MUESER RUTLEDGE CONSULTING ENGINEERS

FILE NO. 10587
SUBCODE

ATTERBERG LIMITS

PROJECT: DUNDALK MARINE TERMINAL

PERF BY ZY DATE 10-03-07
CALC BY MM DATE 10-03-07
CHK'D BY DATE

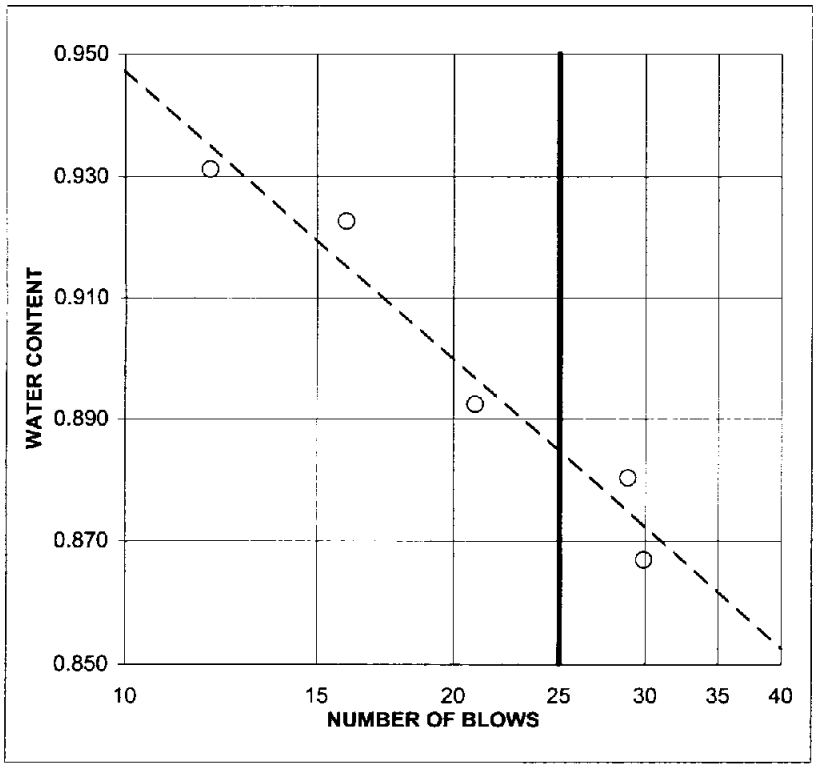
LIQUID LIMIT SHOWN CALCULATED BY:
COMPUTER
VISUAL

Boring No.	Sample No.	W_L	W_P	I_P	W_N	I_L	U.S.C.
SBA D-1	300-320	88.46	40.95	47.51	76.56	0.75	OH

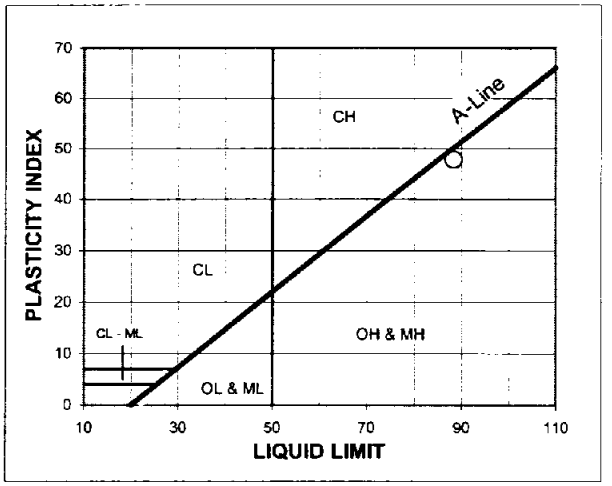
DESCRIPTION: SOFT GRAY ORGANIC SILTY CLAY, TRACE FINE SAND

PREPARATION - NONE - 40 FRACTION
SPECIAL :

TEST	W_L	W_L	W_L	W_L	W_L	W_P	W_P	W_P
TARE NO.	63	141	56	57	51	59	60	61
NO. OF BLOWS	40	28	21	16				
WET + TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.142	5.395
DRY + TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.203
WATER	3.151	3.43	3.052	3.509	3.247	1.3	1.108	1.192
TARE	1.274	1.267	1.272	1.275	[illegible]	1.308	1.321	1.326
SAMPLE DRY	3.635	3.897	3.42	3.803	3.487	3.204	2.713	2.877
WATER CONTENT	86.69%	88.02%	89.24%	92.27%	93.12%	40.57%	40.84%	41.43%



	W_N
TARE NO.	62
WET + TARE	21.459
DRY + TARE	12.760
WATER	8.758
TARE	1.261
SAMPLE DRY	11.439
WATER CONTENT	76.56%



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 4318:
"STANDARD TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS"

MRCE Form LIM-1

MUESER RUTLEDGE CONSULTING ENGINEERS

FILE NO. 10587
SUBCODE

ATTERBERG LIMITS

PROJECT: DUNDALK MARINE TERMINAL

PERF BY ARJ DATE 09-20-07
CALC BY MM DATE 09-21-07
CHK'D BY ARJ DATE 09-21-07

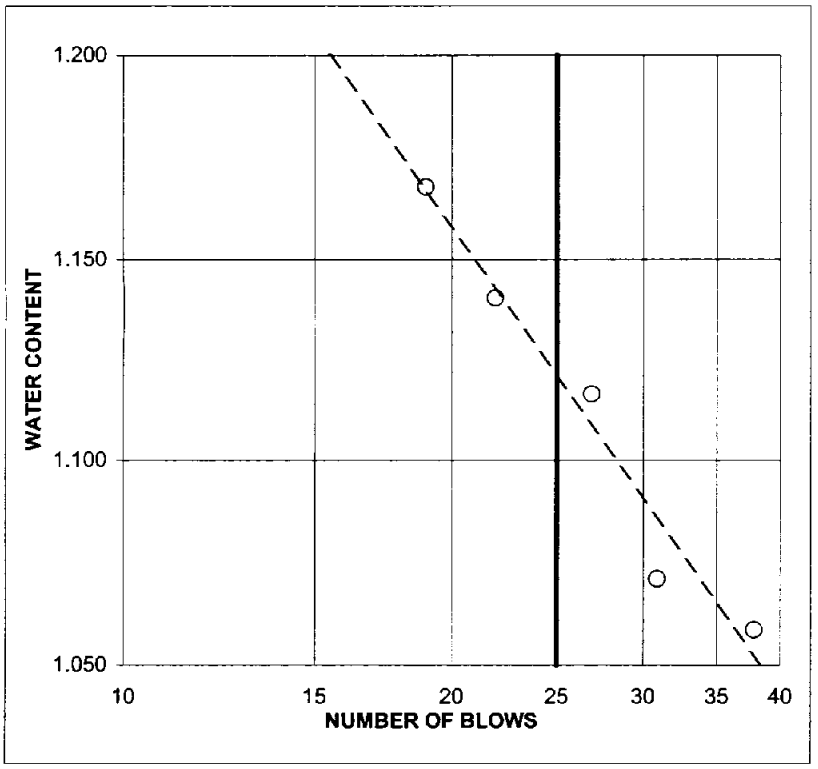
LIQUID LIMIT SHOWN CALCULATED BY:
COMPUTER
VISUAL

Boring No.	Sample No.	W_L	W_P	I_P	W_N	I_L	U.S.C.
SBA-E1	360-320	112.09	38.87	73.21	81.68	0.58	CH

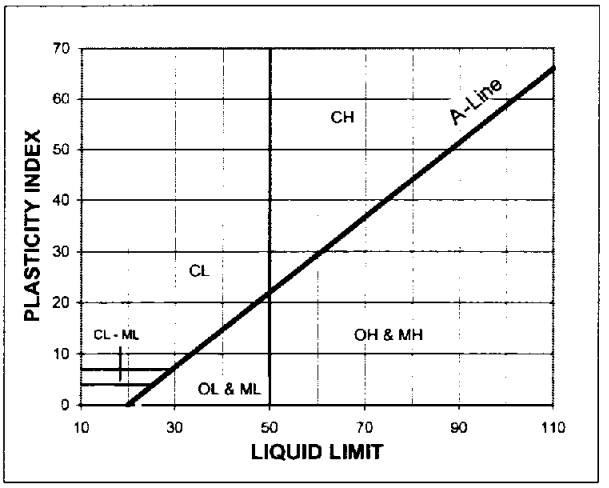
DESCRIPTION:

PREPARATION - NONE - 40 FRACTION
SPECIAL : SOFT GRAY ORGANIC SILTY CLAY, TRACE SHELLS

TEST	W_L	W_L	W_L	W_L	W_L	W_P	W_P	W_P
TARE NO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12
NO. OF BLOWS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
WET + TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.440
DRY + TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.824
WATER	2.008	2.566	2.610	2.799	3.035	1.334	1.252	1.116
TARE	[illegible]	[illegible]	1.310	[illegible]	[illegible]	[illegible]	[illegible]	1.305
SAMPLE DRY	1.897	2.396	2.338	2.455	2.599	3.258	3.234	3.019
WATER CONTENT	105.85%	107.10%	111.63%	114.01%	116.78%	40.95%	38.71%	36.97%



	W_N
TARE NO.	[illegible]
WET + TARE	[illegible]
DRY + TARE	[illegible]
WATER	8.011
TARE	1.319
SAMPLE DRY	9.808
WATER CONTENT	81.68%



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 4318:
"STANDARD TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS"

MRCE Form LIM-1

MUESER RUTLEDGE CONSULTING ENGINEERS

FILE NO. 10587
SUBCODE

ATTERBERG LIMITS

PROJECT: DUNDALK MARINE TERMINAL

PERF BY ARJ DATE 09-20-07
CALC BY MM DATE 09-21-07
CHK'D BY ARJ DATE 09-21-07

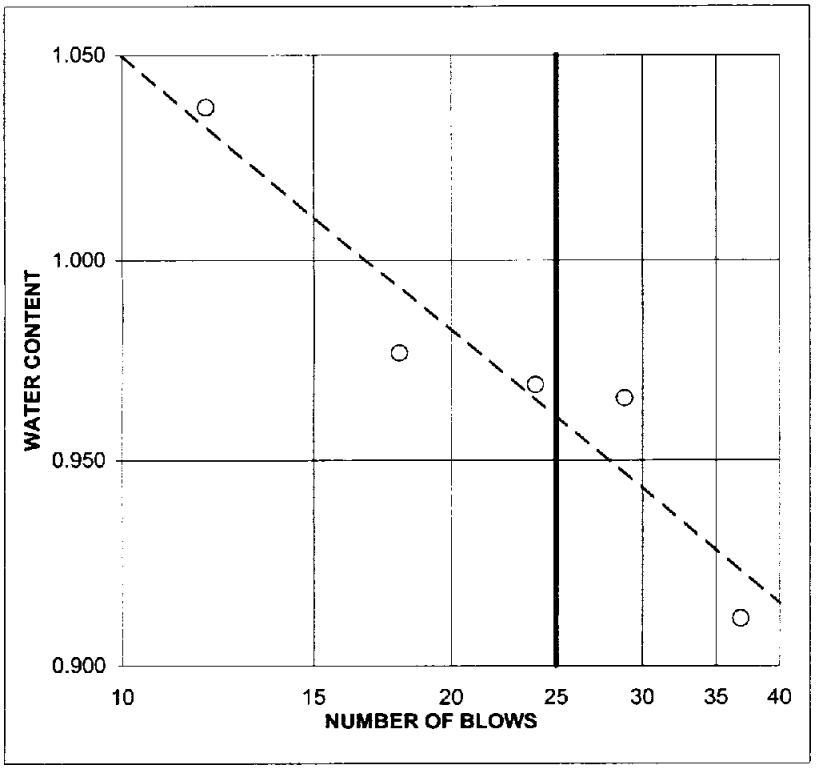
LIQUID LIMIT SHOWN CALCULATED BY:
COMPUTER
VISUAL

Boring No.	Sample No.	W_L	W_P	I_P	W_N	I_L	U.S.C.
SBA F1	300-320	96.09	30.55	65.54	83.99	0.82	CH

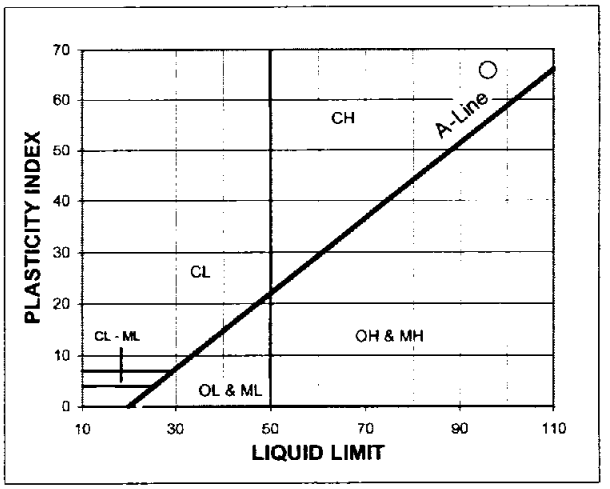
DESCRIPTION: SOFT GRAY ORGANIC SILTY CLAY, TRACE GRAVEL & SHELLS

PREPARATION - NONE - 40 FRACTION
SPECIAL :

TEST	W_L	W_L	W_L	W_L	W_L	W_P	W_P	W_P
TARE NO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	94	95
NO. OF BLOWS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
WET + TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.206
DRY + TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.032
WATER	3.38	2.17	2.842	4.823	2.901	0.965	1.179	1.174
TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.280	1.280
SAMPLE DRY	3.259	2.222	2.934	4.996	3.183	3.194	3.912	3.752
WATER CONTENT	103.71%	97.66%	96.86%	96.54%	91.14%	30.21%	30.14%	31.29%



	W_N
TARE NO.	96
WET + TARE	16.348
DRY + TARE	9.471
WATER	6.877
TARE	1.283
SAMPLE DRY	8.188
WATER CONTENT	83.99%



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 4318:
"STANDARD TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS"

MRCE Form LIM-1

MUESER RUTLEDGE CONSULTING ENGINEERS

FILE NO. 10587
SUBCODE LAB 2

ATTERBERG LIMITS

PROJECT: DUNDALK MARINE TERMINAL

PERF BY ARJ — DATE 10-17-07
CALC BY MM — DATE 10-24-07
CHK'D BY ARJ — DATE 10-26-07

LIQUID LIMIT SHOWN CALCULATED BY:
_____ COMPUTER
_____ VISUAL

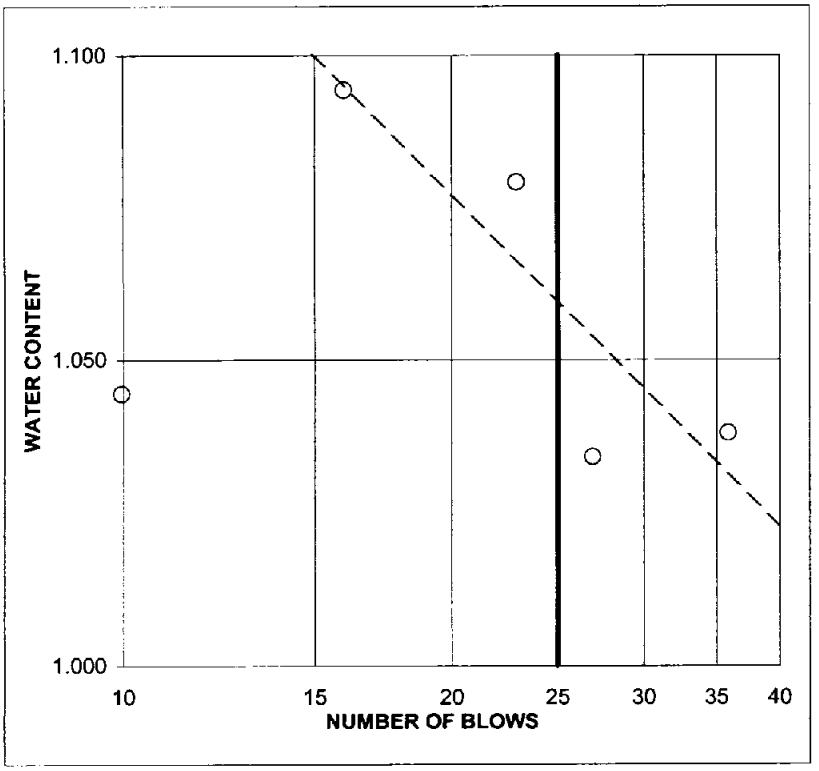
Boring No.	Sample No.	W_L	W_P	I_P	W_N	I_L	U.S.C.
SBA-G-3	220-240	105.96	42.39	63.57	73.65	0.49	[illegible]

DESCRIPTION: STIFF GRAY SILTY ORGANIC CLAY, TRACE GRAVEL & VEGETATION

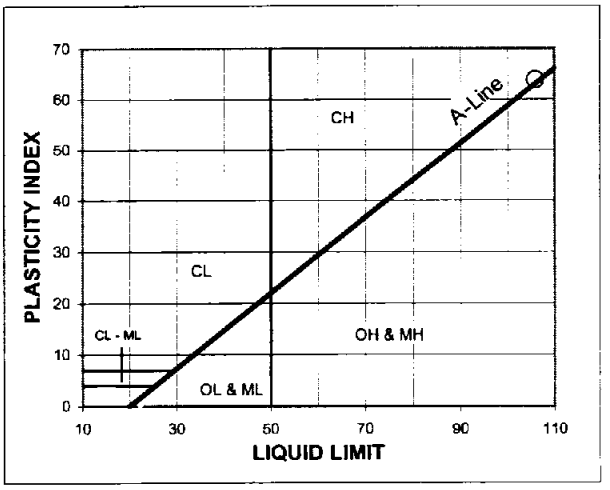
PREPARATION _____ - NONE _____ - 40 FRACTION
SPECIAL : _____

RERUN

TEST	W_L	W_L	W_L	W_L	W_L	W_P	W_P	W_P
TARE NO.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NO. OF BLOWS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
WET + TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DRY + TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
WATER	2.414	2.873	2.559	2.41	2.19	1.25	1.314	1.152
TARE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SAMPLE DRY	2.206	2.662	2.475	2.322	2.097	3.017	2.9	2.85
WATER CONTENT	109.43%	107.93%	103.39%	103.79%	104.43%	41.43%	45.31%	40.42%

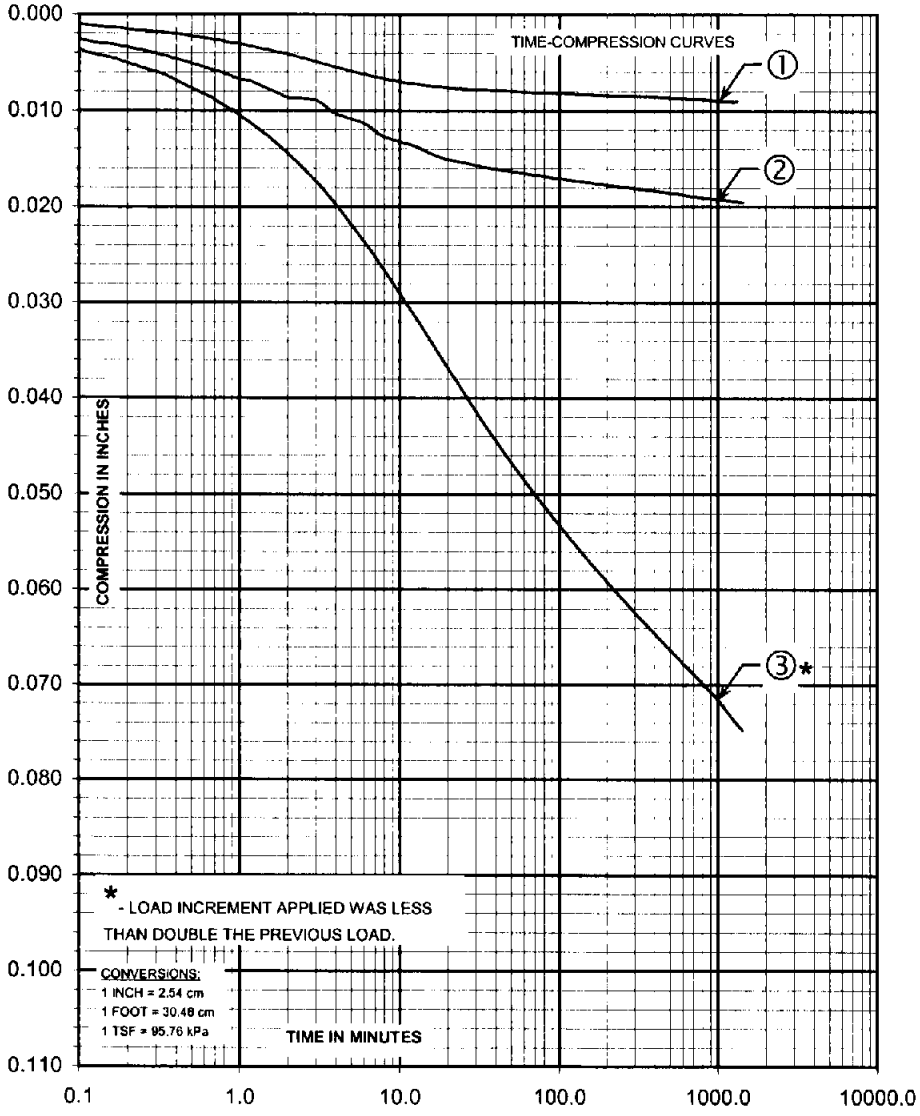


	W_N	
TARE NO.	[illegible]	[illegible]
WET + TARE	[illegible]	[illegible]
DRY + TARE	[illegible]	[illegible]
WATER	3.847	
TARE	[illegible]	[illegible]
SAMPLE DRY	5.223	
WATER CONTENT	73.65%	



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 4318:
"STANDARD TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS"

MRCE Form LIM-1



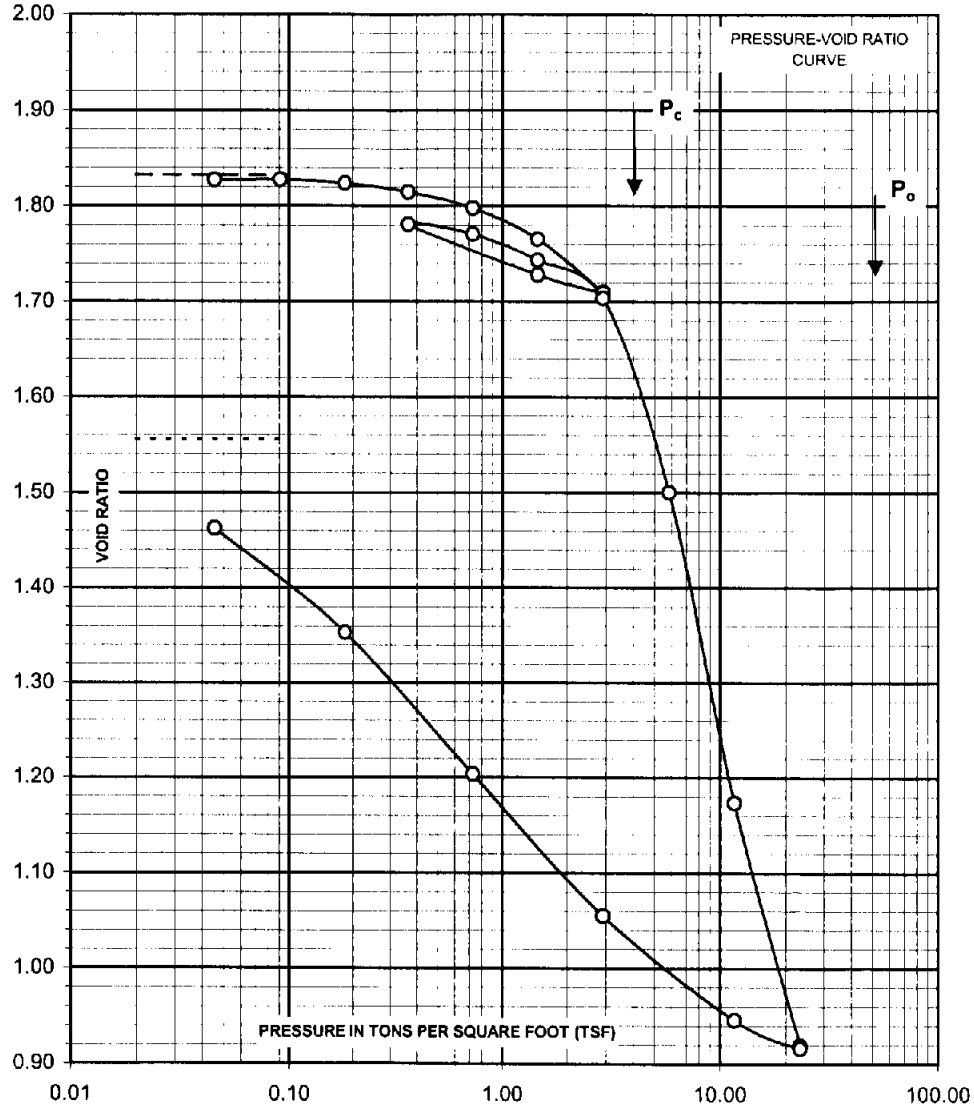


PLATE NO. 1

CURVE NO.	INCREMENT FROM (TSF)	INCREMENT TO (TSF)
①	1.462	2.923
②	0.731	1.462
③*	2.923	5.846

SPECIMEN DESCRIPTION: STIFF GRAY ORGANIC SILTY CLAY (CH)

STRATUM

PROPERTIES OF PLASTICITY LIMIT SPECIMEN

UNIFIED SOILS CLASSIFICATION - CH
LIQUID LIMIT, w_L = 93
PLASTIC LIMIT, w_P = 38
PLASTICITY INDEX, I_P = 55
NATURAL WATER CONT., W_n,% = 62.4
LIQUIDITY INDEX, $(w-w_P)/I_P$ = 0.45
SPECIFIC GRAVITY, G_s = 2.807

PROPERTIES OF CONSOLIDATION SPECIMEN

ELEVATION OF SPECIMEN =
DEPTH OF SPECIMEN (FT) = 46.3
DIAMETER OF SPECIMEN (IN) = 2.504
INITIAL THICKNESS OF SPECIMEN (IN) = 1.0047
INITIAL WATER CONTENT, % = 64.5
FINAL WATER CONTENT, % = 57.3
INITIAL DEGREE OF SATURATION, % = 98.8
FINAL DEGREE OF SATURATION, % = 103.3

— — — — INITIAL VOID RATIO, e_o = 1.832
- - - - - - - FINAL VOID RATIO, e_f = 1.556
ESTIMATED PRECONSOLIDATION STRESS (TSF), P_c = 4.0
EXISTING OVERBURDEN STRESS (TSF), P_o =
COMPRESSION INDEX, C_c = 1.10
RECOMPRESSION INDEX, C_r = 0.073
SWELLING INDEX, C_s = 0.255, REBOUND FROM e = 0.92

DUNDALK MARINE TERMINAL

BALTIMORE MARYLAND

MUESER RUTLEDGE CONSULTING ENGINEERS

225 WEST 34TH STREET, NEW YORK, N.Y. 10122

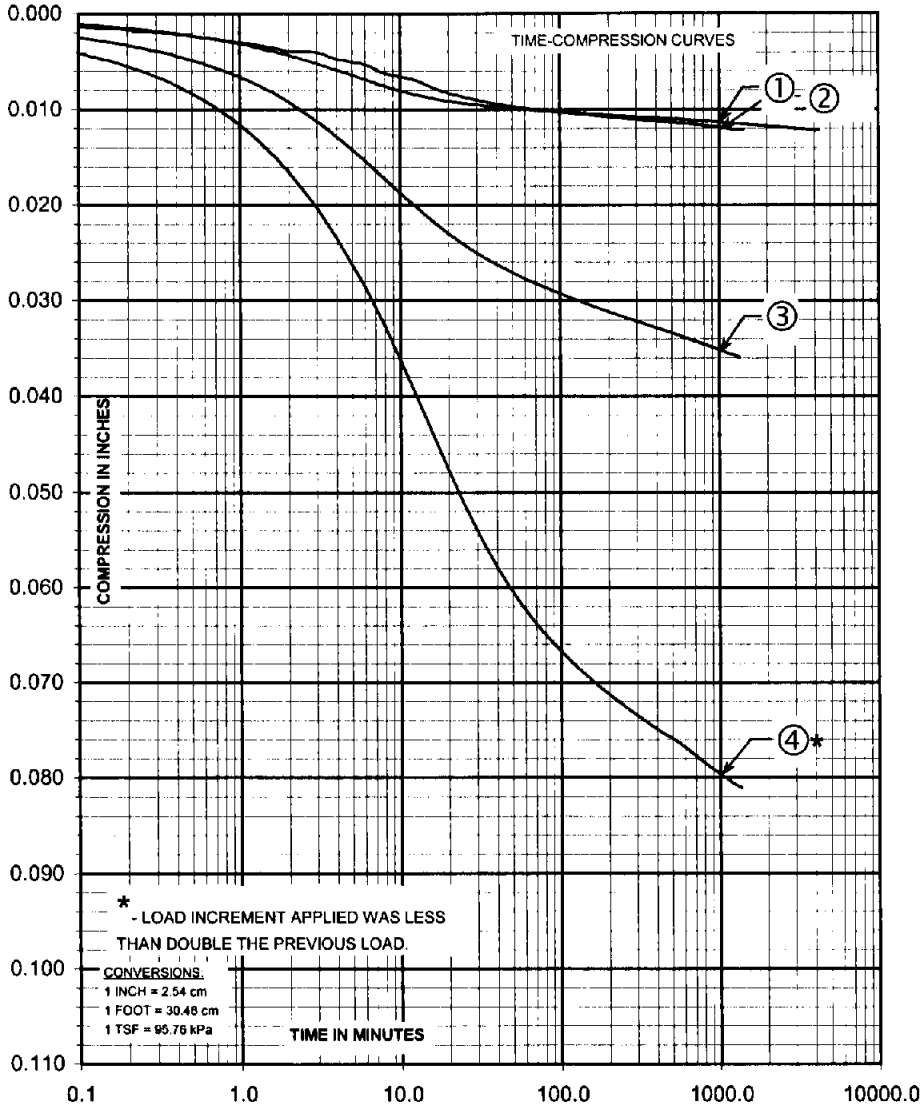
MADE BY: MM DATE: 10-15-07 FILE NO.
CH'KD BY: DATE: 10587

CONSOLIDATION TEST

BORING NO. B-117 SAMPLE NO. 45-47

PLATE NO. 1

MRCE Form CONSOL-1



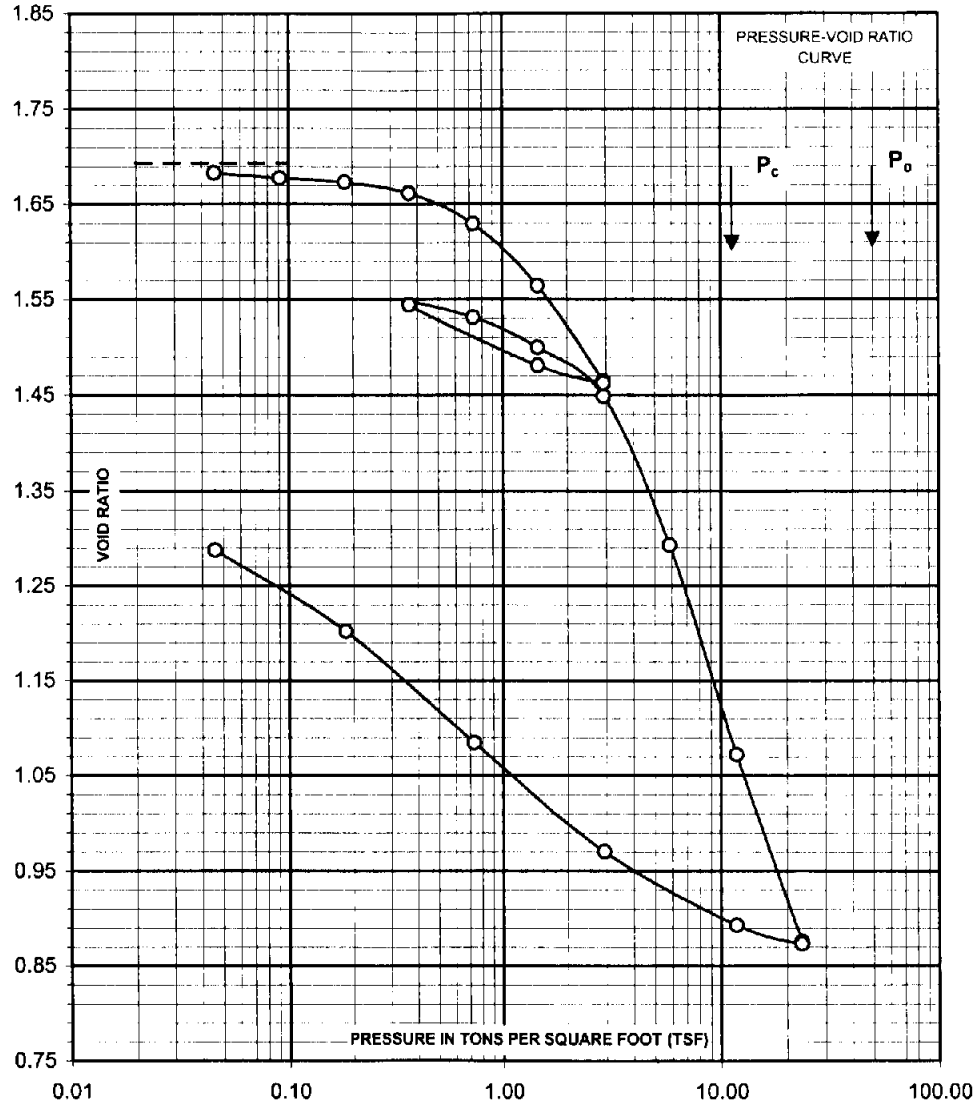


PLATE NO.	CURVE NO.	INCREMENT FROM (TSF)	INCREMENT TO (TSF)
	①	0.366	0.732
	②	1.463	2.927
	③	0.732	1.463
	④*	5.853	11.706

SPECIMEN DESCRIPTION: STIFF GRAY ORGANIC SILTY CLAY (OH)

STRATUM

PROPERTIES OF PLASTICITY LIMIT SPECIMEN

UNIFIED SOILS CLASSIFICATION -
LIQUID LIMIT, w_L =
PLASTIC LIMIT, w_P =
PLASTICITY INDEX, I_P =
NATURAL WATER CONT., W_n,% =
LIQUIDITY INDEX, $(w-w_P)/I_P$ =
SPECIFIC GRAVITY, G_s =

PROPERTIES OF CONSOLIDATION SPECIMEN

ELEVATION OF SPECIMEN =
DEPTH OF SPECIMEN (FT) =
DIAMETER OF SPECIMEN (IN) =
INITIAL THICKNESS OF SPECIMEN (IN) = 1.0001
INITIAL WATER CONTENT, % = 59.3
FINAL WATER CONTENT, % = 49.5
INITIAL DEGREE OF SATURATION, % = 98.3
FINAL DEGREE OF SATURATION, % = 103.1

— — — — INITIAL VOID RATIO, e_o = 1.693
- - - - - - - FINAL VOID RATIO, e_f = 1.350
ESTIMATED PRECONSOLIDATION STRESS (TSF), P_c =
EXISTING OVERBURDEN STRESS (TSF), P_o =
COMPRESSION INDEX, C_c =
RECOMPRESSION INDEX, C_r =
SWELLING INDEX, C_s = 0.12, REBOUND FROM e =

DUNDALK MARINE TERMINAL

BALTIMORE MARYLAND

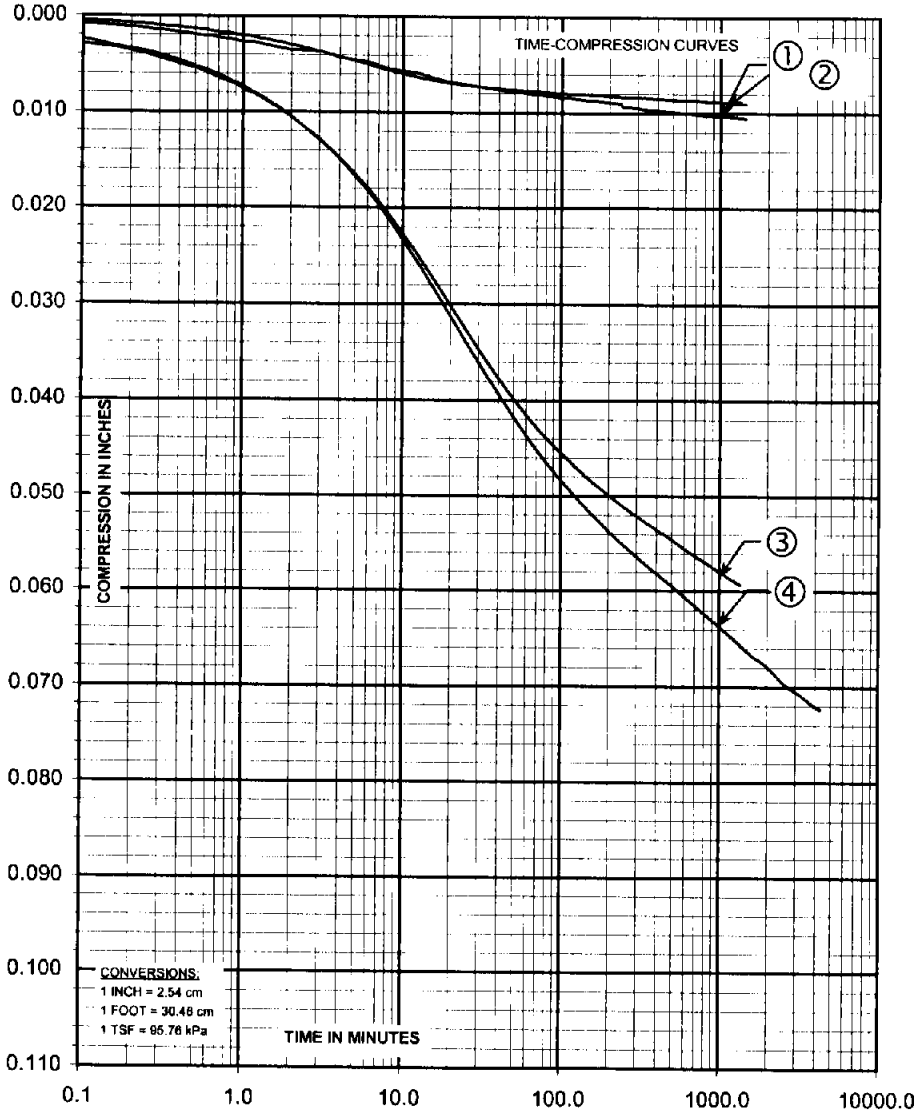
MUESER RUTLEDGE CONSULTING ENGINEERS
225 WEST 34TH STREET, NEW YORK, N.Y. 10122

MADE BY: MM DATE: 10-25-07 FILE NO.
CH'KD BY: DATE: **10587**

CONSOLIDATION TEST
BORING NO. B-124 SAMPLE NO. 570-590 TOP

PLATE NO.

MRCE Form CONSOL-1



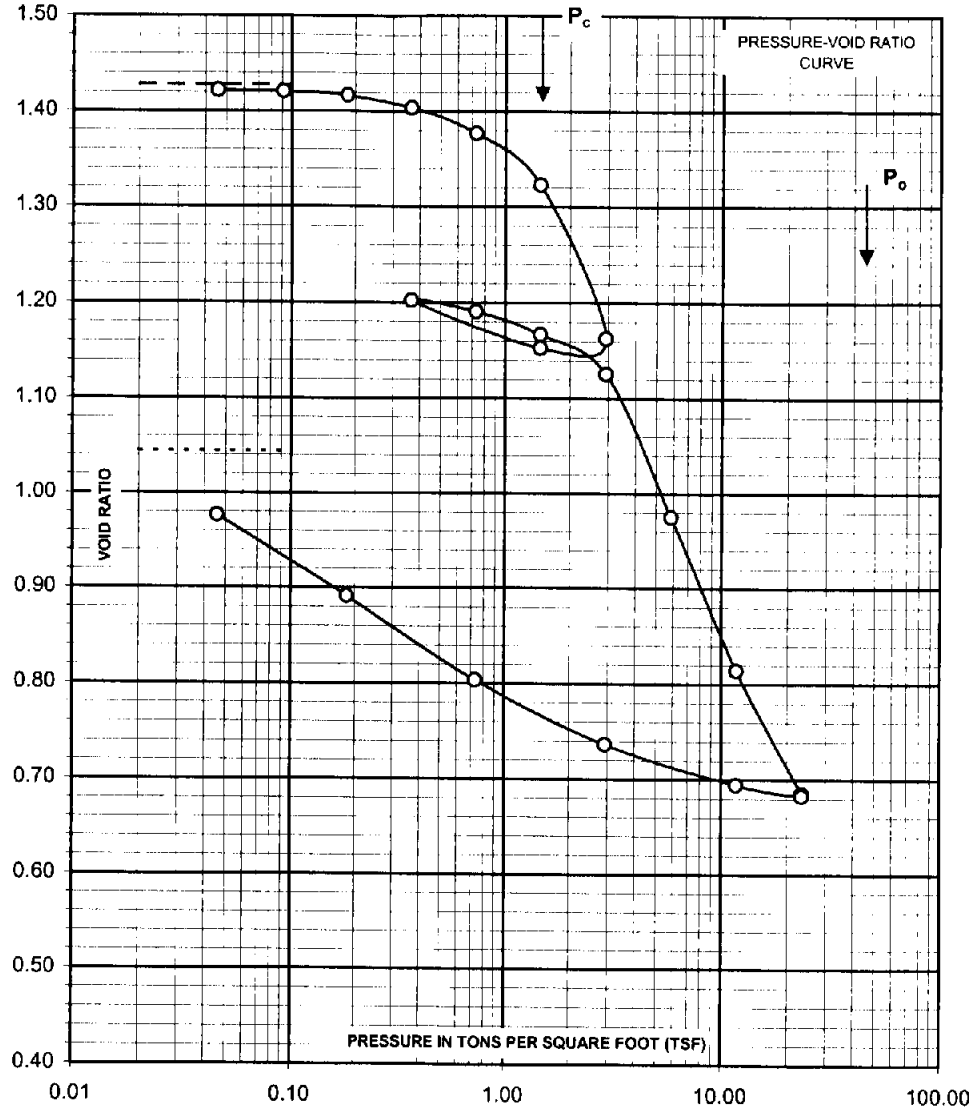


PLATE NO.	CURVE NO.	INCREMENT FROM (TSF)	INCREMENT TO (TSF)
	①	0.366	0.733
	②	1.465	2.931
	③	0.733	1.465
	④	2.931	5.861

SPECIMEN DESCRIPTION: GRAY ORGANIC SILTY CLAY (CL)

STRATUM

PROPERTIES OF PLASTICITY LIMIT SPECIMEN

UNIFIED SOILS CLASSIFICATION - CL
LIQUID LIMIT, w_L = 49
PLASTIC LIMIT, w_P = 20
PLASTICITY INDEX, I_P = 29
NATURAL WATER CONT., W_n,% = 37.8
LIQUIDITY INDEX, $(w-w_P)/I_P$ = 0.61
SPECIFIC GRAVITY, G_s = 2.8

PROPERTIES OF CONSOLIDATION SPECIMEN

ELEVATION OF SPECIMEN =
DEPTH OF SPECIMEN (FT) = 29.9
DIAMETER OF SPECIMEN (IN) = 2.5
INITIAL THICKNESS OF SPECIMEN (IN) = 0.986
INITIAL WATER CONTENT, % = 50.2
FINAL WATER CONTENT, % = 37.5
INITIAL DEGREE OF SATURATION, % = 98.4
FINAL DEGREE OF SATURATION, % = 100.6

— — — — INITIAL VOID RATIO, e_o = 1.428
- - - - - - - FINAL VOID RATIO, e_f = 1.044
ESTIMATED PRECONSOLIDATION STRESS (TSF), P_c = 1.63
EXISTING OVERBURDEN STRESS (TSF), P_o =
COMPRESSION INDEX, C_c = 0.53
RECOMPRESSION INDEX, C_r = 0.079
SWELLING INDEX, C_s = 0.12, REBOUND FROM e = 0.6827

DUNDALK MARINE TERMINAL

BALTIMORE MARYLAND

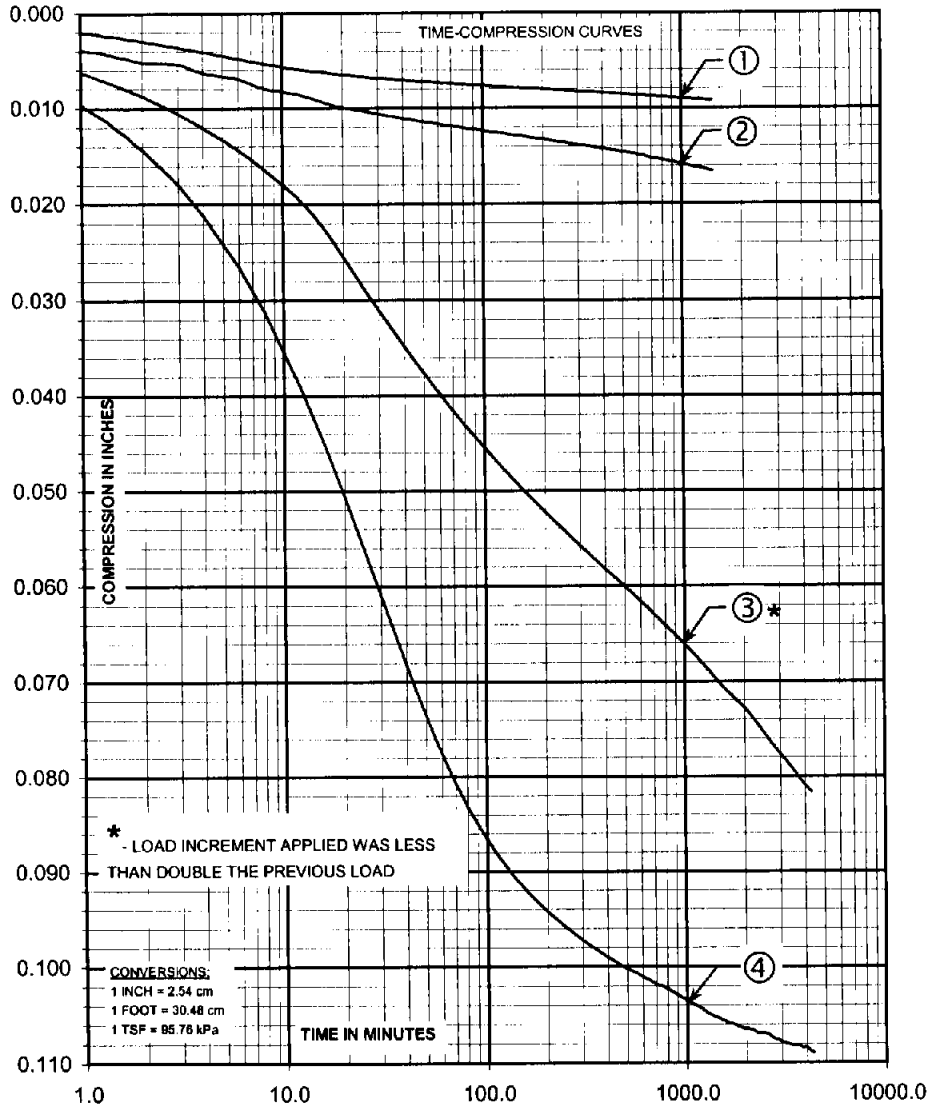
MUESER RUTLEDGE CONSULTING ENGINEERS
225 WEST 34TH STREET, NEW YORK, N.Y. 10122

MADE BY: MM DATE: 10-15-07 FILE NO.
CH'KD BY: DATE: **10587**

CONSOLIDATION TEST
BORING NO. SBA C-2 SAMPLE NO. 290-310

PLATE NO.

MRCE Form CONSOL-1



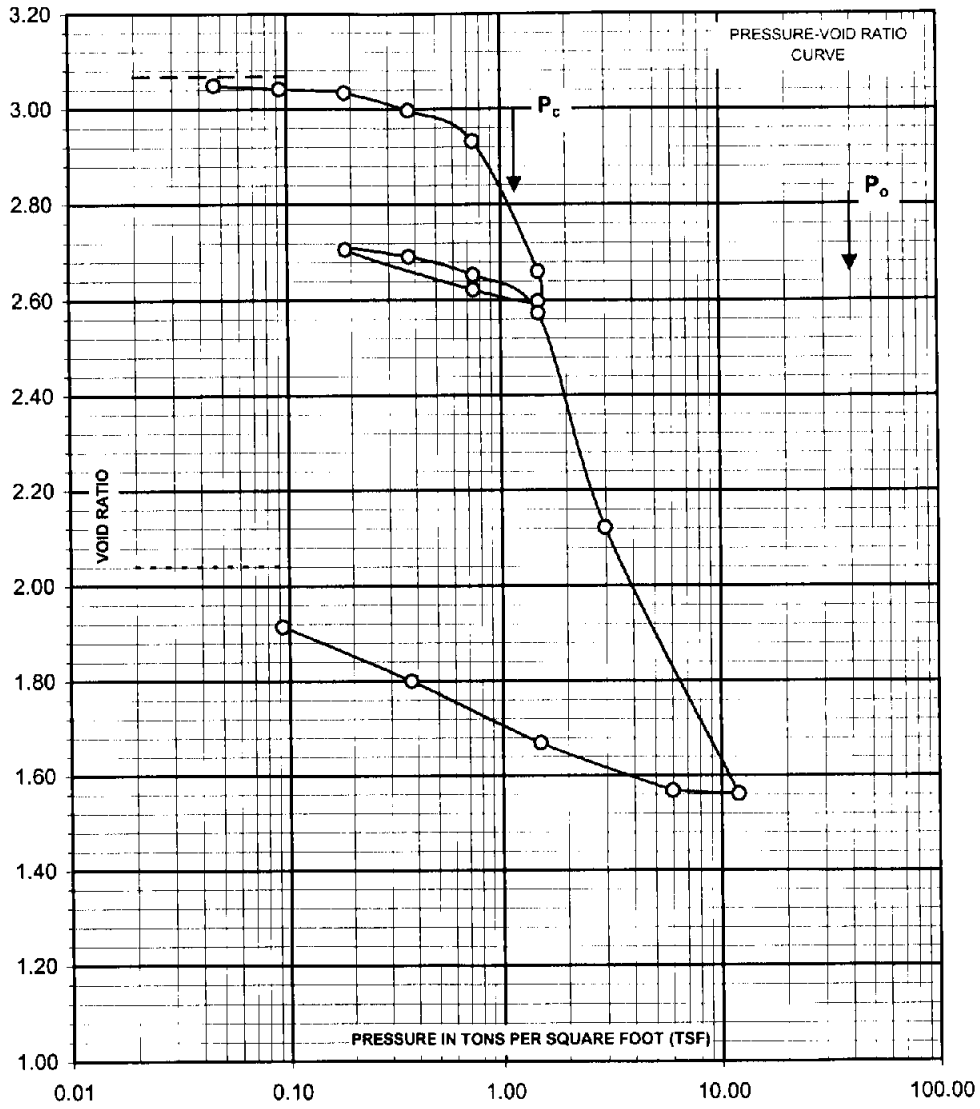


PLATE NO.

CURVE NO.	INCREMENT FROM (TSF)	INCREMENT TO (TSF)
①	0.373	0.746
②	0.746	1.493
③*	0.373	0.746
④	2.986	5.972

SPECIMEN DESCRIPTION: GRAY ORGANIC SILTY CLAY (CH)

STRATUM

PROPERTIES OF PLASTICITY LIMIT SPECIMEN

UNIFIED SOILS CLASSIFICATION - CH
LIQUID LIMIT, w_L = 112
PLASTIC LIMIT, w_P = 39
PLASTICITY INDEX, I_P = 73
NATURAL WATER CONT., W_n,% = 81.7
LIQUIDITY INDEX, $(w-w_P)/I_P$ = 0.58
SPECIFIC GRAVITY, G_s = 2.799

PROPERTIES OF CONSOLIDATION SPECIMEN

ELEVATION OF SPECIMEN =
DEPTH OF SPECIMEN (FT) = 31.0
DIAMETER OF SPECIMEN (IN) = 2.5
INITIAL THICKNESS OF SPECIMEN (IN) = 1.0085
INITIAL WATER CONTENT, % = 108.0
FINAL WATER CONTENT, % = 66.4
INITIAL DEGREE OF SATURATION, % = 98.5
FINAL DEGREE OF SATURATION, % = 91.1

— — — — INITIAL VOID RATIO, e_o = 3.068
- - - - - - - FINAL VOID RATIO, e_f = 2.041
ESTIMATED PRECONSOLIDATION STRESS (TSF), P_c = 1.07
EXISTING OVERBURDEN STRESS (TSF), P_o =
COMPRESSION INDEX, C_c = 1.550
RECOMPRESSION INDEX, C_r = 0.119
SWELLING INDEX, C_s = 0.205, REBOUND FROM e = 1.56

DUNDALK MARINE TERMINAL

BALTIMORE MARYLAND

MUESER RUTLEDGE CONSULTING ENGINEERS
225 WEST 34TH STREET, NEW YORK, N.Y. 10122

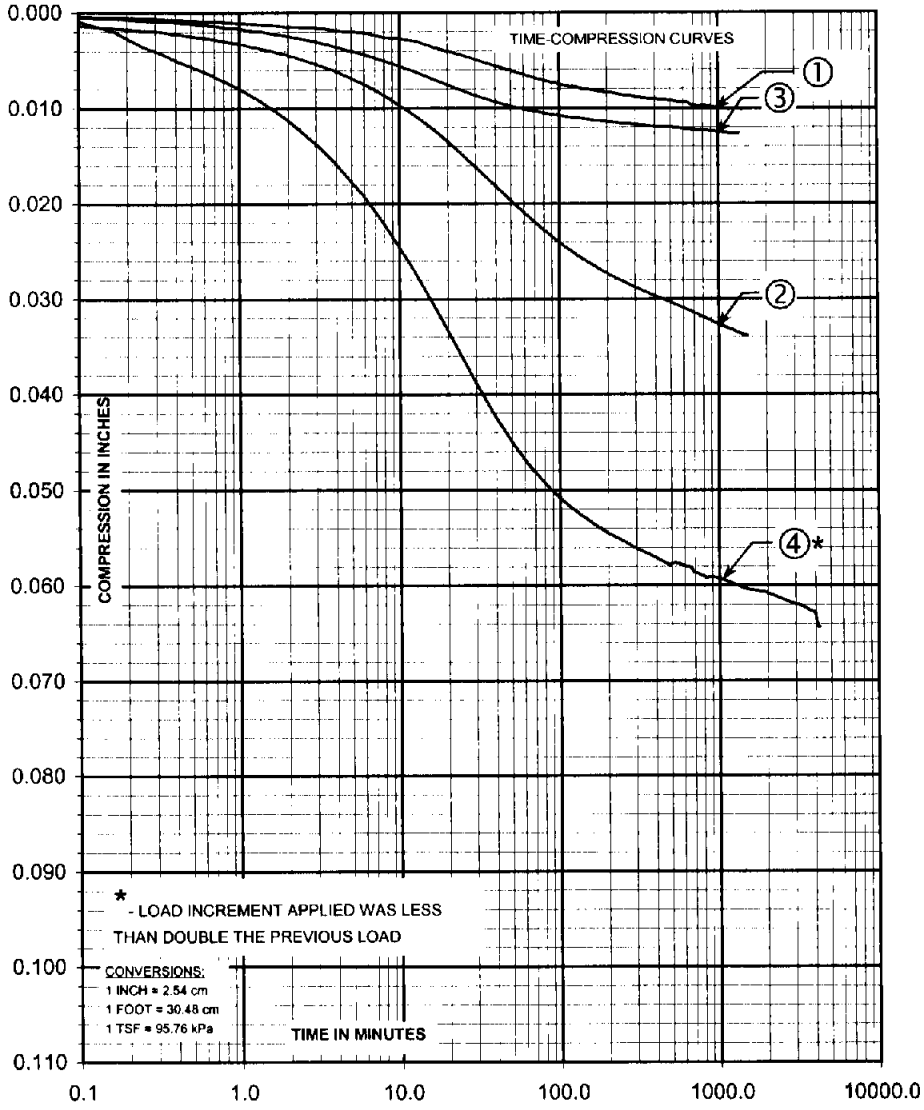
MADE BY: MM DATE: 10-22-07
CH'KD BY: DATE:

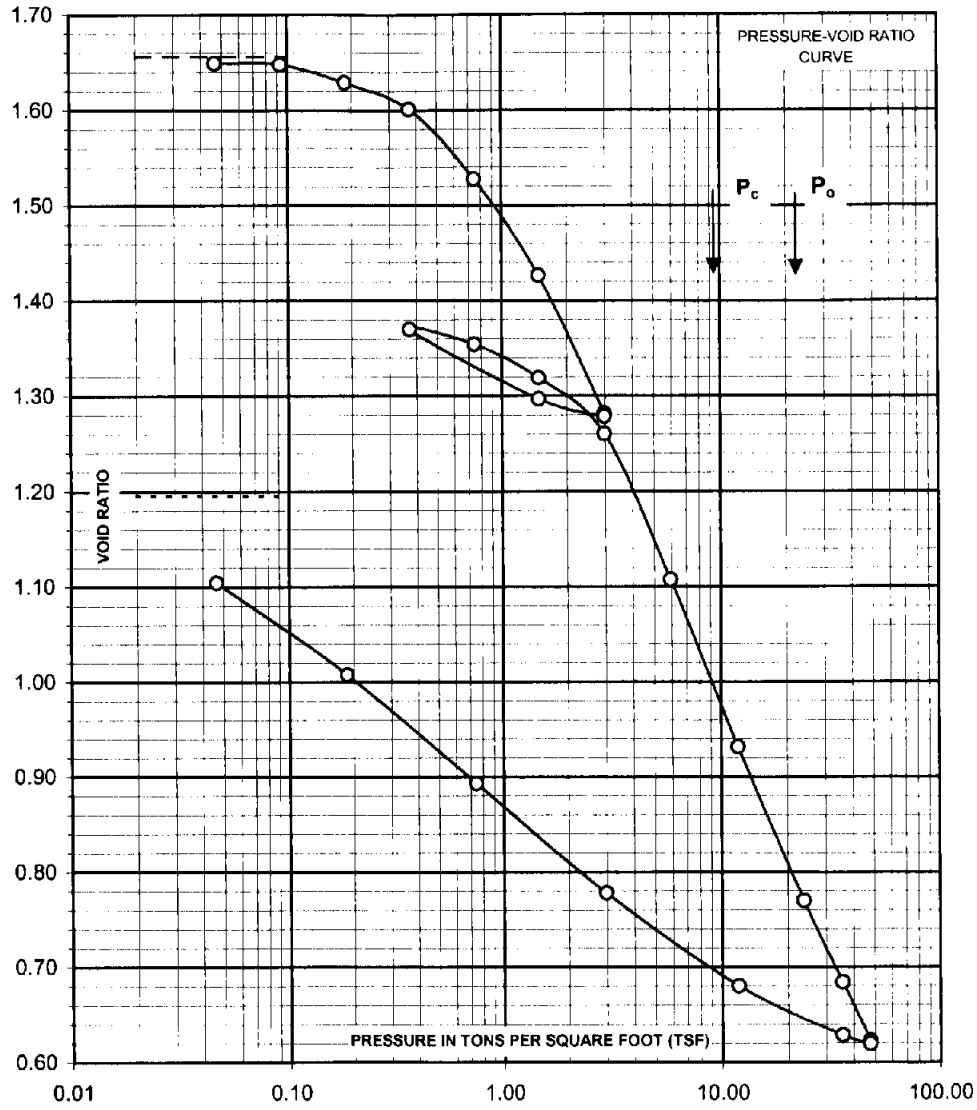
FILE NO. 10587

CONSOLIDATION TEST
BORING NO.SBA E-1 SAMPLE NO.300-320

PLATE NO.

MRCE Form CONSOL-1





CURVE NO.	INCREMENT FROM (TSF)	INCREMENT TO (TSF)
①	0.19	0.37
②	0.74	1.49
③	0.74	1.49
④*	11.90	23.80

PLATE NO.

SPECIMEN DESCRIPTION: SOFT GRAY ORGANIC SILTY CLAY (CH)

STRATUM

PROPERTIES OF PLASTICITY LIMIT SPECIMEN

UNIFIED SOILS CLASSIFICATION -
LIQUID LIMIT, w_L =
PLASTIC LIMIT, w_P =
PLASTICITY INDEX, I_P =
NATURAL WATER CONT., W_n,% =
LIQUIDITY INDEX, $(w-w_P)/I_P$ =
SPECIFIC GRAVITY, G_s =

PROPERTIES OF CONSOLIDATION SPECIMEN

ELEVATION OF SPECIMEN =
DEPTH OF SPECIMEN (FT) = 31.3
DIAMETER OF SPECIMEN (IN) = 2.5
INITIAL THICKNESS OF SPECIMEN (IN) = 1.0081
INITIAL WATER CONTENT, % = 56.8
FINAL WATER CONTENT, % = 43.5
INITIAL DEGREE OF SATURATION, % = 98.3
FINAL DEGREE OF SATURATION, % = 104.3

— — — — INITIAL VOID RATIO, e_o = 1.656
- - - - - - - FINAL VOID RATIO, e_f = 1.196
ESTIMATED PRECONSOLIDATION STRESS (TSF), P_c = 0.92
EXISTING OVERBURDEN STRESS (TSF), P_o =
COMPRESSION INDEX, C_c = 0.559
RECOMPRESSION INDEX, C_r = 0.107
SWELLING INDEX, C_s = 0.182, REBOUND FROM e = 0.619

DUNDALK MARINE TERMINAL

BALTIMORE MARYLAND

MUESER RUTLEDGE CONSULTING ENGINEERS
225 WEST 34TH STREET, NEW YORK, N.Y. 10122

MADE BY: MM DATE: 10-23-07
CH'KD BY: DATE:

FILE NO. 10587

CONSOLIDATION TEST
BORING NO. F-1 SAMPLE NO. 300-320

PLATE NO

MRCE Form CONSOL-1

MUESER RUTLEDGE CONSULTING ENGINEERS

SPECIFIC GRAVITY OF SOLIDS, Gs

PROJECT DUNDALK MARINE TERMINAL

FILE NO. 10587
SUBCODE

Perf. by	ZY	DATE	09-24-07
Calc. by	MM	DATE	10-01-07
Checked by	ZY	DATE	10-03-07

****RERUN SAMPLE**

Boring No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bottle No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M_p	168.08	168.08	168.08	168.08	168.08
Temp., T °C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$M_{pws,t}$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$M_{pw,t}$	665.58	665.58	665.58	665.58	665.58
Tare No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dry Soil + Tare	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tare	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M_s, Dry Soil	22.9	22.9	22.9	22.9	22.9
$G_{s\ @\ 20\ C}$	2.865	2.865	2.865	2.865	2.865

SPECIFIC GRAVITY = **2.865** CK'Kd by:

Boring No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sample No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bottle No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M_p					
Temp., T °C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$M_{pws,t}$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$M_{pw,t}$					
Tare No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dry Soil + Tare	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tare	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M_s, Dry Soil					
$G_{s\ @\ 20\ C}$					

SPECIFIC GRAVITY = CHECKED BY:

M_p = weight of bottle
$M_{pw,t}$ = weight of bottle + water (including temperature correction)
$M_{pws,t}$ = weight of bottle + water + soil
M_s = dry weight of soil
K = temperature coefficient

$$G_{s\ @\ 20\ C} = \frac{K \cdot M_s}{M_{pw,t} - (M_{pws,t} - M_s)}$$

ALL TEST METHODS/RESULTS CONFORM TO ASTM STANDARD D 854:
"SPECIFIC GRAVITY OF SOILS"

MRCE Form GS-1

MUESER RUTLEDGE CONSULTING ENGINEERS

SPECIFIC GRAVITY OF SOLIDS, Gs

PROJECT DUNDALK MARINE TERMINAL

FILE NO. 10587
SUBCODE

Perf. by ZY DATE 09-19-07
Calc. by MM DATE 09-24-07
Checked by DATE

Boring No.	SBAF-1	SBAF-1	SBAF-1	SBAF-1	SBAF-1
Sample No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bottle No.	26	26	26	26	26
M_p	166.92	166.92	166.92	166.92	166.92
Temp., T °C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$M_{pws,t}$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$M_{pw,t}$	664.82	664.75	664.70	664.71	664.77
Tare No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dry Soil + Tare	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tare	[illegible]	[illegible]	[illegible]	1211	1215
M_s, Dry Soil	33.6	33.6	33.6	33.6	33.6
$G_{s\ @\ 20\ C}$	2.770	2.785	2.819	2.817	2.804

SPECIFIC GRAVITY = **2.799** CK'Kd by:

Boring No.	SBAF-1	SBAF-1	SBAF-1	SBAF-1	SBAF-1
Sample No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bottle No.	6	6	6	6	6
M_p	164.15	164.15	164.15	164.15	164.15
Temp., T °C	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$M_{pws,t}$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$M_{pw,t}$	661.76	661.69	661.64	661.65	661.71
Tare No.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dry Soil + Tare	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tare	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
M_s, Dry Soil	23.7	23.7	23.7	23.7	23.7
$G_{s\ @\ 20\ C}$	2.938	2.962	2.980	3.014	2.994

SPECIFIC GRAVITY = **2.977** CHECKED BY:

M_p = weight of bottle
$M_{pw,t}$ = weight of bottle + water (including temperature correction)
$M_{pws,t}$ = weight of bottle + water + soil
M_s = dry weight of soil
K = temperature coefficient

$$G_{s\ @\ 20\ C} = \frac{K \cdot M_s}{M_{pw,t} - (M_{pws,t} - M_s)}$$

ALL TEST METHODS/RESULTS CONFORM TO ASTM STANDARD D 854: "SPECIFIC GRAVITY OF SOILS"

MRCE Form GS-1

MUESER RUTLEDGE CONSULTING ENGINEERS

SPECIFIC GRAVITY OF SOLIDS, Gs

PROJECT DUNDALK MARINE TERMINAL

FILE NO. 10587
SUBCODE

Perf. by ZY — DATE 09-19-07
Calc. by MM — DATE 09-24-07
Checked by — DATE

Boring No.	SBAG-2	SBAG-2	SBAG-2	SBAG-2	SBAG-2
Sample No.	280-310	280-310	280-310	280-310	280-310
Bottle No.	18	18	18	18	18
M_p	168.68	168.68	168.68	168.68	168.68
Temp., T °C	24.6	25.4	25.4	25.4	25.0
$M_{pws,t}$	698.9	698.8	698.8	698.8	698.8
$M_{pw,t}$	666.48	666.41	666.36	666.37	666.43
Tare No.	57	57	57	57	57
Dry Soil + Tare	153.1	153.1	153.1	153.1	153.1
Tare	102.2	102.2	102.2	102.2	102.2
M_s, Dry Soil	50.9	50.9	50.9	50.9	50.9
$G_{s\ @\ 20\ C}$	2.752	2.746	2.753	2.752	2.744

SPECIFIC GRAVITY = **2.750** CK'Kd by:

Boring No.	B-124	B-124	B-124	B-124	B-124
Sample No.	57-59	57-59	57-59	57-59	57-59
Bottle No.	2	2	2	2	2
M_p	181.66	181.66	181.66	181.66	181.66
Temp., T °C	24.6	25.4	25.4	25.4	25.4
$M_{pws,t}$	713.8	713.8	713.9	713.9	713.7
$M_{pw,t}$	679.50	679.43	679.38	679.39	679.45
Tare No.	51	51	51	51	51
Dry Soil + Tare	156	156	156	156	156
Tare	102.6	102.6	102.6	102.6	102.6
M_s, Dry Soil	53.4	53.4	53.4	53.4	53.4
$G_{s\ @\ 20\ C}$	2.793	2.802	2.824	2.823	2.786

SPECIFIC GRAVITY = **2.806** CHECKED BY:

M_p = weight of bottle

$M_{pw,t}$ = weight of bottle + water (including temperature correction)

$M_{pws,t}$ = weight of bottle + water + soil

M_s = dry weight of soil

K = temperature coefficient

$$G_{s\ @\ 20\ C} = \frac{K \cdot M_s}{M_{pw,t} - (M_{pws,t} - M_s)}$$

ALL TEST METHODS/RESULTS CONFORM TO ASTM STANDARD D 854: "SPECIFIC GRAVITY OF SOILS"

MRCE Form GS-1

MUESER RUTLEDGE CONSULTING ENGINEERS

SPECIFIC GRAVITY OF SOLIDS, Gs

PROJECT DUNDALK MARINE TERMINAL

FILE NO. 10587
SUBCODE

Perf. by ZY DATE 09-19-07
Calc. by MM DATE 09-24-07
Checked by DATE

Boring No.	B-124	B-124	B-124	B-124	B-124
Sample No.	57-59	57-59	57-59	57-59	57-59
Bottle No.	23	23	23	23	23
M_p	168.08	168.08	168.08	168.08	168.08
Temp., T °C	24.0	25.1	25.0	25.0	25.0
$M_{pws,t}$	706.6	706.6	706.6	706.7	706.6
$M_{pw,t}$	665.70	665.63	665.58	665.59	665.65
Tare No.	55	55	55	55	55
Dry Soil + Tare	169.5	169.5	169.5	169.5	169.5
Tare	105.9	105.9	105.9	105.9	105.9
M_s, Dry Soil	63.6	63.6	63.6	63.6	63.6
$G_{s\ @\ 20\ C}$	2.799	2.807	2.813	2.824	2.805

SPECIFIC GRAVITY = **2.809** CK'Kd by:

Boring No.	B-117	B-117	B-117	B-117	B-117
Sample No.	45-47	45-47	45-47	45-47	45-47
Bottle No.	10	10	10	10	10
M_p	167.31	167.31	167.31	167.31	167.31
Temp., T °C	24.0	25.1	25.0	25.0	25.0
$M_{pws,t}$	718.5	718.5	718.5	718.5	718.5
$M_{pw,t}$	664.93	664.86	664.81	664.82	664.88
Tare No.	58	58	58	58	58
Dry Soil + Tare	182.5	182.5	182.5	182.5	182.5
Tare	102.3	102.3	102.3	102.3	102.3
M_s, Dry Soil	80.2	80.2	80.2	80.2	80.2
$G_{s\ @\ 20\ C}$	2.799	2.805	2.819	2.808	2.803

SPECIFIC GRAVITY = **2.807** CHECKED BY:

M_p = weight of bottle
$M_{pw,t}$ = weight of bottle + water (including temperature correction)
$M_{pws,t}$ = weight of bottle + water + soil
M_s = dry weight of soil
K = temperature coefficient

$$G_{s\ @\ 20\ C} = \frac{K \cdot M_s}{M_{pw,t} - (M_{pws,t} - M_s)}$$

ALL TEST METHODS/RESULTS CONFORM TO ASTM STANDARD D 854: "SPECIFIC GRAVITY OF SOILS"

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	09-19-07
Calc. by	MM	Date	09-24-07
Chk'd by	ARJ	Date	09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. B-117
Test Pit No.
Sample No. 45-47

Weight	Total Sample	Retained on #200 sieve
Tare No.	N-1	N-1
Dry + Tare	171.6	103.9
Tare	103.8	103.8
Sample Dry	67.8	0.1

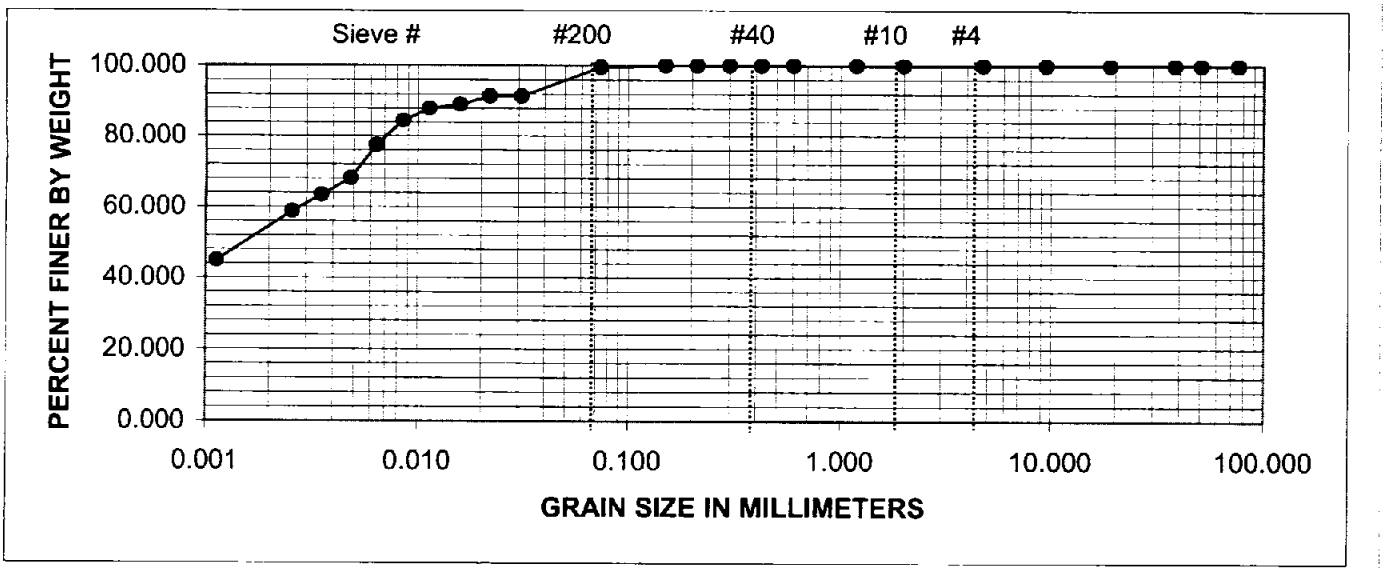
Washed through #200 Sieve: 67.7

Gravel	0.0	
C - Sand	0.0	Total
M - Sand	0.0	% Sand
F - Sand	0.4	0.4
Fines	99.6	

Sieve Analysis

Classification		U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel		3"					76.200	100.0
		2"					50.800	100.0
		1.5"					38.100	100.0
		3/4"					19.000	100.0
		3/8"					9.500	100.0
		#4					4.760	100.0
C	Sand	#10					2.000	100.0
		#16					1.190	100.0
M		#30					0.600	100.0
		#40					0.425	100.0
		#50					0.300	100.0
F		#70					0.212	100.0
		#100			0.00	0.00	0.150	100.0
		#200			0.30	0.30	0.074	99.6
Silt/Clay		Pan			0.00	0.30		

Total Sieved	0.30
Washed Wt.	67.50
Total Wt.	67.80



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 09-19-07
Calc. by MM Date 09-24-07
Chk'd. by ARJ Date 09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. B-117
Test Pit No.
Sample No. 45-47

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

Other -

% Passing No. 200 Sieve = 99.56

Evaporating Dish No. MC
Wt. of Dish + Dry Soil = 243.90
Wt. of Dish = 176.20
Wt. of Dry Soil used in Hydrometer Test = 67.70

Sample Description

Specific Gravity of Soil = 2.70
Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No. 16194
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
09-19-07	09:21	1	38.0	38.50	23.5	-1.149	39.15	0.0310	91.4
09-19-07	09:22	2	38.0	38.50	23.5	-1.149	39.15	0.0220	91.4
09-19-07	09:24	4	37.0	37.50	23.5	-1.149	38.15	0.0159	89.1
09-19-07	09:28	8	36.5	37.00	23.5	-1.149	37.65	0.0114	87.9
09-19-07	09:35	15	35.0	35.50	23.5	-1.149	36.15	0.0086	84.4
09-19-07	09:50	30	32.0	32.50	23.5	-1.149	33.15	0.0064	77.4
09-19-07	10:20	60	28.0	28.50	23.5	-1.149	29.15	0.0049	68.1
09-19-07	11:20	120	26.0	26.50	23.5	-1.149	27.15	0.0035	63.4
09-19-07	13:20	240	24.0	24.50	23.5	-1.149	25.15	0.0026	58.7
09-20-07	09:21	1440	18.0	18.50	24.0	-1.239	19.24	0.0011	44.9

ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	09-19-07
Calc. by	MM	Date	09-24-07
Chk'd by	ARJ	Date	09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. B-124
Test Pit No.
Sample No. 57-59

Weight	Total Sample	Retained on #200 sieve
Tare No.	N-3	N-3
Dry + Tare	157.6	105.0
Tare	103.31	103.31
Sample Dry	54.29	1.69

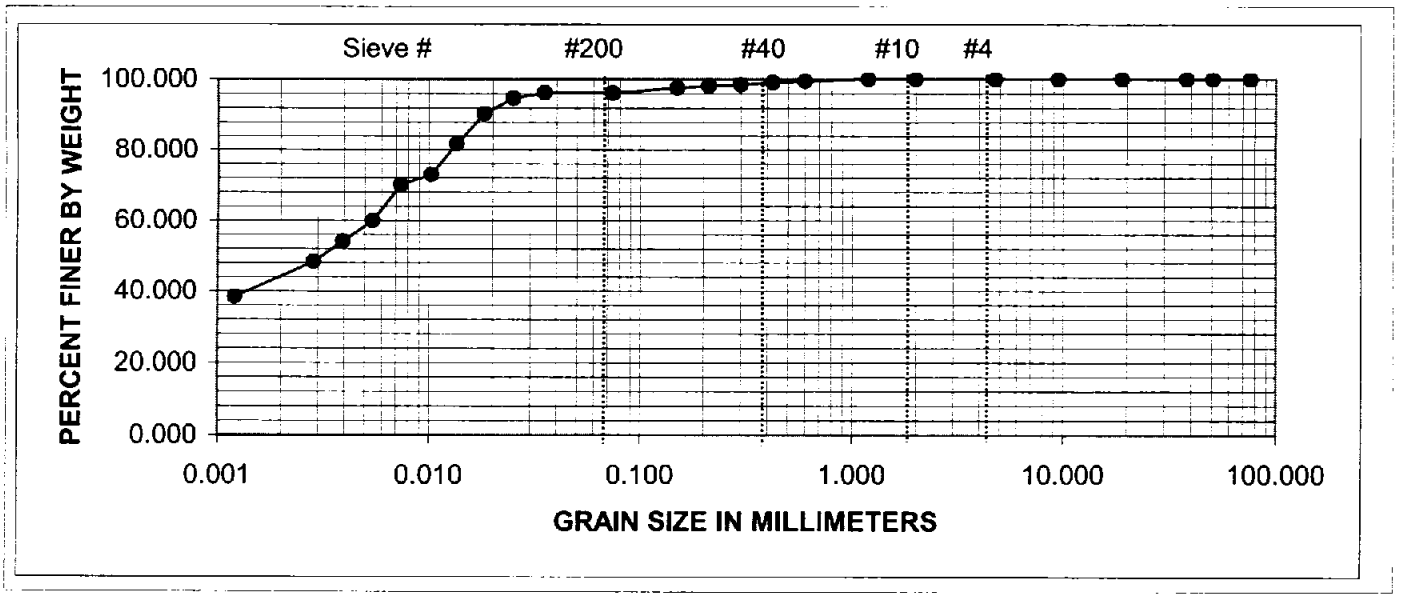
Washed through #200 Sieve 52.6

Gravel	0.0	
C - Sand	0.0	Total
M - Sand	0.9	% Sand
F - Sand	2.9	3.9
Fines	96.1	

Sieve Analysis

Classification		U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel		3"					76.200	100.0
		2"					50.800	100.0
		1.5"					38.100	100.0
		3/4"					19.000	100.0
		3/8"					9.500	100.0
		#4					4.760	100.0
C	Sand	#10					2.000	100.0
M		#16			0.00	0.00	1.190	100.0
		#30			0.30	0.30	0.600	99.4
		#40			0.20	0.50	0.425	99.1
F		#50			0.30	0.80	0.300	98.5
		#70			0.20	1.00	0.212	98.2
		#100			0.30	1.30	0.150	97.6
		#200			0.80	2.10	0.074	96.1
Silt/Clay		Pan			0.20	2.30		

Total Sieved	2.30
Washed Wt.	51.99
Total Wt.	54.29



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 09-19-07
Calc. by MM Date 09-24-07
Chk'd. by ARJ Date 09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. B-124
Test Pit No.
Sample No. 57-59

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

% Passing No. 200 Sieve = 96.13

Evaporating Dish No. 90-L10
Wt. of Dish + Dry Soil = 211.00
Wt. of Dish = 158.40
Wt. of Dry Soil used in Hydrometer Test = 52.60

Other -

Sample Description

Specific Gravity of Soil = 2.70
Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No. 16194
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
09-19-07	09:11	1	32.0	32.50	23.50	-1.149	33.15	0.0351	
09-19-07	09:12	2	31.5	32.00	23.50	-1.149	32.65	0.0251	94.8
09-19-07	09:14	4	30.0	30.50	23.50	-1.149	31.15	0.0182	90.4
09-19-07	09:18	8	27.0	27.50	23.50	-1.149	28.15	0.0135	81.7
09-19-07	09:25	15	24.0	24.50	23.50	-1.149	25.15	0.0103	73.0
09-19-07	09:40	30	23.0	23.50	23.50	-1.149	24.15	0.0074	70.1
09-19-07	10:10	60	19.5	20.00	23.50	-1.149	20.65	0.0055	59.9
09-19-07	11:10	120	17.5	18.00	23.50	-1.149	18.65	0.0040	54.1
09-19-07	12:10	240	15.5	16.00	23.50	-1.149	16.65	0.0029	48.3
09-20-07	09:11	1440	12.0	12.50	24.00	-1.239	13.24	0.0012	38.4

ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	10-10-07
Calc. by	MM	Date	10-24-07
Chk'd by	ARJ	Date	10-26-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. DMT-295
Test Pit No.
Sample No. 230-250 BOT

Weight	Total Sample	Retained on #200 sieve
Tare No.	C-2	C-2
Dry + Tare	106.7	54.6
Tare	43.4	43.4
Sample Dry	63.3	11.2

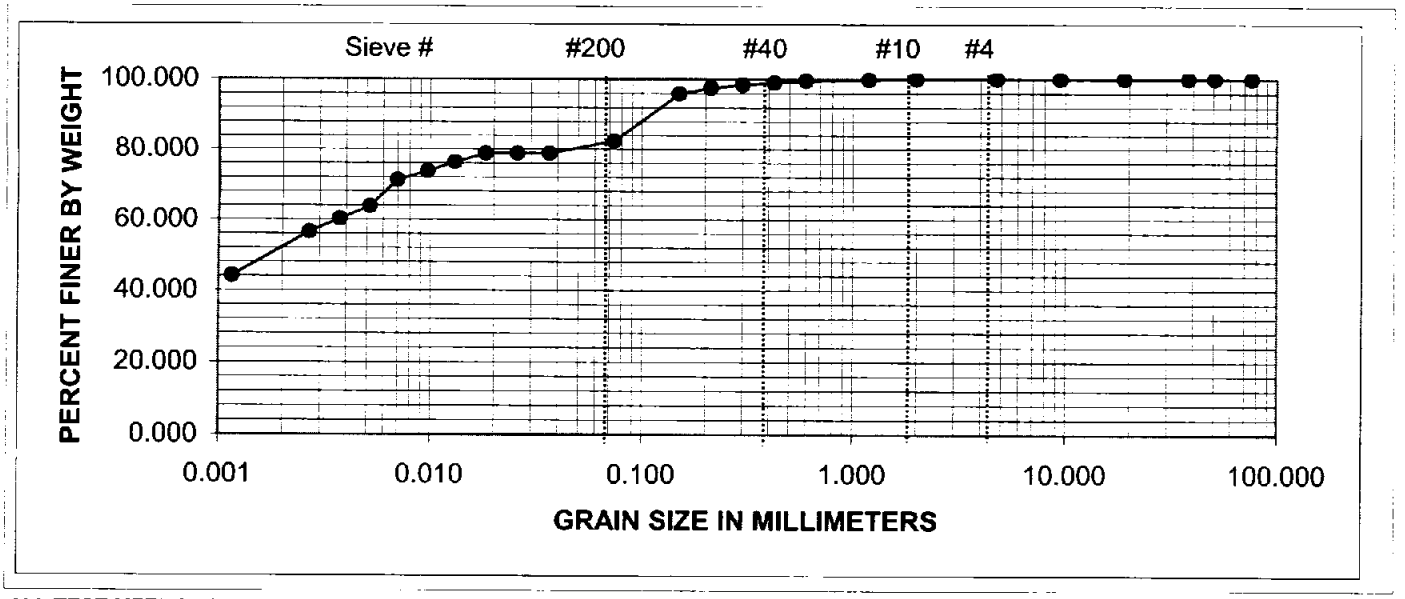
Washed through #200 Sieve 52.1

Gravel	0.0	
C - Sand	0.0	Total
M - Sand	0.9	% Sand
F - Sand	16.6	17.5
Fines	82.5	

Sieve Analysis

Classification		U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel		3"					76.200	100.0
		2"					50.800	100.0
		1.5"					38.100	100.0
		3/4"					19.000	100.0
		3/8"					9.500	100.0
		#4					4.760	100.0
C	Sand	#10			0.00	0.00	2.000	100.0
M		#16			0.10	0.10	1.190	99.8
		#30			0.20	0.30	0.600	99.5
		#40			0.30	0.60	0.425	99.1
F		#50			0.40	1.00	0.300	98.4
		#70			0.60	1.60	0.212	97.5
		#100			1.00	2.60	0.150	95.9
		#200			8.50	11.10	0.074	82.5
Silt/Clay		Pan			0.60	11.70		

Total Sieved	11.70
Washed Wt.	51.60
Total Wt.	63.30



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 10-10-07
Calc. by MM Date 10-24-07
Chk'd. by ARJ Date 10-26-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. DMT-295
Test Pit No.
Sample No. 230-250 BOT

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

Other -

% Passing No. 200 Sieve = 82.46

Evaporating Dish No. 93-L10
Wt. of Dish + Dry Soil = 210.50
Wt. of Dish = 158.40
Wt. of Dry Soil used in Hydrometer Test = 52.10

Sample Description

Specific Gravity of Soil = 2.70
X Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No. 87469
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
10-10-07	09:20	1	31.00	31.50	21.5	-0.337	31.34	0.0366	78.8
10-10-07	09:21	2	31.00	31.50	21.5	-0.337	31.34	0.0259	78.8
10-10-07	09:23	4	31.00	31.50	21.5	-0.337	31.34	0.0183	78.8
10-10-07	09:30	8	30.00	30.50	21.5	-0.337	30.34	0.0132	76.3
10-10-07	09:35	15	29.00	29.50	21.5	-0.337	29.34	0.0098	73.7
10-10-07	09:45	30	28.00	28.50	21.5	-0.337	28.34	0.0070	71.2
10-10-07	10:20	60	25.00	25.50	21.5	-0.337	25.34	0.0052	63.7
10-10-07	11:20	120	23.5	24.00	22.0	-0.423	23.92	0.0037	60.1
10-10-07	13:20	240	22.0	22.50	22.4	-0.491	22.49	0.0027	56.5
10-11-07	09:20	1440	17.0	17.50	22.8	-0.560	17.56	0.0012	44.1

ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	10-10-07
Calc. by	MM	Date	10-24-07
Chk'd by	ARJ	Date	10-26-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. INC-17
Test Pit No.
Sample No. 180-200

Weight	Total Sample	Retained on #200 sieve
Tare No.	C-5	C-5
Dry + Tare	96.0	43.6
Tare	42.1	42.1
Sample Dry	53.9	1.5

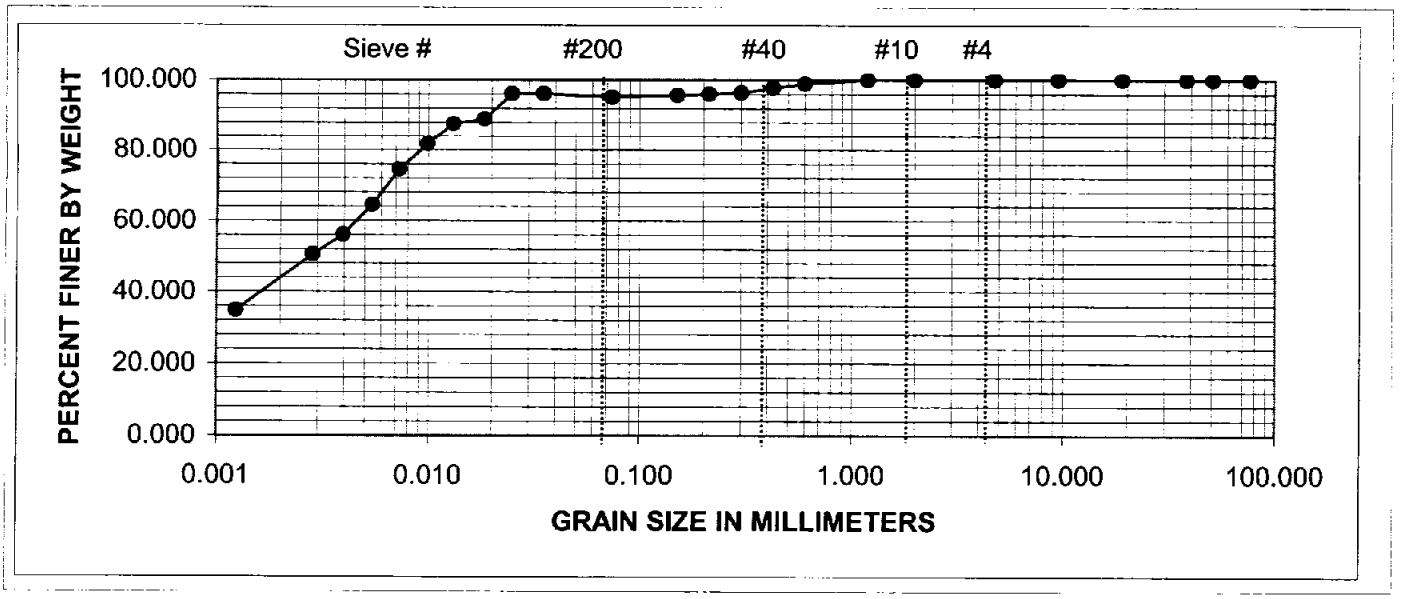
Washed through #200 Sieve: 52.4

Gravel	0.0	
C - Sand	0.0	Total
M - Sand	2.2	% Sand
F - Sand	2.6	4.8
Fines	95.2	

Sieve Analysis

Classification		U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel		3"					76.200	100.0
		2"					50.800	100.0
		1.5"					38.100	100.0
		3/4"					19.000	100.0
		3/8"					9.500	100.0
		#4					4.760	100.0
C	Sand	#10					2.000	100.0
M		#16			0.00	0.00	1.190	100.0
		#30			0.60	0.60	0.600	98.9
		#40			0.60	1.20	0.425	97.8
		#50			0.70	1.90	0.300	96.5
F		#70			0.20	2.10	0.212	96.1
		#100			0.20	2.30	0.150	95.7
		#200			0.30	2.60	0.074	95.2
Silt/Clay		Pan			0.00	2.60		

Total Sieved	2.60
Washed Wt.	51.30
Total Wt.	53.90



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 10-10-07
Calc. by MM Date 10-24-07
Chk'd. by ARJ Date 10-26-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. INC-17
Test Pit No.
Sample No. 180-200

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

Other -

% Passing No. 200 Sieve = 95.18

Evaporating Dish No. H-4
Wt. of Dish + Dry Soil = 491.90
Wt. of Dish = 439.50
Wt. of Dry Soil used in Hydrometer Test = 52.40

Sample Description

Specific Gravity of Soil = 2.70
X Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No. 87469
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
10-10-07	09:16	1	33.0	33.50	21.5	-0.337	33.34	0.0353	
10-10-07	09:17	2	33.0	33.50	21.5	-0.337	33.34	0.0249	
10-10-07	09:19	4	30.5	31.00	21.5	-0.337	30.84	0.0184	89.0
10-10-07	09:23	8	30.0	30.50	21.5	-0.337	30.34	0.0132	87.5
10-10-07	09:30	15	28.0	28.50	21.5	-0.337	28.34	0.0099	81.7
10-10-07	09:45	30	25.5	26.00	21.5	-0.337	25.84	0.0073	74.5
10-10-07	10:15	60	22.0	22.50	21.5	-0.337	22.34	0.0054	64.4
10-10-07	11:15	120	19.0	19.50	22.0	-0.423	19.42	0.0040	56.0
10-10-07	13:15	1240	17.0	17.50	22.5	-0.509	17.51	0.0029	50.5
10-11-07	09:16	1440	11.5	12.00	22.8	-0.560	12.06	0.0012	34.8

ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	09-19-07
Calc. by	MM	Date	09-24-07
Chk'd by	ARJ	Date	09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA C-2
Test Pit No.
Sample No. 290-310 TOP

Weight	Total Sample	Retained on #200 sieve
Tare No.	M-10	M-10
Dry + Tare	180	126.5
Tare	113.2	113.2
Sample Dry	66.8	13.3

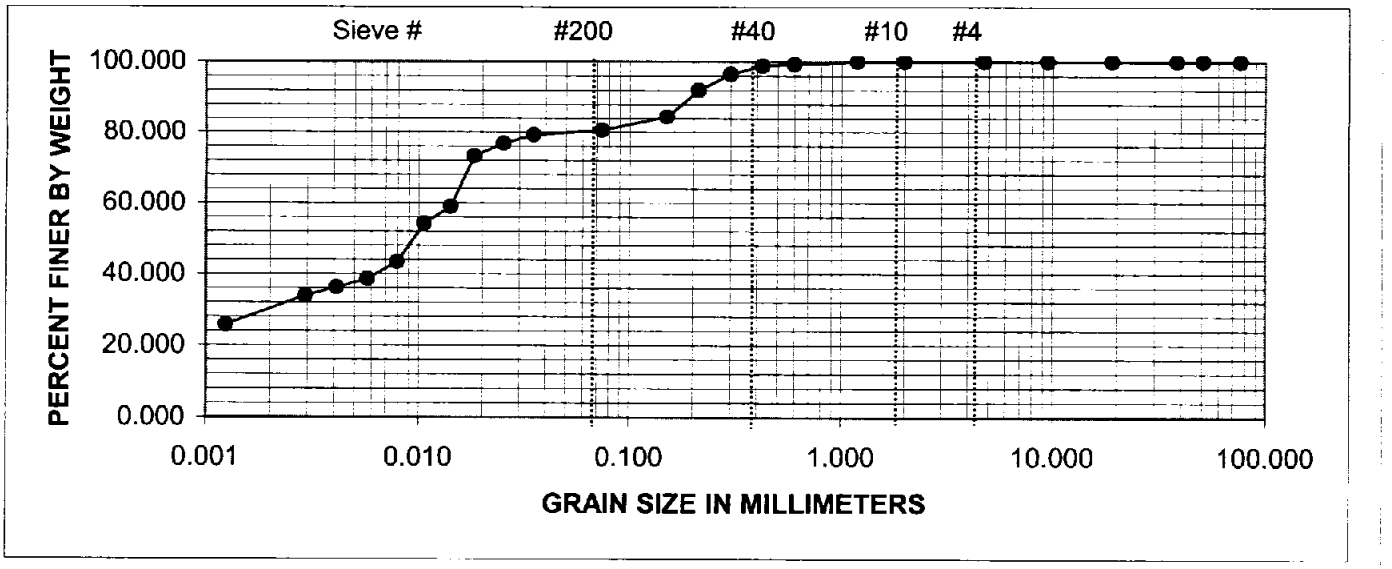
Washed through #200 Sieve: 53.5

Gravel	0.0	
C - Sand	0.0	Total
M - Sand	1.2	% Sand
F - Sand	18.3	19.5
Fines	80.5	

Sieve Analysis

Classification		U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel		3"					76.200	100.0
		2"					50.800	100.0
		1.5"					38.100	100.0
		3/4"					19.000	100.0
		3/8"					9.500	100.0
		#4					4.760	100.0
C	Sand	#10					2.000	100.0
		#16	0.00		0.00	0.00	1.190	100.0
M		#30	0.50		0.50	0.50	0.600	99.3
		#40	0.30		0.30	0.80	0.425	98.8
		#50	1.50		1.50	2.30	0.300	96.6
F		#70	3.00		3.00	5.30	0.212	92.1
		#100	5.10		5.10	10.40	0.150	84.4
		#200	2.60		2.60	13.00	0.074	80.5
Silt/Clay		Pan	0.10		0.10	13.10		

Total Sieved	13.10
Washed Wt.	53.70
Total Wt.	66.80



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 09-19-07
Calc. by MM Date 09-24-07
Chk'd. by ARJ Date 09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA C-2
Test Pit No.
Sample No. 290-310 TOP

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

Other -

% Passing No. 200 Sieve = 80.54

Evaporating Dish No. 93-12
Wt. of Dish + Dry Soil = 224.60
Wt. of Dish = 171.10
Wt. of Dry Soil used in Hydrometer Test = 53.50

Sample Description

Specific Gravity of Soil = 2.70
Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No. 16194
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
09-19-07	09:16	1	32.0	32.50	23.5	-1.149	33.15	0.0351	79.3
09-19-07	09:17	2	31.0	31.50	23.5	-1.149	32.15	0.0253	76.9
09-19-07	09:19	4	29.5	30.00	23.5	-1.149	30.65	0.0183	73.3
09-19-07	09:23	8	23.5	24.00	23.5	-1.149	24.65	0.0142	58.9
09-19-07	09:30	15	21.5	22.00	23.5	-1.149	22.65	0.0107	54.2
09-19-07	09:45	30	17.0	17.50	23.5	-1.149	18.15	0.0080	43.4
09-19-07	10:15	60	15.0	15.50	23.5	-1.149	16.15	0.0058	38.6
09-19-07	11:15	120	14.0	14.50	23.5	-1.149	15.15	0.0041	36.2
09-19-07	13:15	240	13.0	13.50	23.5	-1.149	14.15	0.0029	33.8
09-20-07	09:16	1440	9.5	10.00	24.0	-1.239	10.74	0.0012	25.7

ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	09-19-07
Calc. by	MM	Date	09-25-07
Chk'd by	ARJ	Date	09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA C-2
Test Pit No.
Sample No. 290-310 BOT

Weight	Total Sample	Retained on #200 sieve
Tare No.	N-6	N-6
Dry + Tare	191.7	168.3
Tare	106.65	106.65
Sample Dry	85.05	61.65

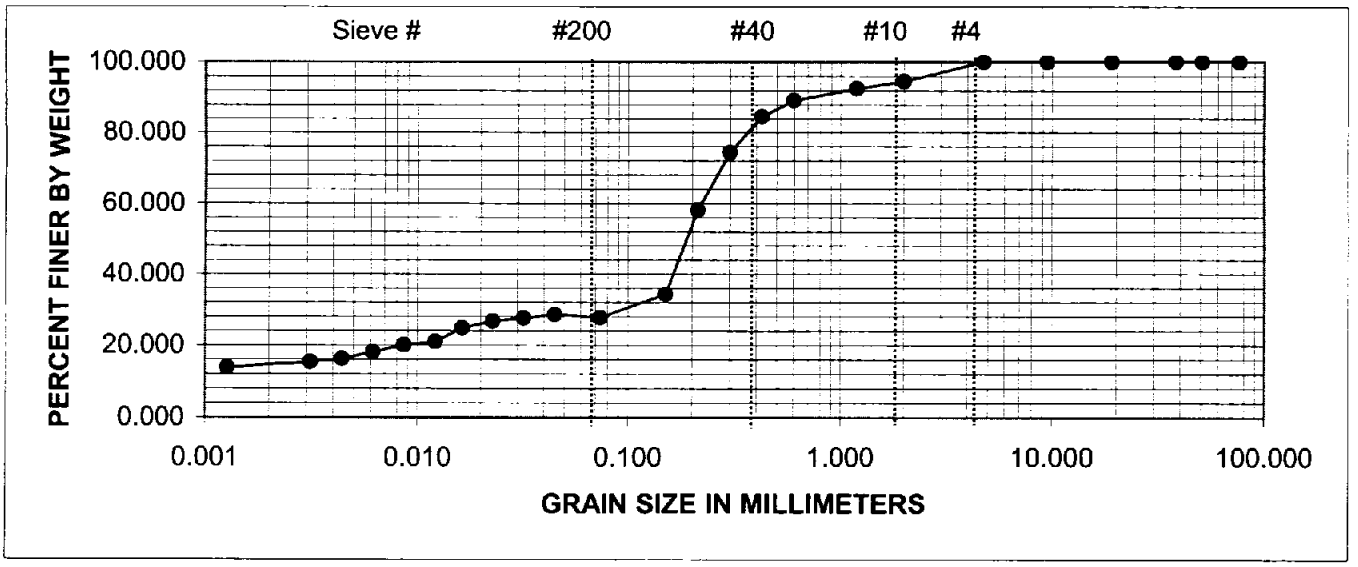
Washed through #200 Sieve: 23.4

Gravel	0.0	
C - Sand	5.4	Total
M - Sand	10.0	% Sand
F - Sand	56.9	72.3
Fines	27.7	

Sieve Analysis

Classification	U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel	3"					76.200	100.0
	2"					50.800	100.0
	1.5"					38.100	100.0
	3/4"					19.000	100.0
	3/8"					9.500	100.0
	#4	0.00		0.00	0.00	4.760	100.0
C	#10	4.60		4.60	4.60	2.000	94.6
M	#16	1.70		1.70	6.30	1.190	92.6
	#30	2.90		2.90	9.20	0.600	89.2
Sand	#40	3.90		3.90	13.10	0.425	84.6
F	#50	8.70		8.70	21.80	0.300	74.4
	#70	13.80		13.80	35.60	0.212	58.1
	#100	20.30		20.30	55.90	0.150	34.3
	#200	5.60		5.60	61.50	0.074	27.7
Silt/Clay	Pan	0.10		0.10	61.60		

Total Sieved	61.60
Washed Wt.	23.45
Total Wt.	85.05



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 09-19-07
Calc. by MM Date 09-25-07
Chk'd. by ARJ Date 09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA C-2
Test Pit No.
Sample No. 290-310 BOT

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

% Passing No. 200 Sieve = 27.69

Evaporating Dish No. 63
Wt. of Dish + Dry Soil = 220.80
Wt. of Dish = 197.40
Wt. of Dry Soil used in Hydrometer Test = 23.40

Other -

Sample Description

Specific Gravity of Soil = 2.70
Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No. 16194
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
09-20-07	09:06	1	14.0	14.50	23.60	-1.167	15.17	0.0451	
09-20-07	09:07	2	13.5	14.00	23.60	-1.167	14.67	0.0321	27.6
09-20-07	09:09	4	13.0	13.50	23.60	-1.167	14.17	0.0228	26.6
09-20-07	09:11	8	12.0	12.50	23.60	-1.167	13.17	0.0163	24.7
09-20-07	09:20	15	10.0	10.50	23.50	-1.149	11.15	0.0122	21.0
09-20-07	09:35	30	9.5	10.00	23.50	-1.149	10.65	0.0086	20.0
09-20-07	10:05	60	8.5	9.00	23.50	-1.149	9.65	0.0062	18.1
09-20-07	11:05	120	7.5	8.00	23.50	-1.149	8.65	0.0044	16.3
09-20-07	13:05	240	7.0	7.50	23.50	-1.149	8.15	0.0031	15.3
09-21-07	09:06	1440	6.0	6.50	24.50	-1.330	7.33	0.0013	13.8

ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	09-19-07
Calc. by	MM	Date	09-24-07
Chk'd by	ARJ	Date	09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA E-1
Test Pit No.
Sample No. 300-320 TOP

Weight	Total Sample	Retained on #200 sieve
Tare No.	D-20	D-20
Dry + Tare	134.1	88.4
Tare	81.8	81.8
Sample Dry	52.3	6.6

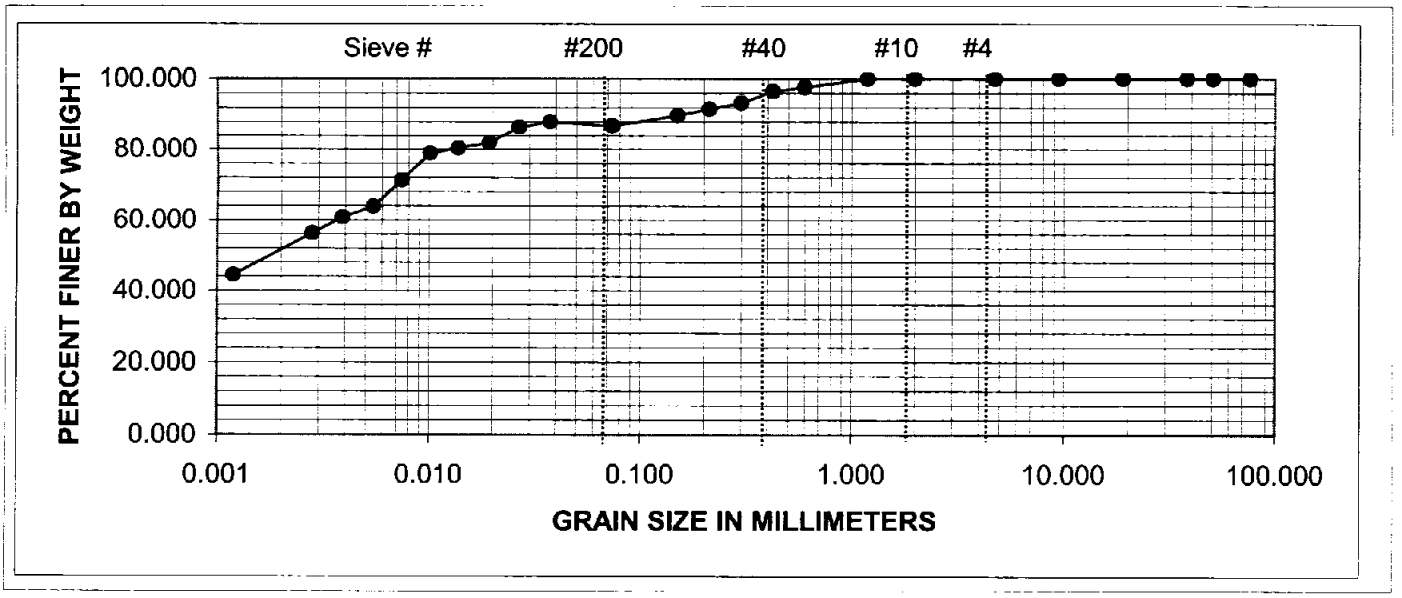
Washed through #200 Sieve
45.7

Gravel	0.0	
C - Sand	0.0	Total
M - Sand	3.4	% Sand
F - Sand	9.8	13.2
Fines	86.8	

Sieve Analysis

Classification		U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel		3"					76.200	100.0
		2"					50.800	100.0
		1.5"					38.100	100.0
		3/4"					19.000	100.0
		3/8"					9.500	100.0
		#4					4.760	100.0
C	Sand	#10					2.000	100.0
M		#16	0.00		0.00	0.00	1.190	100.0
		#30	1.20		1.20	1.20	0.600	97.7
		#40	0.60		0.60	1.80	0.425	96.6
F		#50	1.70		1.70	3.50	0.300	93.3
		#70	0.90		0.90	4.40	0.212	91.6
		#100	0.90		0.90	5.30	0.150	89.9
		#200	1.60		1.60	6.90	0.074	86.8
Silt/Clay		Pan	0.20		0.20	7.10		

Total Sieved	7.10
Washed Wt.	45.20
Total Wt.	52.30



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 09-19-07
Calc. by MM Date 09-24-07
Chk'd. by ARJ Date 09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA E-1
Test Pit No.
Sample No. 300-320 TOP

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

Other -

% Passing No. 200 Sieve = 86.81

Evaporating Dish No. 211-4
Wt. of Dish + Dry Soil = 485.20
Wt. of Dish = 439.50
Wt. of Dry Soil used in Hydrometer Test = 45.70

Sample Description

Specific Gravity of Soil = 2.70
Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No. 16194
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
09-19-07	09:31	1	28.0	28.50	23.50	-1.149	29.15	0.0376	
09-19-07	09:32	2	27.5	28.00	23.50	-1.149	28.65	0.0268	86.4
09-19-07	09:34	4	26.0	26.50	23.50	-1.149	27.15	0.0194	81.9
09-19-07	09:38	8	25.5	26.00	23.50	-1.149	26.65	0.0138	80.4
09-19-07	09:45	15	25.0	25.50	23.50	-1.149	26.15	0.0102	78.9
09-19-07	10:00	30	22.5	23.00	23.50	-1.149	23.65	0.0074	71.3
09-19-07	10:30	60	20.0	20.50	23.50	-1.149	21.15	0.0054	63.8
09-19-07	11:30	120	19.0	19.50	23.50	-1.149	20.15	0.0039	60.8
09-19-07	13:30	240	17.5	18.00	23.50	-1.149	18.65	0.0028	56.3
09-24-07	09:31	1440	13.5	14.00	24.00	-1.239	14.74	0.0012	44.5

ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	09-19-07
Calc. by	MM	Date	09-25-07
Chk'd by	ARJ	Date	09-27-07

Project: DUNDALK MARINE TERMINAL
Location:

Boring No. SBA E-1
Test Pit No.
Sample No. 300-320 BOT

Weight	Total Sample	Retained on #200 sieve
Tare No.	M-11	M-11
Dry + Tare	307.6	264.6
Tare	112.9	112.9
Sample Dry	194.7	151.7

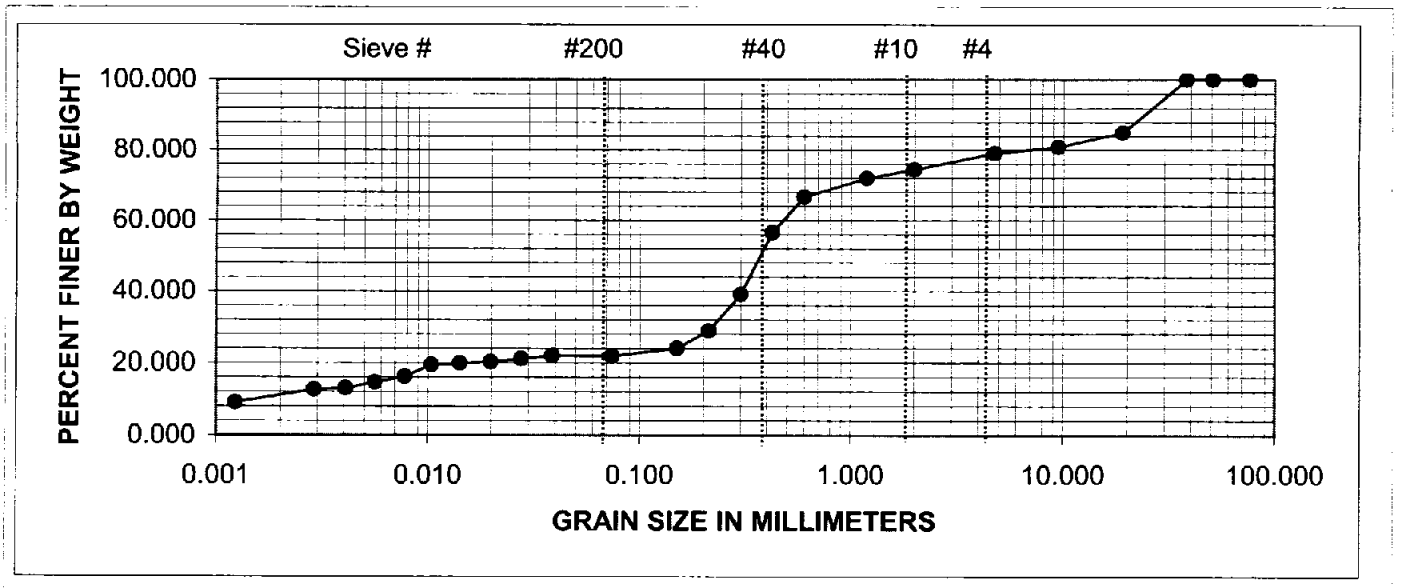
Washed through #200 Sieve: 43

Gravel	20.9	
C - Sand	4.7	Total
M - Sand	17.9	% Sand
F - Sand	34.7	57.3
Fines	21.8	

Sieve Analysis

Classification		U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel		3"					76.200	100.0
		2"					50.800	100.0
		1.5"	0.00		0.00	0.00	38.100	100.0
		3/4"	29.40		29.40	29.40	19.000	84.9
		3/8"	7.90		7.90	37.30	9.500	80.8
		#4	3.40		3.40	40.70	4.760	79.1
C	Sand	#10	9.10		9.10	49.80	2.000	74.4
M		#16	4.90		4.90	54.70	1.190	71.9
		#30	10.40		10.40	65.10	0.600	66.6
		#40	19.60		19.60	84.70	0.425	56.5
F		#50	33.90		33.90	118.60	0.300	39.1
		#70	19.90		19.90	138.50	0.212	28.9
		#100	9.50		9.50	148.00	0.150	24.0
		#200	4.20		4.20	152.20	0.074	21.8
Silt/Clay		Pan	0.00		0.00	152.20		

Total Sieved	152.20
Washed Wt.	42.50
Total Wt.	194.70



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 09-19-07
Calc. by MM Date 09-25-07
Chk'd. by ARJ Date 09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA E-1
Test Pit No.
Sample No. 300-320 BOT

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

Other -

% Passing No. 200 Sieve = 21.83

Evaporating Dish No. SC-81
Wt. of Dish + Dry Soil = 217.60
Wt. of Dish = 174.60
Wt. of Dry Soil used in Hydrometer Test = 43.00

Sample Description

Specific Gravity of Soil = 2.70
Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No. 16194
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
09-19-07	09:26	1	26.0	26.50	23.50	-1.149	27.15	0.0388	
09-19-07	09:27	2	25.0	25.50	23.50	-1.149	26.15	0.0278	21.1
09-19-07	09:29	4	24.0	24.50	23.50	-1.149	25.15	0.0199	20.3
09-19-07	09:33	8	23.5	24.00	23.50	-1.149	24.65	0.0142	19.9
09-19-07	09:40	15	23.0	23.50	23.50	-1.149	24.15	0.0104	19.5
09-19-07	09:55	30	19.0	19.50	23.50	-1.149	20.15	0.0078	16.2
09-19-07	10:25	60	17.0	17.50	23.50	-1.149	18.15	0.0056	14.6
09-19-07	11:25	120	15.0	15.50	23.50	-1.149	16.15	0.0041	13.0
09-19-07	13:25	240	14.5	15.00	23.50	-1.149	15.65	0.0029	12.6
09-20-07	09:26	1440	10.0	10.50	24.00	-1.239	11.24	0.0012	9.1

ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	10-12-07
Calc. by	MM	Date	10-24-07
Chk'd by	ARJ	Date	10-26-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA D-1
Test Pit No.
Sample No. 300-320

Weight	Total Sample	Retained on #200 sieve
Tare No.	93-L2	93-L2
Dry + Tare	273.5	219.5
Tare	171.1	171.1
Sample Dry	102.5	48.4

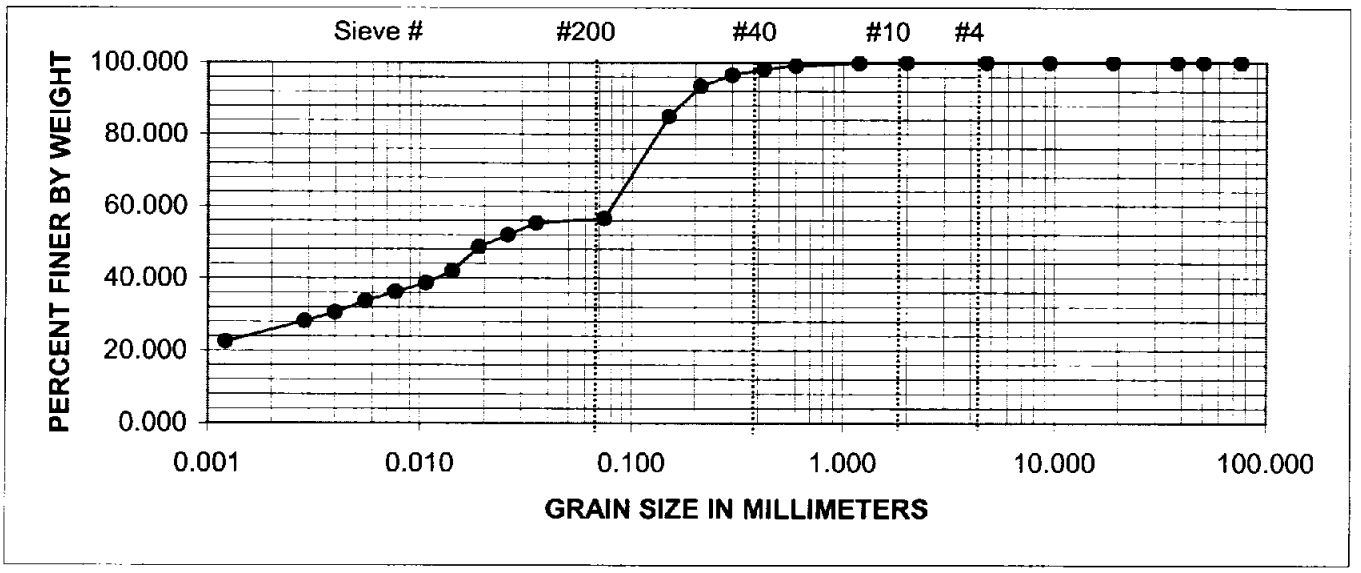
Washed through #200 Sieve 54.1

Gravel	0.0	
C - Sand	0.0	Total
M - Sand	1.8	% Sand
F - Sand	41.8	43.5
Fines	56.5	

Sieve Analysis

Classification		U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel		3"					76.200	100.0
		2"					50.800	100.0
		1.5"					38.100	100.0
		3/4"					19.000	100.0
		3/8"					9.500	100.0
		#4					4.760	100.0
C	Sand	#10	0.00		0.00	0.00	2.000	100.0
M		#16	0.20		0.20	0.20	1.190	99.8
		#30	0.70		0.70	0.90	0.600	99.1
		#40	0.90		0.90	1.80	0.425	98.2
		#50	1.80		1.80	3.60	0.300	96.5
F		#70	3.20		3.20	6.80	0.212	93.4
		#100	8.60		8.60	15.40	0.150	85.0
		#200	29.20		29.20	44.60	0.074	56.5
Silt/Clay		Pan	3.10		3.10	47.70		

Total Sieved	47.70
Washed Wt.	54.80
Total Wt.	102.50



ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 10-12-07
Calc. by MM Date 10-24-07
Chk'd. by ARJ Date 10-26-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA D-1
Test Pit No.
Sample No. 300-320

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

Other -

% Passing No. 200 Sieve = 56.49

Evaporating Dish No. H-3
Wt. of Dish + Dry Soil = 511.00
Wt. of Dish = 456.90
Wt. of Dry Soil used in Hydrometer Test = 54.10

Sample Description

Specific Gravity of Soil = 2.70
X Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No. 87469
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
10-12-07	09:25	1	33.0	33.50	21.5	-0.337	33.34	0.0353	55.3
10-12-07	09:26	2	31.0	31.50	21.5	-0.337	31.34	0.0259	52.0
10-12-07	09:29	4	29.0	29.50	21.5	-0.337	29.34	0.0189	48.6
10-12-07	09:33	8	25.0	25.50	21.5	-0.337	25.34	0.0142	42.0
10-12-07	09:40	15	23.0	23.50	21.5	-0.337	23.34	0.0107	38.7
10-12-07	09:55	30	21.5	22.00	21.5	-0.337	21.84	0.0077	36.2
10-12-07	10:25	60	20.0	20.50	21.5	-0.337	20.34	0.0056	33.7
10-12-07	11:25	120	18.0	18.50	22.0	-0.423	18.42	0.0040	30.6
10-12-07	13:25	240	16.5	17.00	22.5	-0.509	17.01	0.0029	28.2
10-13-07	09:25	1440	13.0	13.50	22.8	-0.560	13.56	0.0012	22.5

ALL TEST METHODS / RESULTS CONFORM TO ASTM STANDARD D 422:
"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS
GRAIN SIZE ANALYSIS

File No. 10587

Perf by	ZY	Date	09-19-07
Calc. by	MM	Date	09-24-07
Chk'd by	ARJ	Date	09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA F-1
Test Pit No.
Sample No. 300-320

Weight	Total Sample	Retained on #200 sieve
Tare No.	035	035
Dry + Tare	138.7	90.7
Tare	81.3	81.3
Sample Dry	57.4	9.4

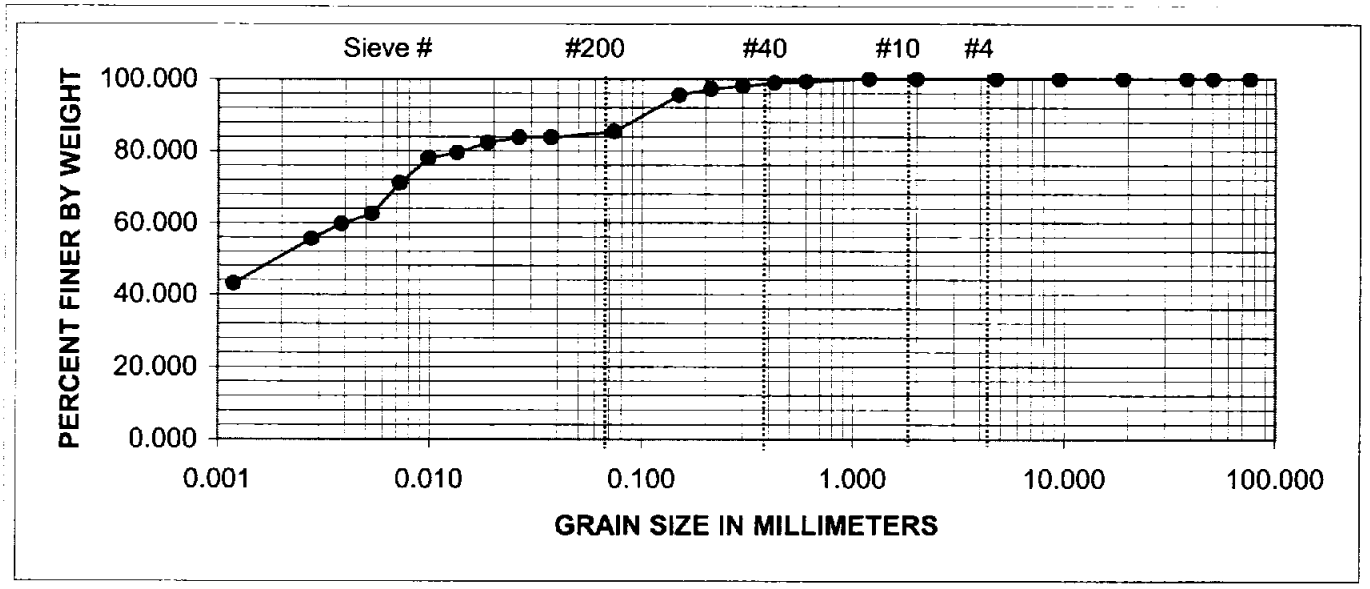
Washed through #200 Sieve
48

Gravel	0.0	
C - Sand	0.0	Total
M - Sand	1.0	% Sand
F - Sand	13.6	14.6
Fines	85.4	

Sieve Analysis

Classification		U.S. Std. Sieve No.	Wt. Retained + Tare	Tare Wt.	Wt. Retained	Σ Wt. Retained	Sieve Size mm	Percent Passing
Gravel		3"					76.200	100.0
		2"					50.800	100.0
		1.5"					38.100	100.0
		3/4"					19.000	100.0
		3/8"					9.500	100.0
		#4					4.760	100.0
C	Sand	#10					2.000	100.0
M		#16			0.00	0.00	1.190	100.0
		#30			0.40	0.40	0.600	99.3
		#40			0.20	0.60	0.425	99.0
F		#50			0.50	1.10	0.300	98.1
		#70			0.50	1.60	0.212	97.2
		#100			1.00	2.60	0.150	95.5
		#200			5.80	8.40	0.074	85.4
Silt/Clay		Pan			0.60	9.00		

Total Sieved	9.00
Washed Wt.	48.40
Total Wt.	57.40



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MRCE Form GR-1

MUESER RUTLEDGE CONSULTING ENGINEERS

File No. 10587

HYDROMETER TEST

Perf. By ZY Date 09-19-07
Calc. by MM Date 09-24-07
Chk'd. by ARJ Date 09-27-07

Project DUNDALK MARINE TERMINAL
Location

Boring No. SBA F-1
Test Pit No.
Sample No. 300-320

Hydrometer Analysis Only

X Combined Analysis - Sample washed on No. 200 Sieve for hydrometer testing + No. 200 Sieve portion dried and sieved

% Passing No. 200 Sieve = 85.37

Evaporating Dish No.
Wt. of Dish + Dry Soil =
Wt. of Dish =
Wt. of Dry Soil used in Hydrometer Test = 48.00

Other -

Sample Description

Specific Gravity of Soil = 2.70
Assumed Measured

Dispersing Agent: 0.5 gms. of $(NaPO_3)_6$

Correction for meniscus = 0.5

Hydrometer No.
Hydrometer Type 151H

Date	Clock Time	Δt Min.	Hydrometer Reading R'H	R1H Corr. For Meniscus RH = R'H+Cm	Temp °C	Composite Correction	RH Corr. RHC	Grain Diameter mm	% Finer
09-19-07	09:36	1	28.5	29.00	23.50	-1.149	29.65	0.0373	83.7
09-19-07	09:37	2	28.5	29.00	23.50	-1.149	29.65	0.0264	83.7
09-19-07	09:39	4	28.0	28.50	23.50	-1.149	29.15	0.0188	82.3
09-19-07	09:43	8	27.0	27.50	23.50	-1.149	28.15	0.0135	79.5
09-19-07	09:50	15	26.5	27.00	23.50	-1.149	27.65	0.0099	78.1
09-19-07	10:05	30	24.0	24.50	23.50	-1.149	25.15	0.0073	71.0
09-19-07	10:35	60	21.0	21.50	23.50	-1.149	22.15	0.0054	62.6
09-19-07	11:35	120	20.0	20.50	23.50	-1.149	21.15	0.0038	59.7
09-19-07	13:35	240	18.5	19.00	23.50	-1.149	19.65	0.0028	55.5
09-20-07	09:36	1440	14.0	14.50	24.00	-1.239	15.24	0.0012	43.0

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"STANDARD TEST METHOD FOR PARTICLE-SIZE ANALYSIS OF SOILS"

MRCE Form GR-1