APPENDIX A

Soils Laboratory Test Results

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GARCO TESTING LABORATORIES

532 West 3560 South
Salt Lake City, Utah 84115
Phone 266-4498

5826 South 1900 West
Roy, Utah 84067
Phone 776-5355

5071 So. Arville
Las Vegas, Nevada 89118
Phone (702) 364-8031

October 15, 1990

Earth Fax Engineering
Attn: Rhett Brooks
7324 S. 1300 E., Ste 100
Midvale, Utah 84047

Subject: Physical Properties on samples submitted from the Genwall project.

Direct Shear Unconsolidated - Undrained

Lab #33098 - I.D.: FS-1

Soil I.D.: SM
% Compaction: 93%
Maximum Dry Density = 132.8
Optimum Moisture = 6.9%

Fee Angle = 55 deg
Cohesion = 1600 psf

Lab #33099 - I.D.: SS-1 REMOLDED TO 110 pcf

Soil I.D.: SM
~~% Compaction: 93%~~
~~Maximum Dry Density = 132.8~~
~~Optimum Moisture = 6.9%~~

Fee Angle = 46 deg
Cohesion = 700 psf

Atterberg Limit

Lab #33101 SAMPLE SS-1

Non Plastic

ASTM D-1883 California Bearing Ratio

Lab #33092 - I.D.: BS-1

Maximum Density = 132.8
Optimum Moisture = 6.9%
% Compaction = 94.8%
Surcharge = 50 psf
% Swell = 0

Bearing Values

Penetration	PSI	% of Standard
.100	485	48
.200	866	58
.300	1117	59
.400	1342	58
.500	1564	60

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Lab #33093 - I.D.: BS-2

Maximum Density	=	132.8	Surcharge	=	50 psf
Optimum Moisture	=	6.9%	% Swell	=	0.53%
% Compaction	=	95.4%			

Bearing Values

Penetration	PSI	% of Standard
.100	216	21
.200	291	19
.300	365	19
.400	451	19
.500	539	20

Lab #33092 - I.D.: BS-3

Maximum Density	=	132.8	Surcharge	=	50 psf
Optimum Moisture	=	6.9%	% Swell	=	0
% Compaction	=	95.4%			

Bearing Values

Penetration	PSI	% of Standard
.100	171	17
.200	316	21
.300	420	22
.400	529	23
.500	656	25

Atterberg Limit
Lab #33096 - I.D.: Combined material BS-1, BS-2, BS-3

Non Plastic

ASTM D-1557-D Proctor
Lab #33095 - I.D.: Combined material BS-1, BS-2, BS-3

Maximum Density	=	132.8 pcf
Optimum Moisture	=	6.9%

Sincerely,

D. Watson

Doug Watson
General Manager

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Las Vegas, Nevada 89118
Phone (702) 364-8031

0091 9/28/90

EARTH FAX ENGINEERING, INC.
7324 SOUTH 1300 EAST, STE 100
MIDVALE, UTAH 84047
ATTN: RANDOLPH GAINER

LAB NO.: 33100
MATERIAL: SS-1
PIT/PLANT:

PROJECT: QUALITY CONTROL
IDENTIFICATION:
SPECIFICATION:

TEST DATE: 9/25/90
SAMPLE BY: CUST RUN BY: KRIS

REMARKS: #33101:ATTERBERG LIMIT-NON PLASTIC

USA SIEVE NUMBER	GRAMS RETAINED	% RETAINED	ACCUM. % RETAINED	% PASSING	SPECIFICATION % PASSING
2.5"	320.0	16.4	16.4	83.6	
1.5"	0		16.4	83.6	
1"	79.0	4.0	20.4	79.6	
3/4"	17.8	.9	21.3	78.7	
1/2"	48.8	2.5	23.8	76.2	SILTY GRAVELLY SAND
3/8"	34.4	1.8	25.6	74.4	SM
#4	66.1	3.4	29.0	71.0	
#8	49.0	2.5	31.5	68.5	
#16	40.2	2.1	33.6	66.4	
#30	51.3	2.6	36.2	63.8	
#50	239.2	12.2	48.4	51.6	
#100	422.0	21.6	70.0	30.0	
#200	200.3	10.2	X 80.2	19.8	

ORIGINAL WT. 1955.5
WASHED WT. 1595.4
-#200 W.O. 360.1
-#200 S.O. 26.5
TOTAL -#200 386.6 = 19.8%

F.M. 3.72
DESIGN F.M.

SINCERELY

D. Watson

MANAGER

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Las Vegas, Nevada 89118
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0091 9/28/90

EARTH FAX ENGINEERING, INC.
7324 SOUTH 1300 EAST, STE 100
MIDVALE, UTAH 84047
ATTN: RANDOLPH GAINER

LAB NO.: 33097
MATERIAL: COMBINED MATERIAL
PIT/PLANT: FROM BS-1, BS-2, AND BS-3

PROJECT: QUALITY CONTROL
IDENTIFICATION: COMB BS-1,BS-2,BS-3
SPECIFICATION:

TEST DATE: 9/25/90
SAMPLE BY: CUST RUN BY: KRIS

REMARKS: #33096:ATTERBERG LIMIT-NON PLASTIC

USA SIEVE NUMBER	GRAMS RETAINED	% RETAINED	ACCUM. % RETAINED	% PASSING	SPECIFICATION % PASSING
2"	292.1	9.4	9.4	90.6	
1.5"	274.2	8.8	18.2	81.8	
1"	42.5	1.4	19.6	80.4	
3/4"	50.0	1.6	21.2	78.8	
1/2"	241.5	7.8	29.0	71.0	
3/8"	135.6	4.4	33.4	66.6	
#4	316.6	10.2	43.6	56.4	SILTY SANDY GRAVEL
#8	220.6	7.1	50.7	49.3	GM
#16	137.8	4.4	55.1	44.9	
#30	92.4	3.0	58.1	41.9	
#50	124.6	4.0	62.1	37.9	
#100	330.9	10.6	72.7	27.3	
#200	230.5	7.4	X 80.1	19.9	

ORIGINAL WT. 3113.7
WASHED WT. 2529.2
-#200 W.O. 584.5
-#200 S.O. 39.0
TOTAL -#200 623.5 = 20.0%

F.M. 4.73
DESIGN F.M.

SINCERELY,

D. Watson

MANAGER

National Voluntary Laboratory Accreditation Program

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United States Department of Commerce Accredited

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GARCO *TESTING LABORATORIES*

5826 South 1900 West
Roy, Utah 84067

532 West 3560 South
Salt Lake City, Utah 84115

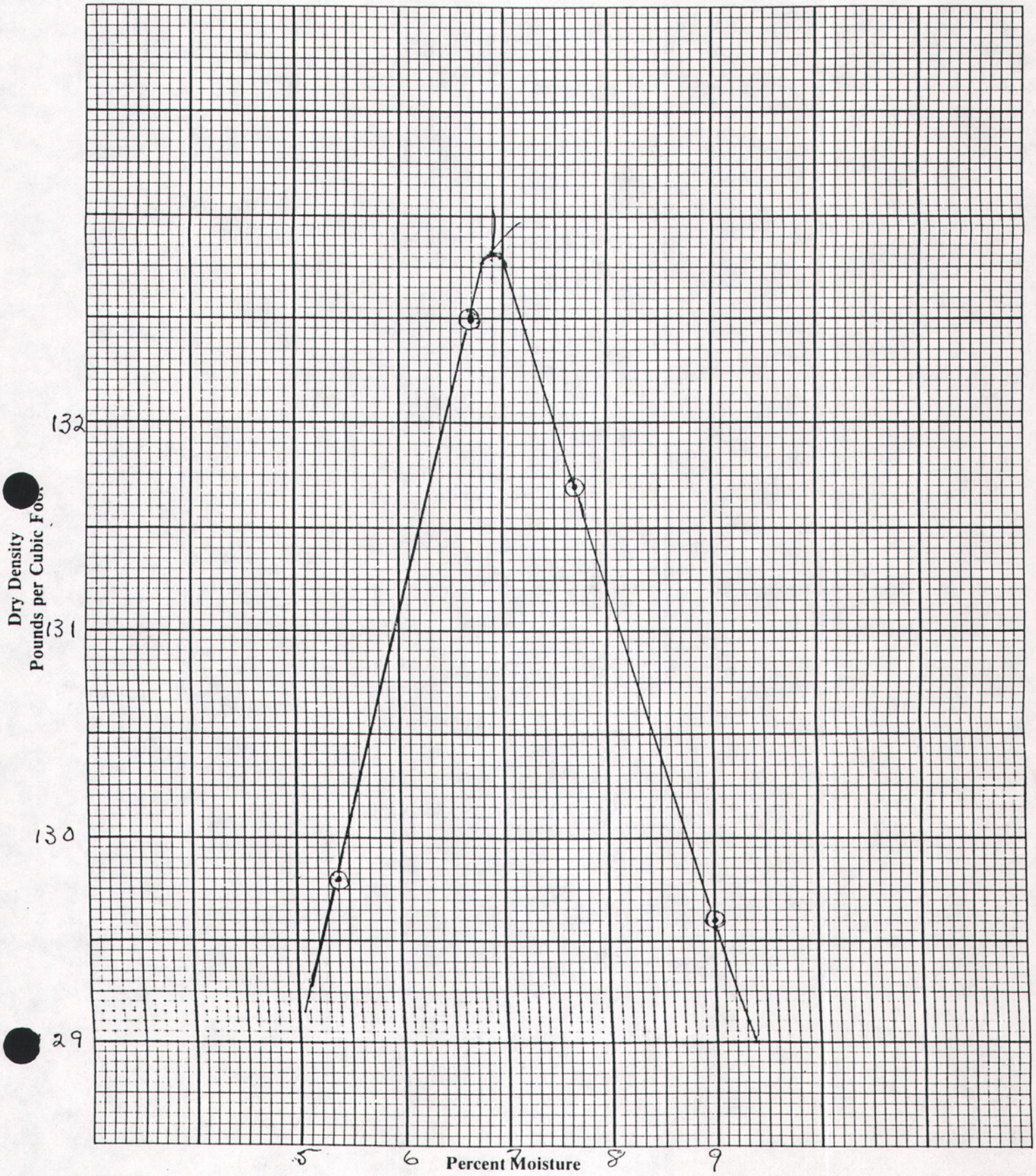
5071 S. Arville
Las Vegas, Nevada 89118

MOISTURE DENSITY CURVE ASTM C-698, D-1557

Lab # 33095 Material _____ Source COMB. BS-1, BS-2, BS-3

Customer Earth Fax Project Genwal Date 9-26-90

Test Method T-180-D Max. Compaction 132.8 Opt. Moist. 6.9



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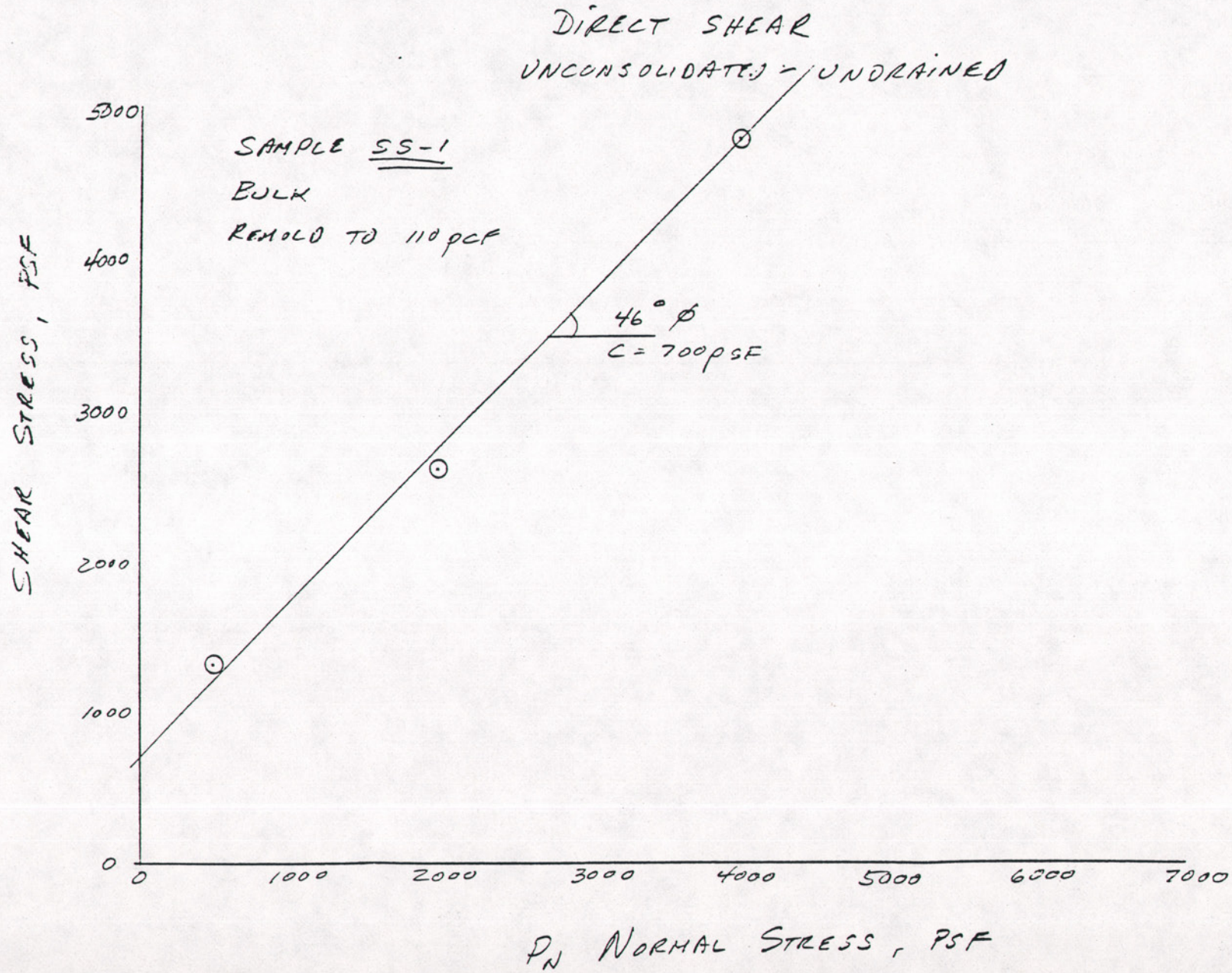

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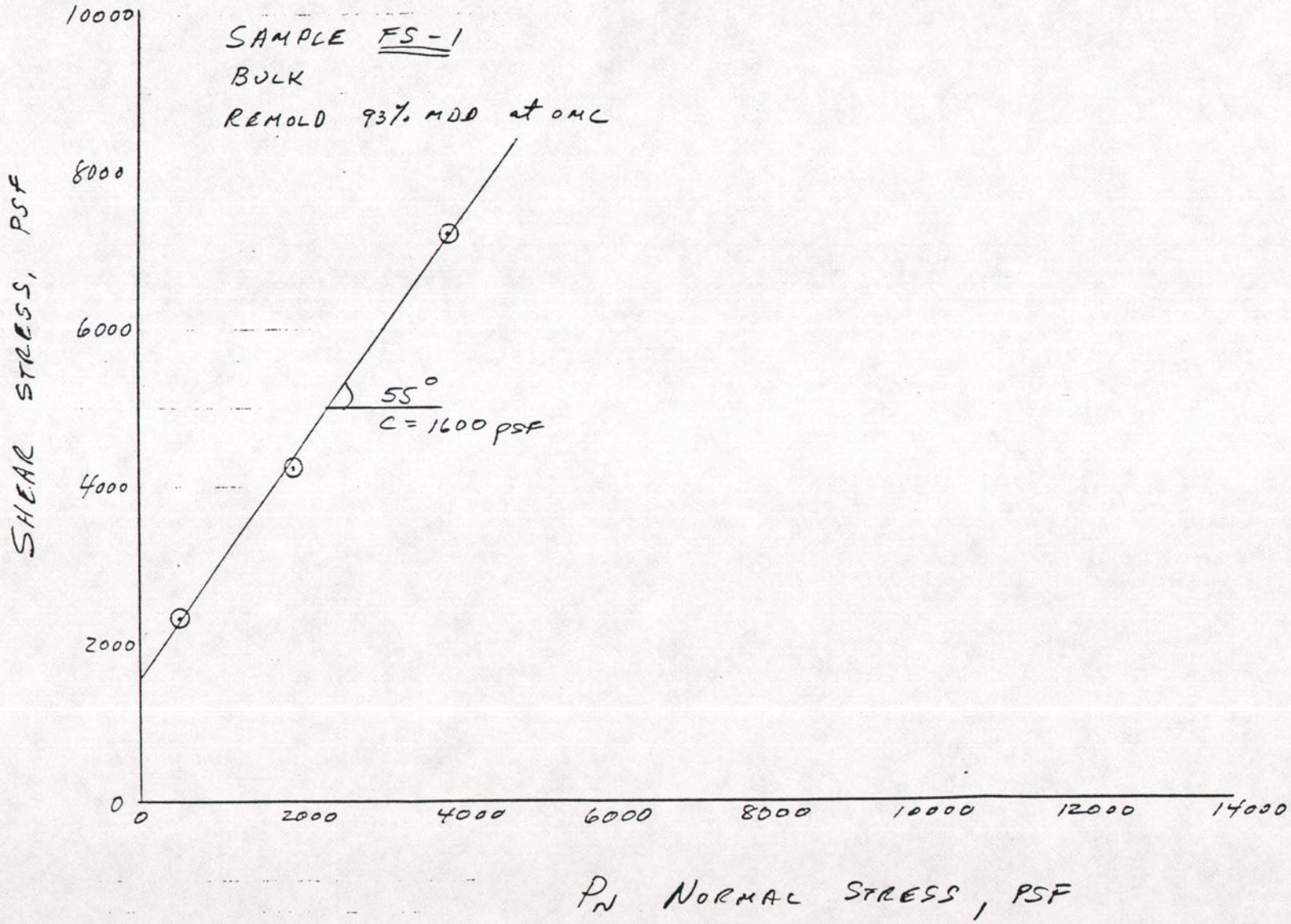

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