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APPENDIX C

(Revised April 27, 2001)

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 2000C028
WHITE TANKS FRS#3
INTERIM DAM SAFETY IMPROVEMENTS

PCN 470-04-30

Registered Professional Engineer (Civil)
CERTIFICATE NO.
22867
ALEXANDER W.
GOURLAY
Date Signed 4-27-01
ARIZONA, U.S.A.

A470.957

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

CONTRACT 2000C028

WHITE TANKS FRS#3
INTERIM DAM SAFETY IMPROVEMENTS

PCN 470-04-30

APPENIX C (REVISED APRIL 2001

Note: This document amends the previous Appendix C submittal presented in the Design Report for the Interim Dam Safety Improvements White Tanks FRS#3 dated February 7, 2001.

AMENDED

APPENDIX C

BORING LOGS AND LABORATORY DATA

Appendix C Contents

Boring Logs

- 57+30
- 58+00
- 59+00
- DMB-4
- DMB-6
- DMB-7
- DMB-9
- NOTE: Logs of Test Pits A, B and C not available.

Summary Table C-1 – Summary of Relevant Laboratory Test Results

Grain-Size Distributions

- Boring 57+30, 2 samples
- Boring 58+00, 1 sample
- Boring 59+00, 1 sample
- Crack and Filter Investigation Test Pits, 3 samples (plot only)
- Existing Filter Investigation Test Pit, 2 samples (plot only)
- Test Pits A, B, and C (spillway)

BORING LOG

LOCATION OF BORING: STA. 57 + 30 WHITE TANKS DAM	JOB NO. 15448-007-058	CLIENT FCDMC	LOCATION BUCKEYE, AZ

DRILLING METHOD:	INTERVAL:	DRILLER:	BORING NO.
CME 75 WITH 3 3/4-INCH HOLLOW STEM AUGER	0'-31.5'	ATL	57 + 30
			SHEET 1 OF 1

SAMPLING METHOD:	INTERVAL:
STANDARD PENETRATION TEST WITH SPLIT SPOON (SPT)	5-FOOT INTERVALS

LOGGED BY: BKW	WATER LEVEL	NA		DRILLING START TIME	DRILLING FINISH TIME
CHECKED BY: SGN	TIME				
	DATE			DATE 11/1/99	DATE 11/1/99
DATUM: APPROX. ELEVATION: feet	CASING DEPTH				

SURFACE CONDITIONS:

DEPTH IN FEET	SAMPLER TYPE	SAMPLE NO	SAMPLE DEPTH (ft)	LABORATORY TESTS: % PASSING #200 SIEVE	LIQUID LIMIT %	PLASTICITY INDEX %	WATER CONTENT %	DRY DENS (pcf)	BLOWS/ft	GRAPHIC LOG	USCS	DESCRIPTION
											GP	SANDY GRAVEL:
5	SPT	1	5.0						9			2 bag sample from 5 to 10 feet
10	SPT	2	10.0						7			1 bag sample from 10 to 15 feet
15	SPT	3	15.0						9			Less sand, more cobbles and rock at depth (from bag samples)
												1 bag sample from 15 to 20 feet
20	SPT	4	20.0						13			
												1 bag sample from 20 to 25 feet
25	SPT	5	25.0						15			1 bag sample from 25 to 30 feet
30	SPT	6	30.0						18		ML	Through dam fill into native ground silt, brown, dry
												Boring terminated at 31.5' below ground surface.
35												

BLGV022 5/2/00

DAMES & MOORE

BORING LOG

LOCATION OF BORING:	JOB NO.	CLIENT FCDMC	LOCATION BUCKEYE, AZ
STA. 58 + 00 WHITE TANKS DAM	15448-007-058		

DRILLING METHOD:	INTERVAL:	DRILLER:	BORING NO.
CME 75 WITH 3 3/4-INCH HOLLOW STEM AUGER	0'-31.5'	ATL	58 + 00
			SHEET 1 OF 1

SAMPLING METHOD:	INTERVAL:
STANDARD PENETRATIN TEST WITH SPLIT SPOON (SPT)	5-FOOT INTERVALS

DRILLING	START	FINISH
TIME		
DATE	11/1/99	11/1/99

LOGGED BY: BKW	WATER LEVEL	NA	
CHECKED BY: SGN	TIME		
	DATE		
	CASING DEPTH		

DATUM: APPROX. ELEVATION: feet

SURFACE CONDITIONS:

DEPTH IN FEET	SAMPLER TYPE	SAMPLE NO	SAMPLE DEPTH (ft)	% PASSING #200 SIEVE	LIQUID LIMIT %	PLASTICITY INDEX %	WATER CONTENT %	DRY DENS (pcf)	BLOWS/ft	GRAPHIC LOG	USCS	DESCRIPTION
											GP	SANDY GRAVEL: 4" max round 1 bag sample 0-5 feet
5	SPT	1	5.0						6			No recovery 1 bag sample 5-10 feet
10	SPT	2	10.0						10			No recovery
15	SPT	3	15.0						17			No recovery
20	SPT	4	20.0						12			No recovery
25	SPT	5	25.0						19			No recovery
30	SPT	6	30.0						50/6"			No recovery
												Boring terminated at 31.5' below ground surface.
35												

BLGV022 5/2/00

DAMES & MOORE

BORING LOG

LOCATION OF BORING.	JOB NO.	CLIENT FCDMC	LOCATION BUCKEYE AZ
STA 59+00 WHITE TANKS DAM	15448-007-058		

DRILLING METHOD:	INTERVAL:	DRILLER:	BORING NO.
CME 75 WITH 3 3/4-INCH HOLLOW STEM AUGER	0'-31.5'	ATL	59+00
			SHEET 1 OF 1

SAMPLING METHOD:	INTERVAL:
STANDARD PENETRATIN TEST WITH SPLIT SPOON (SPT)	5-FOOT INTERVALS

				DRILLING START	DRILLING FINISH
LOGGED BY: BKW	WATER LEVEL	NA		TIME	TIME
CHECKED BY: SGN	TIME				
	DATE			DATE 11/1/99	DATE 11/1/99
DATUM: APPROX. ELEVATION: feet	CASING DEPTH				

SURFACE CONDITIONS:

DEPTH IN FEET	SAMPLER TYPE	SAMPLE NO.	SAMPLE DEPTH (ft)	% PASSING #200 SIEVE	LIQUID LIMIT %	PLASTICITY INDEX %	WATER CONTENT %	DRY DENS (pcf)	BLOWS/ft	GRAPHIC LOG	USCS	DESCRIPTION
											GP	SANDY GRAVEL: 3" max rounded 1 bag sample 0-5 feet
5	SPT	1	5.0						5			No recovery
10	SPT	2	10.0						5			No recovery
15	SPT	3	15.0						11			No recovery
20	SPT	4	20.0						15			No recovery 1 bag sample 20-25 feet
25	SPT	5	25.0						12			No recovery
30	SPT	6	30.0						50/6"			No recovery
												Boring terminated at 31.5' below ground surface.
35												

BLGV022 5/2/00

DAMES & MOORE

BORING LOG

LOCATION OF BORING:	JOB NO.	CLIENT	LOCATION
WHITE TANKS DAM	15448-005-022	MARICOPA COUNTY FLOOD CONTROL DISTRICT	WHITE TANKS

DRILLING METHOD:	INTERVAL:	DRILLER:	BORING NO.
MOBILE B-57 WITH 6-INCH HOLLOW STEM AUGER	0'-36'	ATL, INC.	DMB-4
			SHEET 1 OF 1

SAMPLING METHOD:	INTERVAL:
STANDARD PENETRATION TEST WITH SPLIT SPOON (SPT) AND DAMES & MOORE TYPE (U) WITH BRASS SLEEVES AND RINGS	5-FOOT INTERVALS

			DRILLING START	DRILLING FINISH
LOGGED BY: PLG	WATER LEVEL	NA	TIME 0929	TIME 1145
CHECKED BY: PLG	TIME			
	DATE		DATE 11/3/98	DATE 11/3/98
DATUM: ELEVATION: feet	CASING DEPTH			

SURFACE CONDITIONS: GRADED ROADWAY SURFACE ON TOP OF DAM

DEPTH IN FEET	SAMPLER TYPE	SAMPLE NO.	SAMPLE DEPTH (ft)	% PASSING #200 SIEVE	LIQUID LIMIT %	PLASTICITY INDEX %	WATER CONTENT %	DRY DENS. (pcf)	BLOWS/ft	GRAPHIC LOG	USCS	DESCRIPTION
											CL ML	SANDY SILTY CLAY WITH GRAVEL: Sand is predominantly fine to medium graine, gravel is fine to coarse grained, dry, brown, hard
5	U	1.0	5.0	58	27	7	4.6	102.0	29 26			Same as above
10	SPT	2.0	10.0				4.0		48 50/4"			Same as above
15	U	3.0	15.0						40 43			Same as above, decreased in gravel content
20	SPT	4.0	20.0	55	23	8	3.1		50/4"		CL	SANDY LEAN CLAY: Sand is fine to coarse grained, dry, brown, hard
25												No recovery
30	U	5.0	30.0						45 48			Same as above, some signs of light cementaion
35	SPT	6.0	35.0				1.5		40 50/5"		SM	SILTY SAND WITH GRAVEL: Sand is fine to coarse, gravel is fine to coarse, dry, light brown, very dense, some signs of light cementation

Boring terminated at 36' below ground surface.

8LGV022 1/22/99

DAMES & MOORE

BORING LOG

LOCATION OF BORING:	JOB NO.	CLIENT	LOCATION
WHITE TANKS DAM	15448-005-022	MARICOPA COUNTY FLOOD CONTROL DISTRICT	WHITE TANKS

DRILLING METHOD:	INTERVAL:	DRILLER:	BORING NO.
MOBILE B-57 WITH 6-INCH HOLLOW STEM AUGER	0'-36.5'	ATL, INC.	DMB-6
			SHEET 1 OF 1

SAMPLING METHOD:	INTERVAL:
STANDARD PENETRATION TEST WITH SPLIT SPOON (SPT) AND DAMES & MOORE TYPE (U) WITH BRASS SLEEVES AND RINGS	5-FOOT INTERVALS

				DRILLING START	DRILLING FINISH
LOGGED BY: PLG	WATER LEVEL	NA		TIME 1103	TIME 1725
CHECKED BY: PLG	TIME				
	DATE			DATE 11/5/98	DATE 11/5/98
DATUM: ELEVATION: feet	CASING DEPTH				

SURFACE CONDITIONS: GRADED ROADWAY SURFACE ON TOP OF DAM

DEPTH IN FEET	SAMPLER TYPE	SAMPLE NO.	SAMPLE DEPTH (ft)	% PASSING #200 SIEVE	LIQUID LIMIT %	PLASTICITY INDEX %	WATER CONTENT %	DRY DENS. (pcf)	BLOWS/ft	USCS	DESCRIPTION
										CL	SANDY LEAN CLAY WITH GRAVEL: Sand is primarily fine to medium grained though a coarse fraction is present, gravel is fine to coarse, dry to slightly moist, brown, hard
5	U	1.0	5.0	39	32	9	3.0	121.7	20 28	SC	CLAYEY SAND WITH GRAVEL: Sand is fine to coarse grained, gravel is fine to coarse, dry to slightly moist, brown, very dense Small increase in gravel
10	U	2.0	10.0						45 48		Same as above
15	SPT	3.0	15.0				4.5		48 50/3"		Same as above
20	U	4.0	20.0				6.2	100.9	46 50/4"		Same as above, cemented light to moderate in layers and modules
25	SPT	5.0	25.0						8 9 8		Same as above, becomes medium dense, decreased cementaion
30	U	6.0	30.0	70	38	13	4.5	83.6	45 50/5"	CL	SANDY LEAN CLAY: Sand is predominantly fine grained, dry, light brown, hard, moderately well cemented
35	SPT	7.0	35.0						25 37 42	SM	SILTY SAND WITH GRAVEL: Sand is fine to coarse, gravel is fine to coarse and sub-angular, dry, light brown, very dense

Boring terminated at 36.5' below ground surface.

BLGV022 1/22/99

DAMES & MOORE

BORING LOG

LOCATION OF BORING: WHITE TANKS DAM	JOB NO. 15448-005-022	CLIENT MARICOPA COUNTY FLOOD CONTROL DISTRICT	LOCATION WHITE TANKS

DRILLING METHOD:	INTERVAL:	DRILLER:	BORING NO.
MOBILE B-57 WITH 6-INCH HOLLOW STEM AUGER	0'-14.5'	ATL, INC.	DMB-7
			SHEET 1 OF 1

SAMPLING METHOD:	INTERVAL:
STANDARD PENETRATION TEST WITH SPLIT SPOON (SPT) AND DAMES & MOORE TYPE (U) WITH BRASS SLEEVES AND RINGS	5-FOOT INTERVALS

			DRILLING START	DRILLING FINISH
LOGGED BY: PLG	WATER LEVEL	NA	TIME 1240	TIME 1305
CHECKED BY: PLG	TIME			
	DATE		DATE 11/5/98	DATE 11/5/98
DATUM: ELEVATION: feet	CASING DEPTH			

DEPTH IN FEET	SAMPLER TYPE	SAMPLE NO.	SAMPLE DEPTH (ft)	LABORATORY TESTS: % PASSING #200 SIEVE	LIQUID LIMIT %	PLASTICITY INDEX %	WATER CONTENT %	DRY DENS. (pcf)	BLOWS/ft	GRAPHIC LOG	USCS	DESCRIPTION
											CL	SANDY LEAN CLAY WITH GRAVEL: Sand is predominatly fine to medium with some coarse, gravel is fine to coarse grained, dry to slightly moist, brown, hard
5	SPT	1.0	5.0	56	37	17	6.9		18 28 49			Same as above, moderately cemented
10	U		10.0				9.3	121.4	34 40			Becomes slightly moist
15												Boring terminated at 14.5' below ground surface.
20												
25												
30												
35												

SURFACE CONDITIONS: GRADED ROADWAY SURFACE ON TOP OF DAM

BLGV022 1/22/99

DAMES & MOORE

BORING LOG

LOCATION OF BORING:	JOB NO.	CLIENT	LOCATION
WHITE TANKS DAM	15448-005-022	MARICOPA COUNTY FLOOD CONTROL DISTRICT	WHITE TANKS

DRILLING METHOD:	INTERVAL:	DRILLER:	BORING NO.
MOBILE B-57 WITH 6-INCH HOLLOW STEM AUGER	0'-35.83'	ATL, INC.	DMB-9
			SHEET 1 OF 1

SAMPLING METHOD:	INTERVAL:
STANDARD PENETRATION TEST WITH SPLIT SPOON AND DAMES & MOORE TYPE U WITH BRASS SLEEVES AND RINGS	5-FOOT INTERVALS

				DRILLING START	DRILLING FINISH
LOGGED BY: PLG	WATER LEVEL	NA		TIME 0722	TIME 0956
CHECKED BY: PLG	TIME				
	DATE			DATE 11/4/98	DATE 11/4/98
DATUM: ELEVATION: feet	CASING DEPTH				

SURFACE CONDITIONS: GRADED ROADWAY SURFACE ON TOP OF DAM

DEPTH IN FEET	SAMPLER TYPE	SAMPLE NO.	SAMPLE DEPTH (ft)	% PASSING #200 SIEVE	LIQUID LIMIT %	PLASTICITY INDEX %	WATER CONTENT %	DRY DENS. (pcf)	BLOWS/ft	USCS	DESCRIPTION
										CL	SANDY LEAN CLAY WITH GRAVEL: Sand is fine to coarse, gravel is fine to coarse, sub-rounded to sub-angular, dry to slightly moist, brown, hard, gravel up to 2" in diameter
5	U	1.0	5.0						26 50/4"		SANDY LEAN CLAY: Sand is fine to coarse, sub-rounded to sub-angular, slightly moist, brown, hard
10	SPT	2.0	10.0	56	28	9	6.0		33 50/4"		Same as above, some light to moderate cementation
15	U	3.0	15.0	44	24	6	2.2	111.3	22 23	SC SM	SILTY CLAYEY SAND: Sand is primarily fine to medium grained with some coarse sand and few fine gravels, dry, brown, very dense
20	SPT	4.0	20.0				5.8		40 50/4"		Same as above, decreased gravel content (less than 2%), sand is primarily fine grained, becomes dry to slightly moist
										SP SM	Base of Dam
											Gravel/cobbles
25											No recovery
											Gravel/cobbles
30	SPT	5.0	30.0	12		NP	0.9		17 38 41		POORLY GRADED SAND WITH SILT AND GRAVEL: Sand is fine to coarse predominantly fine grained, all components are sub-angular, dry, light brown, very dense, some possible signs of cementation though not evident from sample cohesion
											Gravel/cobbles
35	SPT	6.0	35.0				2.3		33 50/4"		Same as above
											Boring terminated at 35.83' below ground surface.

8LGV022 1/22/99

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APPENDIX C
Table C-1
Summary of Relevant Laboratory Test Results

DMB-4	31+00	1	5 - 6.5	Small Bag	CL-ML	20	27	7							100	99	97	94	88	83	79	68	57.8
DMB-4	31+00	4	20 - 21.5	Small Bag	CL	15	23	8							100	98	97	93	86	81	76	65	55.4
DMB-6	50+50	1	5 - 6.5	Sleeve	CL	21	32	9			100	87	87	83	82	79	74	67	60	55	51	44	38.6
DMB-6	50+50	6	30 - 31.5	Sleeve	CL	25	38	13								100	98	95	91	88	85	77	69.9
DMB-7	58+00	1	5 - 6.5	Small Bag	CL	20	37	17						100	98	97	94	88	81	76	72	64	56
DMB-9	73+50	2	10 - 11.5	Small Bag	CL	19	28	9						100	98	95	92	87	81	77	73	65	55.5
DMB-9	73+50	3	15 - 16.5	Sleeve	CL-ML	18	24	6					100	99	98	94	91	85	78	73	68	55	44.2
DMB-9	73+50	5	30 - 31.5	Small Bag	SM	NV	NV	NP				100	97	92	89	83	68	52	39	32	26	17	11.9
57+30	57+30	1	5 - 10	Bag	GP	NV	NV	NP	100	98	90	68	49	31	22	13	8	8	8	8	8	8	4.2
57+30	57+30	4	20 - 25	Bag	GP	NV	NV	NP	100	100	86	48	24	5	2	1	1	1	1	1	1	1	0.8
58+00	58+00	1	5 - 10	Bag	GP	NV	NV	NP	93	69	13	2	1	1	1	1	1	1	1	1	1	1	0.3
59+00	59+00	4	15 - 20	Bag	GP	NV	NV	NP	100	87	36	7	2	1	1	1	1	1	1	1	1	1	0.3
Test Pit A	Spillway	--	--	Bag	--	--	--	--							99	95	85	71	53	44	36	20	4
Test Pit B	Spillway	--	--	Bag	--	--	--	--								98	95	90	78	70	62	38	7
Test Pit C	Spillway	--	--	Bag	--	--	--	--			93	79	76		69	62	57	48	40	36	32	24	17

Note:

Results of the grain-size analyses on samples collected during the crack and filter investigation (5 samples) provided in graphical format only.

PARTICLE SIZE ANALYSIS

DAMES & MOORE GROUP

Project: White Tanks FRS #3 Project No.: 15448-005-022 Date: December 21, 1998

Client: Maricopa County Flood Control District

Stockpile/Windrow Sample

Location:

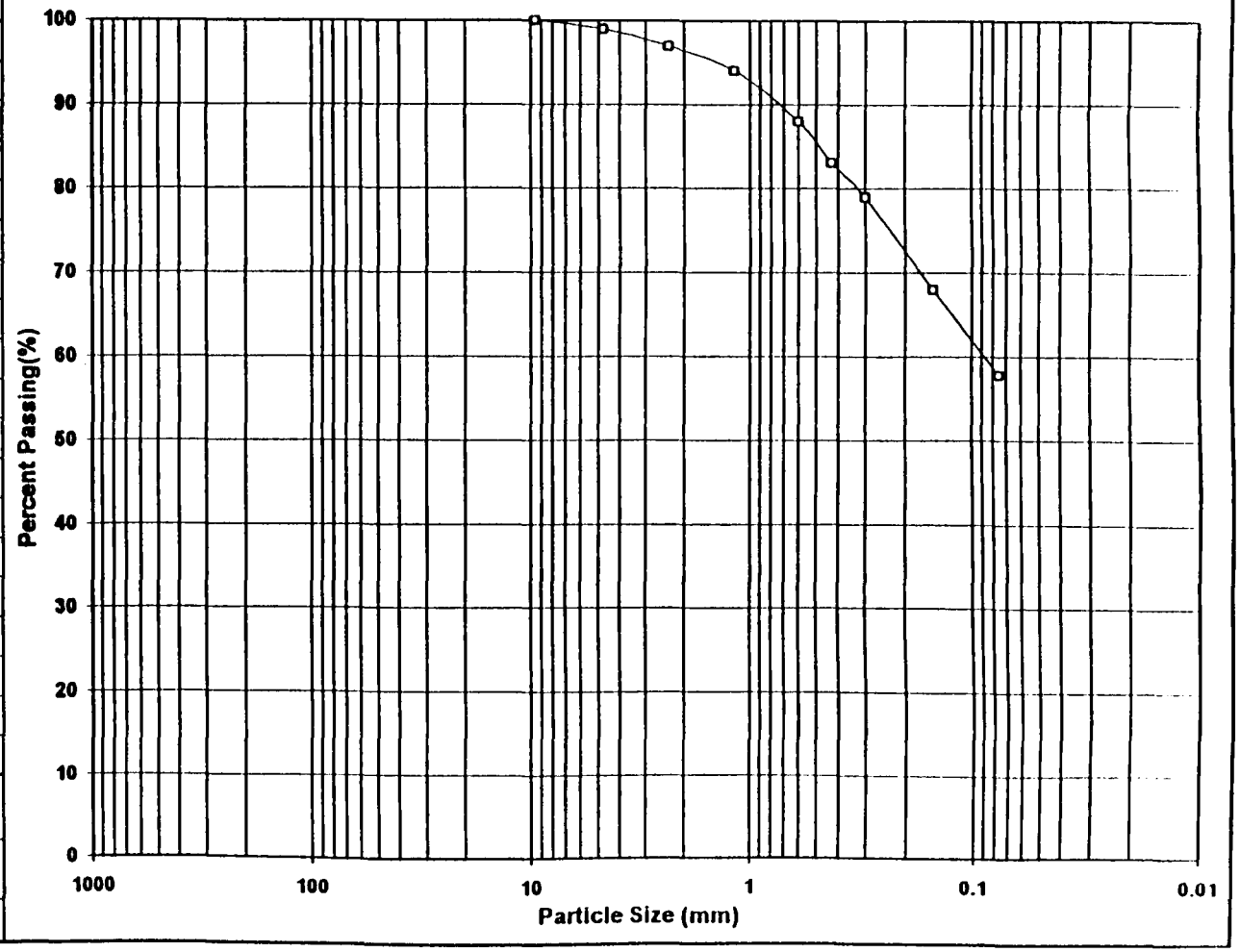
Drilled Sample:

Boring DMB-4 Sample # 1 Depth 5'-5.5'

Sieve US Std	Sieve Metric(mm)	Percent Passing	Specification
3"	75.0		
2.5"	62.5		
2"	50.0		
1.5"	37.5		
1.25"	31.3		
1"	25.0		
3/4"	19.0		
1/2"	12.5		
3/8"	9.5	100	
#4	4.75	99	
#8	2.36	97	
#10	2.0		
#16	1.18	94	
#30	0.6	88	
#40	0.43	83	
#50	0.3	79	
#100	0.15	68	
#200	0.075	57.8	

Plasticity Index 7

USCS Classification: CL-ML



PARTICLE SIZE ANALYSIS

DAMES & MOORE GROUP

Project: White Tanks FRS #3 Project No.: 15448-005-022 Date: December 21, 1998

Client: Maricopa County Flood Control District

Stockpile/Windrow Sample

Location:

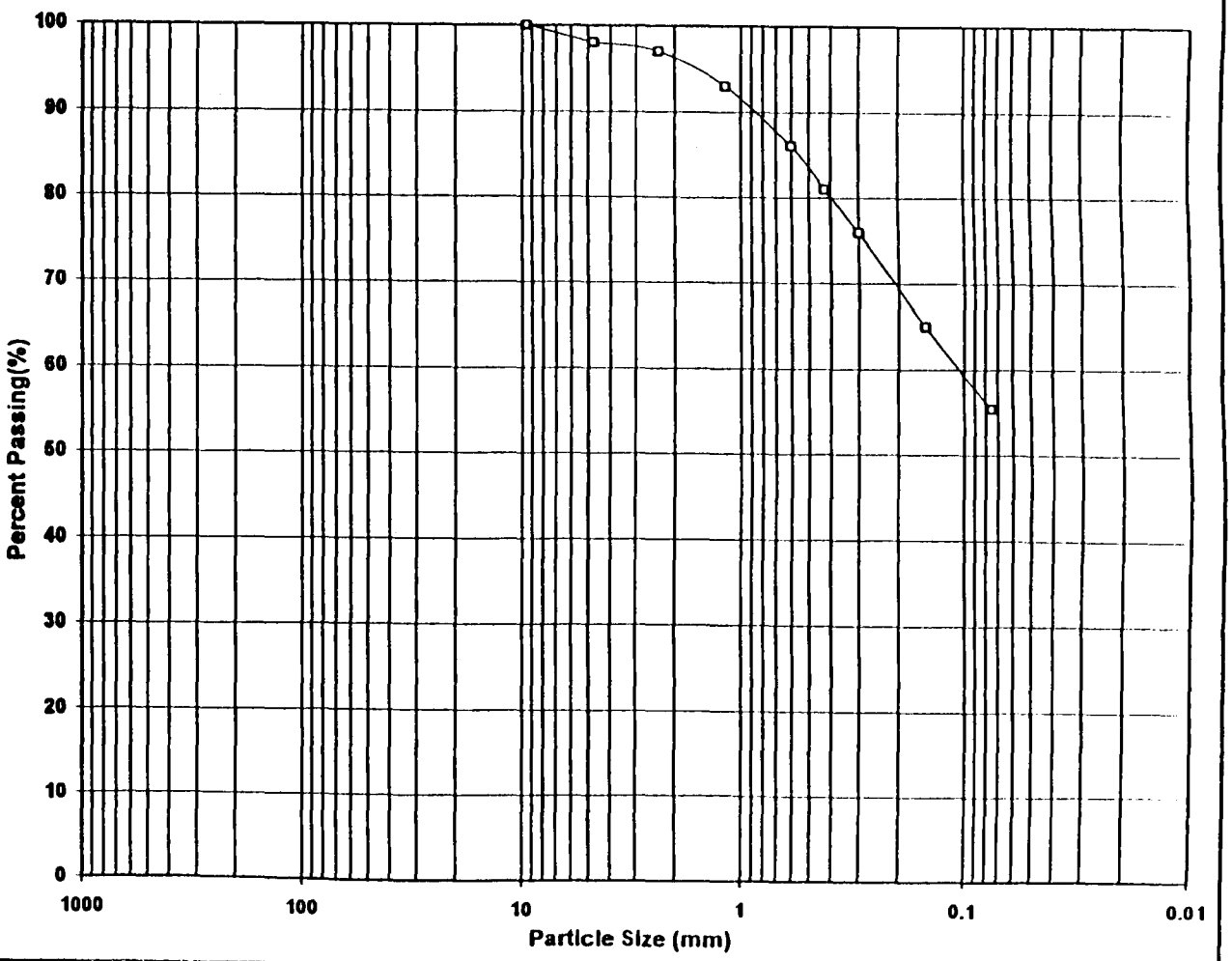
Drilled Sample:

Boring DMB-4 Sample # 4 Depth 20'

Sieve US Std	Sieve Metric(mm)	Percent Passing	Specification
3"	75.0		
2.5"	62.5		
2"	50.0		
1.5"	37.5		
1.25"	31.3		
1"	25.0		
3/4"	19.0		
1/2"	12.5		
3/8"	9.5	100	
#4	4.75	98	
#8	2.36	97	
#10	2.0		
#16	1.18	93	
#30	0.6	86	
#40	0.43	81	
#50	0.3	76	
#100	0.15	65	
#200	0.075	55.4	

Plasticity Index 8

USCS Classification: CL



PARTICLE SIZE ANALYSIS

DAMES & MOORE GROUP

Project: White Tanks FRS #3 Project No.: 15448-005-022 Date: December 21, 1998

Client: Maricopa County Flood Control District

Stockpile/Windrow Sample

Location:

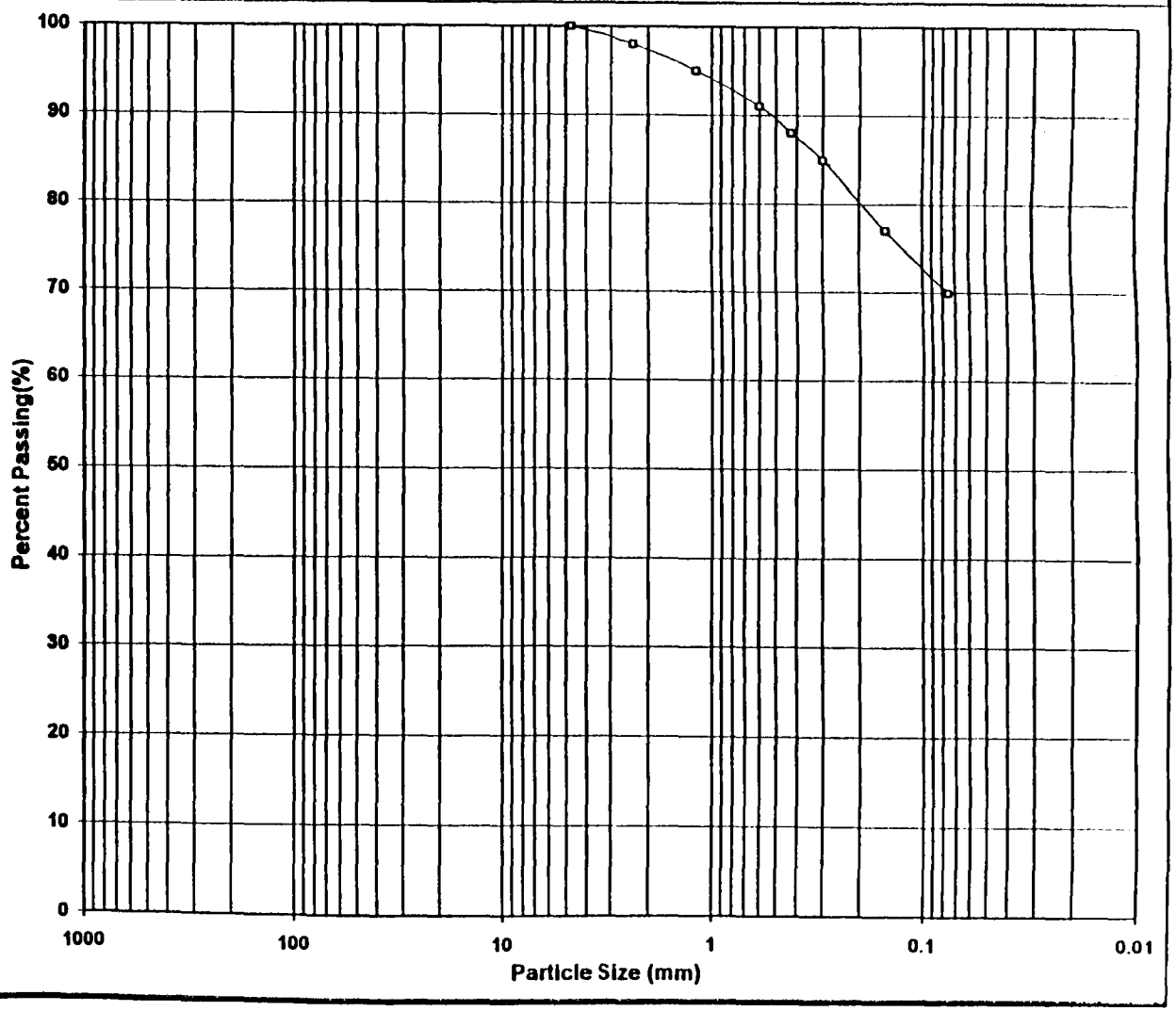
Drilled Sample:

Boring DMB-6 Sample # 6 Depth 30'

Sieve US Std	Sieve Metric(mm)	Percent Passing	Specification
3"	75.0		
2.5"	62.5		
2"	50.0		
1.5"	37.5		
1.25"	31.3		
1"	25.0		
3/4"	19.0		
1/2"	12.5		
3/8"	9.5		
#4	4.75	100	
#8	2.36	98	
#10	2.0		
#16	1.18	95	
#30	0.6	91	
#40	0.43	88	
#50	0.3	85	
#100	0.15	77	
#200	0.075	69.9	

Plasticity Index 13

USCS Classification: CL



PARTICLE SIZE ANALYSIS

DAMES MOORE GROUP

Project: White Tanks FRS #3 Project No.: 15448-005-022 Date: December 21, 1998

Client: Maricopa County Flood Control District

Stockpile/Windrow Sample

Location:

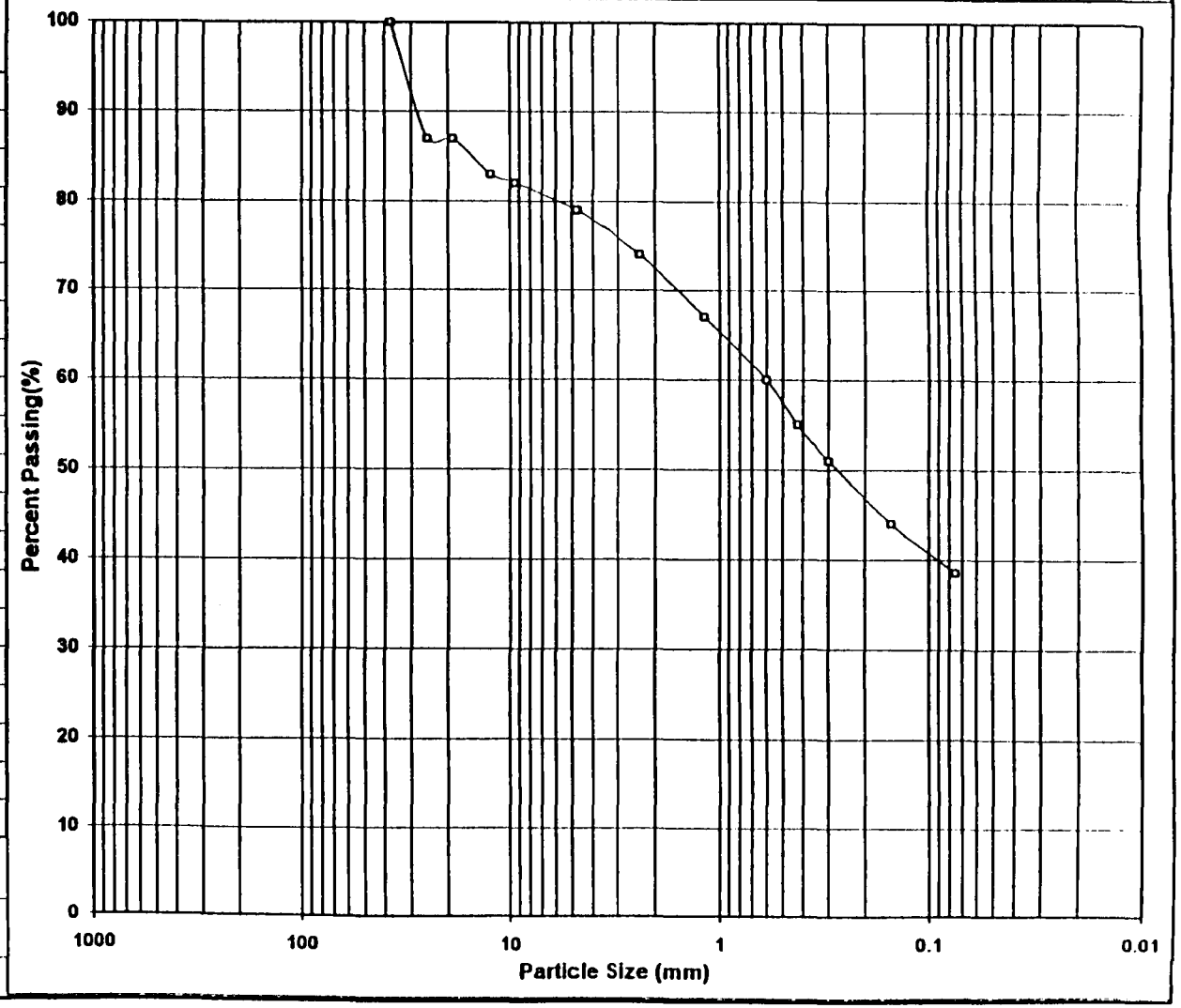
Drilled Sample:

Boring DMB-6 Sample # 1 Depth 5'

Sieve US Std	Sieve Metric(mm)	Percent Passing	Specification
3"	75.0		
2.5"	62.5		
2"	50.0		
1.5"	37.5	100	
1.25"	31.3		
1"	25.0	87	
3/4"	19.0	87	
1/2"	12.5	83	
3/8"	9.5	82	
#4	4.75	79	
#8	2.36	74	
#10	2.0		
#16	1.18	67	
#30	0.6	60	
#40	0.43	55	
#50	0.3	51	
#100	0.15	44	
#200	0.075	38.6	

Plasticity Index 9

USCS Classification: SC



PARTICLE SIZE ANALYSIS

DAMES MOORE GROUP

Project: White Tanks FRS #3 Project No.: 15448-005-022 Date: December 21, 1998

Client: Maricopa County Flood Control District

Stockpile/Windrow Sample

Location:

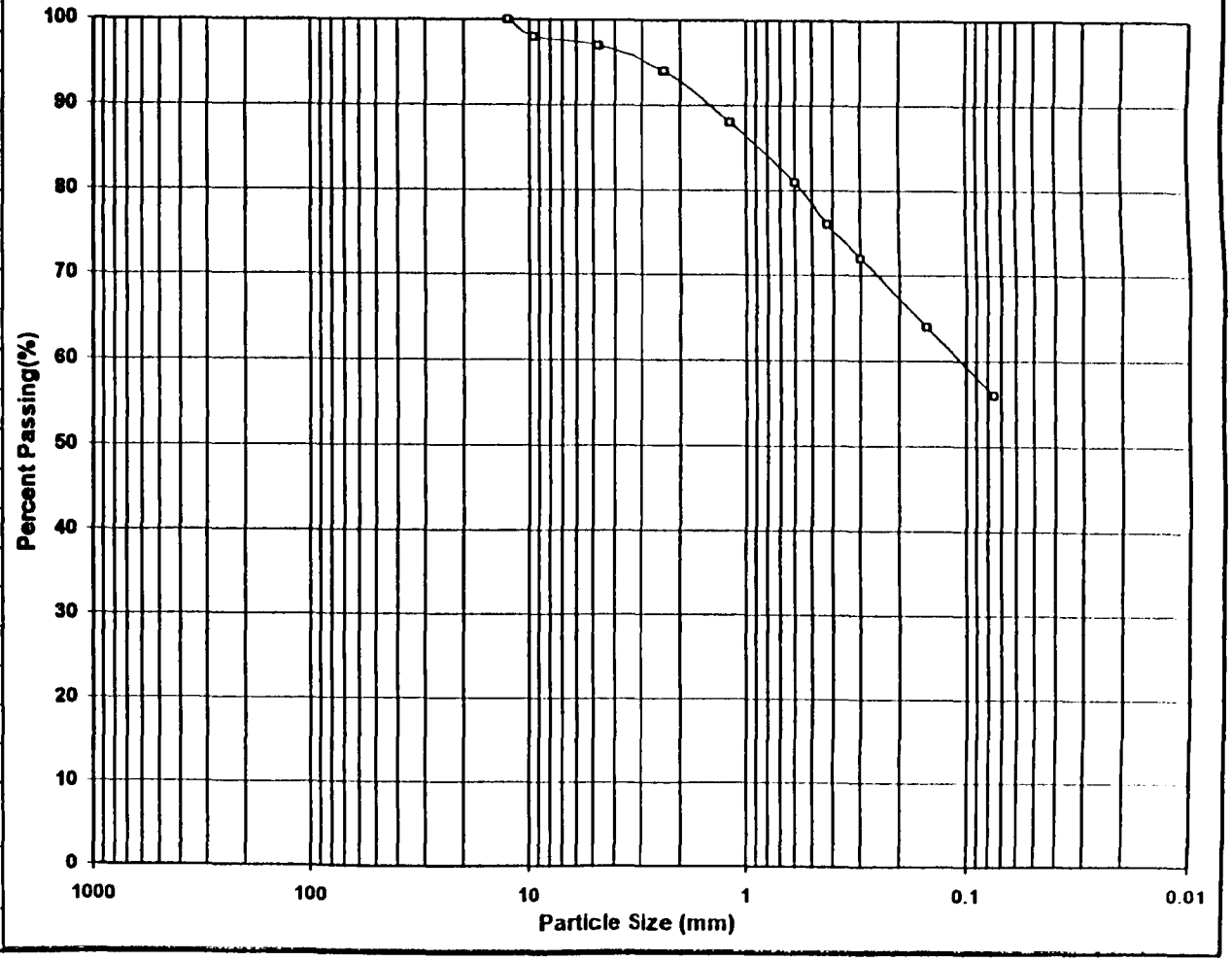
Drilled Sample:

Boring DMB-7 Sample # 1 Depth 5'-6'

Sieve US Std	Sieve Metric(mm)	Percent Passing	Specification
3"	75.0		
2.5"	62.5		
2"	50.0		
1.5"	37.5		
1.25"	31.3		
1"	25.0		
3/4"	19.0		
1/2"	12.5	100	
3/8"	9.5	98	
#4	4.75	97	
#8	2.36	94	
#10	2.0		
#16	1.18	88	
#30	0.6	81	
#40	0.43	76	
#50	0.3	72	
#100	0.15	64	
#200	0.075	56	

Plasticity Index 17

USCS Classification: CL



PARTICLE SIZE ANALYSIS

DAMES MOORE GROUP

Project: White Tanks FRS #3 Project No.: 15448-005-022 Date: December 21, 1998

Client: Maricopa County Flood Control District

Stockpile/Windrow Sample

Location:

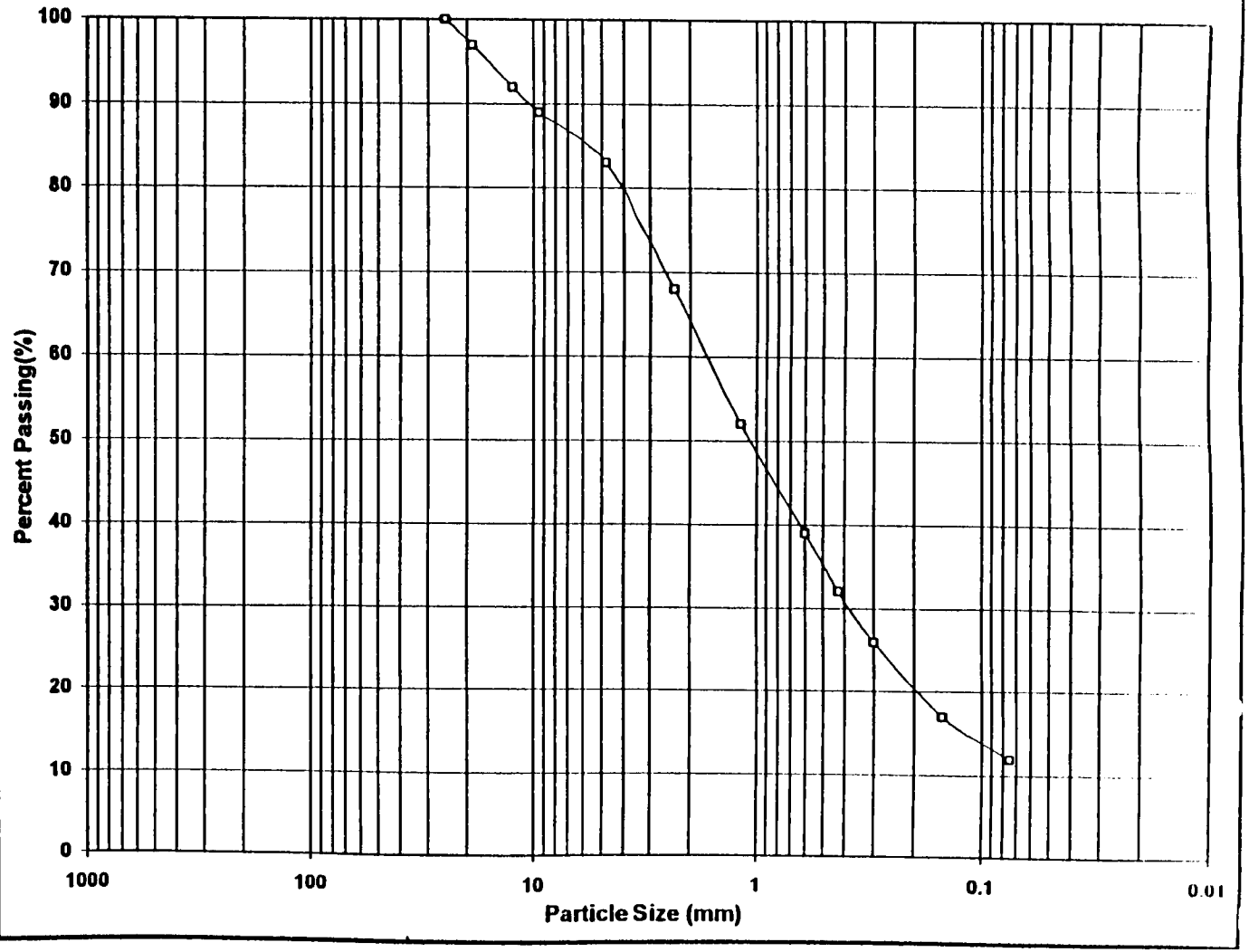
Drilled Sample:

Boring DMB-9 Sample # 5 Depth 30'

Sieve US Std	Sieve Metric(mm)	Percent Passing	Specification
3"	75.0		
2.5"	62.5		
2"	50.0		
1.5"	37.5		
1.25"	31.3		
1"	25.0	100	
3/4"	19.0	97	
1/2"	12.5	92	
3/8"	9.5	89	
#4	4.75	83	
#8	2.36	68	
#10	2.0		
#16	1.18	52	
#30	0.6	39	
#40	0.43	32	
#50	0.3	26	
#100	0.15	17	
#200	0.075	11.9	

Plasticity Index NONPLASTIC

USCS Classification: SP-SM



PARTICLE SIZE ANALYSIS

DAMES MOORE GROUP

Project: White Tanks FRS #3 Project No.: 15448-005-022 Date: December 21, 1998

Client: Maricopa County Flood Control District

Stockpile/Windrow Sample

Location:

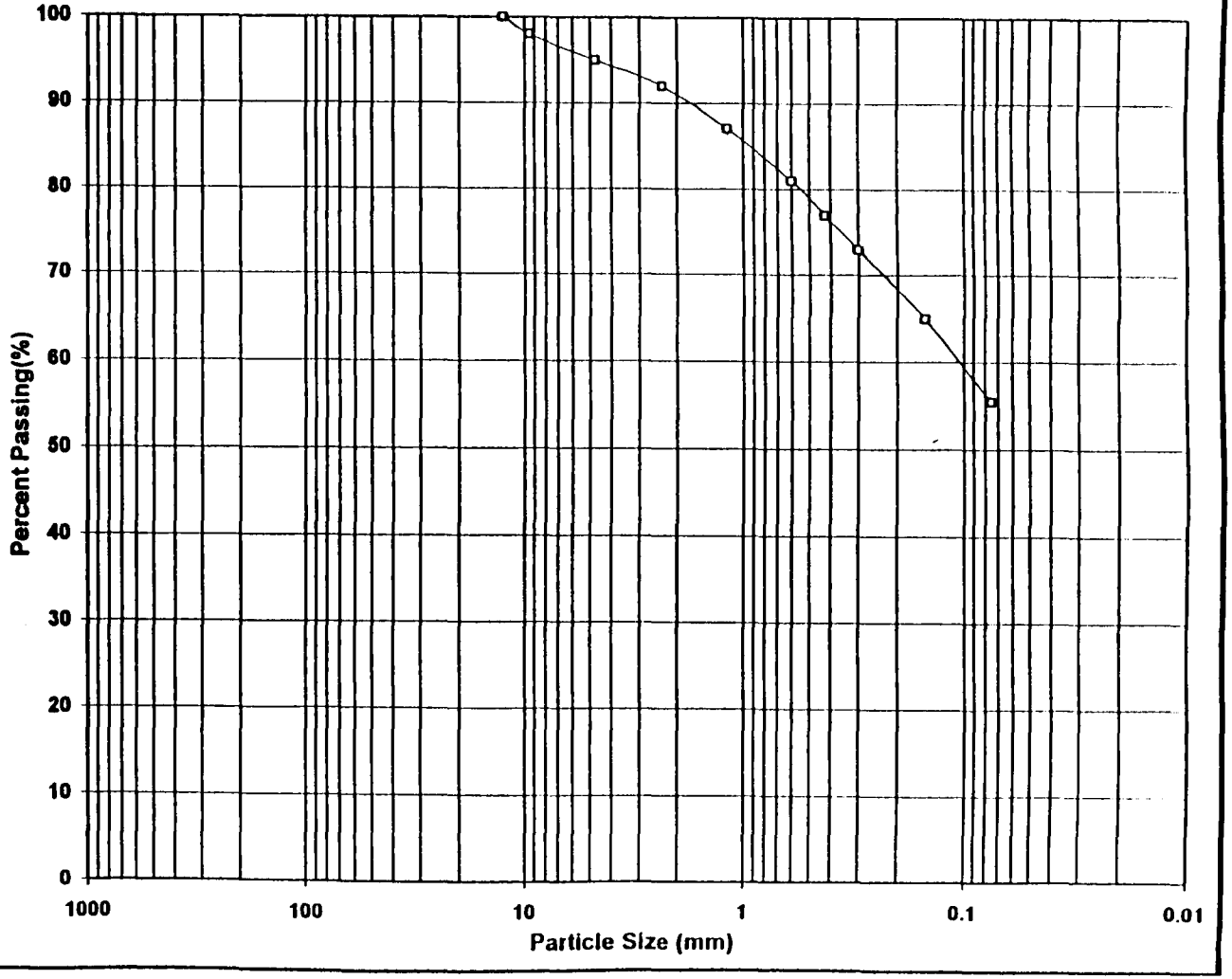
Drilled Sample:

Boring DMB-9 Sample 2 Depth 10'-11'

Sieve US Std	Sieve Metric(mm)	Percent Passing	Specification
3"	75.0		
2.5"	62.5		
2"	50.0		
1.5"	37.5		
1.25"	31.3		
1"	25.0		
3/4"	19.0		
1/2"	12.5	100	
3/8"	9.5	98	
#4	4.75	95	
#8	2.36	92	
#10	2.0		
#16	1.18	87	
#30	0.6	81	
#40	0.43	77	
#50	0.3	73	
#100	0.15	65	
#200	0.075	55.5	

Plasticity Index 9

USCS Classification: CL



PARTICLE SIZE ANALYSIS

DAMES MOORE GROUP

Project: White Tanks FRS #3 Project No.: 15448-005-022 Date: December 21, 1998

Client: Maricopa County Flood Control District

Stockpile/Windrow Sample

Location:

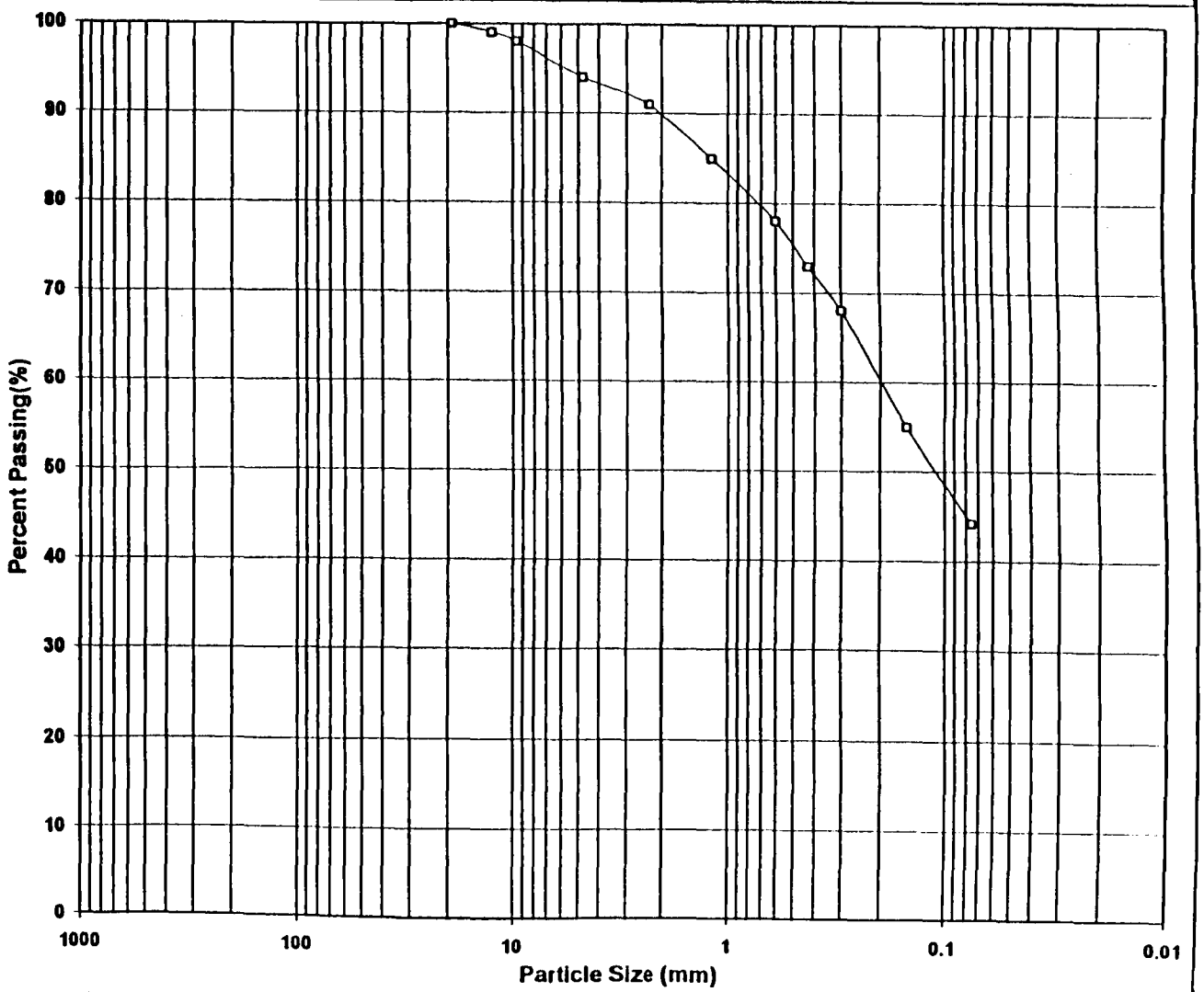
Drilled Sample:

Boring DMB-9 Sample # 3 Depth 15'

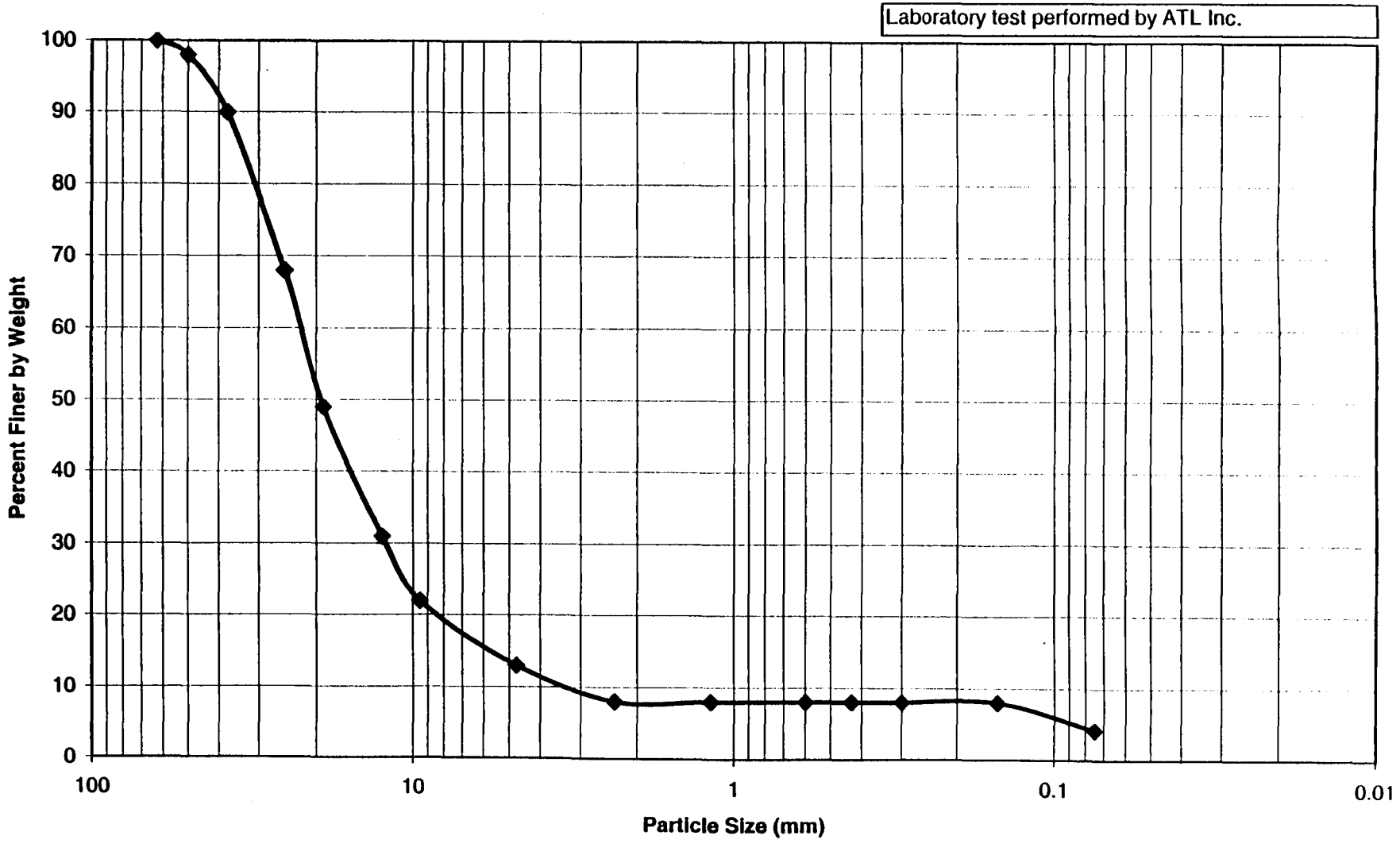
Sieve US Std	Sieve Metric(mm)	Percent Passing	Specification
3"	75.0		
2.5"	62.5		
2"	50.0		
1.5"	37.5		
1.25"	31.3		
1"	25.0		
3/4"	19.0	100	
1/2"	12.5	99	
3/8"	9.5	98	
#4	4.75	94	
#8	2.36	91	
#10	2.0		
#16	1.18	85	
#30	0.6	78	
#40	0.43	73	
#50	0.3	68	
#100	0.15	55	
#200	0.075	44.2	

Plasticity Index 6

USCS Classification: SC-SM



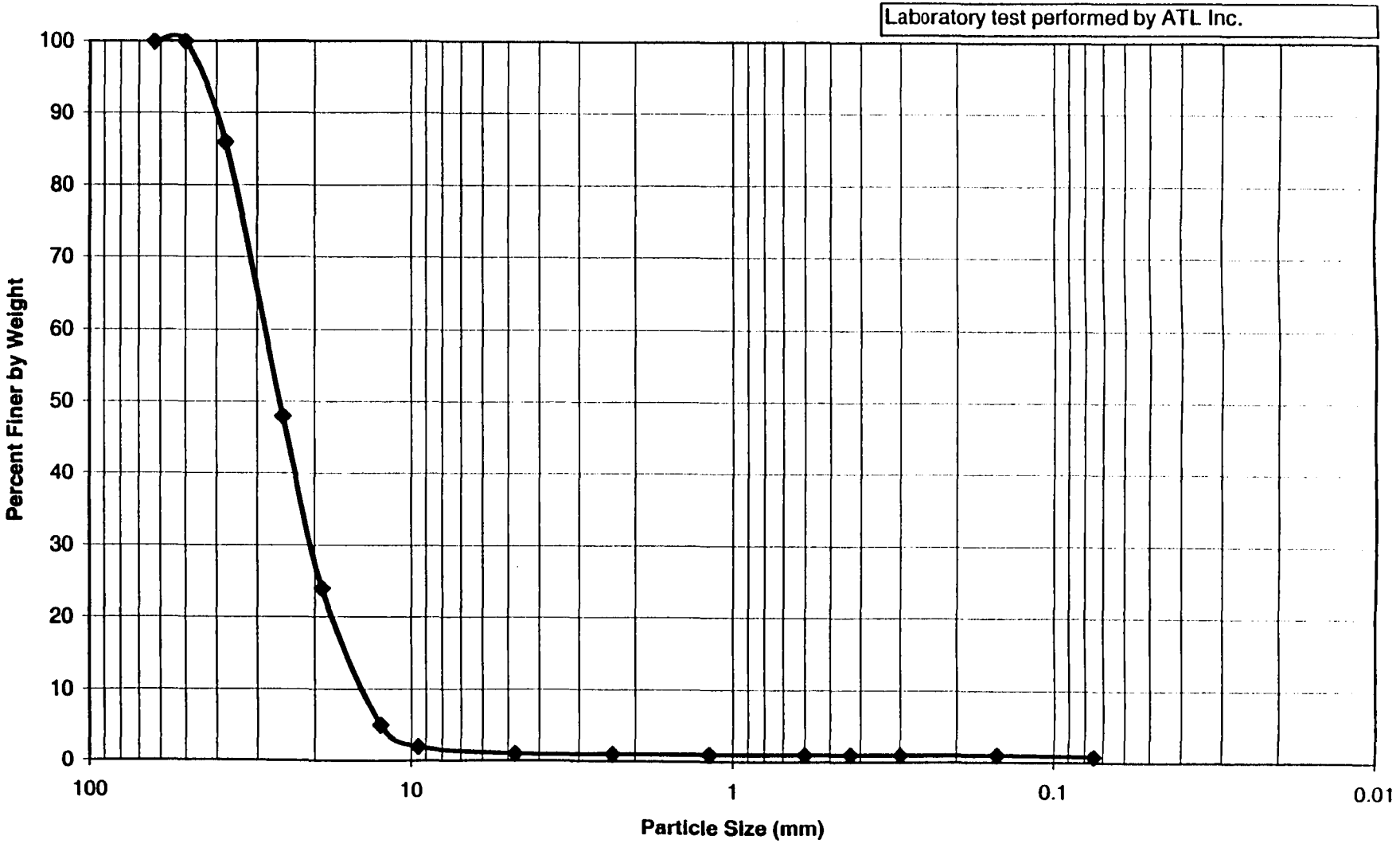
Grain Size Distribution Curve
Boring 57+30 @ 5 - 10 Feet



WHITE TANKS FRS #3

15448-007-022

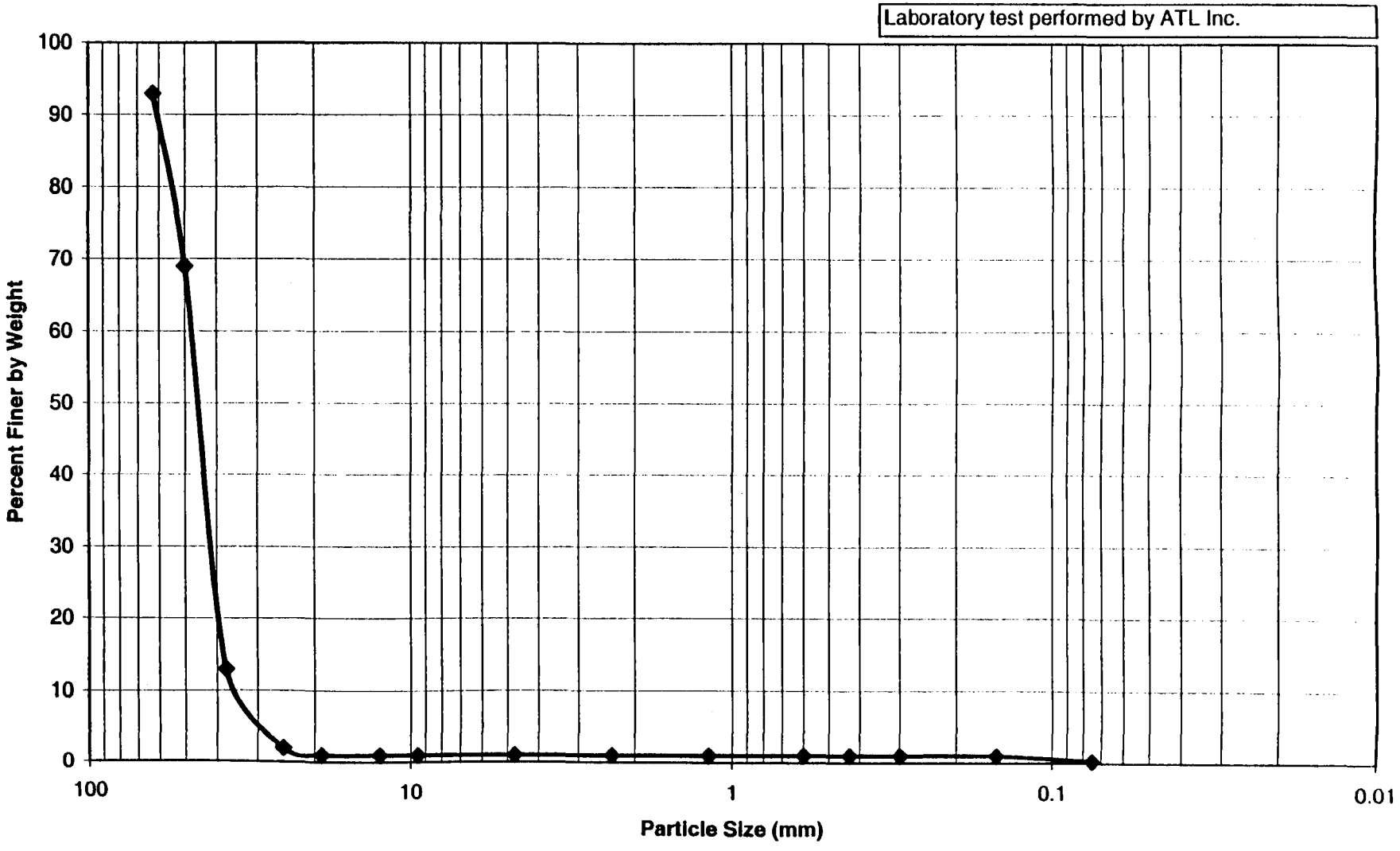
Grain Size Distribution Curve
Boring 57+30 @ 20 - 25 Feet



WHITE TANKS FRS #3

15448-007-022

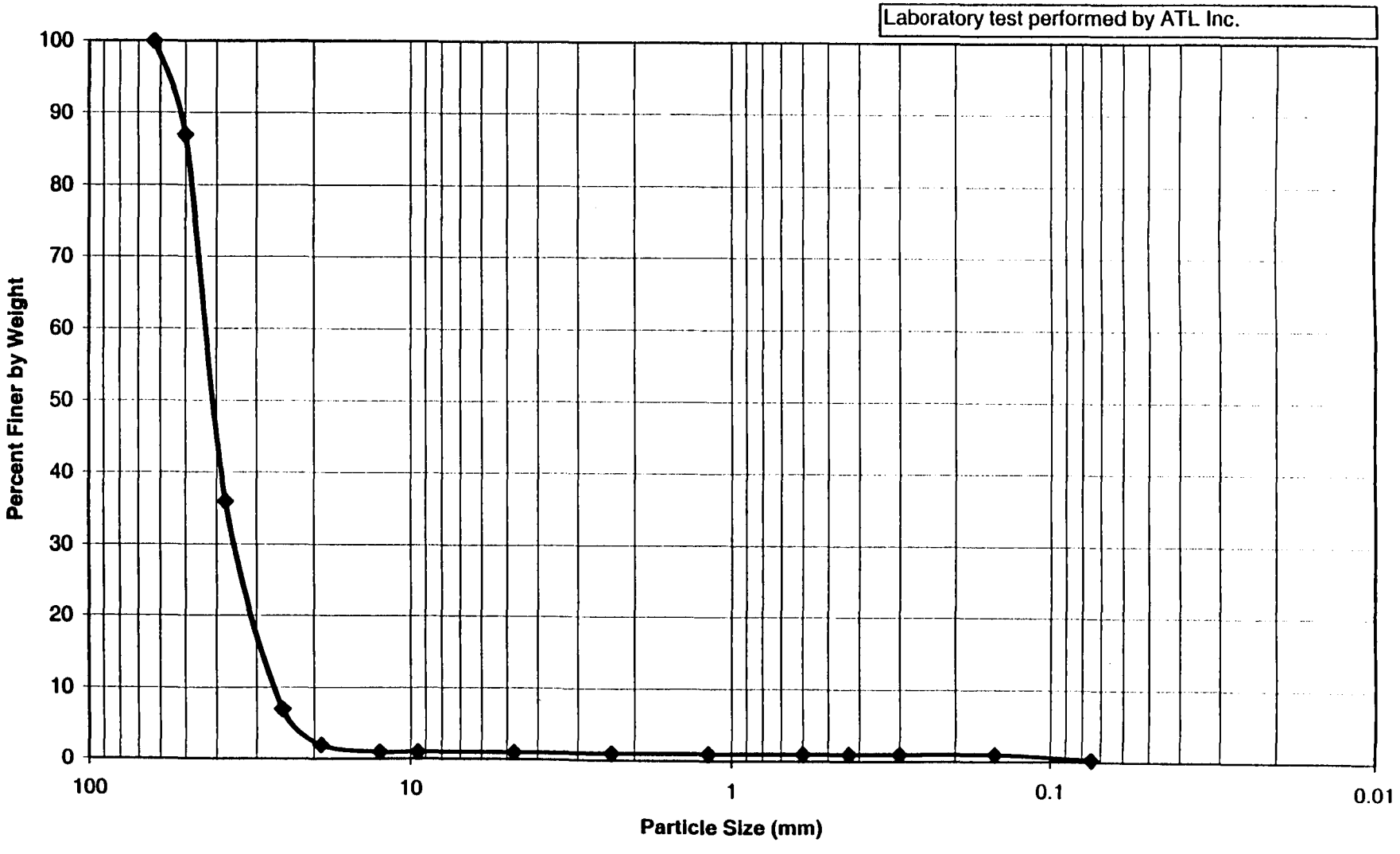
Grain Size Distribution Curve
Boring 58+00 @ 5 - 10 Feet



WHITE TANKS FRS #3

15448-007-022

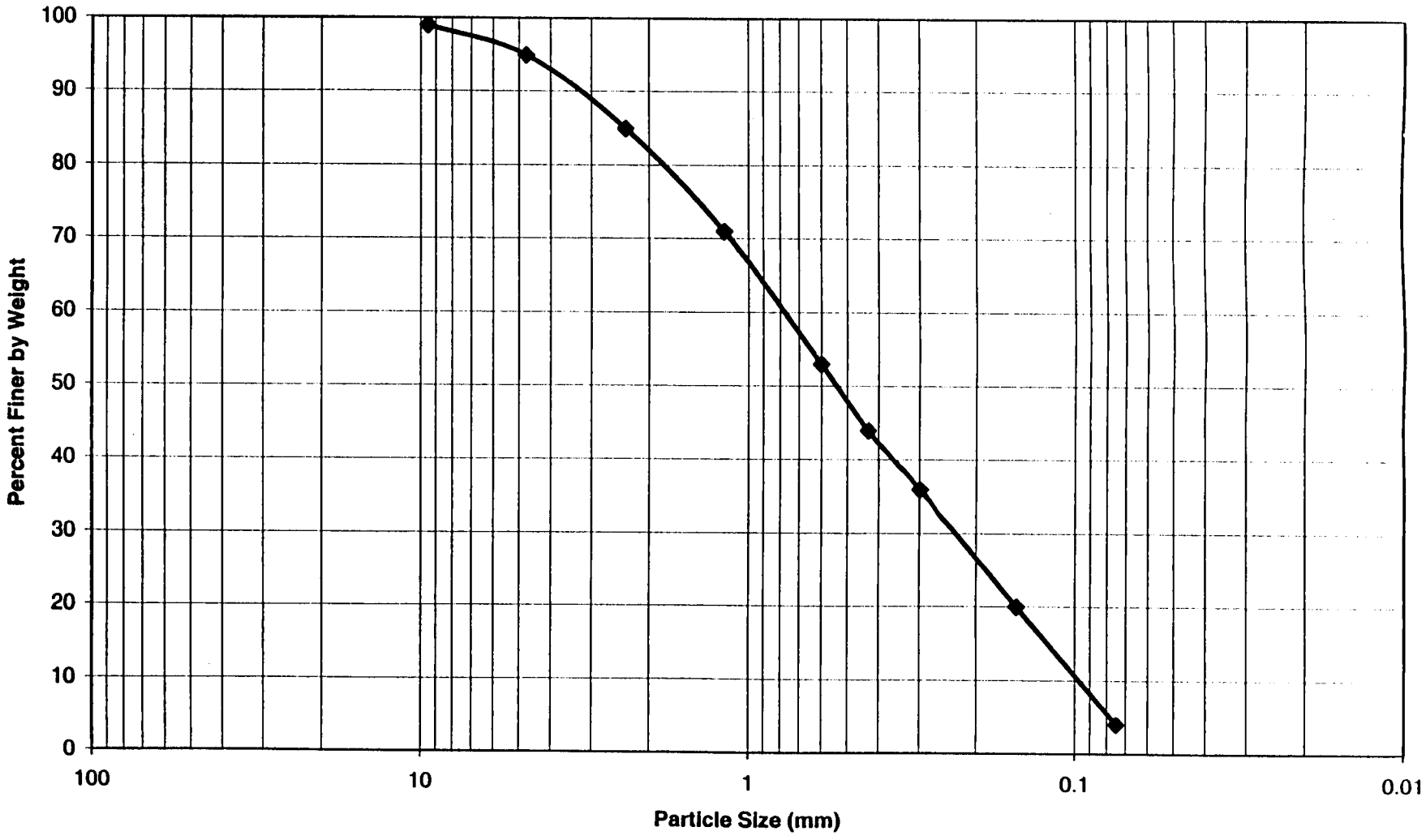
Grain Size Distribution Curve
Boring 59+00 @ 15 - 20 Feet



WHITE TANKS FRS #3

15448-007-022

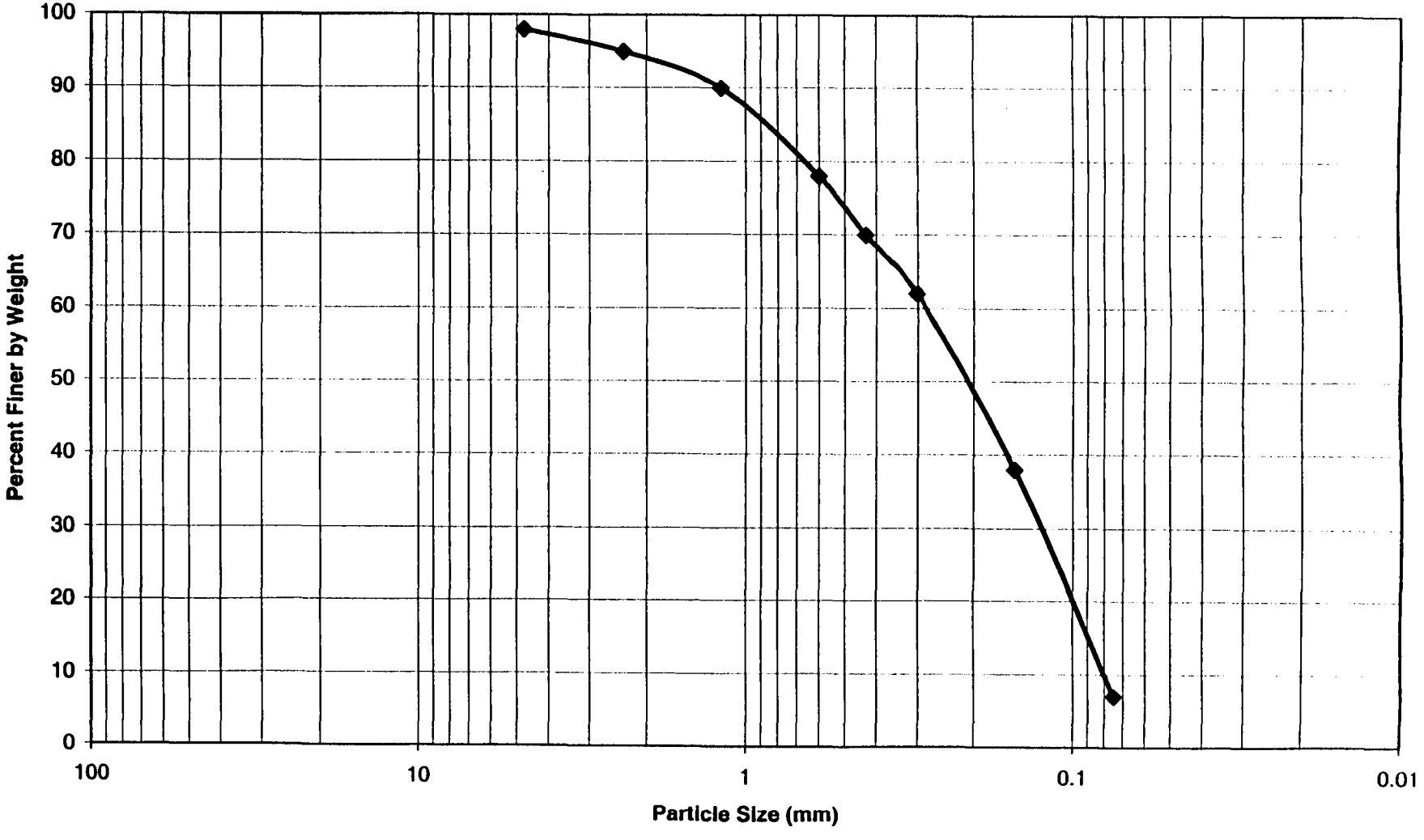
Grain Size Distribution Curve
Test Pit A



WHITE TANKS FRS #3

15448-007-022

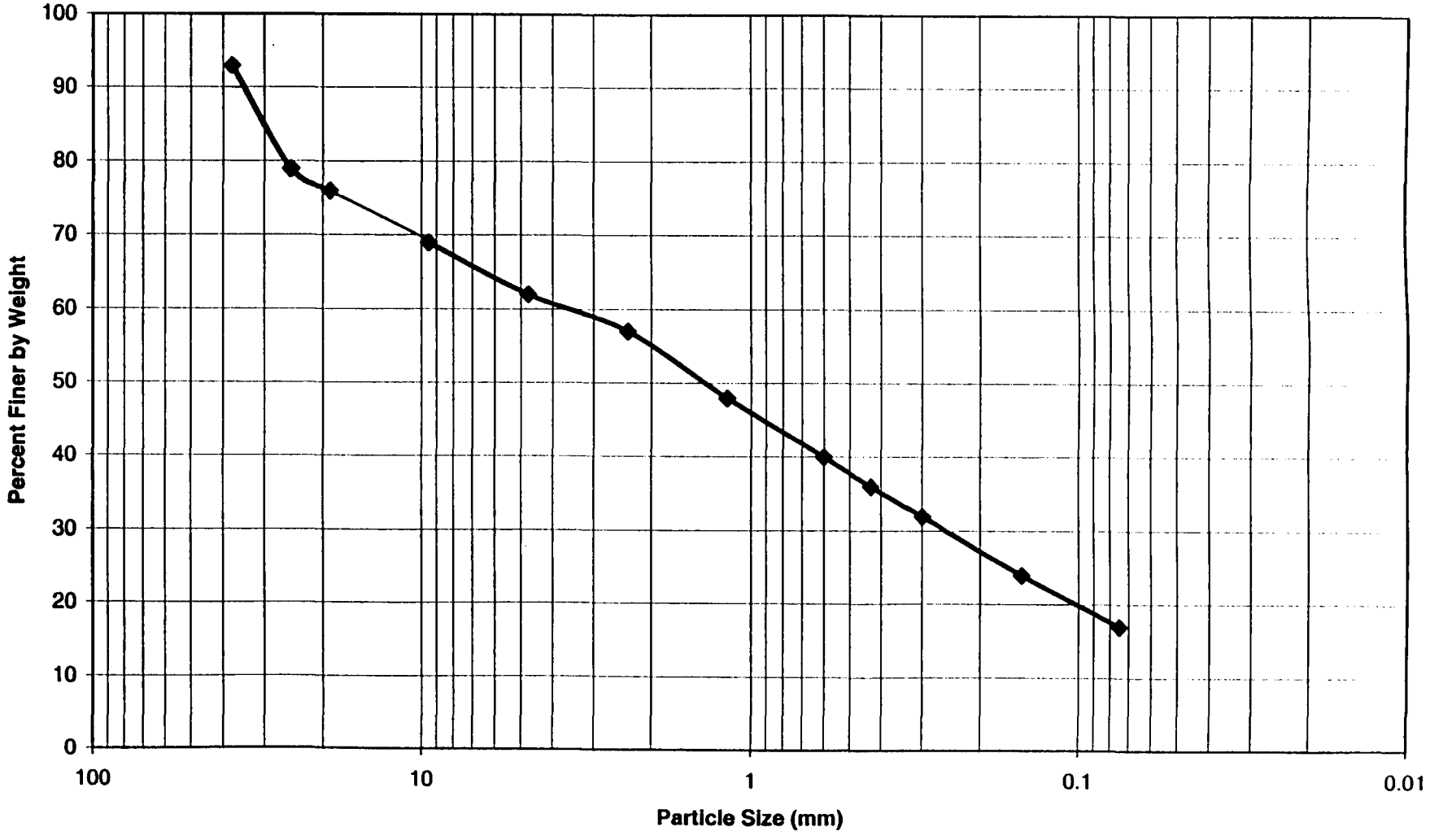
Grain Size Distribution Curve
Test Pit B



WHITE TANKS FRS #3

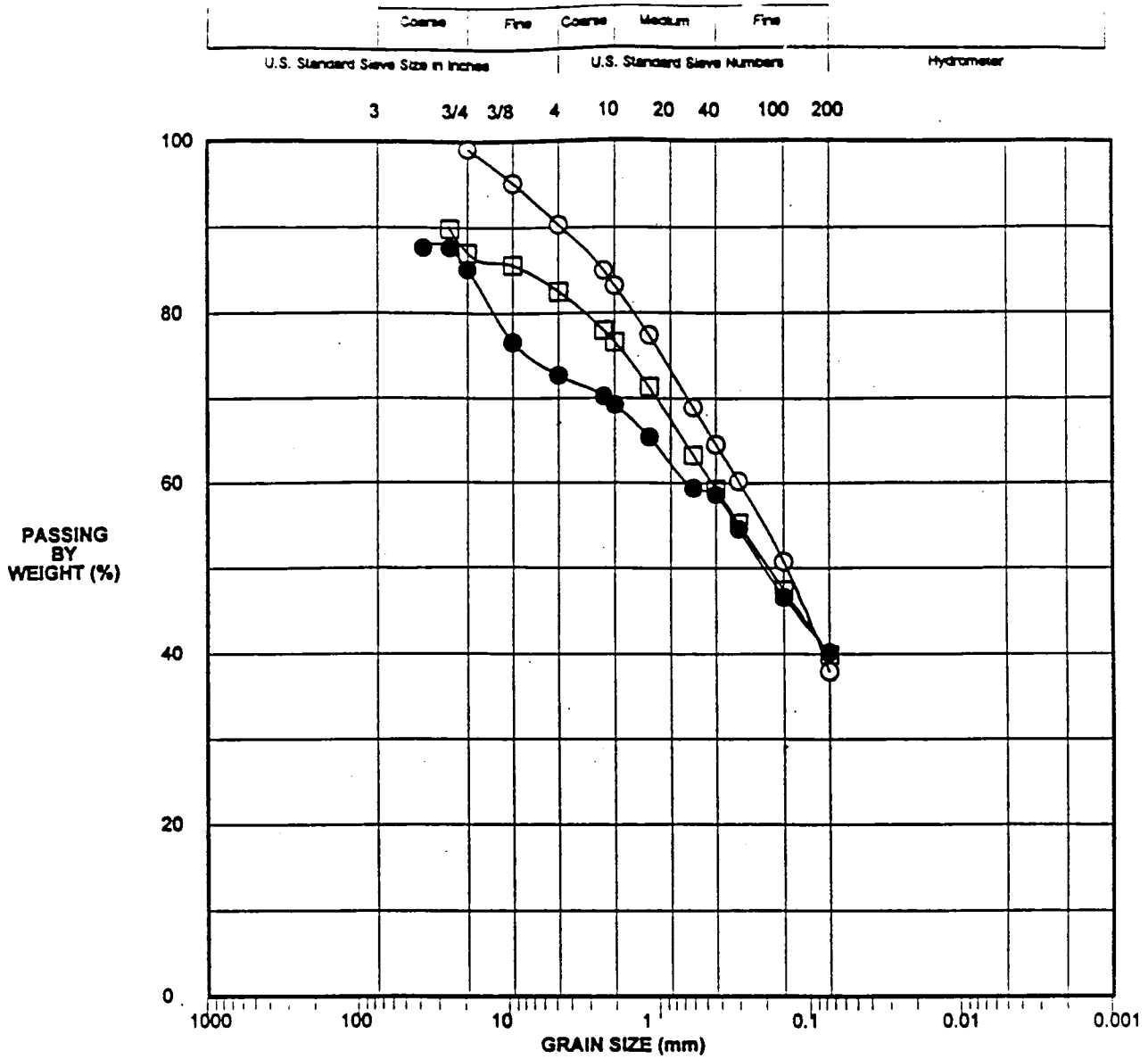
15448-007-022

Grain Size Distribution Curve
Test Pit C



WHITE TANKS FRS #3

15448-007-022



GRAIN SIZE DISTRIBUTION

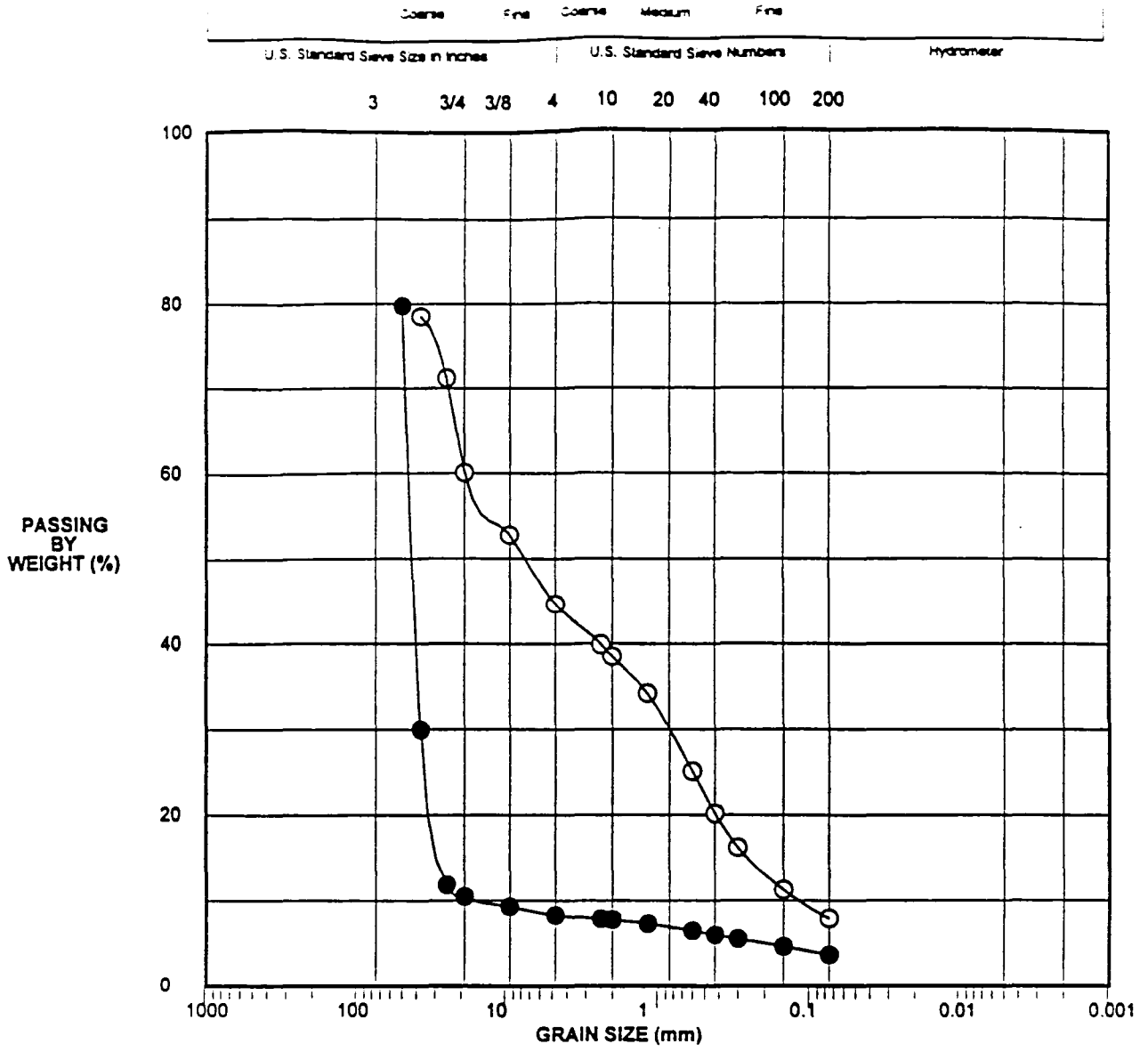
SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	% GRAVEL	% SAND	% FINES
○	E	5	Crack Investigation Test Pit	9.6	52.2	38.2
●	D	5	Filter Investigation Test Pit - South Sidewall	27.2	32.5	40.3
□	D	8	Filter Investigation Test Pit - North Sidewall	17.4	42.5	40.1

Note: Samples obtained during Crack & Filter Investigation, March 2000.

REMARKS:

ATL, INC.
CONSTRUCTION QUALITY ASSURANCE
GEOTECHNICAL/ENVIRONMENTAL CONSULTANTS

WHITE TANKS DAM



GRAIN SIZE DISTRIBUTION

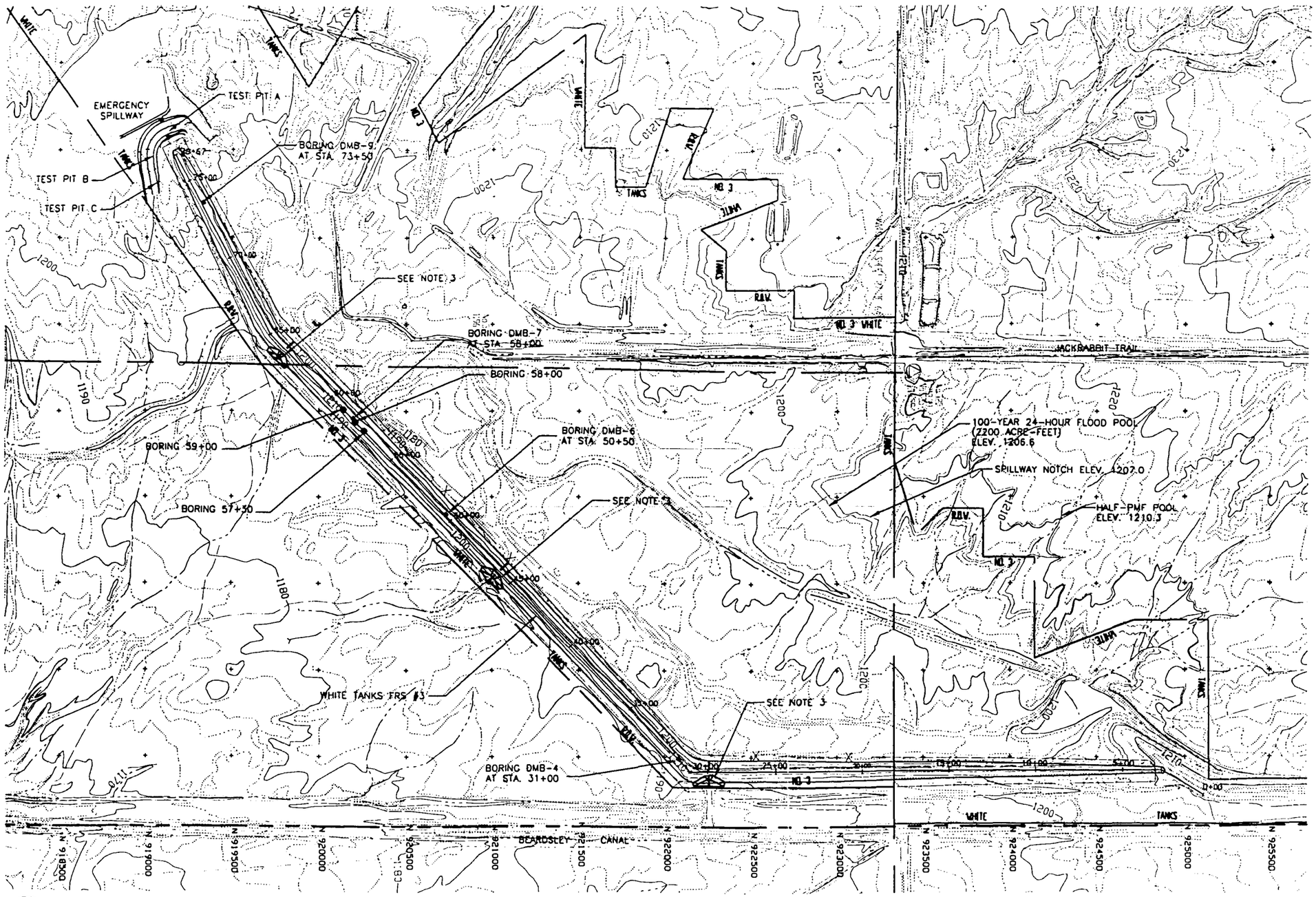
SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	% GRAVEL	% SAND	% FINES
○	D	5	Filter Material	55.3	0.0	44.7
●	D	5	Drain Material	91.7	4.6	3.6

Note: Samples obtained during Crack & Filter Investigation, March 2000.

REMARKS:

ATL, INC.
CONSTRUCTION QUALITY ASSURANCE
GEOTECHNICAL/ENVIRONMENTAL CONSULTANTS

White Tanks Dam



NOTES:

1. Borings 57+30, 58+00, and 59+00 are part of the filter investigation.
2. Samples from borings DMB-4, DMB-6, DMB-7 and DMB-9 were used in calculating the diaphragm filter gradation.
3. Proposed Interim Dam Safety (IDS) modifications.

Flood Control District of Maricopa County

DAMES & MOORE
A DAMES & MOORE GROUP COMPANY

SOURCE:
BASE MAP OF WHITE TANKS/AGUA FRIA A.D.M.S. TOPOGRAPHIC MAPS, FLOWN 12/22/89 BY COOPER AERIAL OF PHOENIX, INC. FOR THE WLB GROUP INC., AREA DRAINAGE MASTER STUDY.

WHITE TANKS FRS #3

A14018.DWG 9-20-00 XREF:TOPO1289

Dames & Moore Job No. 15448-007-058

Location of Borings and Testpits

Figure 1