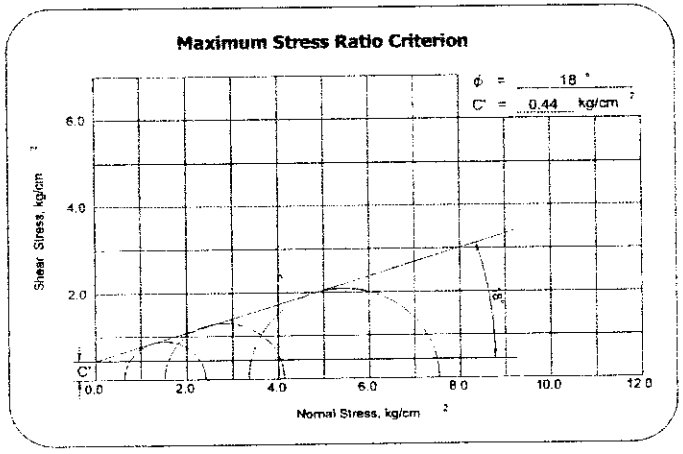


STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA
Triaxial (CU)..... ATP-12 / S-2

Maximum Deviator Stress Criterion



Maximum Stress Ratio Criterion



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17813
LOCATION		DATE TESTED	SEPT. 20, 2002

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D4767)

TEST PIT NO.	ATP-13	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

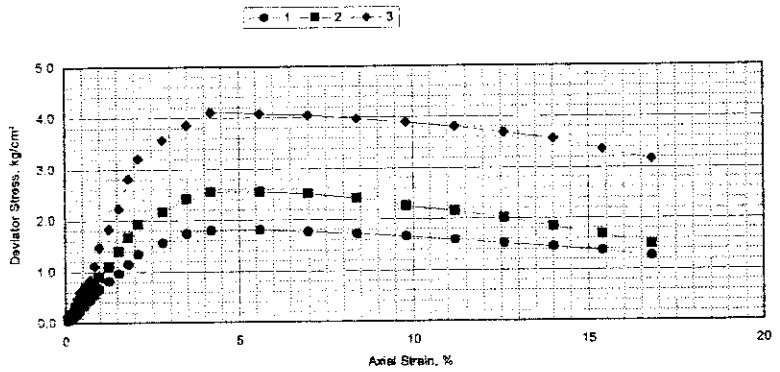
TEST NUMBER		1	2	3
INITIAL LENGTH	(cm)	7.14	7.14	7.14
INITIAL DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm²)	9.90	9.90	9.90
INITIAL VOLUME	(cu.cm)	70.67	70.67	70.67
MOISTURE CONTENT (BEFORE TEST)	(%)	25.00	24.90	25.10
MOISTURE CONTENT (AFTER TEST)	(%)	22.20	21.80	22.00
WET UNIT WEIGHT	(g/cc)	1.75	1.75	1.75
MAXIMUM CONFINING PRESSURE	(kg/cm²)	1.00	2.00	4.00
MAXIMUM BACK PRESSURE	(kg/cm²)	0.50	0.50	0.50
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm²)	**0.7399**	**1.5852**	**3.4938**
MAJOR SRESS	(kg/cm²)	**2.5484**	**4.1369**	**7.5955**
MAXIMUM STRESS RATIO CRITERION				
MINOR STRESS	(kg/cm²)	**0.7399**	**1.5852**	**3.3954**
MAJOR SRESS	(kg/cm²)	**2.5484**	**4.1369**	**7.4373**
SPECIMEN PROPERTIES				
VOLUME CHANGE	(cu.cm)	4.30	5.50	7.00
CHANGE IN HEIGHT	(cm)	0.14	0.19	0.24
CORRECTED HEIGHT	(cm)	7.00	6.95	6.90
CORRECTED AREA	(cm²)	9.49	9.37	9.22
CORRECTED VOLUME	(cu.cm)	66.37	65.17	63.67
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS _____

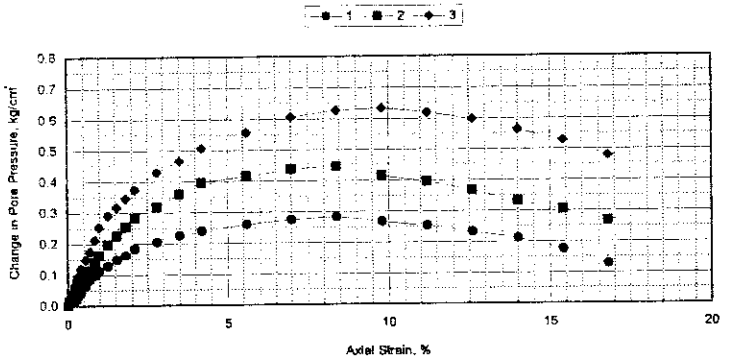
STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (CU)..... ATP-13 / S-1

DEVIATOR STRESS CRITERION



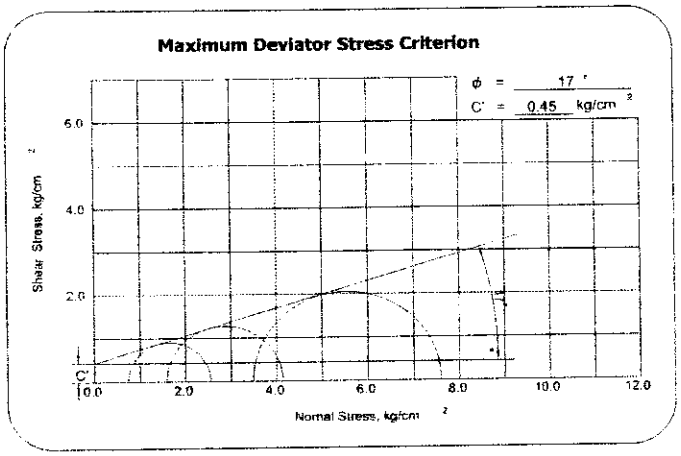
CHANGE IN PORE PRESSURE



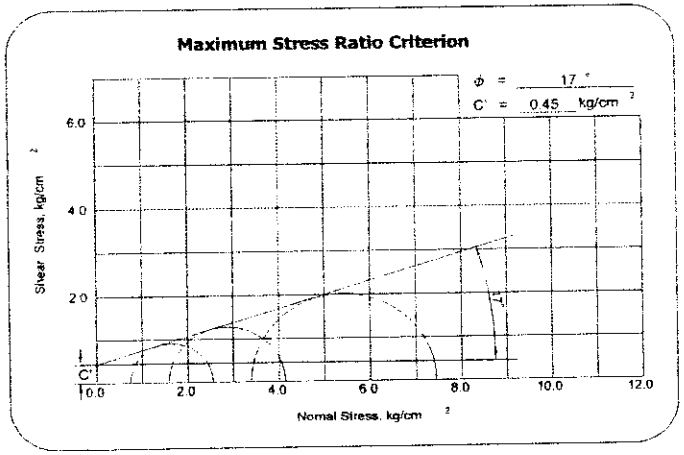
STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (CU)..... ATP-13 / S-1

Maximum Deviator Stress Criterion



Maximum Stress Ratio Criterion



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17812
LOCATION		DATE TESTED	SEPT. 19, 2002

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D4767)

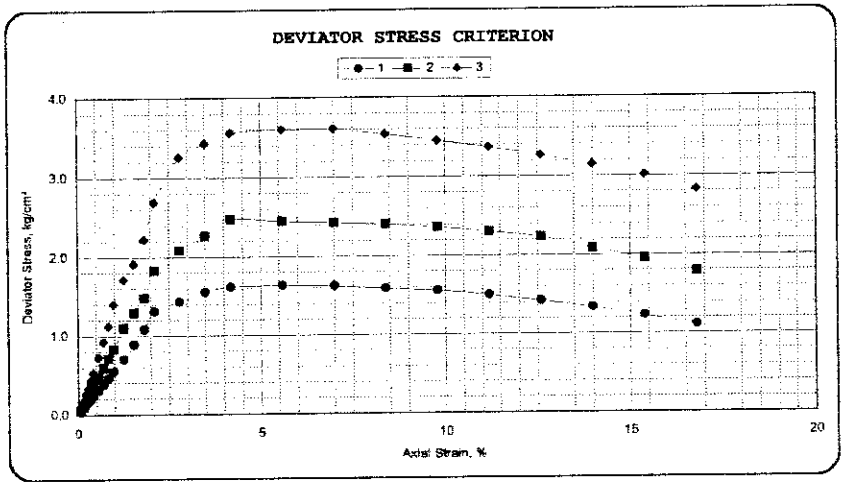
TEST PIT NO.	ATP-14	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

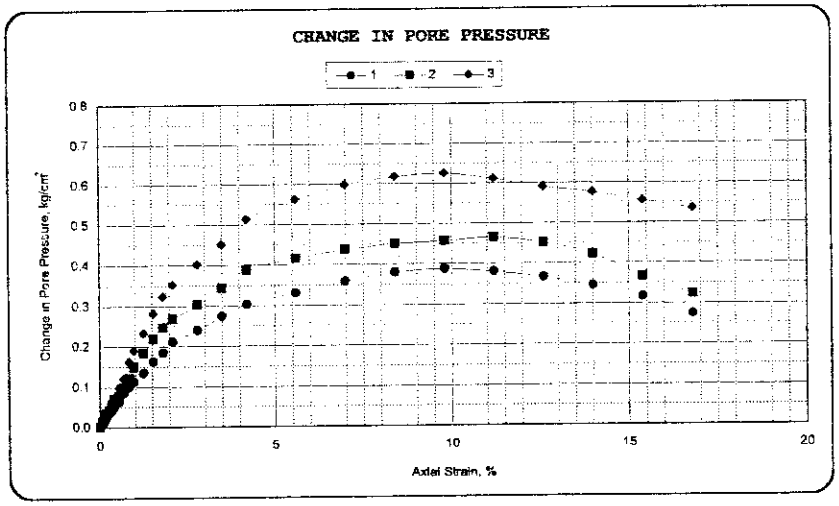
TEST NUMBER		1	2	3
INITIAL LENGTH	(cm)	7.14	7.14	7.14
INITIAL DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm²)	9.90	9.90	9.90
INITIAL VOLUME	(cu.cm)	70.67	70.67	70.67
MOISTURE CONTENT (BEFORE TEST)	(%)	25.00	24.90	25.10
MOISTURE CONTENT (AFTER TEST)	(%)	22.20	21.80	22.00
WET UNIT WEIGHT	(g/cc)	1.74	1.74	1.74
MAXIMUM CONFINING PRESSURE	(kg/cm²)	1.00	2.00	4.00
MAXIMUM BACK PRESSURE	(kg/cm²)	0.50	0.50	0.50
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm²)	**0.6696**	**1.5641**	**3.4025**
MAJOR SRESS	(kg/cm²)	**2.3019**	**3.9892**	**7.0086**
MAXIMUM STRESS RATIO CRITERION				
MINOR STRESS	(kg/cm²)	**0.6204**	**1.5641**	**3.4025**
MAJOR SRESS	(kg/cm²)	**2.2115**	**3.9892**	**7.0086**
SPECIMEN PROPERTIES				
VOLUME CHANGE	(cu.cm)	4.40	5.50	7.00
CHANGE IN HEIGHT	(cm)	0.15	0.19	0.24
CORRECTED HEIGHT	(cm)	6.99	6.95	6.90
CORRECTED AREA	(cm²)	9.48	9.37	9.22
CORRECTED VOLUME	(cu.cm)	66.27	65.17	63.67
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS _____

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (CU)..... ATP-14 / S-1

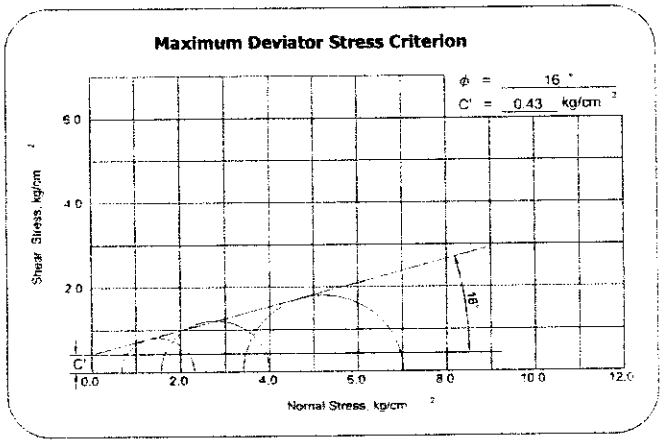




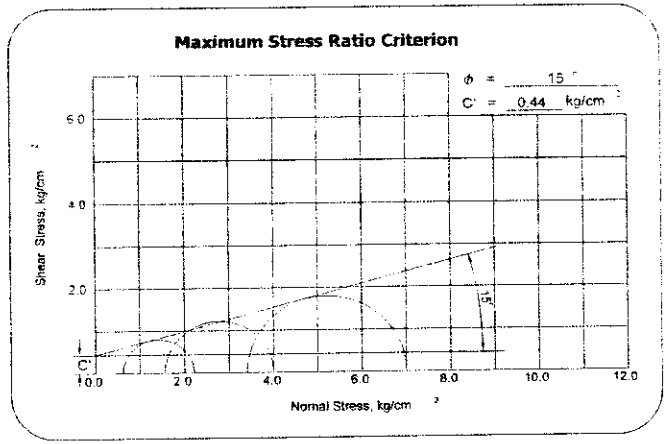
STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (CU)..... ATP-14 / S-1

Maximum Deviator Stress Criterion



Maximum Stress Ratio Criterion



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17810
LOCATION		DATE TESTED	SEPT. 12, 2002

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D4767)

TEST PIT NO.	ATP-15	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

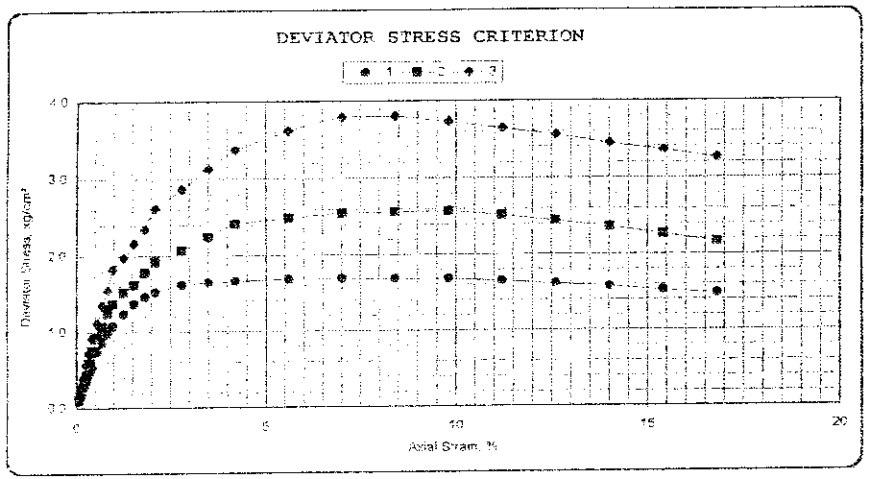
TEST NUMBER		1	2	3
INITIAL LENGTH	(cm)	7.14	7.14	7.14
INITIAL DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm²)	9.90	9.90	9.90
INITIAL VOLUME	(cu.cm)	70.67	70.67	70.67
MOISTURE CONTENT (BEFORE TEST)	(%)	22.50	22.40	22.50
MOISTURE CONTENT (AFTER TEST)	(%)	19.90	19.85	19.80
WET UNIT WEIGHT	(g/cc)	1.74	1.74	1.75
MAXIMUM CONFINING PRESSURE	(kg/cm²)	1.00	2.00	4.00
MAXIMUM BACK PRESSURE	(kg/cm²)	0.50	0.50	0.50
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm²)	**0.7540**	**1.4517**	**0.0000**
MAJOR SRESS	(kg/cm²)	**2.4394**	**4.0312**	**0.0000**
MAXIMUM STRESS RATIO CRITERION				
MINOR STRESS	(kg/cm²)	**0.7188**	**1.4517**	**0.0000**
MAJOR SRESS	(kg/cm²)	**2.3993**	**4.0207**	**0.0000**
SPECIMEN PROPERTIES				
VOLUME CHANGE	(cu.cm)	3.80	4.50	5.80
CHANGE IN HEIGHT	(cm)	0.13	0.15	0.20
CORRECTED HEIGHT	(cm)	7.01	6.99	6.94
CORRECTED AREA	(cm²)	9.54	9.47	9.34
CORRECTED VOLUME	(cu.cm)	66.87	66.17	64.87
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

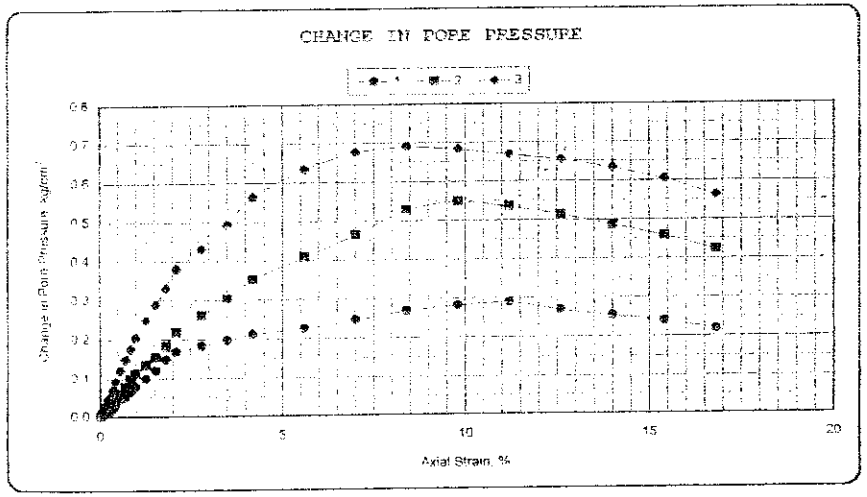
REMARKS REMOULDED

G6-76

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (CU)..... ATP-15 / S-1

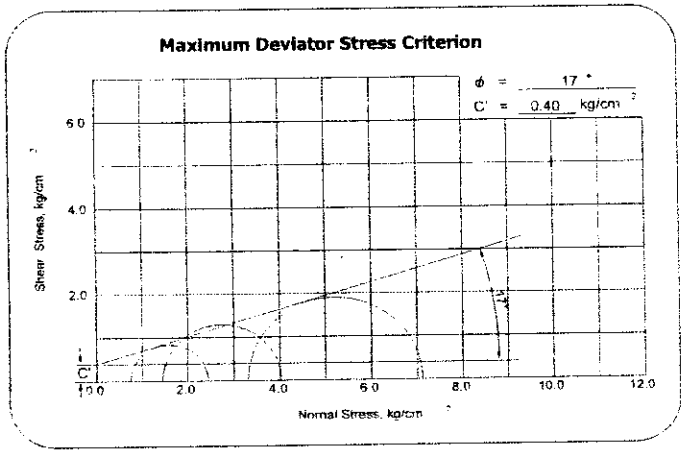




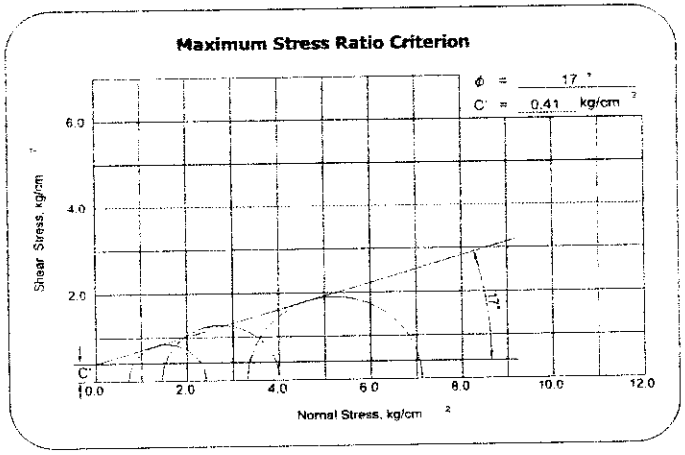
STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (CU)..... ATP-15 / S-1

Maximum Deviator Stress Criterion



Maximum Stress Ratio Criterion



PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17811
LOCATION		DATE TESTED	SEPT. 13, 2002

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D4767)

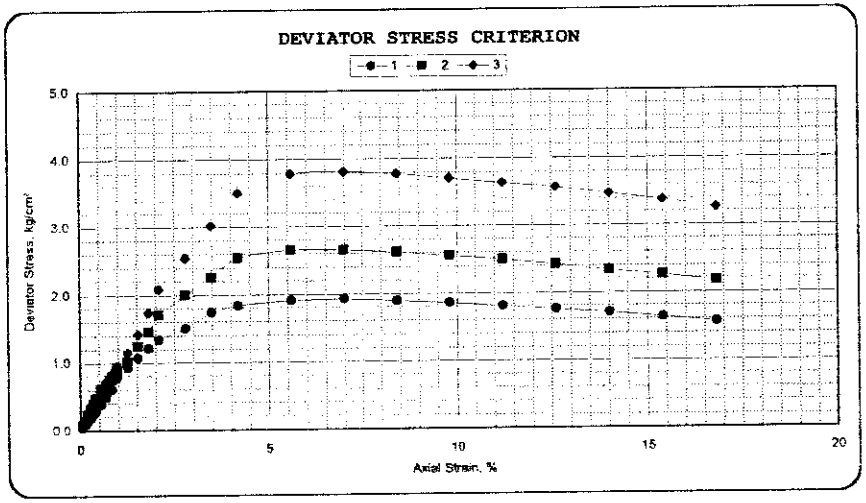
TEST PIT NO.	KTP-8	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

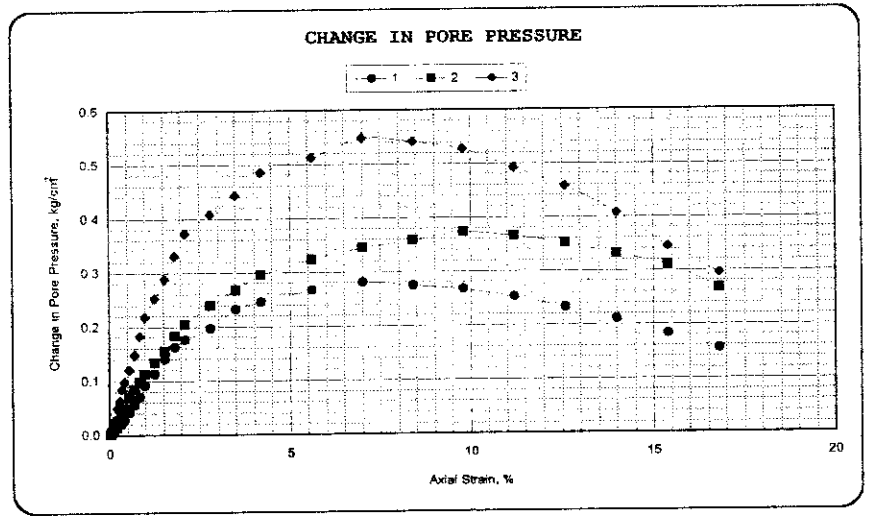
TEST NUMBER		1	2	3
INITIAL LENGTH	(cm)	7.14	7.14	7.14
INITIAL DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm²)	9.90	9.90	9.90
INITIAL VOLUME	(cu.cm)	70.67	70.67	70.67
MOISTURE CONTENT (BEFORE TEST)	(%)	26.40	26.50	26.35
MOISTURE CONTENT (AFTER TEST)	(%)	23.20	23.35	23.10
WET UNIT WEIGHT	(g/cc)	1.77	1.75	1.75
MAXIMUM CONFINING PRESSURE	(kg/cm²)	1.00	2.00	4.00
MAXIMUM BACK PRESSURE	(kg/cm²)	0.50	0.50	0.50
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm²)	**0.7188**	**1.6766**	**3.4517**
MAJOR SRESS	(kg/cm²)	**2.6479**	**4.3270**	**7.2626**
MAXIMUM STRESS RATIO CRITERION				
MINOR STRESS	(kg/cm²)	**0.7188**	**1.6555**	**3.4517**
MAJOR SRESS	(kg/cm²)	**2.6479**	**4.3033**	**7.2626**
SPECIMEN PROPERTIES				
VOLUME CHANGE	(cu.cm)	4.00	5.00	6.50
CHANGE IN HEIGHT	(cm)	0.13	0.17	0.22
CORRECTED HEIGHT	(cm)	7.01	6.97	6.92
CORRECTED AREA	(cm²)	9.52	9.42	9.27
CORRECTED VOLUME	(cu.cm)	66.67	65.67	64.17
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS _____

STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

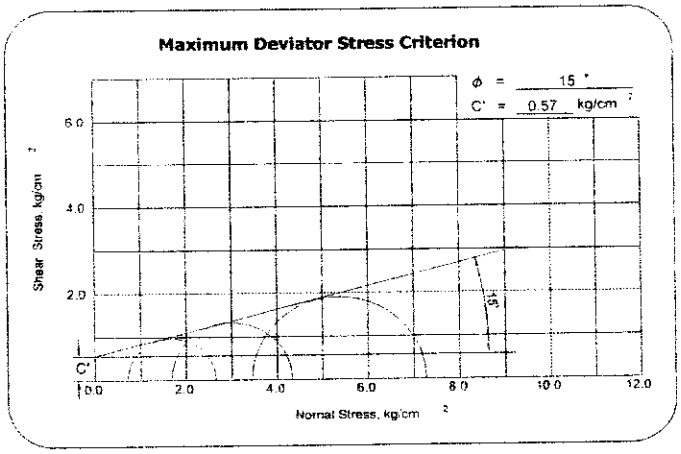
Triaxial (CU)..... KTP-8 / S-1

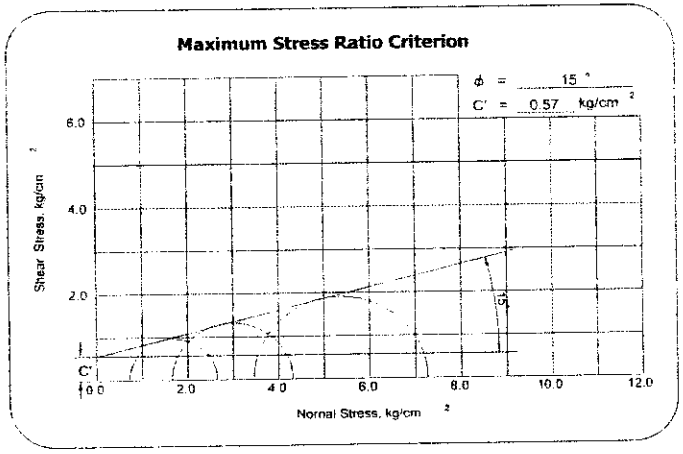




STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (CU)..... KTP-8 / S-1





PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-TCU-17814
LOCATION		DATE TESTED	SEPT. 22, 2002

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

(ASTM - D4767)

TEST PIT NO.	KTP-9	SAMPLE NO.	S-1	DEPTH (M)	0.00-3.00
DESCRIPTION	Silty CLAY				

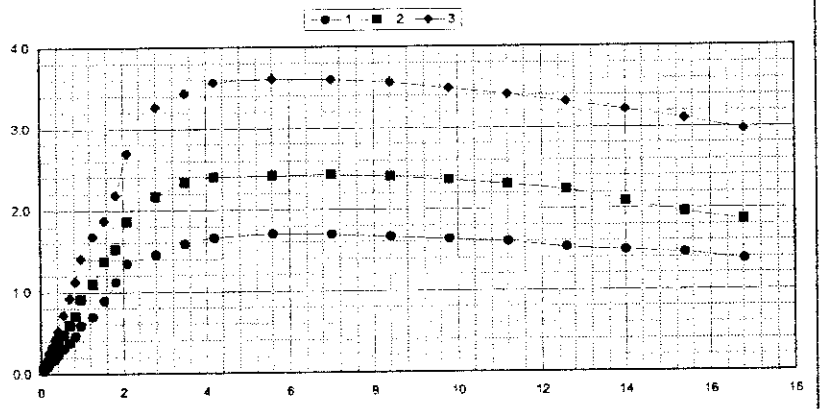
TEST NUMBER		1	2	3
INITIAL LENGTH	(cm)	7.14	7.14	7.14
INITIAL DIAMETER	(cm)	3.55	3.55	3.55
CROSS-SECTION AREA	(cm²)	9.90	9.90	9.90
INITIAL VOLUME	(cu.cm)	70.67	70.67	70.67
MOISTURE CONTENT (BEFORE TEST)	(%)	24.70	24.55	24.60
MOISTURE CONTENT (AFTER TEST)	(%)	21.50	21.40	21.60
WET UNIT WEIGHT	(g/cc)	1.72	1.72	1.72
MAXIMUM CONFINING PRESSURE	(kg/cm²)	1.00	2.00	4.00
MAXIMUM BACK PRESSURE	(kg/cm²)	0.50	0.50	0.50
MAXIMUM DEVIATOR STRESS CRITERION				
MINOR STRESS	(kg/cm²)	**0.6977**	**1.5641**	**3.4868**
MAJOR SRESS	(kg/cm²)	**2.4042**	**3.9892**	**7.0941**
MAXIMUM STRESS RATIO CRITERION				
MINOR STRESS	(kg/cm²)	**0.6204**	**1.5641**	**3.3954**
MAJOR SRESS	(kg/cm²)	**2.2509**	**3.9892**	**6.9549**
SPECIMEN PROPERTIES				
VOLUME CHANGE	(cu.cm)	4.40	5.50	7.20
CHANGE IN HEIGHT	(cm)	0.15	0.19	0.24
CORRECTED HEIGHT	(cm)	6.99	6.95	6.90
CORRECTED AREA	(cm²)	9.48	9.37	9.20
CORRECTED VOLUME	(cu.cm)	66.27	65.17	63.47
RATE OF SHEAR	(mm/min)	0.13	0.13	0.13

REMARKS _____

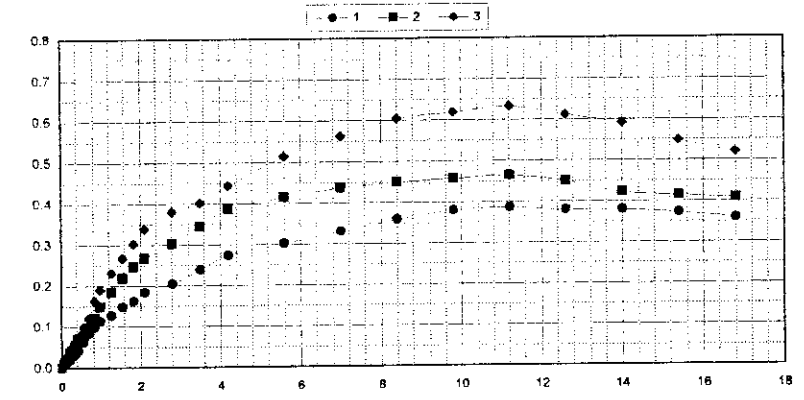
STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (CU)..... KTP-9 / S-1

DEVIATOR STRESS CRITERION



CHANGE IN PORE PRESSURE

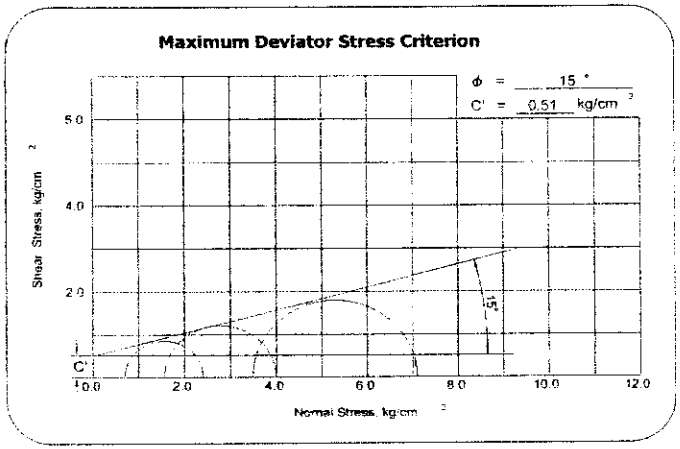


G6-80

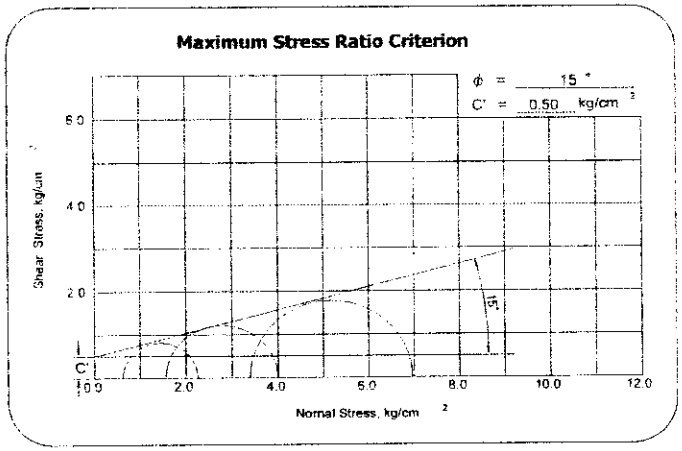
STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA

Triaxial (CU)..... KTP-9 / S-1

Maximum Deviator Stress Criterion



Maximum Stress Ratio Criterion



Clay Lumps

And

Friable Particles

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-CLF-17760
LOCATION		DATE TESTED	SEPT. 16, 2002

CLAY LUMPS & FRIABLE PARTICLES IN AGGREGATE

ASTM-C142

TEST PIT NO.	ATP-4	SAMPLE NUMBER	S-1 & S-2	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

SIZE OF PARTICLES MAKING UP SAMPLE	W	R	P
1 1/2	5042	4973	1.37
1 1/2 TO 3/4	3016	2979	1.23
3/4 TO 3/8	2007	1938	3.44
16	126	122	3.17

WHERE

P = Percent of clay lumps and friable particles

W = Mass of test sample

R = Mass of particles retained on designated sieve

FORMULA

P = [(W-R) /W] x 100

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-CLF-17761
LOCATION		DATE TESTED	SEPT. 16, 2002

CLAY LUMPS & FRIABLE PARTICLES IN AGGREGATE

ASTM-C142

TEST PIT NO.	ATP-5	SAMPLE NUMBER	S-1 & S-2	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

SIZE OF PARTICLES MAKING UP SAMPLE	W	R	P
1 1/2	5018	4975	0.86
1 1/2 TO 3/4	3022	2928	3.11
3/4 TO 3/8	2013	1961	2.58
16	113	110	2.65

WHERE

P = Percent of clay lumps and friable particles

W = Mass of test sample

R = Mass of particles retained on designated sieve

FORMULA

P = [(W-R) /W] x 100

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-CLF-17761
LOCATION		DATE TESTED	SEPT. 16, 2002

CLAY LUMPS & FRIABLE PARTICLES IN AGGREGATE

ASTM-C142

TEST PIT NO.	ATP-6	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

SIZE OF PARTICLES MAKING UP SAMPLE	W	R	P
1 1/2	5011	4958	1.06
1 1/2 TO 3/4	3020	2940	2.65
3/4 TO 3/8	2002	1938	3.20
16	109	106	2.75

WHERE

P = Percent of clay lumps and friable particles

W = Mass of test sample

R = Mass of particles retained on designated sieve

FORMULA

P = [(W-R) /W] x 100

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-CLF-17763
LOCATION		DATE TESTED	SEPT. 16, 2002

CLAY LUMPS & FRIABLE PARTICLES IN AGGREGATE

ASTM-C142

TEST PIT NO.	ATP-9	SAMPLE NUMBER	S-1 & S-2	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

SIZE OF PARTICLES MAKING UP SAMPLE	W	R	P
1 1/2	5003	4975	0.56
1 1/2 TO 3/4	3015	2918	3.22
3/4 TO 3/8	2013	1970	2.14
16	110	107	2.73

WHERE

P = Percent of clay lumps and friable particles

W = Mass of test sample

R = Mass of particles retained on designated sieve

FORMULA

P = [(W-R) /W] x 100

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-CLF-17765
LOCATION		DATE TESTED	SEPT. 17, 2002

CLAY LUMPS & FRIABLE PARTICLES IN AGGREGATE

ASTM-C142

TEST PIT NO.	KTP-1	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded GRAVEL				

SIZE OF PARTICLES MAKING UP SAMPLE	W	R	P
1 1/2	5007	4906	2.02
1 1/2 TO 3/4	3013	2886	4.22
3/4 TO 3/8	2009	1945	3.19
16	103	100	2.91

WHERE

P = Percent of clay lumps and friable particles

W = Mass of test sample

R = Mass of particles retained on designated sieve

FORMULA

P = [(W-R) /W] x 100

PROJECT	STUDY ON WATER RESOURCES DEVELOPMENT FOR METRO MANILA	CONTROL NO	ADL02-CLF-17766
LOCATION		DATE TESTED	SEPT. 17, 2002

CLAY LUMPS & FRIABLE PARTICLES IN AGGREGATE

ASTM-C142

TEST PIT NO.	KTP-3	SAMPLE NUMBER	S-1	DEPTH	0.00-3.00
DESCRIPTION	Poorly graded SAND				

SIZE OF PARTICLES MAKING UP SAMPLE	W	R	P
1 1/2	5002	4936	1.32
1 1/2 TO 3/4	3009	2891	3.92
3/4 TO 3/8	2013	1909	5.17
16	106	102	3.77

WHERE

P = Percent of clay lumps and friable particles

W = Mass of test sample

R = Mass of particles retained on designated sieve

FORMULA

P = [(W-R) /W] x 100