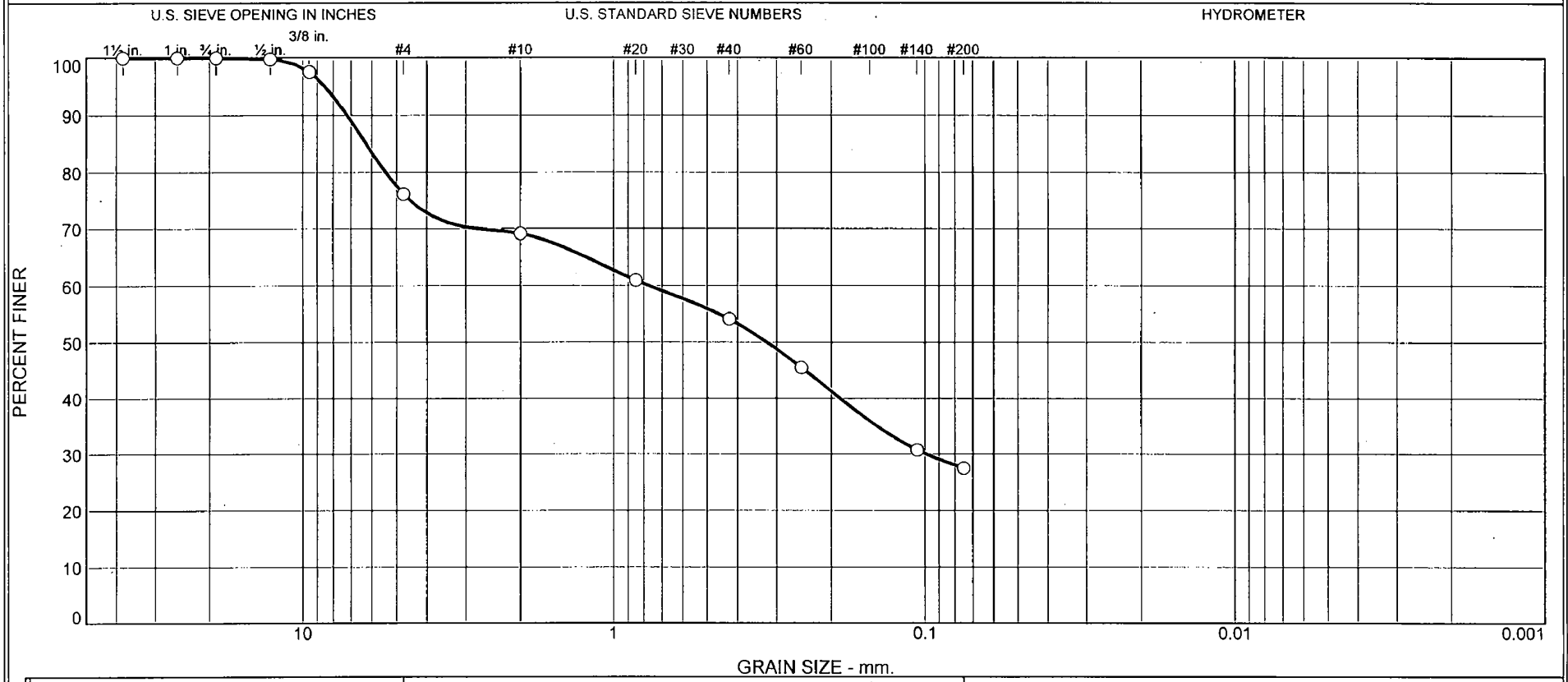
Particle Size Distribution Report/ ASTM D 6913-04e1 Method A



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	24	7	15	27	27	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Test Pit TP-701	701-1-AC	NA	5/30/08	SM	Processed Material After Compaction	ND	ND	ND

Client Bechtel

Project Turkey Point COL

Project No. 6468071950 Figure

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○ Grainsize test performed on material used for ASTM D 1557-07 after compaction.

ZHU 7/23/08

Tested By: AWH Checked By: LBJ

GRAIN SIZE DISTRIBUTION TEST DATA

7/23/2008

Client: Bechtel
Project: Turkey Point COL
Project Number: 6468071950
Location: Test Pit TP-701
Depth: NA **Sample Number:** 701-1-AC
Material Description: Processed Material After Compaction
Date: 5/30/08 **Natural Moisture:** ND
Liquid Limit: ND **Plastic Limit:** ND **USCS Class.:** SM
Testing Remarks: Grainsize test performed on material used for ASTM D 1557-07 after compaction.
Tested by: AWH **Checked by:** LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
4391.90	0.00	0.00	1.5"	0.00	100
			1"	0.00	100
			3/4"	0.00	100
			1/2"	9.80	100
			3/8"	106.70	98
			#4	1048.00	76
879.00	0.00	0.00	#10	81.11	69
			#20	175.54	61
			#40	254.50	54
			#60	353.70	46
			#140	524.30	31
			#200	561.90	27

Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	24	24	7	15	27	49			27

D_{10}	D_{15}	D_{20}	D_{30}	D_{50}	D_{60}	D_{80}	D_{85}	D_{90}	D_{95}
			0.0994	0.3221	0.7720	5.4203	6.2632	7.2136	8.4814

Fineness Modulus
2.50

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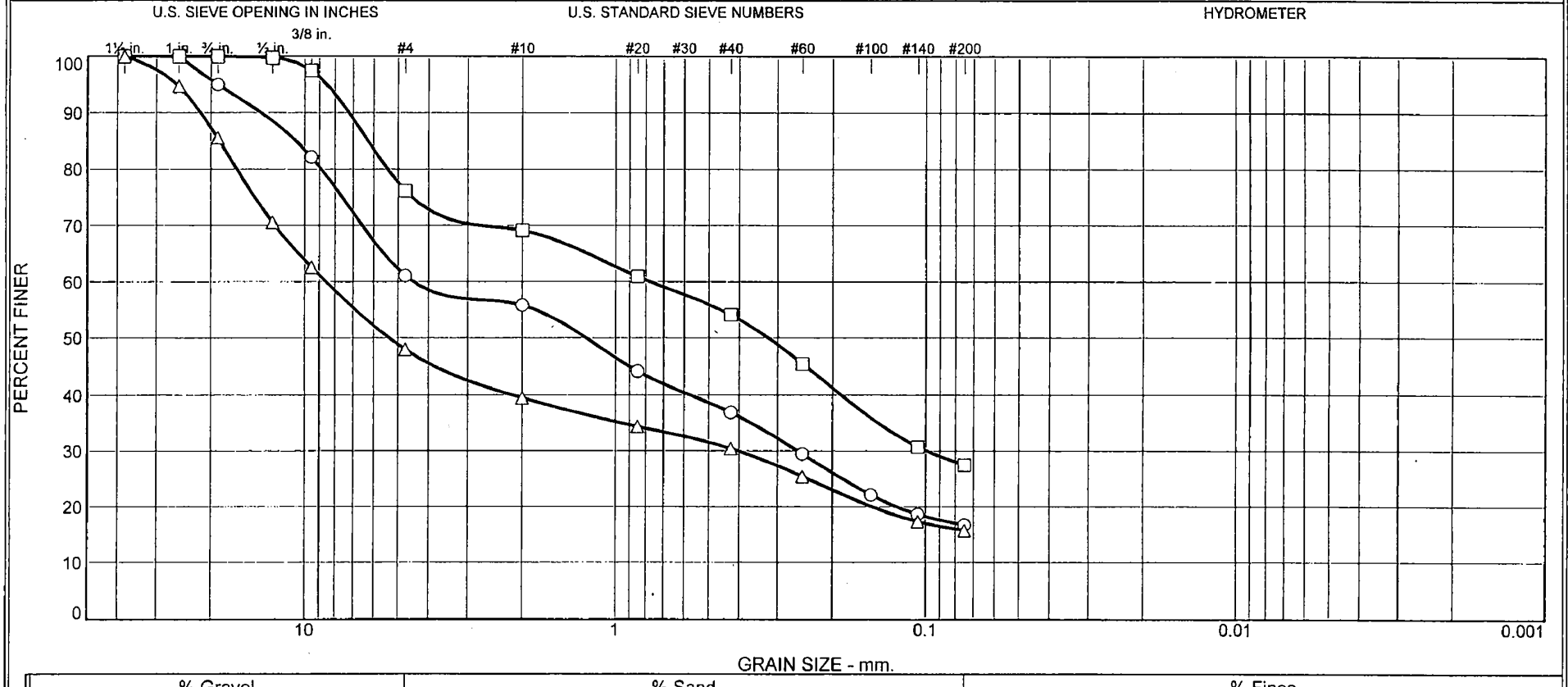
Particle Size Distribution Report/ ASTM D 6913-04e1 Method A



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	5	34	5	19	20	17	
□	0	24	7	15	27	27	
△	14	38	9	9	14	16	

	Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
○	Test Pit TP-701	701-1	3.0-4.5	5/1/08	SM	Pale Brown Silty SAND with Gravel (Visual)	ND	ND	ND
□	Test Pit TP-701	701-1-AC	NA	5/30/08	SM	Processed Material After Compaction	ND	ND	ND
△	Test Pit TP-701	701-1-BC	NA	5/28/08	GM	Processed Material Before Compaction	ND	ND	ND

Client Bechtel

Project Turkey Point COL

Project No. 6468071950 Figure N/A

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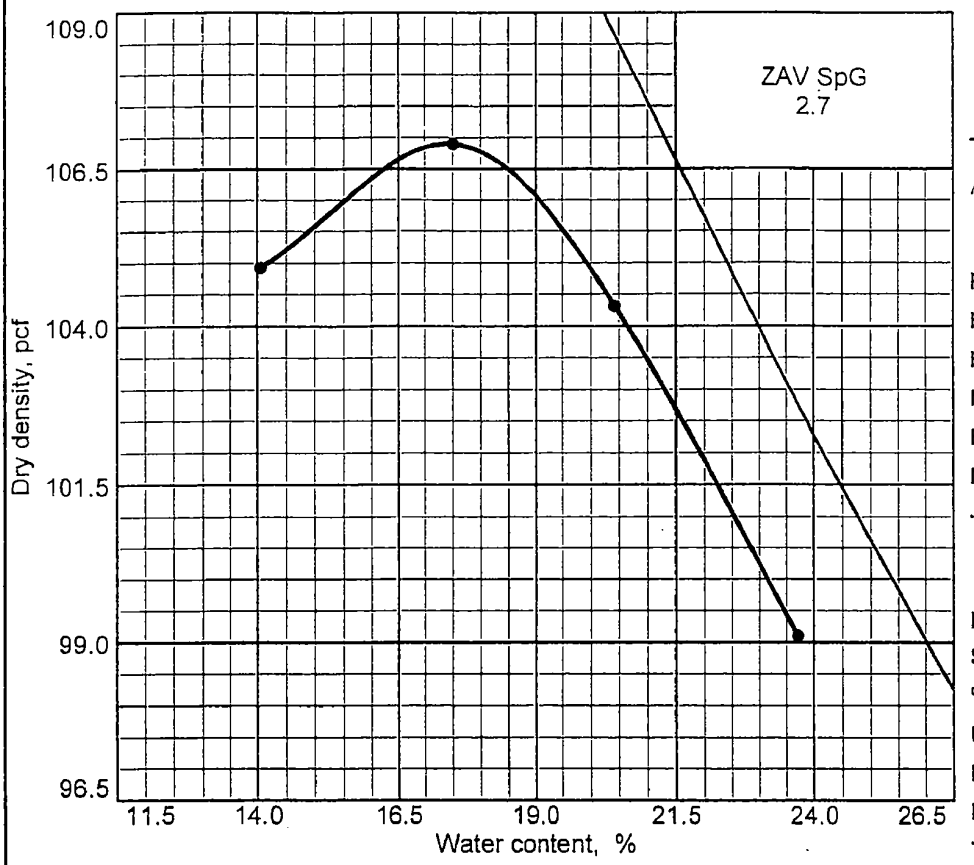
Raleigh, **North Carolina**

○ SIEVE ANALYSIS ONLY
ND = Not Determined
Test performed on material as obtained from the field.
□ Grainsize test performed on material used for ASTM D 1557-07 after compaction.
△ Grainsize test performed on material before compaction.

ZHU 7/22/08

Tested By: ○ CS △ AWH Checked By: LBJ

COMPACTION TEST REPORT



Curve No.
TP 701

Test Specification:
ASTM D 1557-07 Method B Modified

Preparation Method	Dry
Hammer Wt.	10.0
Hammer Drop	18 mechanical
Number of Layers	5
Blows per Layer	25
Mold Size	.03334 cu.ft.

Test Performed on Material Passing 3/8 in. **Sieve**

NM ND **LL** ND **PI**
Sp.G. (ASTM D 854) ND
%>3/8 in. 18.0 **%<No.200** 17
USCS SM **AASHTO** ND
Date Sampled 5/1/08
Date Tested 5/29/08
Tested By AWH

TESTING DATA

	1	2	3	4	5	6
WM + WS	6020.3	6110.1	6110.2	6064.4		
WM	4210.4	4210.4	4210.4	4210.4		
WW + T #1	482.70	516.80	502.70	625.60		
WD + T #1	424.20	440.80	418.60	507.10		
TARE #1	8.10	6.80	6.80	7.30		
WW + T #2	N/A	N/A	N/A	N/A		
WD + T #2	N/A	N/A	N/A	N/A		
TARE #2	N/A	N/A	N/A	N/A		
MOISTURE	14.1	17.5	20.4	23.7		
DRY DENSITY	104.9	106.9	104.3	99.1		

TEST RESULTS

Maximum dry density = 106.9 pcf

Optimum moisture = 17.4 %

Material Description

Pale Brown Silty SAND with gravel (Visual)

Remarks:

Project No. 6468071950 **Client:** Bechtel
Project: Turkey Point COL

• **Source:** Test Pit TP-701 **Sample No.:** 701-1 **Elev./Depth:** 3.0-4.5

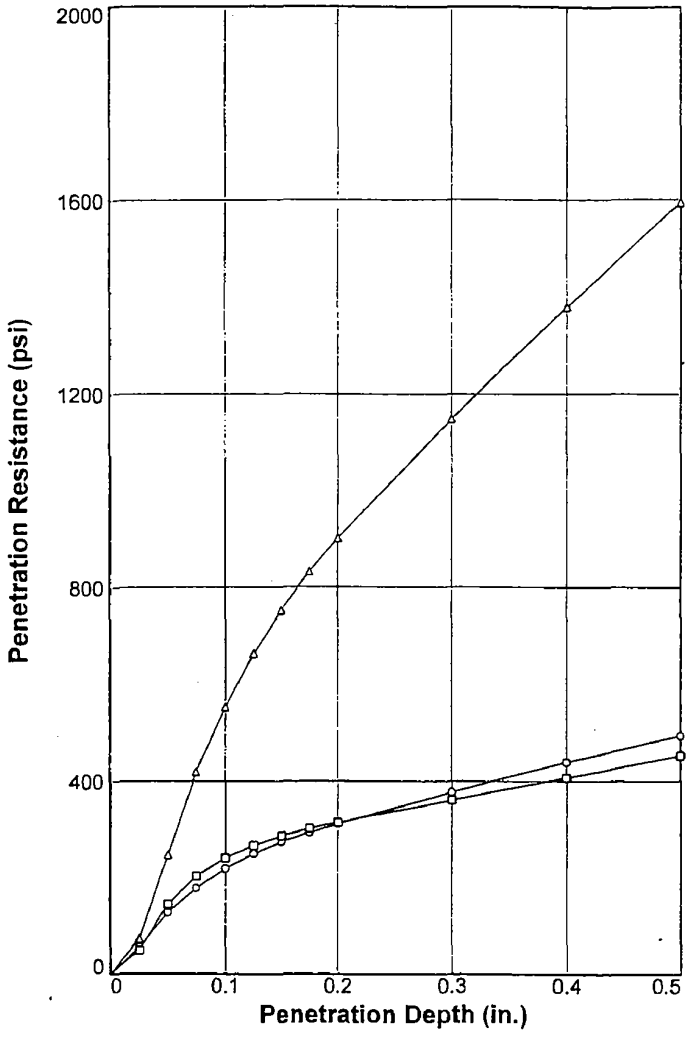
MACTEC, Inc.
Raleigh, North Carolina

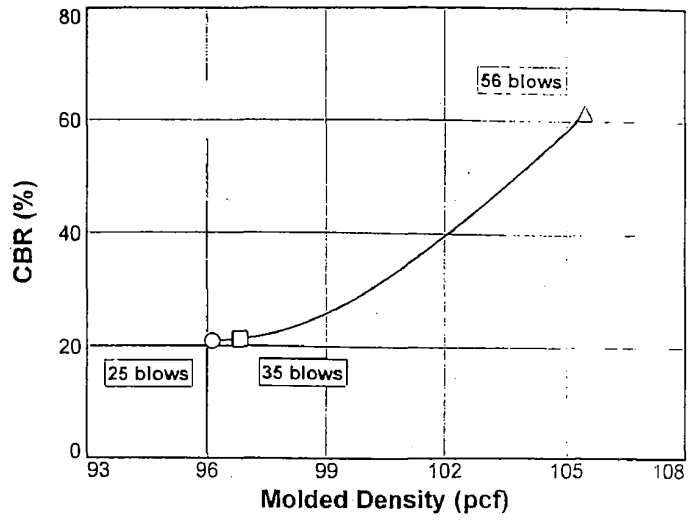
Checked by: LBJ
Title: Lab Manager

Figure N/A

ZHU 7/22/08

BEARING RATIO TEST REPORT
ASTM D 1883 -07





Points for 0.2" Penetrations are Plotted

	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	96.1	89.9	16.2	96.1	89.9	23.1	22.2	20.9	0.003	10.0	0
2 △	105.5	98.7	16.4	105.5	98.7	20.0	58.9	61.4	0.008	10.02	0
3 □	96.8	90.6	16.5	96.8	90.6	22.9	24.9	21.2	0.008	10.02	0

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Pale Brown Silty SAND with Gravel (Visual)	SM	106.9	17.4	ND	ND

Project No: 6468071950

Project: Turkey Point COL

Source of Sample: Test Pit TP-701 **Depth:** 3.0-4.5

Sample Number: 701-1

Date: 5/1/08

Test Description/Remarks:

Prepared in accordance with ASTM D 1557-07

BEARING RATIO TEST REPORT

MACTEC Engineering and Consulting, Inc.

Figure N/A

ZHU 7/22/08

BEARING RATIO TESTING RESULTS

(ASTM D 1883-~~99~~07

7/22/08

Date:	5/1/08		
Project No.:	6468071950		
Project:	Turkey Point COL		
Location:	Test Pit TP-701		
Depth:	3.0-4.5	**Sample Number:**	701-1
Material Description:	Pale Brown Silty SAND with Gravel (Visual)		
USCS Classification:	SM		
Liquid Limit:	ND	**Plasticity Index:**	ND
Test Description:	Prepared in accordance with ASTM D 1557-07		
Maximum Dry Density:	106.9	**Optimum Moisture Content:**	17.4
Testing Remarks:			

Sample 1 (25 Blows; Surcharge: 10.0 lbs.)

Water Content

Wt. Wet Soil+Tare, gms. 265.0 | Wt. Soil+Tare, gms. 228.9 | Wt. Tare, gms. 6.7 | Moisture, % 16.2

Unit Weight

Wt. Mold+Soil, gms. 10815.8 | Wt. Mold, gms. 7006.2 | Ht. Soil, in. 4.593 | Density, pcf 96.1

Swell Data

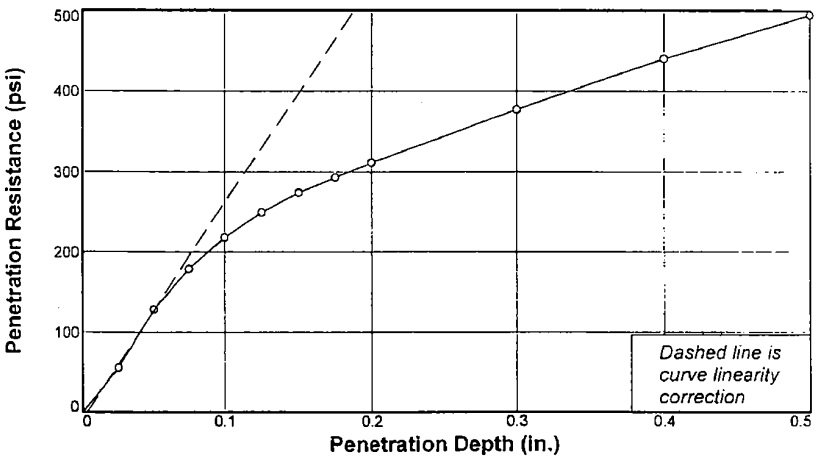
Elapsed Time, hrs.	Dial Reading in. x 1,000	Swell %
0	.1	0.0
96	.22	0.0

Final Water Content

	Wt. Wet Soil+Tare, gms.	Dry Soil+Tare	Tare	Moisture, %
Top	482.1	386.7	6.9	25.1
Middle	428.8	352.3	6.9	22.1
Bottom	428.8	352.3	6.9	22.1

Penetration Test Data

Pen. in.	Dial Reading in. x 1,000	Stress psi	CBR %
0.0	0	0.0	
0.025	55	55.6	
0.05	127	128.4	
0.075	177	179.0	
0.1	216	218.4	22.2
0.125	247	249.8	
0.15	271	274.1	
0.175	290	293.3	
0.2	308	311.5	20.9
0.3	373	377.2	19.9
0.4	435	439.9	19.2
0.5	489	494.5	19.0



Sample 2 (56 Blows, Surcharge: 10.02 lbs)

Water Content

Wt. Wet Soil+Tare, gms. 289.3 | Wt. Soil+Tare, gms. 249.5 | Wt. Tare, gms. 6.9 | Moisture, % 16.4

Unit Weight

Wt. Mold+Soil, gms. 12434 | Wt. Mold, gms. 8253.8 | Ht. Soil, in. 4.587 | Density, pcf 105.5

Swell Data

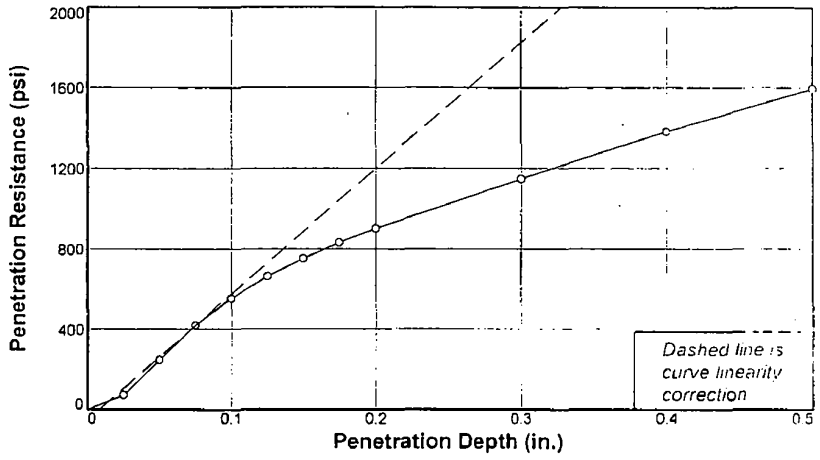
Elapsed Time, hrs.	Dial Reading in. x 1,000	Swell %
0	.1	0.0
96	.22	0.0

Final Water Content

	Wt. Wet Soil+Tare, gms.	Dry Soil+Tare	Tare	Moisture, %
Top	522.0	429.5	9.4	22.0
Middle	484.4	408.1	6.9	19.0
Bottom	484.4	408.1	6.9	19.0

Penetration Test Data

Pen. in.	Dial Reading in. x 1,000	Stress psi	CBR %
0.0	0	0.0	
0.025	75	74.3	
0.05	250	247.6	
0.075	424	420.0	
0.1	560	554.7	58.9
0.125	670	663.7	
0.15	760	752.8	
0.175	840	832.1	
0.2	910	901.4	61.4
0.3	1160	1149.1	61.4
0.4	1395	1381.8	60.8
0.5	1610	1594.8	61.3



Sample 3 (35 Blows, Surcharge: 10.02 lbs)

Water Content

Wt. Wet Soil+Tare, gms. 365.9 | Wt. Soil+Tare, gms. 315.1 | Wt. Tare, gms. 7.0 | Moisture, % 16.5

Unit Weight

Wt. Mold+Soil, gms. 10837.8 | Wt. Mold, gms. 6990.9 | Ht. Soil, in. 4.595 | Density, pcf 96.8

Swell Data

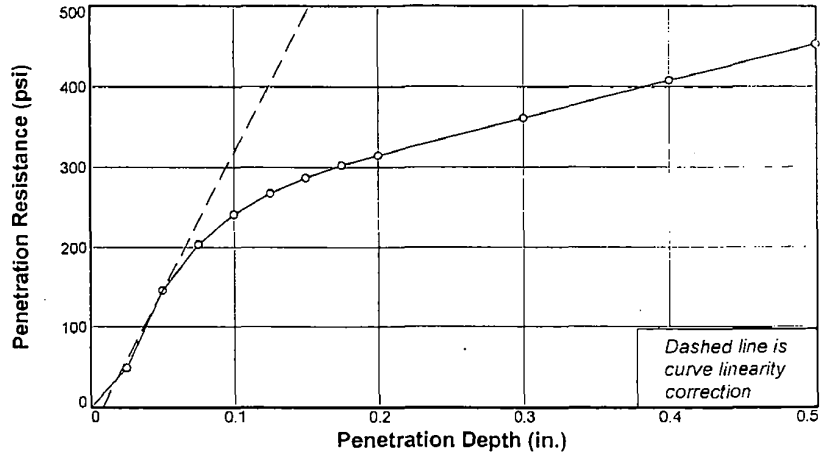
Elapsed Time, hrs.	Dial Reading in. x 1,000	Swell %
0	.1	0.0
96	.30	0.0

Final Water Content

	Wt. Wet Soil+Tare, gms.	Dry Soil+Tare	Tare	Moisture, %
Top	584.7	467	6.9	25.6
Middle	467.4	385.7	6.7	21.6
Bottom	467.4	385.7	6.7	21.6

Penetration Test Data

Pen. in.	Dial Reading in. x 1,000	Stress psi	CBR %
0.0	0	0.0	
0.025	48	48.5	
0.05	144	145.6	
0.075	201	203.3	
0.1	238	240.7	24.9
0.125	264	267.0	
0.15	283	286.2	
0.175	299	302.4	
0.2	311	314.5	21.2
0.3	357	361.1	19.2
0.4	403	407.6	17.9
0.5	448	453.1	17.4



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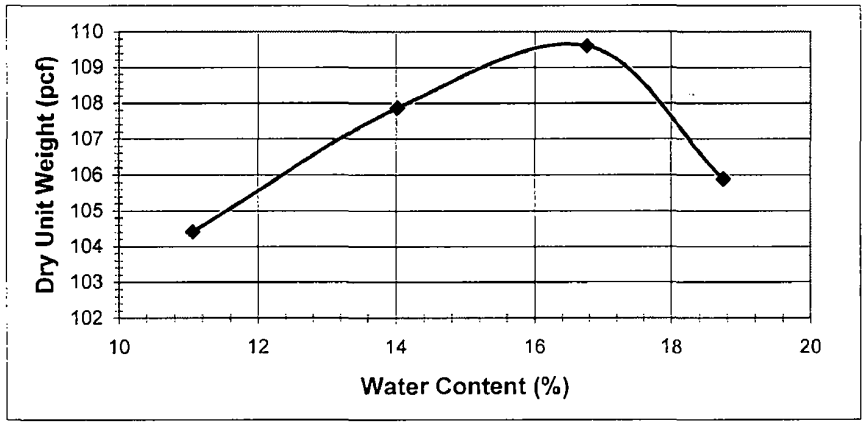
Limerock Bearing Ratio (FM 5-515)

Sample: TP-701
Number of Layers: 5
Blows / layer: 56
Volume of Mold, ft^3: 0.075200

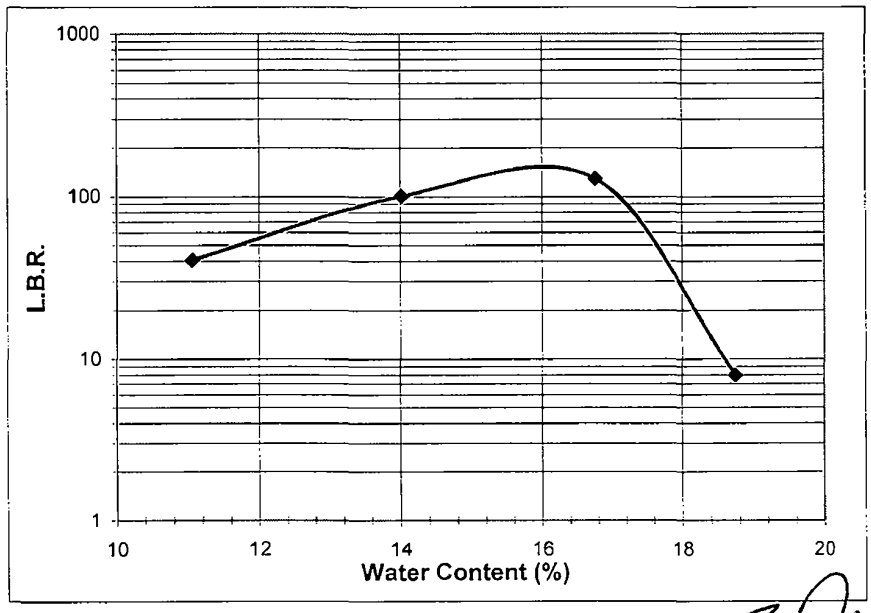
Project Name: Turkey Point COL
Project No: 6468-07-1950
Date: 6/24/2008

w_{opt} (%) = 17.4
γ_{max} (pcf) = 106.9

Sample No.	1	2	3	4	5
Weight of Dish, g	6.7	6.8	6.6	7.1	
Weight of sample + Dish, g	268.8	541.2	507.4	510	
Weight of Dry sample + Dish, g	242.7	475.5	435.5	430.6	
w%	11.1	14.0	16.8	18.7	
Weight of Mold + Soil, g	10948.2	11217.9	12626.3	12543.9	
Weight of Mold, g	6992.6	7023	8260.9	8254.5	
Wet unit weight, pcf	116.0	123.0	128.0	125.7	
Dry unit weight, pcf	104.4	107.9	109.6	105.9	
Corrected Stress Corresponding to 0.1 inch penetration, psi	323.6	807.0	1033.1	63.7	
L.B.R at 0.1 inch penetration (stress/800x100)	40.5	100.9	129.1	8.0	



L.B.R. = 129
Modified Proctor = 107
Optimum Moisture = 17%



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RALEIGH, NORTH CAROLINA

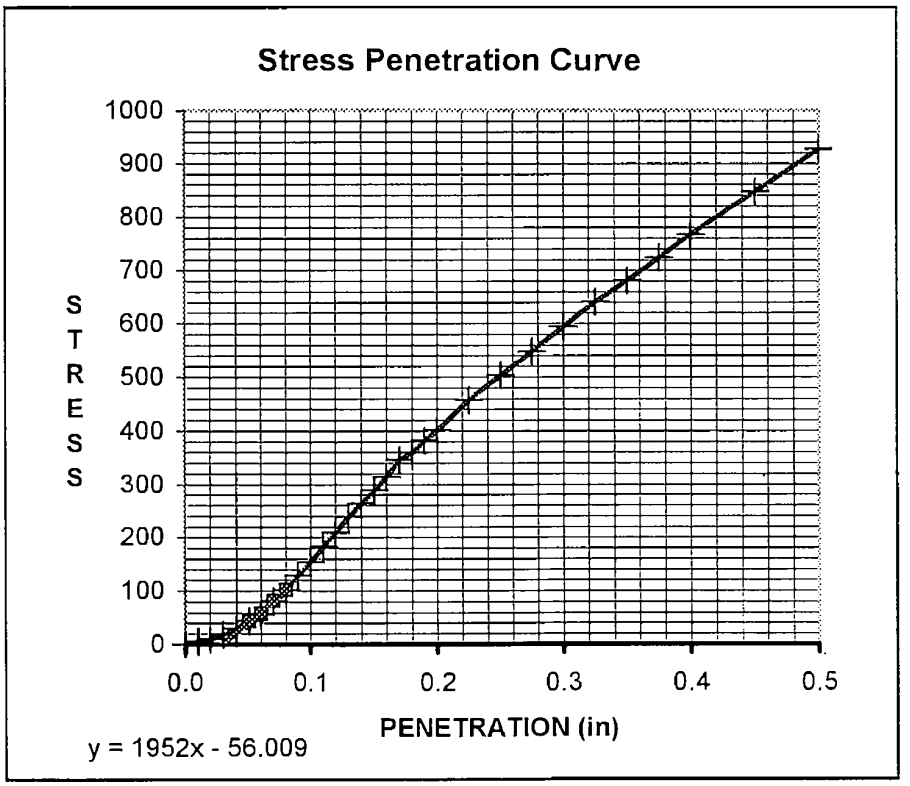
REPORT OF LIMEROCK BEARING RATIO OF LABORATORY COMPACTED SOILS
Performed in General Accordance with FM 5-15

PROJECT NAME: TURKEY POINT COL
MACTEC PROJECT NUMBER: 6468-07-1950
SAMPLE IDENTIFICATION: TP-701 (Sample 1- Mold 2.1.42)
DATE: 6/24/08

Penetration (inches)	Stress (psi)
0.000	0
0.010	6
0.020	11
0.030	19
0.040	30
0.050	44
0.060	58
0.070	81
0.080	101
0.090	129
0.100	153
0.110	183
0.120	209
0.130	239
0.140	264
0.150	289
0.160	314
0.170	346
0.180	359
0.190	381
0.200	401
0.225	457
0.250	503
0.275	547
0.300	594
0.325	640
0.350	682
0.375	724
0.400	768
0.450	847
0.500	928

MAXIMUM DRY DENSITY (pcf): 106.9
OPTIMUM MOISTURE (%): 17.4

COMPACTED VALUES	
WET UNIT WEIGHT (pcf):	116.0
DRY UNIT WEIGHT (pcf):	104.4
INITIAL MOISTURE (%):	11.1
PERCENT MDD:	97.7



At 0.10 inches of Penetration:

	UNCORRECTED	CORRECTED
STRESS (psi)	153.4	232.6
LBR (%)	19.2	29.1

REMARKS: SOAKED SPECIMEN
SURCHARGE WEIGHT = 20 lbs.

SUBMITTED BY:

MACTEC

MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NORTH CAROLINA

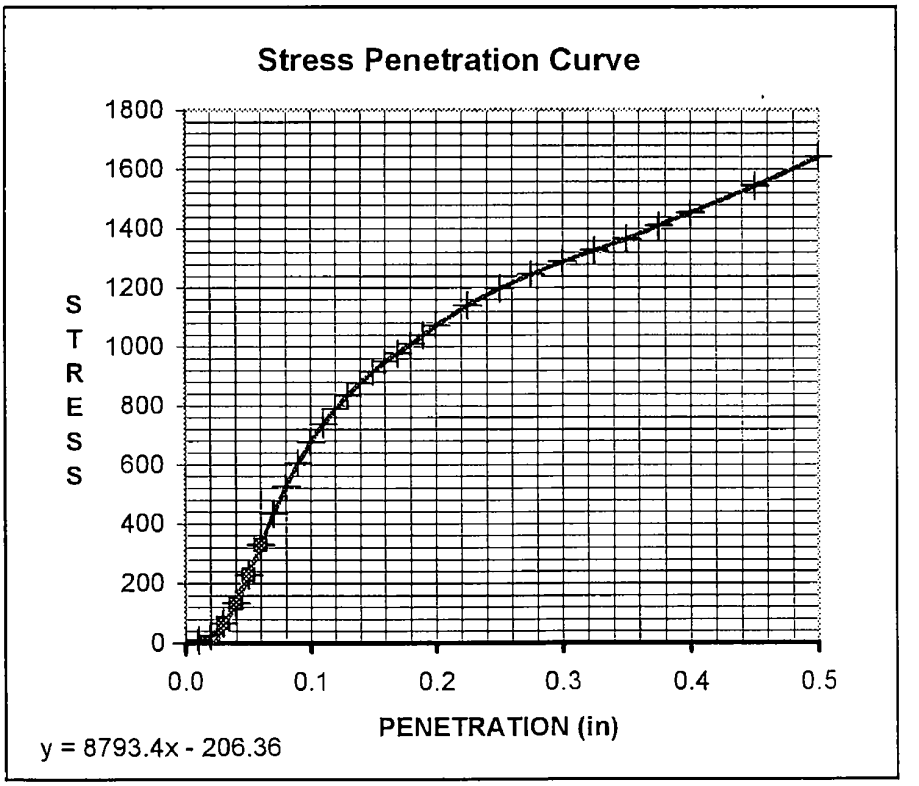
REPORT OF LIMEROCK BEARING RATIO OF LABORATORY COMPACTED SOILS
Performed in General Accordance with FM 5-15

PROJECT NAME: TURKEY POINT COL
MACTEC PROJECT NUMBER: 6468-07-1950
SAMPLE IDENTIFICATION: TP-701 (Sample 2-Mold 2.1.43)
DATE: 6/24/08

Penetration (inches)	Stress (psi)
0.000	0
0.010	11
0.020	27
0.030	67
0.040	133
0.050	228
0.060	329
0.070	434
0.080	525
0.090	606
0.100	677
0.110	737
0.120	788
0.130	833
0.140	877
0.150	916
0.160	949
0.170	978
0.180	1009
0.190	1039
0.200	1072
0.225	1140
0.250	1199
0.275	1247
0.300	1290
0.325	1328
0.350	1366
0.375	1411
0.400	1454
0.450	1545
0.500	1641

MAXIMUM DRY DENSITY (pcf): 106.9
OPTIMUM MOISTURE (%): 17.4

COMPACTED VALUES	
WET UNIT WEIGHT (pcf):	123.0
DRY UNIT WEIGHT (pcf):	107.9
INITIAL MOISTURE (%):	14.0
PERCENT MDD:	100.9



At 0.10 inches of Penetration:

	UNCORRECTED	CORRECTED
STRESS (psi)	676.7	807.0
LBR (%)	84.6	100.9

REMARKS: SOAKED SPECIMEN
SURCHARGE WEIGHT = 20 lbs.

SUBMITTED BY:

MACTEC

MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NORTH CAROLINA

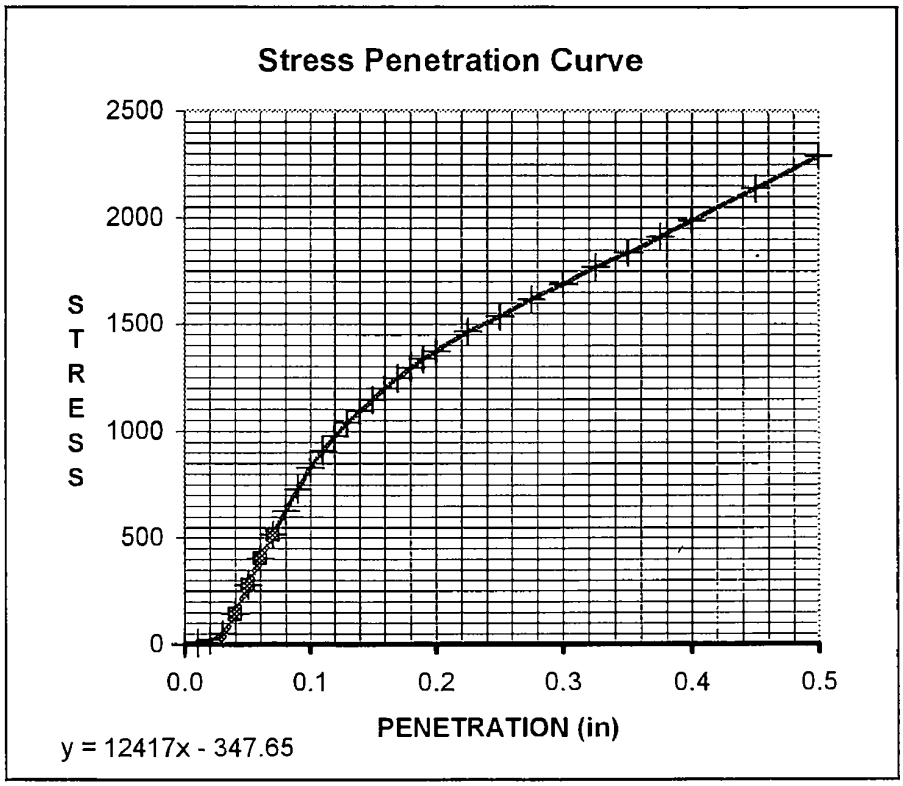
REPORT OF LIMEROCK BEARING RATIO OF LABORATORY COMPACTED SOILS
Performed in General Accordance with FM 5-15

PROJECT NAME: TURKEY POINT COL
MACTEC PROJECT NUMBER: 6468-07-1950
SAMPLE IDENTIFICATION: TP-701 (3-Mold 2.1.48)
DATE: 6/24/08

Penetration (inches)	Stress (psi)
0.000	0
0.010	9
0.020	21
0.030	50
0.040	143
0.050	279
0.060	404
0.070	515
0.080	626
0.090	727
0.100	828
0.110	906
0.120	975
0.130	1038
0.140	1091
0.150	1145
0.160	1199
0.170	1247
0.180	1295
0.190	1338
0.200	1371
0.225	1464
0.250	1535
0.275	1616
0.300	1689
0.325	1768
0.350	1837
0.375	1911
0.400	1985
0.450	2139
0.500	2292

MAXIMUM DRY DENSITY (pcf): 106.9
OPTIMUM MOISTURE (%): 17.4

COMPACTED VALUES	
WET UNIT WEIGHT (pcf):	128.0
DRY UNIT WEIGHT (pcf):	109.6
INITIAL MOISTURE (%):	16.8
PERCENT MDD:	102.5



At 0.10 inches of Penetration:

	UNCORRECTED	CORRECTED
STRESS (psi)	828.1	1033.1
LBR (%)	103.5	129.1

REMARKS: SOAKED SPECIMEN
SURCHARGE WEIGHT = 20 lbs.

SUBMITTED BY:

MACTEC

MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NORTH CAROLINA

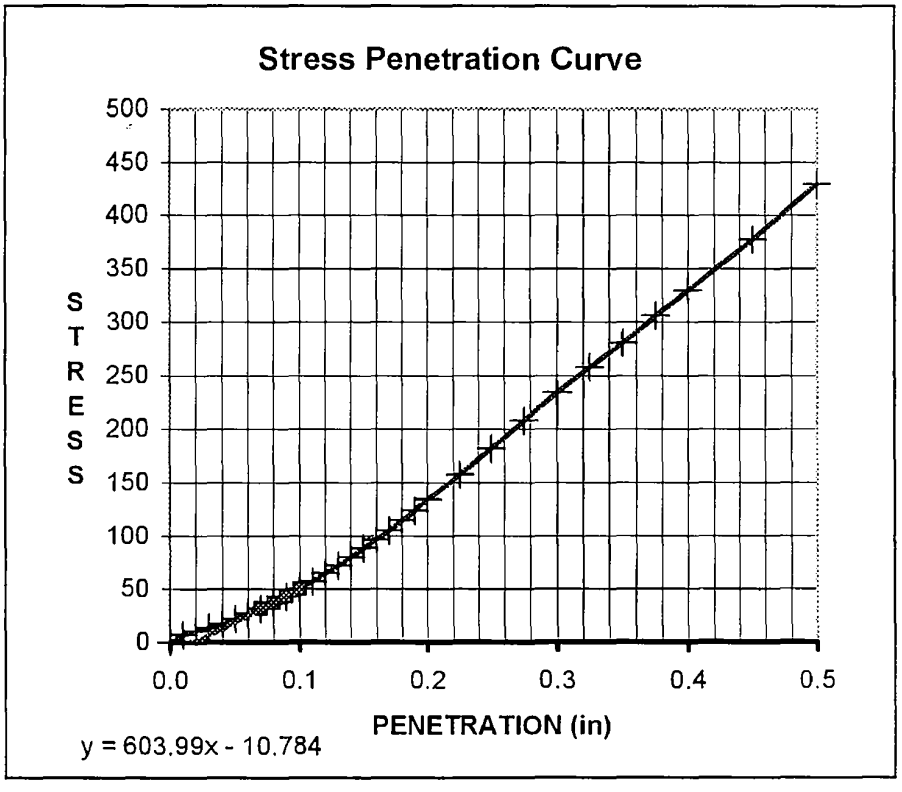
REPORT OF LIMEROCK BEARING RATIO OF LABORATORY COMPACTED SOILS
Performed in General Accordance with FM 5-15

PROJECT NAME: TURKEY POINT COL
MACTEC PROJECT NUMBER: 6468-07-1950
SAMPLE IDENTIFICATION: TP-701 (Sample 4-Mold 2.1.51)
DATE: 6/24/08

Penetration (inches)	Stress (psi)
0.000	0.0
0.010	7.4
0.020	10.6
0.030	13.8
0.040	17.0
0.050	22.3
0.060	26.6
0.070	31.9
0.080	37.2
0.090	42.9
0.100	50.2
0.110	57.5
0.120	65.3
0.130	72.6
0.140	79.8
0.150	88.1
0.160	97.1
0.170	105.3
0.180	114.6
0.190	123.9
0.200	134.2
0.225	157.5
0.250	182.0
0.275	207.6
0.300	234.1
0.325	257.8
0.350	280.1
0.375	305.9
0.400	329.2
0.450	377.3
0.500	429.4

MAXIMUM DRY DENSITY (pcf): 106.9
OPTIMUM MOISTURE (%): 17.4

COMPACTED VALUES	
WET UNIT WEIGHT (pcf):	125.8
DRY UNIT WEIGHT (pcf):	105.9
INITIAL MOISTURE (%):	18.7
PERCENT MDD:	99.1



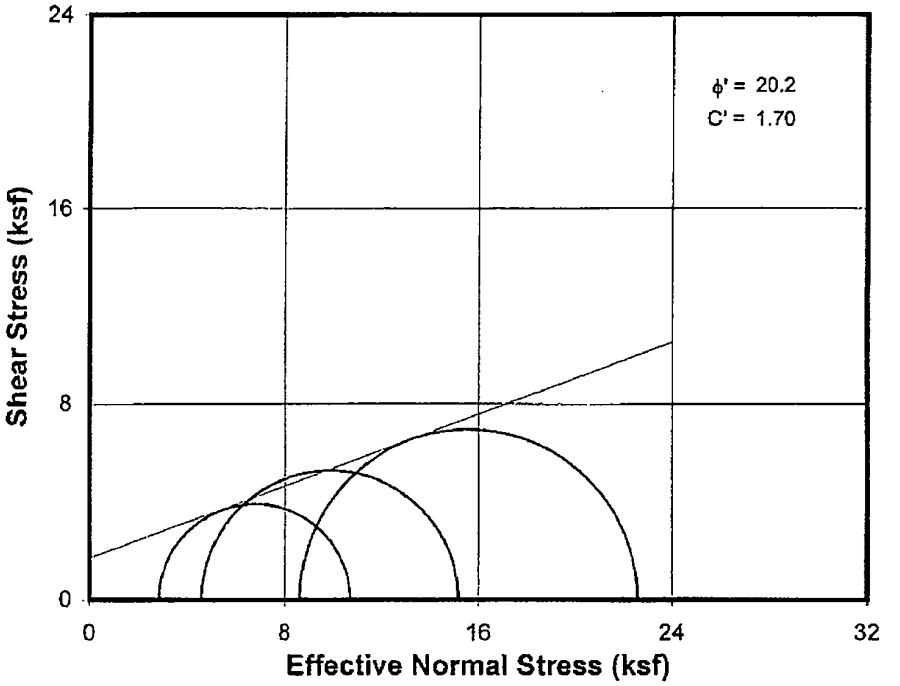
At 0.10 inches of Penetration:

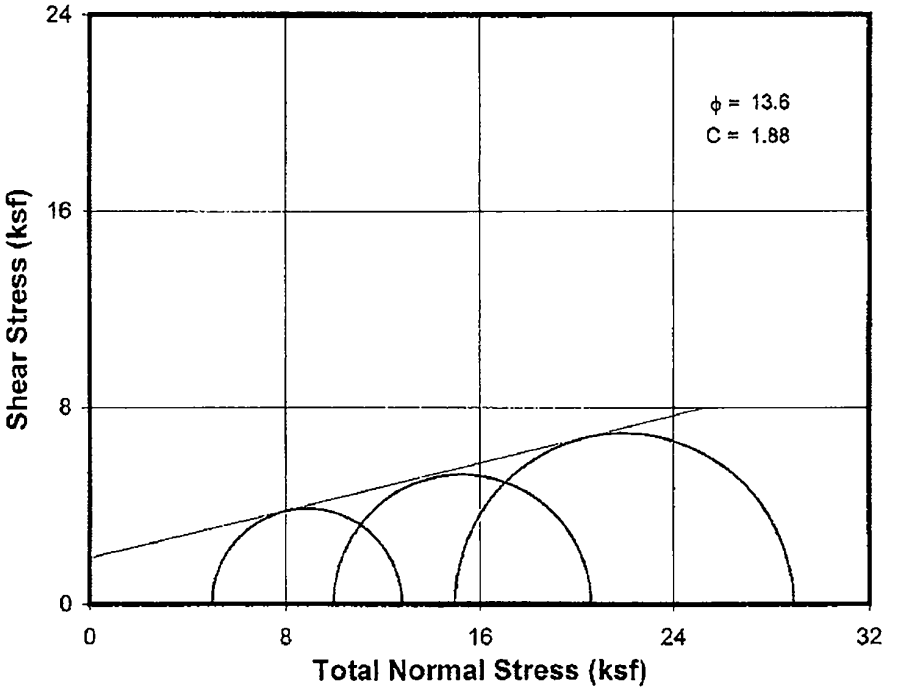
	UNCORRECTED	CORRECTED
STRESS (psi)	50.2	63.7
LBR (%)	6.3	8.0

REMARKS: SOAKED SPECIMEN
SURCHARGE WEIGHT = 20 lbs

SUBMITTED BY:

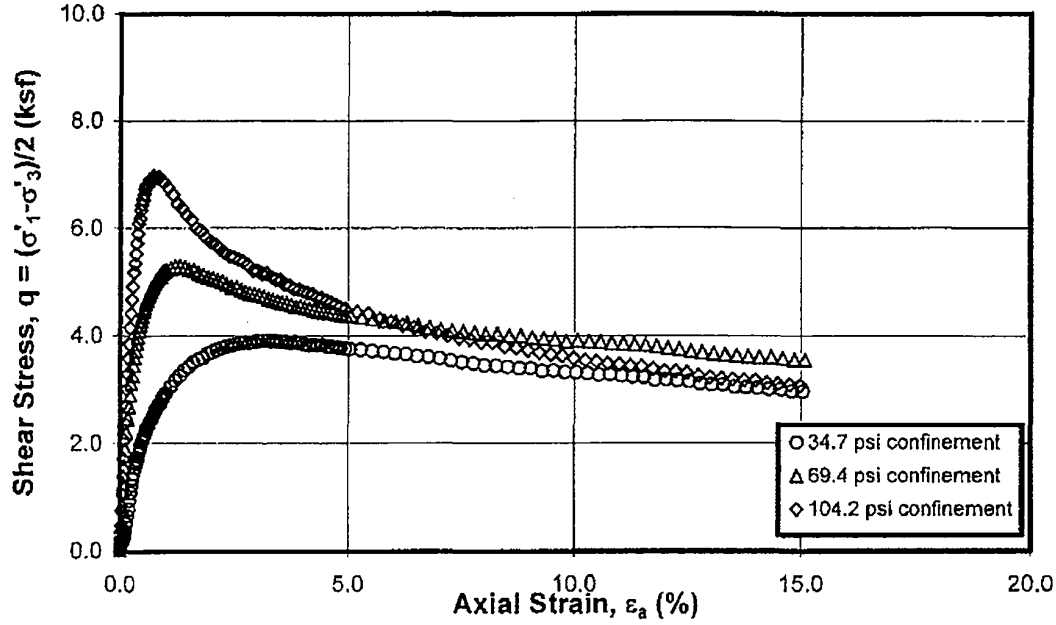
Soil Strength Test

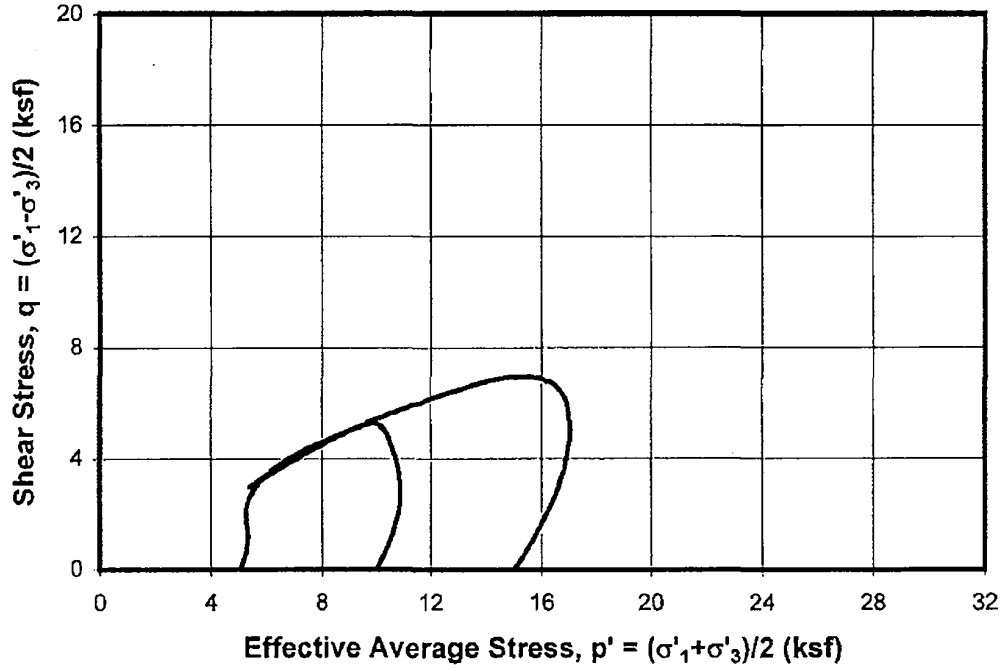




UNDRAINED TRIAXIAL COMPRESSION TEST
Isotropically Consolidated- Mohr's Circles
Sample: UD12 - Depth: 178.9 - 179.70 ft
Boring B630

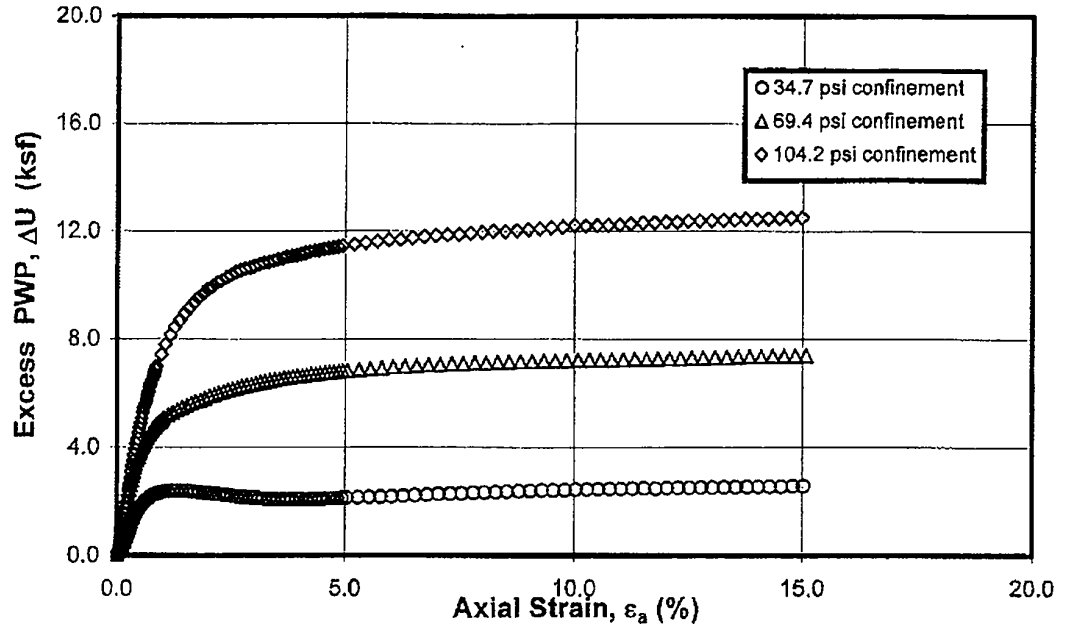
Reviewed By: J.M.

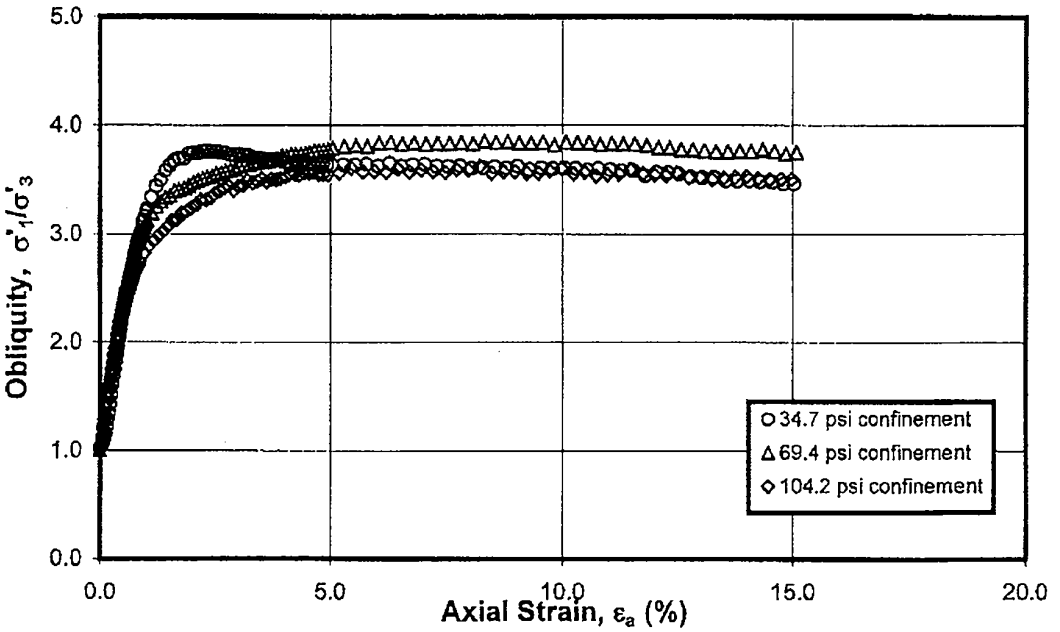




UNDRAINED TRIAXIAL COMPRESSION TEST
Isotropically Consolidated
Sample: UD12 - Depth: 178.9 - 179.70 ft
Boring B630

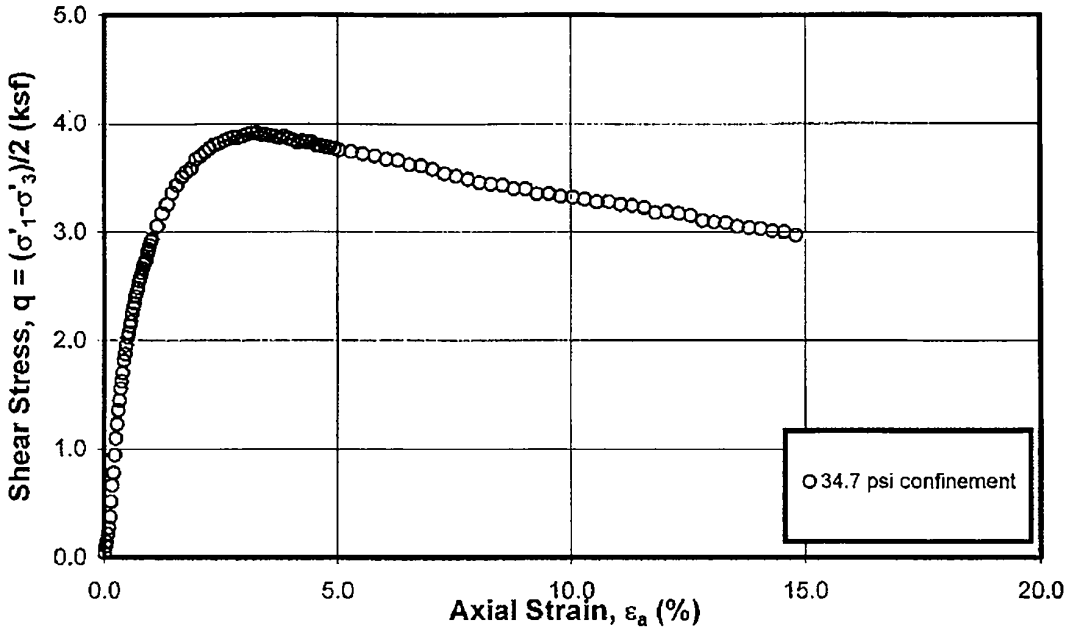
Reviewed By: J.M.

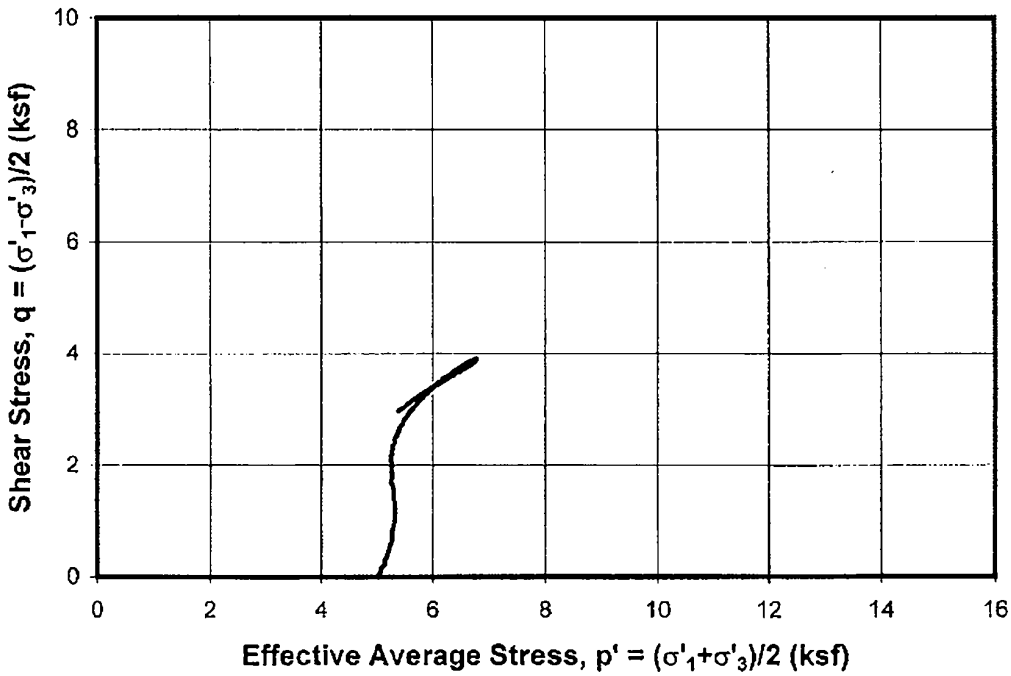




UNDRAINED TRIAXIAL COMPRESSION TEST
Isotropically Consolidated
Sample: UD12 - Depth: 178.9 - 179.70 ft
Boring B630

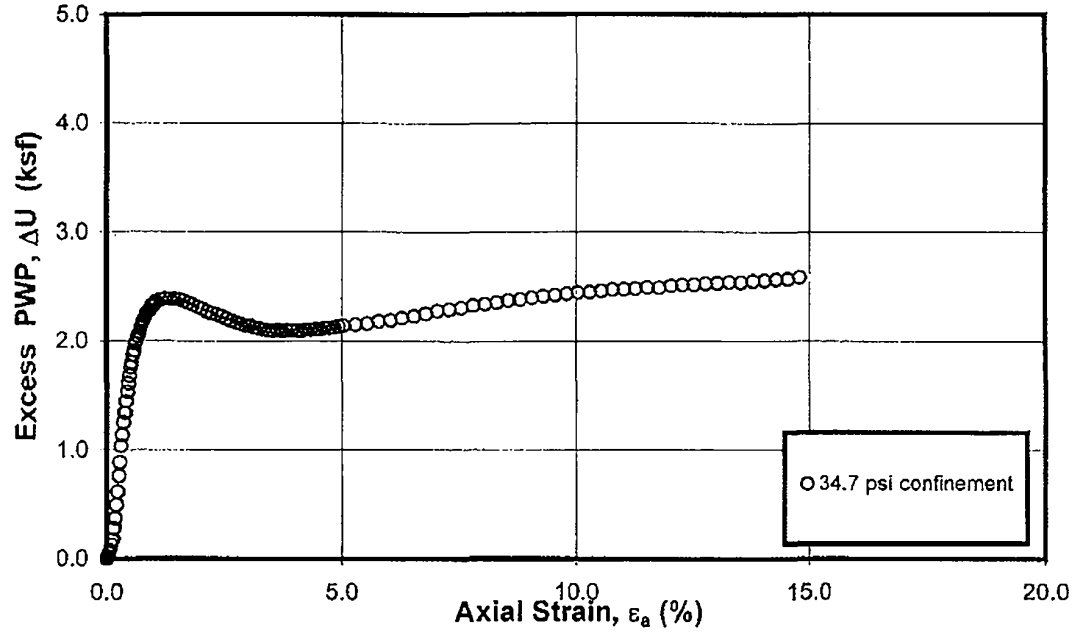
Reviewed By: J.M.

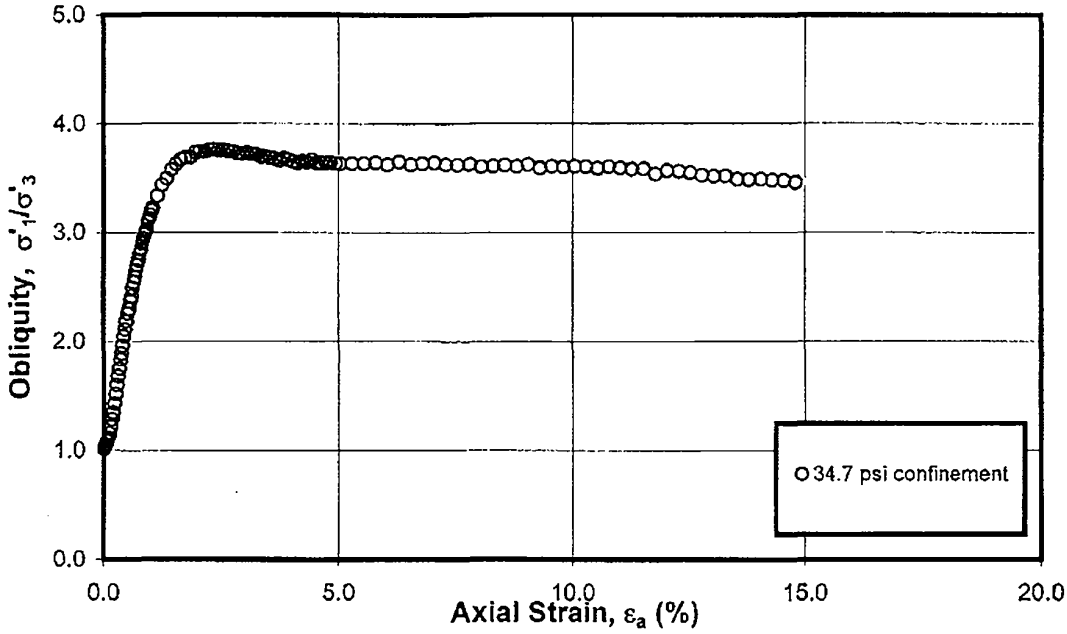




UNDRAINED TRIAXIAL COMPRESSION TEST
Isotropically Consolidated
Sample: UD12a - Depth: 178.90 ft
Boring B630

Reviewed By: JM





UNDRAINED TRIAXIAL COMPRESSION TEST
Isotropically Consolidated
Sample: UD12a - Depth: 178.90 ft
Boring B630

Reviewed By: JM

TRIAXIAL TEST (ASTM D 4767): Specimen Setup / Take Down

Project Number: 0411-08-1701 | Test Type: CIU Triaxial | Cell No.: TRX 4 | File Name: B630_UD12a
Task No.: NA | Test Stress(es), σ'_c or $\sigma'_{v,c}$ = 5.00 , NA , NA & NA ksf
Project Name: Turkey Point COL | k ($\sigma'_{h,c}$ / $\sigma'_{v,c}$) = 1.00 | Induced OCR = 1.00 | K_{ua} ($\sigma_{d,ue}/2\sigma'_{v,c}$) = NA

Assig. Remarks: | Specific Gravity: 2.700 [ ] Meas.; [X] Assumed

[X] Tube [ ] Field Extruded	[ ] Liner [ ] Remolded	[ ] Tamping	[ ] Constant Effort:	Blows/Tamps per Layer =	
Boring No.: B630	[ ] Reconstituted	[ ] Impact/Rammer	Rammer Wgt.(lbf)=	No. Layers =	
Sample No.: UD12	Compostite No.:	[ ] Pluviated:	Tamper Force (lbf)=	Drop (in.) =	
Depth (ft): 178.90	Specimen No.: a	[ ] Kneading	[ ] Undercompaction: U_{ni} (%) =	Dia. (in.) =	
[ ] Spec. Selection by X-ray;	[ ] Geomarine Sample		Ref. Effort =	% Comp. =	± Opt. =

Type Consolidation :	[X] Isotropic [ ] Anistropic	[ ] K_o stress path [ ] 45° stress path	[X] Used automated system: Drained Axial Strain Rate, $\varepsilon_{a,rate}$ (%/h) = ?Value Remarks:																
Loading Conditions :	[X] Static [ ] Post Cyclic	[X] Undrained [ ] Drained	[X] Comp. [ ] Ext.	[X] Strain [ ] Stress Path	[ ] Stress [ ] Strain	[X] Constant Cell Pressure [ ] Variable Cell Pressure	[ ] Cyclic (Hz) Rate: [ ] 0.1;	[ ] Stress [ ] Strain 1; Other:											

Water Content (WC);	Initial - Trimming Location			Final, W_{at}
	Top ($W_{o,1}$)	Bottom ($W_{o,2}$)	Sides ($W_{o,3}$)	(see below)
Container No	4084	5025	1102	5010
Mass Moist Soil + Cont. (g)	46.02	45.08	92.40	97.73
Mass Dry Soil + Container (g)	42.35	41.69	78.75	81.39
Mass Container (g)	30.26	30.79	31.55	30.82
Water Content, $W_{o,n}$ (%)	30.36	31.10	28.92	32.31
Avg. Initial WC, $W_{o,avg}$ (%)	30.13	Final (W_{at}): [X] Slice ; [ ]		Whole Spec.

[ ] See attached data sheet(s) for additional water contents

SOIL MASSES:	Initial	Final
Moist + Tare (etc.)(g)	438.50	442.86
Tare (etc.) (g)	0.00	0.00
Mass Moist Spec., M_{tn} (g)	438.50	442.86
Excess Dry Soil (soil not included in final mass measurement)		
Container No		NA
Mass Dry Soil + Cont. (g)		NA
Mass Container (g)		NA
Mass Excess Dry Soil, $M_{d,es}$ (g)		0.00

Specimen Dimensions, (mm)

	Height			Dia., X indicates with membrane		
	Initial (H_o)	Final (H_{at})		Initial (D_o)	Final (D_{at})	
GB	100.000	74.000	1 T	51.00	53.00	For
1	15.46	17.65	2 M	51.50	60.00	Wedge
2	15.16	17.66	3 B	51.00	70.00	Failure
3	15.47	17.70	1'T			= d_{max}
4	15.13	17.67	2'M			= d_{min}
5	15.56	17.60	3'B			= Δd
Avg	115.36	91.66	Avg.	51.17	61.00	xxxxx

Measuring Devices:
Pi Tape: [X] Dia
Calipers: [ ] Ht.; [ ] Dia
Dial Comparator: [X] Ht.; [ ] Dia
Remarks:

$A_o = \pi D^2/400$ (cm^2)	20.56
V_o (cm^3)	237.19
$A_{atb,m}=\pi (D^*_{at})^2/400$ (cm^2)	28.99
$A_{atw,m}=(d_{min}-2\Delta d)d_{max}\pi/400$ (cm^2)	NA
$D^*_{at}=(D_T+2D_M+D_B)/4$ (mm)	60.75

Estimated Initial Unit Weight

Total, $\gamma_{t,o}$ (lb/ft^3) = 115.41 | Dry, $\gamma_{d,o}$ (lb/ft^3) = 88.69

Membrane / Filter Paper / Apparatus

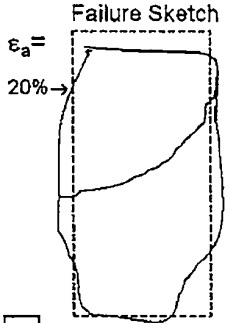
Membrane (mm):	Top	Bottom
Number: = 1 Thickness: [ ] Single; [X] Double	0.72	0.50
	0.72	0.51
Circumference ($C_{rm,o}$)	148.0	149.0
Total Thickness		Dia.($C_{rm,o}/\pi$)
Average:	0.31	47.27

Filter Paper: Top + Bottom: [ ] Yes ; [X] No
Filter Strips: [X] Yes ; [ ] No Number = 8
Type of Filter Strips [ ] Vertical: ¼ in. & Whatman #54
[X] Spiral: ¼ in. & Whatman #1

Apparatus: Mass Top Cap, M_{tc} = 53.4 g, 0.12 lbf
Mass Displ. System, M_{ds} (cap, dial, piston, etc.) = NA g, NA lbf

[ ] Photo Taken.

Failure Sketch



Failure Mode:
[X] Bulge
[X] Wedge
[ ] Parabolic
Wedge/Bulge Ht.= NA (mm)

NA - Not Applicable
GB - Gage Block
Other Remarks:

Top Cap Attached: [ ] Yes; [X] No; Piston Dia.(in.) [X] ½: [ ] ¾; [ ] Load Cell: [ ] External [X] Internal
Top Cap - Rotation [ ] Fixed,<1°; [X] Limited,<5°; [ ] Unlimited, >5°
With: [ ] Frictionless End Caps; [ ] Lat. Movement Top Cap
[ ] Internal LVDT Jacket

Final Visual Classification: Sandy Silt (ML), greenish gray

Trimmed / Reconstituted By: VR | Date: 7/25/2008
Set Up By: TP | Date: 7/25/2008
Taken Down By: TP | Date: 7/31/2008
Prelim. Calc. By: TP
Final Calc. By: TP
Reviewed By: JM.

[ ] See more detailed sketch on attached sheet. Remarks: NA = Not Applicable

TRIAXIAL TEST: Specimen Calculations & Summary(1)

Project Number: 0411-08-1701 | Cell No.: TRX 4 | File Name: B630_UD12a
Task Number: NA | Specific Gravity: 2.700 [ ] Measured; [X] Assumed
Boring No.: B630 | Sample No.: UD12 | Specimen No.: a | Depth (ft): 178.90
Type Test: CIU Triaxial | Specimen: [X] "Undisturbed"; [ ] Reconstituted; [ ]
Calculations Corr. for Salt (dissolved solids): [X] No or, [ ] Yes, with concentration = _____ ppm

	Inital Water Contents (WC), (W_o) over Saturation, (S_o), in (%):						Calculated Mass of Dry Soil (g)	
	Top, $W_{o,1}$	Botttom, $W_{o,2}$	Sides, $W_{o,3}$	Avg., $W_{o,avg}$	Selct., $W_{o,s}$	Back Cal., $W_{o,bc}$	Initial Selected WC, w_o (%)	30.13
W_c	30.36	31.10	28.92	30.13	30.13	31.01	Initial , $M_{d,o}$	336.97
S_o	91.0	92.1	88.8	90.7	90.7	92.0	Final, $M_{d,at}$	334.71
	Measured final mass of moist soil, $M_{t,at}$ (g)					442.86	Selected, M_d	334.71
	Final mass of moist soil corrected for excess dry soil, $M_{tat,c}$ (g)					442.86		

Consolidation Data	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	
Changes in Height (mm) and Volume (cm^3) Within Given Consolidation Stages/Columns	At Initial Seating Stress	During Back-Pressuring	1st Consol. Increment (1)	Column 2 or 3 to 1st Test Stage (1)	Column 4 to 2nd Test Stage	Column 5 to 3rd Test Stage	Column 6 to 4th Test Stage	
Sign Convention: (+) Deformation in compression or Flow out of spec.; (-) Deformation in extension (swell) or Flow into spec.								
Change in Height, $\Delta H_{c,n}$	0.00	0.08		0.19	NA	NA	NA	
Sum of changes in (+ out)	1.65			2.09	NA	NA	NA	
burette readings, $\Delta b_{r,n}$ (- in)		-5.33	NA	22.00	NA	NA	NA	(2)
Theoretical $\Delta V_{ct,n} = (3V_o \times \Delta H_{c,n}/H_o)$	0.02	0.52		1.18	NA	NA	NA	
Vol. Factor, $F_v = \Delta b_{r,n} / \Delta V_{t,n}$				1.78	NA	NA	NA	
Corrected $\Delta V_{ct,n} = F_v \times \Delta V_{t,n}$			NA	0.00	NA	NA	NA	(3)
Selected $\Delta V_{c,n}$	1.65	0.52		2.09	NA	NA	NA	

Summary For Test Stages					
Test Stage:	1st = 1	2nd = 2	3rd = 3	4th = 4	
Cell Pressure, $\sigma_{c,n}$ (psi)	104.70	NA	NA	NA	Number of
Back Pressure, $U_{b,n}$ (psi)	70.12	NA	NA	NA	Test Stages = 1
Axial Force Reading, $P_{r,n}$ (lbf)	22.95	NA	NA	NA	
Eff. Consol. Stress (σ'_c or $\sigma'_{v,c}$) (4), (ksf)	5.08	NA	NA	NA	
t_c, ON or in [X] days [ ] hrs	2.00	NA	NA	NA	

At Final Test Stress/Stage - Summary of Calculation of ΔV_c (cm^3) by Different Procedures					
By Selected Volumes	By Saturation = 100 %	By Change in Mass (5)	For Diff. in Meas. Vol. (V_o-V_{at}),	For Selected ΔV_c, required	
ΔV_c = 4.26	ΔV_c = 4.66	ΔV_c = 0.96	& corr. for ΔH_{td} ΔV_c= NA	G_s for S_c = 100 %:	2.691

At Final Test Stress/Stage - Consolidation Conclusions					
$\Delta H_{c,f}$ (mm) = 0.28	$\Delta V_{c,f}$ (cm^3) = 4.26	Back Cal. G_s for S=100% = 2.691	Normalized	Ht. Ch. (%) =	-1.23
$\varepsilon_{ac,c}$ (%) = 0.24	$\varepsilon_{vc,f}$ (%) = 1.80		Diff. in:	Vol. Ch. (%) =	

Summary of Specimen Physical Properties											
Specific Gravity: G_s = 2.700	Height	Volume	Area	Water Content	Unit Weight		Saturation	Void Ratio	Volumetric Water	Porosity	Skempton B para-
Condition:	(mm)	(cm^3)	(cm^2)	(%)	Total (pcf)	Dry (pcf)	(%)	e	Content	n	meter %(6)
Initial:	115.36	237.19	20.56	31.01	115.41	88.09	92.0	0.910	0.4383	0.476	95.0
After to 1st σ'_c	115.08	232.93	20.24	32.31	118.69	89.70	99.6	0.876	0.4651	0.467	NM
Consol.: to 2nd σ'_c											
to 3rd σ'_c											
to 4th σ'_c											

Notes: (1) If the consol. stress in the 1st consol. increment & 1st test stage are equal, log the data in Column 4.

(2) The height changes occuring within each shearing and unloading stage (1 - 4) are recorded in these rows (after Column 3).

(3) The volume changes occuring within each shearing and unloading stage (1 - 4) are calculated/recorded in these rows (after Column 3).

(4) Stresses are corrected for membrane. (5) ~ $M_{t,o}-(M_{tat,c}+\rho_{water} \times \Delta V_{in,column1\&2})$

(6) Initial value is after back pressuring

NA - Not Applicable ON - Over Night; WC - Water Content Remarks: NM = Not Measured

Calculated By: TP Reviewed By: JM

TRIAXIAL TEST: Specimen Calculations Summary(2)

Project Number: 0411-08-1701 | Test Type: CIU Triaxial | App. No.: TRX 4 | File Name: B630_UD12a
Project Name: Turkey Point COL | Task No.: NA | Test No.: 0 | Test Series for: 0

X Tube ☐ Field Extruded	☐ Liner ☐ Remolded	☐ Tamping	☐ Constant Effort:	Blows/Tamps per Layer =	
Boring No.: B630	☐ Reconstituted	☐ Impact/Rammer	Rammer Wgt.(lbf)= ☐		No. Layers =
Sample No.: UD12	Compostite No.:	☐ Pluviated:	Tamper Force (lbf)= ☐		Drop (in.) =
Depth (ft): 178.9	Specimen No.: a	☐ Kneading	☐ Undercompaction:	U_{ni} (%) =	Dia. (in.) =
☐ Spec. Selection by X-ray;	☐ Geomarine Sample		Ref. Effort =	% Comp. =	± Opt. =

Type Consolidation	X	Isotropic		K_o stress path	X	Used automated system	Drained Axial Strain Rate, $\varepsilon_{a,rate}$ (%/hr.)=?Value											
		Anistropic		45° stress path	Remarks:													
Loading Conditions	X	Static	X	Undrained	X	Comp.	X	Strain ☐ Stress	X	Constant Cell pressure		☐ Cyclic (Hz)		☐ Stress ☐ Strain				
		Post Cyclic		Drained		Ext.		Stress Path		Variable Cell pressure		Rate: ☐ 0.1;		☐ 1; Other:				

Specific Gravity: G_s = 2.700	Height	Volume	Area	Water Content	Unit Weight Total	Unit Weight Dry	Saturation	Void Ratio	Skempton B para-
Condition:	(mm)	(cm^3)	(cm^2)	(%)	(pcf)	(pcf)	(%)	e	meter %(1)
Initial:	115.36	237.19	20.56	31.01	115.41	88.09	92.00	0.91	95.0
After to 1st σ'_c	115.08	232.93	20.24	32.31	118.69	89.70	99.62	0.88	NM
Consol.: to 2nd σ'_c									
to 3rd σ'_c									
to 4th σ'_c									

Unit for Stresses: (ksf)

Consolidation Stress Summary and Loading Summary					
Item	Unit	1st Stage	2nd Stage	3rd Stage	4th Stage
Axial Strain during Consol., $\varepsilon_{a,c}$:	%	0.241	NA	NA	NA
Vol. Strain during Consol., $\varepsilon_{v,c}$:	%	1.796	NA	NA	NA
Effective Vertical Stress, σ'_v:	(ksf)	5.081	NA	NA	NA
Effective Horizontal Stress, σ'_h:	(ksf)	4.992	NA	NA	NA
Consol. Stress Ratio, k (σ'_h / σ'_v):	-	0.982			
Induced OCR:	-	1.00	NA	NA	NA
Eff. Average Stress, (σ'_v + σ'_h)/2:	(ksf)	10.072			
Eff. Mean Stress, (σ'_v + 2*σ'_h)/3:	(ksf)	5.021			
Undr. Ambient Shear Stress, τ_{ba}:	(ksf)	NA	NA	NA	NA
Undr. Ambient Shear Strain, $\varepsilon_{a,ua}$	%	NA	NA	NA	NA

Notes: See Fugro South, Inc. Notation Listing for definition of symbols and acronyms.
(1) Initial B is after saturation
NA - Not Applicable

Membrane Correction	
Type:	Bulge
Modulus:	150.0 psi
Diameter:	47.27 mm
Thickness:	0.31 mm

Area Correction		
Type:	Bulge	
Stage	Area Corr. Const.:	Final Area (cm^2):
1st	1.520	28.99
2nd		
3rd		
4th		

Filter Paper Correction			
Type:	None	Type Strips:	Sprial #1
Strips:	8		
Force:	0.000 lbf/strip		

Final Visual Description and Remarks: Sandy Silt (ML), greenish gray

Loading Summary							
Stage	Stress Status	ε_a (%)	q (ksf)	p' (ksf)	ΔU (ksf)	σ_1' (ksf)	σ_3' (ksf)
1st	Max Shear Stress	3.23	3.913	6.794	2.112	10.707	2.881
	Max Obliquity	2.33	3.804	6.556	2.240	10.360	2.753
2nd	Max Shear Stress						
	Max Obliquity						
3rd	Max Shear Stress						
	Max Obliquity						
4th	Max Shear Stress						
	Max Obliquity						

Remarks: NM = Not Measured

STAGE 1

Project: 0411-08-1701 Boring No.: B630 Depth (ft.): 178.90
Test Type: CIU Triaxial Sample No.: UD12 Stage No.: 1
Specimen No.: a

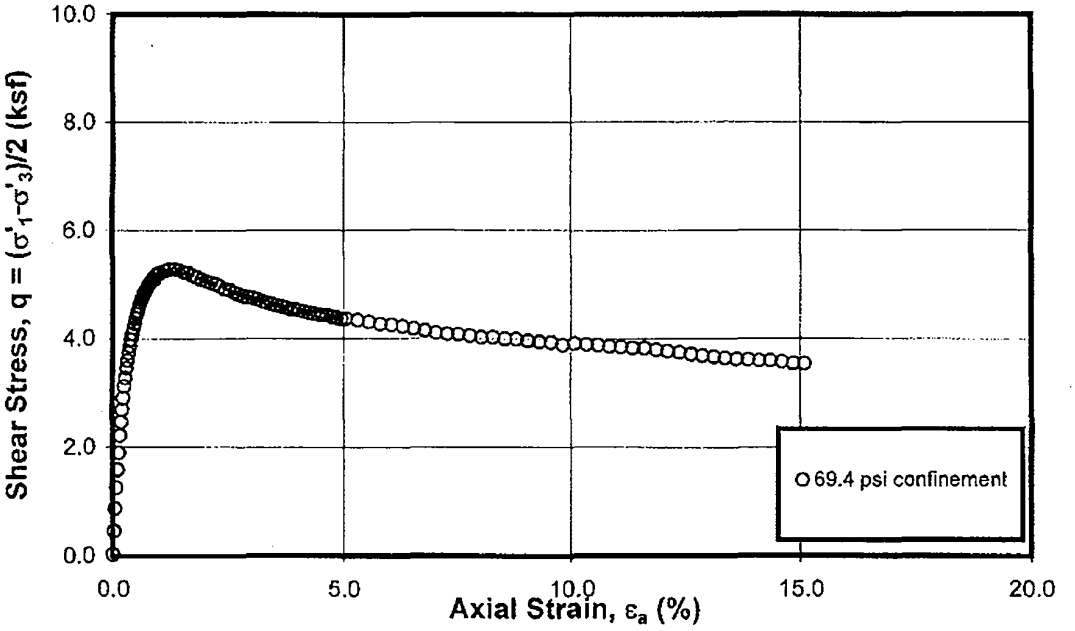
Elapsed Time (min)	Axial Strain ε_a (%)	q (ksf)	p' (ksf)	Excess PWP, ΔU (ksf)	Volume Change (cm^3)	Obliquity σ'_1/σ'_3 -	A_f -	E_S (ksf)	E_T (ksf)
0.0	0.000	0.045	5.036	0.000	0.000	1.018	0.000	-	-
0.8	0.025	0.102	5.075	0.022	0.000	1.041	0.163	460.1	400.3
1.5	0.050	0.145	5.073	0.058	0.000	1.059	0.314	400.5	458.5
2.3	0.075	0.217	5.137	0.076	0.000	1.088	0.207	459.3	513.2
3.0	0.100	0.274	5.128	0.130	0.000	1.113	0.299	456.9	644.3
3.8	0.125	0.379	5.183	0.183	0.000	1.158	0.280	533.3	976.4
4.5	0.150	0.518	5.220	0.282	0.000	1.220	0.306	630.0	1144.1
5.3	0.175	0.665	5.278	0.372	0.000	1.288	0.305	707.7	1046.6
6.0	0.200	0.781	5.271	0.497	0.000	1.348	0.341	734.2	1128.1
6.8	0.225	0.947	5.313	0.619	0.000	1.434	0.347	800.9	1273.7
7.5	0.251	1.100	5.326	0.765	0.000	1.520	0.363	842.0	1131.1
8.3	0.276	1.231	5.331	0.889	0.000	1.601	0.376	861.1	1027.4
9.0	0.301	1.357	5.315	1.038	0.000	1.686	0.394	872.9	863.9
9.8	0.326	1.448	5.301	1.141	0.000	1.752	0.406	861.5	811.0
10.5	0.351	1.560	5.300	1.253	0.000	1.835	0.413	864.1	713.6
11.3	0.376	1.627	5.278	1.342	0.000	1.891	0.424	841.8	573.5
12.0	0.401	1.704	5.250	1.448	0.000	1.961	0.436	827.7	764.6
12.8	0.426	1.819	5.281	1.532	0.000	2.051	0.431	832.7	694.3
13.5	0.451	1.878	5.259	1.614	0.000	2.111	0.439	813.0	548.0
14.3	0.476	1.956	5.262	1.685	0.000	2.184	0.441	802.8	619.1
15.0	0.501	2.034	5.268	1.761	0.000	2.258	0.442	793.5	460.7
15.8	0.526	2.072	5.256	1.808	0.000	2.301	0.446	770.2	402.7
16.5	0.551	2.135	5.256	1.878	0.000	2.368	0.447	758.0	416.8
17.3	0.577	2.176	5.255	1.914	0.000	2.414	0.449	739.5	474.1
18.0	0.602	2.254	5.272	1.979	0.000	2.493	0.447	734.4	511.8
18.8	0.627	2.305	5.293	2.006	0.000	2.543	0.443	721.2	359.7
19.5	0.652	2.344	5.287	2.050	0.000	2.593	0.445	705.5	418.5
20.3	0.677	2.410	5.325	2.077	0.000	2.653	0.439	698.8	407.3
21.0	0.702	2.446	5.319	2.123	0.000	2.703	0.441	684.2	299.6
21.8	0.727	2.485	5.332	2.147	0.000	2.746	0.439	671.2	410.2
22.6	0.752	2.549	5.362	2.183	0.000	2.813	0.435	665.9	390.4
23.3	0.777	2.583	5.379	2.198	0.000	2.848	0.432	653.1	311.2
24.1	0.802	2.627	5.392	2.226	0.000	2.900	0.431	643.7	333.8
24.8	0.828	2.667	5.409	2.250	0.000	2.945	0.429	633.7	303.9
25.6	0.853	2.704	5.435	2.259	0.000	2.980	0.425	623.7	243.4
26.3	0.878	2.728	5.447	2.271	0.000	3.007	0.424	611.4	170.9
27.1	0.903	2.747	5.458	2.284	0.000	3.026	0.422	598.5	330.6
27.8	0.928	2.811	5.483	2.320	0.000	3.104	0.419	596.2	385.9

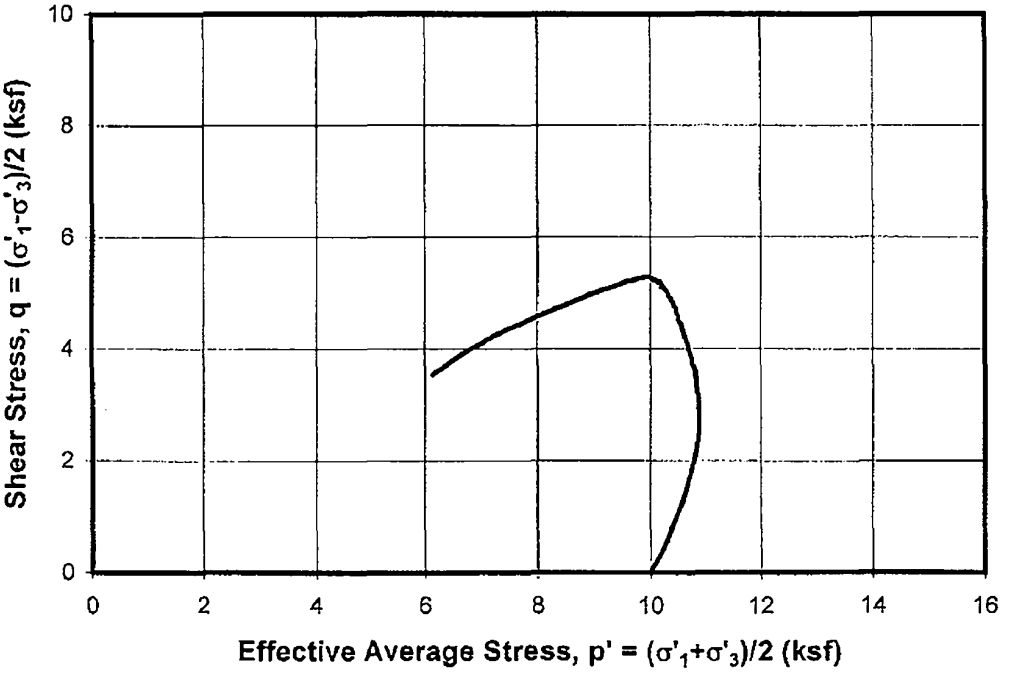
STAGE 1

Elapsed Time (min)	Axial Strain ε_a (%)	q (ksf)	p' (ksf)	Excess PWP, ΔU (ksf)	Volume Change (cm^3)	Obliquity σ'_1/σ'_3 -	A_f -	E_S (ksf)	E_T (ksf)
28.6	0.953	2.843	5.518	2.317	0.000	3.127	0.414	587.3	281.4
29.3	0.978	2.882	5.547	2.328	0.000	3.162	0.410	580.0	290.4
30.1	1.003	2.916	5.564	2.344	0.000	3.203	0.408	572.4	218.6
30.8	1.029	2.937	5.575	2.361	0.000	3.226	0.407	562.3	200.7
33.8	1.129	3.057	5.674	2.376	0.000	3.336	0.394	533.9	235.5
36.8	1.229	3.172	5.776	2.388	0.000	3.437	0.382	509.1	199.5
39.8	1.329	3.257	5.867	2.386	0.000	3.496	0.371	483.4	188.9
42.8	1.429	3.361	5.970	2.382	0.000	3.577	0.359	464.2	176.1
45.8	1.529	3.433	6.046	2.380	0.000	3.628	0.351	443.2	147.0
48.8	1.629	3.509	6.136	2.362	0.000	3.671	0.341	425.2	121.1
51.8	1.729	3.555	6.197	2.347	0.000	3.691	0.335	405.9	80.4
54.8	1.829	3.589	6.257	2.330	0.000	3.690	0.328	387.5	116.6
57.8	1.930	3.671	6.356	2.308	0.000	3.735	0.318	375.9	113.3
60.8	2.030	3.703	6.402	2.294	0.000	3.743	0.313	360.4	65.8
63.8	2.130	3.737	6.463	2.267	0.000	3.743	0.307	346.7	71.2
66.8	2.230	3.774	6.512	2.253	0.000	3.756	0.302	334.4	66.2
69.8	2.331	3.804	6.556	2.240	0.000	3.764	0.298	322.6	45.5
72.8	2.431	3.819	6.591	2.224	0.000	3.756	0.294	310.6	37.3
75.8	2.531	3.841	6.627	2.201	0.000	3.758	0.291	300.0	40.5
78.8	2.631	3.860	6.669	2.183	0.000	3.748	0.286	290.1	32.7
81.8	2.731	3.874	6.700	2.168	0.000	3.742	0.283	280.4	13.2
84.8	2.831	3.873	6.711	2.157	0.000	3.729	0.281	270.5	11.0
87.8	2.931	3.885	6.736	2.141	0.000	3.725	0.279	262.0	29.7
90.8	3.031	3.903	6.761	2.142	0.000	3.731	0.276	254.6	26.6
93.8	3.132	3.911	6.787	2.118	0.000	3.720	0.274	247.0	9.8
96.9	3.232	3.913	6.794	2.112	0.000	3.716	0.273	239.4	-13.5
99.9	3.332	3.898	6.788	2.102	0.000	3.698	0.273	231.3	-12.3
102.9	3.432	3.900	6.793	2.093	0.000	3.697	0.272	224.7	-9.9
105.9	3.532	3.888	6.785	2.090	0.000	3.684	0.273	217.6	-16.9
108.9	3.633	3.884	6.782	2.097	0.000	3.680	0.273	211.4	-19.1
111.9	3.733	3.869	6.775	2.086	0.000	3.663	0.273	204.9	-0.2
114.9	3.833	3.883	6.778	2.094	0.000	3.683	0.273	200.3	-5.8
117.9	3.933	3.863	6.757	2.092	0.000	3.669	0.275	194.2	-34.7
120.9	4.033	3.849	6.749	2.094	0.000	3.654	0.275	188.6	-39.3
123.9	4.133	3.824	6.721	2.089	0.000	3.639	0.277	182.9	-8.0
126.9	4.233	3.841	6.731	2.101	0.000	3.658	0.277	179.3	3.1
20269.6	4.334	3.827	6.718	2.100	0.000	3.647	0.278	174.5	-12.6
20272.6	4.434	3.828	6.695	2.107	0.000	3.670	0.281	170.7	-23.2
20275.6	4.534	3.804	6.686	2.103	0.000	3.639	0.280	165.8	-32.8
20278.6	4.634	3.795	6.669	2.118	0.000	3.641	0.282	161.9	-14.6
20281.6	4.734	3.789	6.660	2.119	0.000	3.639	0.283	158.2	-14.4
20284.6	4.834	3.781	6.641	2.123	0.000	3.643	0.285	154.6	-18.5
20287.6	4.935	3.770	6.634	2.135	0.000	3.633	0.286	151.0	-24.4

STAGE 1

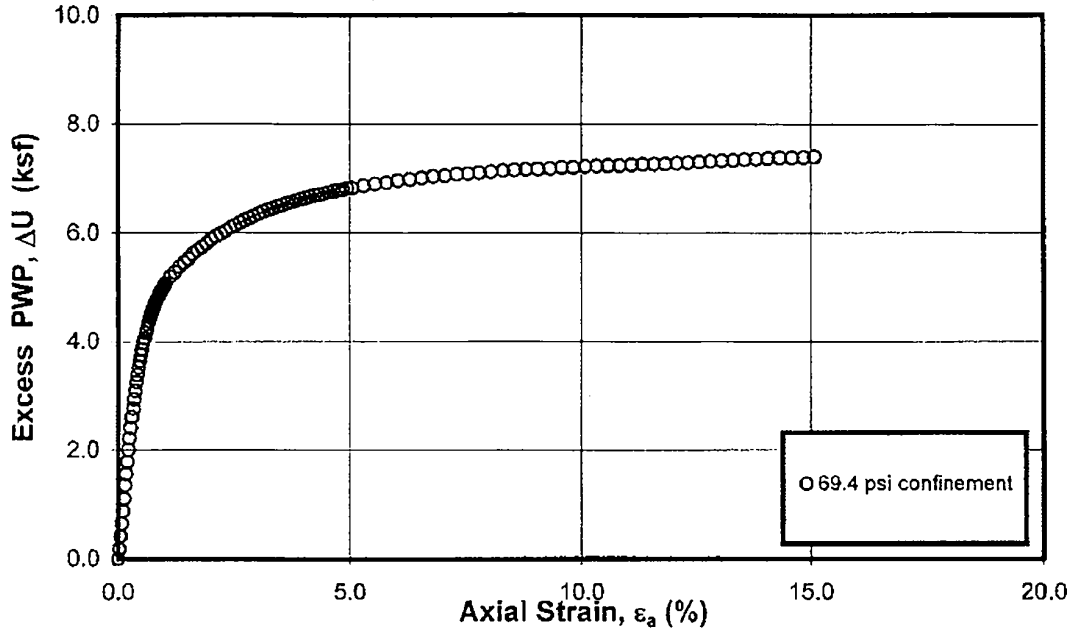
Elapsed Time (min)	Axial Strain ε_a (%)	q (ksf)	p' (ksf)	Excess PWP, ΔU (ksf)	Volume Change (cm^3)	Obliquity σ'_1/σ'_3 -	A_f -	E_S (ksf)	E_T (ksf)
20290.6	5.035	3.756	6.610	2.142	0.000	3.632	0.288	147.4	-19.6
20298.1	5.285	3.743	6.583	2.152	0.000	3.635	0.291	139.9	-13.1
20305.6	5.535	3.723	6.551	2.165	0.000	3.634	0.294	132.9	-14.5
20313.1	5.786	3.706	6.514	2.182	0.000	3.640	0.298	126.6	-19.1
20320.6	6.036	3.676	6.476	2.191	0.000	3.625	0.302	120.3	-16.9
20328.1	6.286	3.664	6.430	2.213	0.000	3.649	0.307	115.1	-20.9
20335.6	6.537	3.623	6.385	2.230	0.000	3.624	0.312	109.5	-20.2
20343.1	6.787	3.613	6.355	2.251	0.000	3.636	0.315	105.2	-15.0
20350.6	7.037	3.586	6.303	2.278	0.000	3.640	0.321	100.6	-28.2
20358.1	7.288	3.543	6.244	2.293	0.000	3.623	0.327	96.0	-27.1
20365.6	7.538	3.518	6.203	2.306	0.000	3.621	0.332	92.2	-20.7
20373.1	7.789	3.491	6.150	2.326	0.000	3.625	0.338	88.5	-23.6
20380.6	8.039	3.459	6.117	2.336	0.000	3.602	0.342	84.9	-17.8
20388.1	8.289	3.446	6.088	2.352	0.000	3.609	0.345	82.1	-16.6
20395.6	8.539	3.432	6.056	2.372	0.000	3.617	0.350	79.3	-17.3
20403.1	8.790	3.403	6.015	2.381	0.000	3.605	0.354	76.4	-12.9
20410.6	9.040	3.400	5.993	2.397	0.000	3.623	0.357	74.2	-20.1
20418.1	9.290	3.353	5.941	2.412	0.000	3.591	0.363	71.2	-18.2
20425.6	9.541	3.354	5.929	2.422	0.000	3.606	0.365	69.4	-9.1
20433.1	9.791	3.330	5.892	2.433	0.000	3.599	0.370	67.1	-13.0
20440.6	10.042	3.322	5.870	2.447	0.000	3.607	0.373	65.3	-10.1
20448.1	10.292	3.305	5.843	2.450	0.000	3.604	0.376	63.4	-17.6
20455.6	10.542	3.278	5.811	2.460	0.000	3.588	0.380	61.3	-9.5
20463.1	10.793	3.281	5.803	2.473	0.000	3.602	0.382	60.0	-8.2
20470.6	11.043	3.257	5.772	2.475	0.000	3.591	0.386	58.2	-14.5
20478.1	11.293	3.245	5.759	2.481	0.000	3.581	0.387	56.7	-11.7
20485.6	11.544	3.228	5.727	2.492	0.000	3.583	0.391	55.2	-25.3
20493.1	11.794	3.181	5.689	2.490	0.000	3.538	0.396	53.2	-14.0
20500.6	12.045	3.193	5.681	2.510	0.000	3.567	0.398	52.3	-3.7
20508.1	12.295	3.172	5.648	2.518	0.000	3.562	0.402	50.9	-15.7
20515.6	12.545	3.154	5.625	2.521	0.000	3.553	0.405	49.6	-25.1
20523.1	12.796	3.109	5.571	2.528	0.000	3.526	0.413	47.9	-23.0
20530.6	13.046	3.096	5.555	2.535	0.000	3.518	0.415	46.8	-7.2
20538.1	13.296	3.091	5.543	2.543	0.000	3.521	0.417	45.8	-17.1
20545.6	13.547	3.053	5.507	2.540	0.000	3.489	0.422	44.4	-19.3
20553.1	13.797	3.043	5.491	2.551	0.000	3.486	0.424	43.5	-8.5
20560.6	14.047	3.032	5.468	2.556	0.000	3.490	0.428	42.5	-11.3
20568.1	14.298	3.015	5.445	2.566	0.000	3.480	0.431	41.5	-10.5
20575.6	14.548	3.006	5.431	2.570	0.000	3.479	0.433	40.7	-16.3
20583.1	14.798	2.974	5.390	2.586	0.000	3.461	0.440	39.6	-14.7

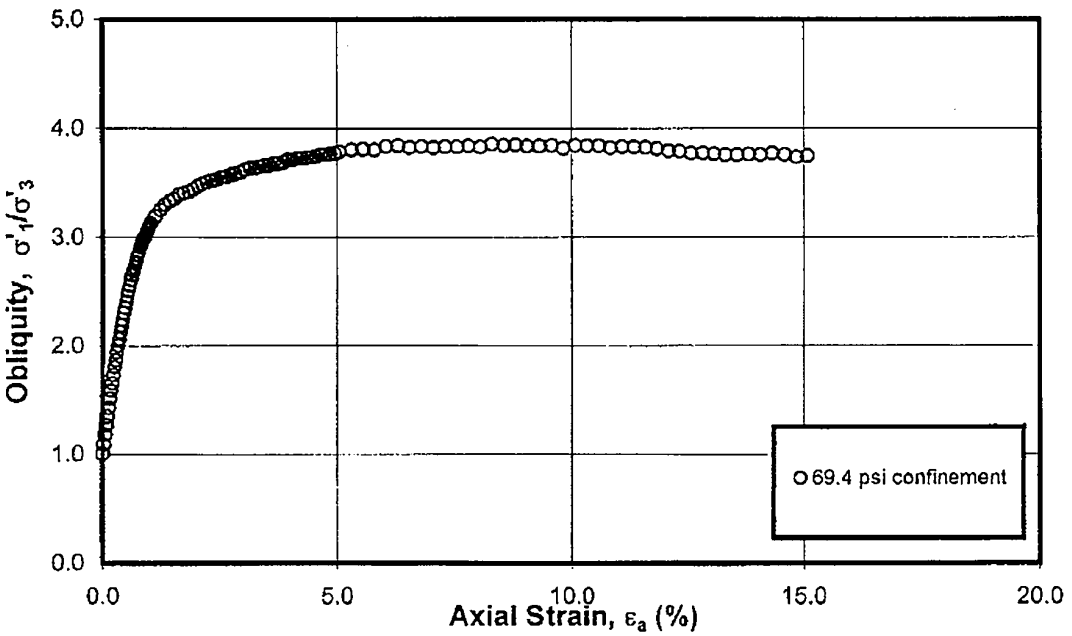




UNDRAINED TRIAXIAL COMPRESSION TEST
Isotropically Consolidated
Sample: UD12b - Depth: 179.30 ft
Boring B630

Reviewed By: JM





UNDRAINED TRIAXIAL COMPRESSION TEST
Isotropically Consolidated
Sample: UD12b - Depth: 179.30 ft
Boring B630

Reviewed By: JM.

TRIAXIAL TEST (ASTM D 4767): Specimen Setup / Take Down

Project Number: 0411-08-1701 | Test Type: CIU Triaxial | Cell No.: TRX-4 | File Name: B630_UD12b
Task No.: NA | Test Stress(es), σ'_c or $\sigma'_{v,c}$ = 10.00 , NA , NA & NA ksf
Project Name: Turkey Point COL | k ($\sigma'_{h,c}$ / $\sigma'_{v,c}$) = 1.00 | Induced OCR = 1.00 | K_{ua} ($\sigma_{d,ua}/2\sigma'_{v,c}$) = NA

Assig. Remarks: | Specific Gravity: 2.700 | [ ] Meas.; [X] Assumed

[X] Tube [ ] Field Extruded [ ] Liner [ ] Remolded	[ ] Tamping	[ ] Constant Effort:	Blows/Tamps per Layer =		
Boring No.: B630 [ ] Reconstituted	[ ] Impact/Rammer	Rammer Wgt.(lbf)=	No. Layers =		
Sample No.: UD12 Compostite No.:	[ ] Pluviated:	Tamper Force (lbf)=	Drop (in.) =		
Depth (ft): 179.30 Specimen No.: b	[ ] Kneading	[ ] Undercompaction: U_{ni} (%) =	Dia. (in.) =		
[ ] Spec. Selection by X-ray; [ ] Geomarine Sample		Ref. Effort =	% Comp. =	± Opt. =	

Type Consolidation :	[X] Isotropic [ ] Anistropic	[ ] K_o stress path [ ] 45° stress path	[X] Used automated system: Drained Axial Strain Rate, $\varepsilon_{a,rate}$ (%/h) = ?Value Remarks:													
Loading Conditions :	[X] Static [ ] Post Cyclic	[X] Undrained [ ] Drained	[X] Comp. [ ] Ext.	[X] Strain [ ] Stress Path	[ ] Stress	[X] Constant Cell Pressure [ ] Variable Cell Pressure	[ ] Cyclic (Hz) Rate:	[ ] 0.1;	[ ] Stress [ ] Strain 1; Other:							

Water Content (WC);	Initial - Trimming Location			Final, W_{at}
	Top ($W_{o,1}$)	Bottom ($W_{o,2}$)	Sides ($W_{o,3}$)	(see below)
Container No	4049	4015	4187	824
Mass Moist Soil + Cont. (g)	41.17	50.35	92.19	97.24
Mass Dry Soil + Container (g)	38.41	45.27	77.48	81.88
Mass Container (g)	29.83	29.48	29.89	32.32
Water Content, $W_{o,n}$ (%)	32.17	32.17	30.91	30.99
Avg. Initial WC, $W_{o,avg}$ (%)	31.75	Final (W_{at}); [X] Slice ; [ ] Whole Spec.		

[ ] See attached data sheet(s) for additional water contents

SOIL MASSES:	Initial	Final
Moist + Tare (etc.)(g)	427.50	423.82
Tare (etc.) (g)	0.00	0.00
Mass Moist Spec., M_{tn} (g)	427.50	423.82
Excess Dry Soil (soil not included in final mass measurement)		
Container No.		NA
Mass Dry Soil + Cont. (g)		NA
Mass Container (g)		NA
Mass Excess Dry Soil, $M_{d,es}$ (g)		0.00

Specimen Dimensions, (mm)

	Height			Dia., X indicates with membrane		
	Initial (H_o)	Final (H_{at})		Initial (D_o)	Final (D_{at})	
GB	100.000	100.000	1 T	50.50	54.50	For
1	15.08	-1.22	2 M	50.50	57.50	Wedge
2	15.08	-1.03	3 B	50.50	51.00	Failure
3	15.03	-1.38	1'T			= d_{max}
4	15.06	-1.39	2'M			= d_{min}
5	15.06	-1.09	3'B			= Δd
Avg	115.06	98.78	Avg.	50.50	54.33	xxxxx

Measuring Devices:
Pi Tape: [X] Dia
Calipers: [ ] Ht.; [ ] Dia
Dial Comparator [X] Ht.; [ ] Dia
Remarks:

$A_o = \pi D^2/400$ (cm^2)	20.03
V_o (cm^3)	230.46
$A_{atb,m} = \pi (D^*_{at})^2 /400$ (cm^2)	23.87
$A_{atw,m} = (d_{min}-2\Delta d)d_{max}\pi/400$ (cm^2)	NA
$D^*_{at} = (D_T+2D_M+D_B)/4$ (mm)	55.13

Estimated Initial Unit Weight

Total, $\gamma_{t,o}$ (lb/ft^3) = 115.80 | Dry, $\gamma_{d,o}$ (lb/ft^3) = 87.89

Membrane / Filter Paper / Apparatus

Membrane (mm):	Top	Bottom
Number: = 1 Thickness: [ ] Single; [X] Double	0.70	0.51
	0.69	0.52
Circumference ($C_{rm,o}$)	148.0	149.0
Total Thickness	Dia.($C_{rm,o}/\pi$)	
Average:	0.30	47.27

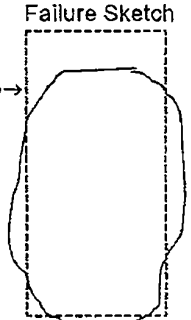
Filter Paper: Top + Bottom: [ ] Yes ; [X] No
Filter Strips: [X] Yes ; [ ] No Number = 8
Type of Filter Strips [ ] Vertical: ¼ in. & Whatman #54
[X] Spiral: ¼ in. & Whatman #1

Apparatus: Mass Top Cap, M_{tc} = 65.6 g, 0.14 lbf
Mass Displ. System, M_{ds} (cap, dial, piston, etc.) = NA g, NA lbf

[ ] Photo Taken.

Failure Sketch

ε_a=
20%→



[ ] See more detailed sketch on attached sheet.

Failure Mode:
[X] Bulge
[ ] Wedge
[ ] Parabolic
Wedge/Bulge Ht.=
NA (mm)

NA - Not Applicable
GB - Gage Block
Other Remarks:

Top Cap Attached: [X] Yes; [ ] No;
Piston Dia.(in.) [X] ½; [ ] ¾; [ ]
Load Cell: [ ] External [X] Internal
Top Cap - Rotation [X] Fixed, <1°; [ ] Limited, <5°; [ ] Unlimited, >5°
With: [ ] Frictionless End Caps; [ ] Lat. Movement Top Cap
[ ] Internal LVDT Jacket

Final Visual Classification: Sandy Silt (ML), greenish gray

Trimmed / Reconstituted By: VR | Set Up By: TP | Taken Down By: VR
Date: 7/31/2008 | Date: 7/31/2008 | Date: 8/12/2008
Prelim. Calc. By: TP | Final Calc. By: TP | Reviewed By: JM.

Remarks: NA = Not Applicable

TRIAXIAL TEST: Specimen Calculations & Summary(1)

Project Number: 0411-08-1701 | Cell No.: TRX-4 | File Name: B630_UD12b
Task Number: NA | Specific Gravity: 2.700 | [ ] Measured; [X] Assumed
Boring No.: B630 | Sample No.: UD12 | Specimen No.: b | Depth (ft): 179.30
Type Test: CIU Triaxial | Specimen: [X] "Undisturbed"; [ ] Reconstituted; [ ]
Calculations Corr. for Salt (dissolved solids): [X] No or, [ ] Yes, with concentration = _____ ppm

	Inital Water Contents (WC), (W_o) over Saturation, (S_o), in (%):						Calculated Mass of Dry Soil (g)	
	Top, $W_{o,1}$	Botttom, $W_{o,2}$	Sides, $W_{o,3}$	Avg., $W_{o,avg}$	Selct., $W_{o,s}$	Back Cal., $W_{o,bc}$	Initial Selected WC, w_o (%)	31.75
W_c	32.17	32.17	30.91	31.75	31.75	32.13	Initial , $M_{d,o}$	324.48
S_o	94.4	94.4	92.5	93.8	93.8	94.3	Final, $M_{d,at}$	323.54
					Measured final mass of moist soil, $M_{t,at}$ (g)	423.82	Selected, M_d	324.48
					Final mass of moist soil corrected for excess dry soil, $M_{tat,c}$ (g)	423.82		

Consolidation Data	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	
Changes in Height (mm) and Volume (cm^3) Within Given Consolidation Stages/Columns	At Initial Seating Stress	During Back-Pressuring	1st Consol. Increment (1)	Column 2 or 3 to **1st Test** Stage (1)	Column 4 to **2nd Test** Stage	Column 5 to **3rd Test** Stage	Column 6 to **4th Test** Stage	
Sign Convention: (+) Deformation in compression or Flow out of spec.; (-) Deformation in extension (swell) or Flow into spec.								
Change in Height, $\Delta H_{c,n}$	-0.01	0.25		0.47	NA	NA	NA	
Sum of changes in (+ out)	5.31			13.75	NA	NA	NA	
burette readings, $\Delta b_{r,n}$ (- in)		-3.39	NA	16.31	NA	NA	NA	(2)
Theoretical $\Delta V_{ct,n} = (3V_o \times \Delta H_{c,n}/H_o)$	-0.03	1.50		2.85	NA	NA	NA	
Vol. Factor, $F_v = \Delta b_{r,n} / \Delta V_{t,n}$				4.82	NA	NA	NA	
Corrected $\Delta V_{ct,n} = F_v \times \Delta V_{t,n}$			NA	0.00	NA	NA	NA	(3)
Selected $\Delta V_{c,n}$	-0.03	-3.39		13.75	NA	NA	NA	

Summary For Test Stages					
Test Stage:	1st = 1	2nd = 2	3rd = 3	4th = 4	
Cell Pressure, $\sigma_{c,n}$ (psi)	119.47	NA	NA	NA	Number of
Back Pressure, $U_{b,n}$ (psi)	50.00	NA	NA	NA	Test Stages = 1
Axial Force Reading, $P_{r,n}$ (lbf)	1.91	NA	NA	NA	
Eff. Consol. Stress (σ'_c or $\sigma'_{v,c}$) (4), (ksf)	10.03	NA	NA	NA	
t_c, ON or in [X] days [ ] hrs	10.00	NA	NA	NA	

At Final Test Stress/Stage - Summary of Calculation of ΔV_c (cm^3) by Different Procedures					
By Selected Volumes	By Saturation = 100 %	By Change in Mass (5)	For Diff. in Meas. Vol. (V_o-V_{at}),	For Selected ΔV_c, required	
ΔV_c = 10.33	ΔV_c = 10.55	ΔV_c = 7.06	& corr. for ΔH_{td} ΔV_c= NA	G_s for S_c = 100 %:	2.695

At Final Test Stress/Stage - Consolidation Conclusions					
$\Delta H_{c,f}$ (mm) = 0.72	$\Delta V_{c,f}$ (cm^3) = 10.33	Back Cal. G_s for S=100% = 2.695	Normalized	Ht. Ch. (%) =	0.65
$\varepsilon_{ac,c}$ (%) = 0.62	$\varepsilon_{vc,f}$ (%) = 4.48		Diff. in:	Vol. Ch. (%) =	

Summary of Specimen Physical Properties											
Specific Gravity: G_s = 2.700	Height	Volume	Area	Water Content	Unit Weight		Saturation	Void Ratio	Volumetric Water	Porosity	Skempton B para-
Condition:	(mm)	(cm^3)	(cm^2)	(%)	Total (pcf)	Dry (pcf)	(%)	e	Content	n	meter %(6)
Initial:	115.06	230.46	20.03	31.75	115.80	87.89	93.7	0.914	0.4478	0.478	99.0
After to 1st σ'_c	114.34	220.13	19.25	30.62	120.19	92.02	99.8	0.829	0.4521	0.453	NM
Consol.: to 2nd σ'_c											
to 3rd σ'_c											
to 4th σ'_c											

Notes: (1) If the consol. stress in the 1st consol. increment & 1st test stage are equal, log the data in Column 4.
(2) The height changes occuring within each shearing and unloading stage (1 - 4) are recorded in these rows (after Column 3).
(3) The volume changes occuring within each shearing and unloading stage (1 - 4) are calculated/recorded in these rows (after Column 3).
(4) Stresses are corrected for membrane. (5) ~ $M_{t,o}$-($M_{tat,c}$+ρ_{water}x$\Delta V_{in,column1\&2}$)
(6) Initial value is after back pressuring
NA - Not Applicable ON - Over Night; WC - Water Content Remarks: NM = Not Measured
Calculated By: TP Reviewed By: JM

TRIAXIAL TEST: Specimen Calculations Summary(2)

Project Number: 0411-08-1701 | Test Type: CIU Triaxial | App. No.: TRX-4 | File Name: B630_UD12b
Project Name: Turkey Point COL | Task No.: NA | Test No.: 0 | Test Series for: 0

[X] Tube [ ] Field Extruded	[ ] Liner [ ] Remolded	[ ] Tamping	[ ] Constant Effort:	Blows/Tamps per Layer =	
Boring No.: B630	[ ] Reconstituted	[ ] Impact/Rammer	Rammer Wgt.(lbf)=	No. Layers =	
Sample No.: UD12	Compostite No.:	[ ] Pluviated:	Tamper Force (lbf)=	Drop (in.) =	
Depth (ft): 179.3	Specimen No.: b	[ ] Kneading	[ ] Undercompaction:	U_{ni} (%) =	Dia. (in.) =
[ ] Spec. Selection by X-ray;	[ ] Geomarine Sample		Ref. Effort =	% Comp. =	± Opt. =

Type Consolidation	[X] Isotropic [ ] Anistropic	[ ] K_o stress path [ ] 45° stress path	[X] Used automated system	Remarks:	Drained Axial Strain Rate, $\varepsilon_{a,rate}$ (%/hr.)=Value
Loading Conditions	[X] Static [ ] Post Cyclic	[X] Undrained [ ] Drained	[X] Comp. [ ] Ext.	[X] Strain [ ] Stress Path	[X] Constant Cell pressure [ ] Variable Cell pressure
[ ] Cyclic (Hz)	Rate: [ ] 0.1;	[ ] Stress [ ] Strain	[ ] 1; Other:		

Specific Gravity: G_s = 2.700	Height	Volume	Area	Water Content	Unit Weight Total	Unit Weight Dry	Saturation	Void Ratio	Skempton B parameter %(1)
Condition:	(mm)	(cm^3)	(cm^2)	(%)	(pcf)	(pcf)	(%)	e	
Initial:	115.06	230.46	20.03	31.75	115.80	87.89	93.75	0.91	99.0
After to 1st σ'_c	114.34	220.13	19.25	30.62	120.19	92.02	99.76	0.83	NM
Consol.: to 2nd σ'_c									
to 3rd σ'_c									
to 4th σ'_c									

Unit for Stresses: (ksf)

Consolidation Stress Summary and Loading Summary

Item	Unit	1st Stage	2nd Stage	3rd Stage	4th Stage
Axial Strain during Consol., $\varepsilon_{a,c}$:	%	0.625	NA	NA	NA
Vol. Strain during Consol., $\varepsilon_{v,c}$:	%	4.482	NA	NA	NA
Effective Vertical Stress, σ'_v:	(ksf)	10.028	NA	NA	NA
Effective Horizontal Stress, σ'_h:	(ksf)	9.974	NA	NA	NA
Consol. Stress Ratio, k (σ'_h / σ'_v):	-	0.995			
Induced OCR:	-	1.00	NA	NA	NA
Eff. Average Stress, (σ'_v + σ'_h)/2:	(ksf)	20.002			
Eff. Mean Stress, (σ'_v + 2*σ'_h)/3:	(ksf)	9.992			
Undr. Ambient Shear Stress, τ_a:	(ksf)	NA	NA	NA	NA
Undr. Ambient Shear Strain, $\varepsilon_{a,ua}$:	%	NA	NA	NA	NA

Notes: See Fugro South, Inc. Notation Listing for definition of symbols and acronyms.
(1) Initial B is after saturation
NA - Not Applicable

Membrane Correction
Type: Bulge
Modulus: 150.0 psi
Diameter: 47.27 mm
Thickness: 0.30 mm

Area Correction
Type: Bulge

Stage	Area Corr. Const.:	Final Area (cm^2):
1st	1.127	23.87
2nd		
3rd		
4th		

Filter Paper Correction
Type: None Type Strips: Sprial #1
Strips: 8
Force: 0.000 lbf/strip

Final Visual Description and Remarks: Sandy Silt (ML), greenish gray

Loading Summary

Stage	Stress Status	ε_a (%)	q (ksf)	p' (ksf)	ΔU (ksf)	σ_1' (ksf)	σ_3' (ksf)
1st	Max Shear Stress	1.33	5.285	9.888	5.379	15.173	4.602
	Max Obliquity	8.32	4.032	6.857	7.148	10.889	2.826
2nd	Max Shear Stress						
	Max Obliquity						
3rd	Max Shear Stress						
	Max Obliquity						
4th	Max Shear Stress						
	Max Obliquity						

Remarks: NM = Not Measured

STAGE 1

Project: 0411-08-1701 Boring No.: B630 Depth (ft.): 179.30
Test Type: CIU Triaxial Sample No.: UD12 Stage No.: 1
Specimen No.: b

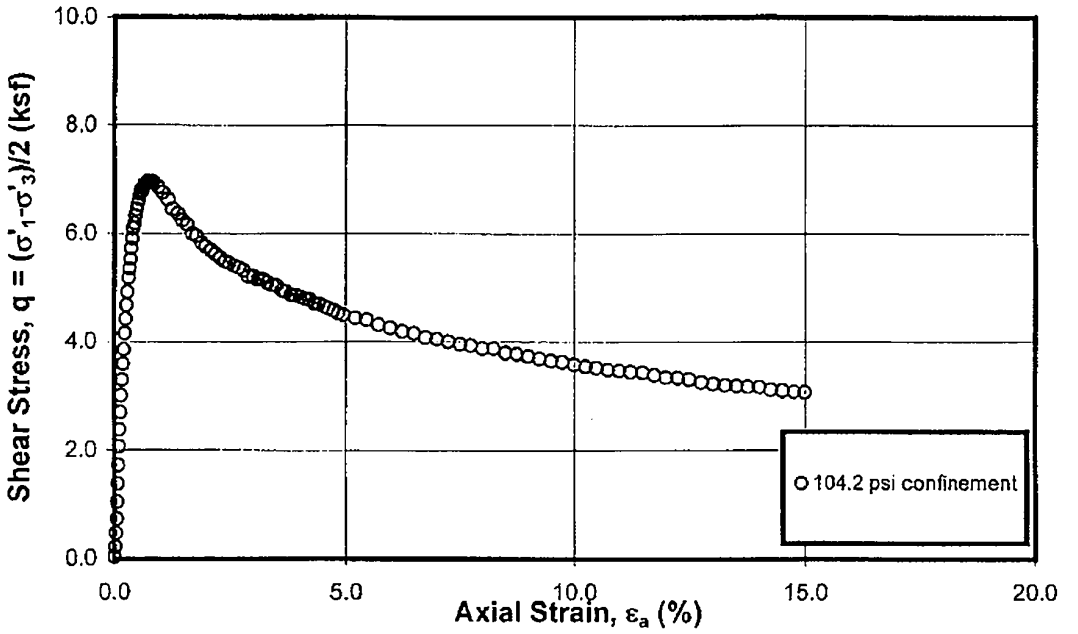
Elapsed Time (min)	Axial Strain ε_a (%)	q (ksf)	p' (ksf)	Excess PWP, ΔU (ksf)	Volume Change (cm^3)	Obliquity σ'_1/σ'_3 -	A_f -	E_S (ksf)	E_T (ksf)
0.0	0.000	0.027	10.001	0.000	0.000	1.005	0.000	-	-
0.8	0.025	0.456	10.241	0.185	0.000	1.093	0.221	3413.2	3359.4
1.5	0.050	0.870	10.421	0.419	0.000	1.182	0.251	3359.4	3171.1
2.3	0.076	1.258	10.580	0.647	0.000	1.270	0.265	3250.7	2807.8
3.0	0.101	1.581	10.675	0.879	0.000	1.348	0.283	3083.4	2550.4
3.8	0.126	1.900	10.765	1.112	0.000	1.429	0.296	2970.8	2518.5
4.5	0.151	2.216	10.837	1.360	0.000	1.514	0.309	2895.2	2274.6
5.3	0.176	2.472	10.871	1.570	0.000	1.588	0.322	2772.5	1891.0
6.0	0.202	2.691	10.877	1.788	0.000	1.658	0.336	2644.7	1721.9
6.8	0.227	2.906	10.871	2.010	0.000	1.730	0.349	2538.9	1707.4
7.5	0.252	3.122	10.870	2.226	0.000	1.806	0.360	2457.1	1474.4
8.3	0.277	3.276	10.840	2.413	0.000	1.866	0.371	2345.8	1343.7
9.0	0.302	3.459	10.824	2.610	0.000	1.939	0.380	2272.0	1299.2
9.8	0.327	3.604	10.807	2.771	0.000	2.001	0.387	2184.5	1079.9
10.5	0.353	3.732	10.766	2.942	0.000	2.061	0.397	2101.4	1046.5
11.3	0.378	3.867	10.746	3.095	0.000	2.124	0.403	2033.0	982.8
12.0	0.403	3.979	10.700	3.261	0.000	2.184	0.412	1961.6	917.4
12.8	0.428	4.098	10.682	3.390	0.000	2.245	0.416	1901.7	861.6
13.6	0.453	4.195	10.633	3.531	0.000	2.303	0.424	1840.0	711.2
14.3	0.478	4.276	10.609	3.640	0.000	2.351	0.428	1776.7	685.6
15.1	0.504	4.368	10.582	3.761	0.000	2.406	0.433	1724.3	705.8
15.8	0.529	4.454	10.560	3.865	0.000	2.459	0.437	1674.8	586.3
16.6	0.554	4.516	10.511	3.978	0.000	2.506	0.443	1621.1	560.1
17.3	0.579	4.595	10.505	4.064	0.000	2.555	0.445	1577.9	576.2
18.1	0.604	4.661	10.465	4.167	0.000	2.606	0.450	1534.1	538.1
18.8	0.629	4.731	10.472	4.232	0.000	2.648	0.450	1494.6	418.4
19.6	0.655	4.766	10.417	4.330	0.000	2.687	0.456	1448.2	378.3
20.3	0.680	4.826	10.414	4.386	0.000	2.727	0.457	1412.1	423.4
21.1	0.705	4.873	10.380	4.474	0.000	2.769	0.461	1375.0	372.5
21.8	0.730	4.919	10.371	4.520	0.000	2.805	0.462	1340.5	283.7
22.6	0.755	4.944	10.331	4.590	0.000	2.836	0.466	1302.3	250.7
23.3	0.780	4.983	10.322	4.637	0.000	2.866	0.468	1270.2	331.9
24.1	0.805	5.028	10.301	4.705	0.000	2.907	0.470	1241.7	278.7
24.8	0.831	5.053	10.282	4.743	0.000	2.932	0.472	1210.1	178.0
25.6	0.856	5.072	10.254	4.792	0.000	2.958	0.475	1179.2	218.1
26.3	0.881	5.108	10.242	4.841	0.000	2.990	0.476	1153.4	104.5
27.1	0.906	5.099	10.192	4.890	0.000	3.002	0.481	1119.4	185.9
27.8	0.931	5.154	10.209	4.922	0.000	3.040	0.480	1101.1	300.3

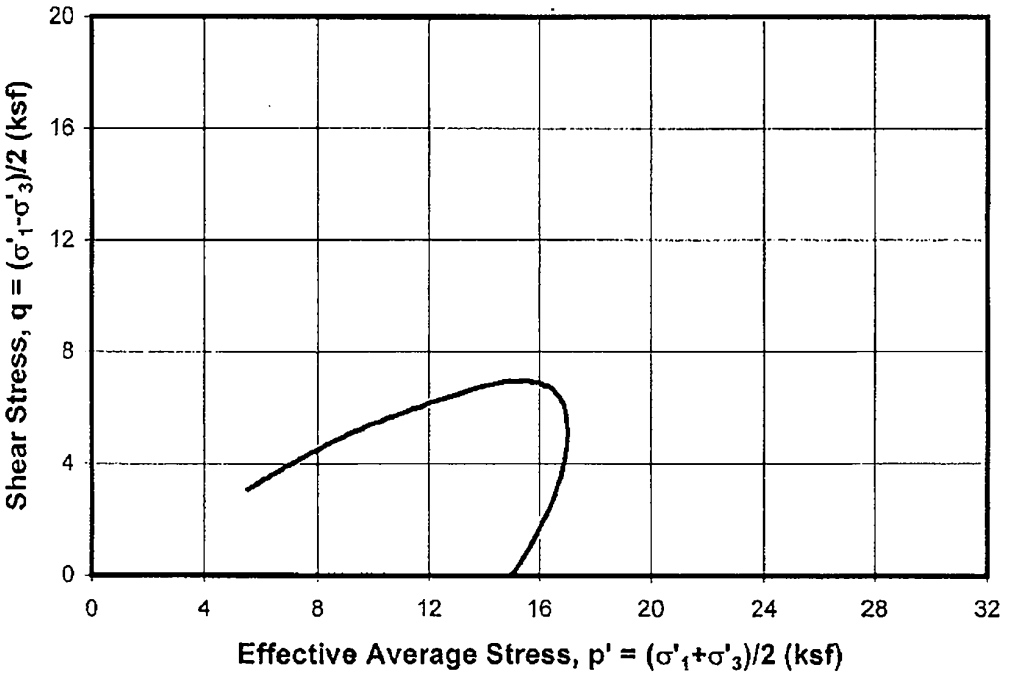
STAGE 1

Elapsed Time (min)	Axial Strain ε_a (%)	q (ksf)	p' (ksf)	Excess PWP, ΔU (ksf)	Volume Change (cm^3)	Obliquity σ'_1/σ'_3 -	A_f -	E_S (ksf)	E_T (ksf)
28.6	0.957	5.174	10.186	4.961	0.000	3.065	0.482	1076.3	179.0
29.3	0.982	5.199	10.181	4.994	0.000	3.088	0.483	1053.9	89.8
30.1	1.007	5.197	10.123	5.046	0.000	3.110	0.488	1027.0	70.8
30.8	1.032	5.217	10.123	5.067	0.000	3.127	0.488	1005.9	112.8
33.8	1.132	5.249	10.037	5.188	0.000	3.193	0.497	922.5	66.2
36.8	1.233	5.284	9.981	5.277	0.000	3.250	0.502	852.8	36.0
39.8	1.333	5.285	9.888	5.379	0.000	3.297	0.511	788.7	-15.0
42.8	1.434	5.269	9.784	5.457	0.000	3.334	0.521	731.0	-61.1
45.8	1.534	5.224	9.670	5.527	0.000	3.350	0.532	677.4	-55.0
48.8	1.635	5.213	9.573	5.615	0.000	3.392	0.541	634.4	-62.7
51.8	1.735	5.161	9.457	5.680	0.000	3.403	0.553	591.7	-84.0
54.8	1.836	5.129	9.370	5.733	0.000	3.419	0.562	555.8	-71.4
57.8	1.937	5.089	9.260	5.803	0.000	3.440	0.573	522.8	-69.5
60.8	2.037	5.059	9.155	5.879	0.000	3.470	0.584	494.1	-59.3
63.8	2.138	5.030	9.071	5.932	0.000	3.489	0.593	468.1	-55.3
66.8	2.238	5.004	8.996	5.987	0.000	3.506	0.601	444.7	-69.7
69.8	2.339	4.960	8.896	6.040	0.000	3.520	0.612	421.9	-94.5
72.8	2.439	4.908	8.788	6.095	0.000	3.530	0.624	400.3	-66.4
75.8	2.540	4.893	8.729	6.136	0.000	3.551	0.631	383.2	-57.7
78.8	2.640	4.850	8.642	6.185	0.000	3.559	0.641	365.4	-76.2
81.9	2.741	4.816	8.557	6.233	0.000	3.574	0.651	349.5	-65.4
84.9	2.841	4.785	8.488	6.274	0.000	3.584	0.659	334.9	-52.2
87.9	2.942	4.764	8.435	6.306	0.000	3.595	0.665	322.0	-37.9
90.9	3.042	4.747	8.371	6.349	0.000	3.619	0.673	310.3	-41.3
93.9	3.143	4.722	8.304	6.389	0.000	3.636	0.681	298.8	-64.8
96.9	3.243	4.681	8.235	6.424	0.000	3.635	0.690	287.0	-60.6
99.9	3.344	4.661	8.181	6.456	0.000	3.649	0.696	277.2	-43.4
102.9	3.444	4.638	8.126	6.489	0.000	3.659	0.703	267.7	-45.2
105.9	3.545	4.616	8.080	6.513	0.000	3.664	0.709	258.9	-42.9
108.9	3.646	4.595	8.022	6.546	0.000	3.681	0.717	250.6	-43.6
111.9	3.746	4.572	7.984	6.563	0.000	3.680	0.722	242.7	-54.0
114.9	3.847	4.540	7.919	6.597	0.000	3.688	0.731	234.7	-25.1
117.9	3.947	4.547	7.901	6.622	0.000	3.711	0.732	229.0	-24.7
120.9	4.047	4.516	7.850	6.640	0.000	3.708	0.740	221.8	-47.6
123.9	4.148	4.499	7.800	6.670	0.000	3.725	0.746	215.6	-36.5
126.9	4.249	4.479	7.764	6.693	0.000	3.727	0.751	209.6	-38.4
129.9	4.349	4.460	7.726	6.703	0.000	3.731	0.757	203.9	-34.8
132.9	4.450	4.444	7.693	6.725	0.000	3.735	0.761	198.5	-31.3
135.9	4.550	4.429	7.658	6.749	0.000	3.743	0.766	193.5	-14.7
138.9	4.651	4.429	7.639	6.766	0.000	3.760	0.768	189.3	-25.9
141.9	4.751	4.403	7.592	6.786	0.000	3.761	0.775	184.2	-39.1
144.9	4.852	4.390	7.563	6.794	0.000	3.767	0.779	179.9	-26.0
147.9	4.952	4.377	7.536	6.821	0.000	3.771	0.783	175.7	-8.1

STAGE 1

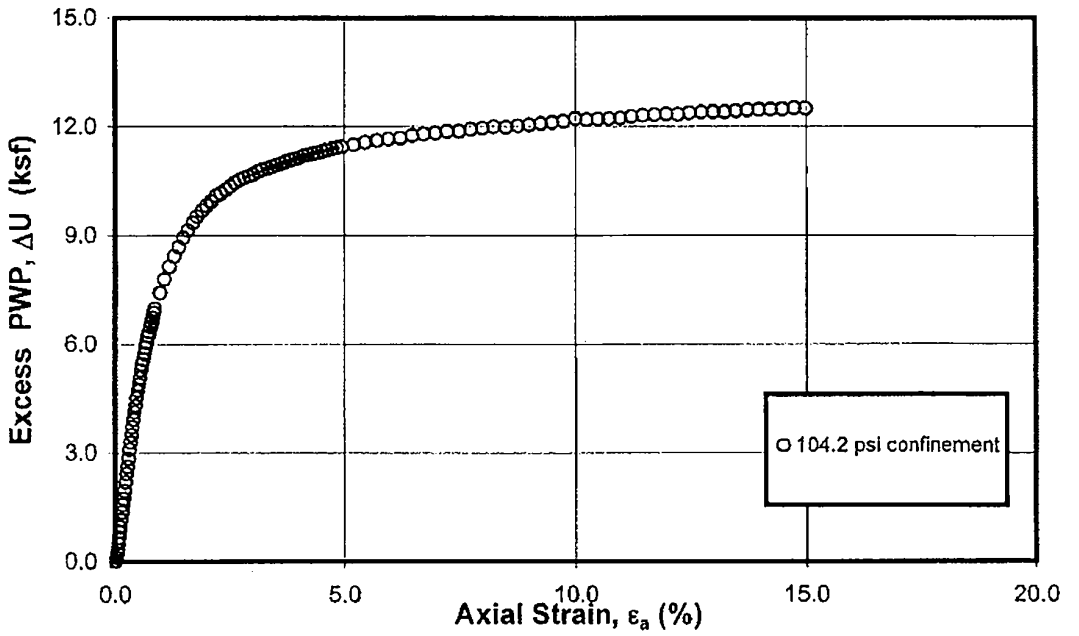
Elapsed Time (min)	Axial Strain ε_a (%)	q (ksf)	p' (ksf)	Excess PWP, ΔU (ksf)	Volume Change (cm^3)	Obliquity σ'_1/σ'_3 -	A_f -	E_S (ksf)	E_T (ksf)
150.9	5.053	4.382	7.527	6.827	0.000	3.786	0.784	172.4	-6.9
158.4	5.304	4.352	7.458	6.867	0.000	3.802	0.794	163.1	-25.5
165.9	5.556	4.318	7.391	6.902	0.000	3.809	0.804	154.5	-28.9
173.4	5.807	4.279	7.332	6.925	0.000	3.804	0.814	146.5	-23.9
180.9	6.058	4.258	7.261	6.967	0.000	3.835	0.824	139.7	-19.2
188.4	6.309	4.231	7.211	6.992	0.000	3.839	0.832	133.3	-27.0
195.9	6.560	4.190	7.156	7.010	0.000	3.825	0.842	126.9	-30.5
203.4	6.811	4.154	7.085	7.043	0.000	3.835	0.853	121.2	-28.0
210.9	7.063	4.119	7.039	7.054	0.000	3.821	0.862	115.9	-23.2
218.4	7.314	4.096	6.991	7.081	0.000	3.830	0.870	111.3	-14.7
225.9	7.565	4.082	6.967	7.093	0.000	3.830	0.874	107.2	-14.8
233.4	7.816	4.059	6.918	7.112	0.000	3.840	0.882	103.2	-21.5
240.9	8.067	4.028	6.877	7.129	0.000	3.828	0.890	99.2	-10.9
248.4	8.319	4.032	6.857	7.148	0.000	3.854	0.892	96.3	-9.3
255.9	8.570	4.005	6.824	7.159	0.000	3.842	0.899	92.8	-14.9
263.4	8.821	3.994	6.799	7.174	0.000	3.848	0.903	90.0	-15.2
270.9	9.073	3.967	6.762	7.180	0.000	3.838	0.911	86.9	-17.6
278.4	9.324	3.950	6.734	7.191	0.000	3.838	0.916	84.2	-10.7
285.9	9.575	3.940	6.713	7.205	0.000	3.842	0.920	81.7	-22.3
293.4	9.826	3.894	6.660	7.209	0.000	3.816	0.932	78.7	-9.3
300.9	10.078	3.916	6.673	7.224	0.000	3.842	0.928	77.2	2.2
308.4	10.329	3.899	6.646	7.229	0.000	3.839	0.933	75.0	-10.6
315.9	10.580	3.890	6.629	7.237	0.000	3.840	0.936	73.0	-14.1
323.4	10.831	3.864	6.602	7.241	0.000	3.823	0.943	70.9	-13.9
330.9	11.082	3.855	6.579	7.252	0.000	3.831	0.947	69.1	-11.1
338.4	11.334	3.836	6.548	7.261	0.000	3.829	0.953	67.2	-9.6
345.9	11.585	3.831	6.544	7.264	0.000	3.824	0.954	65.7	-14.4
353.4	11.836	3.800	6.500	7.271	0.000	3.815	0.964	63.8	-23.9
360.9	12.087	3.771	6.470	7.282	0.000	3.795	0.972	62.0	-20.4
368.4	12.338	3.749	6.434	7.291	0.000	3.792	0.979	60.3	-22.8
375.9	12.590	3.714	6.390	7.304	0.000	3.775	0.990	58.6	-21.0
383.4	12.841	3.696	6.361	7.315	0.000	3.774	0.996	57.2	-17.7
390.9	13.092	3.669	6.321	7.326	0.000	3.767	1.005	55.6	-19.4
398.4	13.343	3.647	6.294	7.330	0.000	3.756	1.012	54.3	-16.2
405.9	13.595	3.629	6.261	7.349	0.000	3.757	1.019	53.0	-11.9
413.4	13.846	3.618	6.236	7.362	0.000	3.763	1.024	51.9	-10.4
420.9	14.097	3.603	6.212	7.371	0.000	3.761	1.030	50.7	-6.8
428.4	14.348	3.601	6.197	7.381	0.000	3.773	1.032	49.8	-9.5
435.9	14.600	3.579	6.173	7.385	0.000	3.759	1.039	48.7	-20.2
443.4	14.851	3.550	6.143	7.390	0.000	3.738	1.048	47.4	-13.3
450.2	15.078	3.546	6.126	7.401	0.000	3.748	1.051	46.7	-3.8

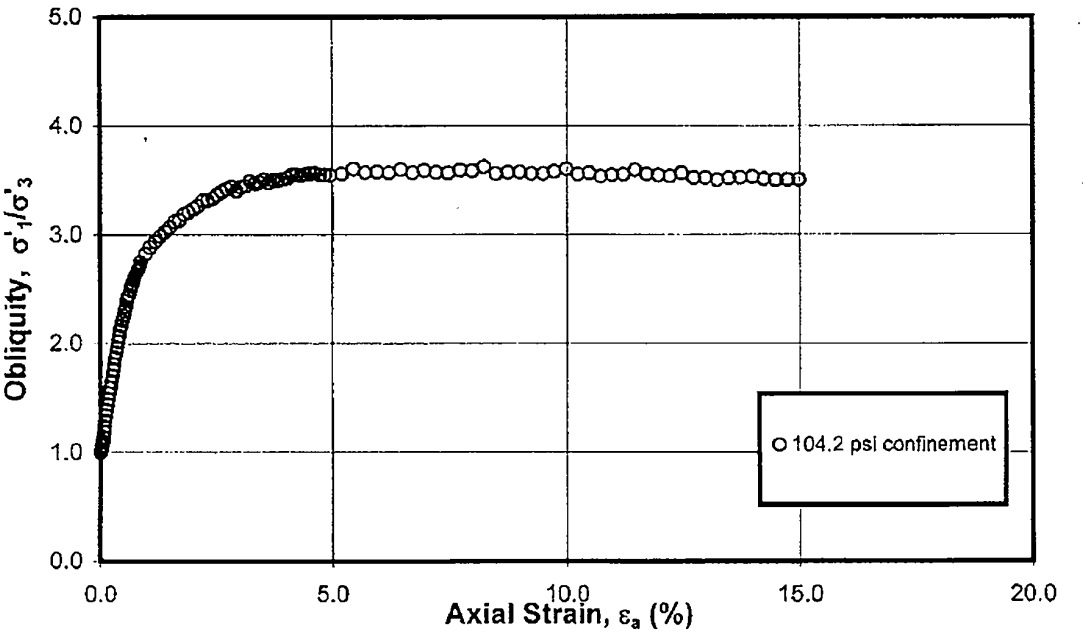




UNDRAINED TRIAXIAL COMPRESSION TEST
Isotropically Consolidated
Sample: UD12c - Depth: 179.70 ft
Boring B630

Reviewed By: JM





UNDRAINED TRIAXIAL COMPRESSION TEST
Isotropically Consolidated
Sample: UD12c - Depth: 179.70 ft
Boring B630

Reviewed By: JM

TRIAXIAL TEST (ASTM D 4767): Specimen Setup / Take Down

Project Number: 0411-08-1701 | Test Type: CIU Triaxial | Cell No.: TRX-8 | File Name: B630_UD12c
Task No.: NA | Test Stress(es), σ'_c or $\sigma'_{v,c}$ = 15.00 , NA , NA & NA ksf
Project Name: Turkey Point COL | k ($\sigma'_{h,c}$ / $\sigma'_{v,c}$) = 1.00 | Induced OCR = 1.00 | K_{ua} ($\sigma_{d,ua}/2\sigma'_{v,c}$) = NA

Assig. Remarks: | Specific Gravity: 2.700 [ ] Meas.; [X] Assumed

[X] Tube [ ] Field Extruded [ ] Liner [ ] Remolded	[ ] Tamping	[ ] Constant Effort:	Blows/Tamps per Layer =
Boring No.: B630 [ ] Reconstituted	[ ] Impact/Rammer	Rammer Wgt.(lbf)=	No. Layers =
Sample No.: UD12 Compostite No.:	[ ] Pluviated:	Tamper Force (lbf)=	Drop (in.) =
Depth (ft): 179.70 Specimen No.: c	[ ] Kneading	[ ] Undercompaction: U_{nf} (%) =	Dia. (in.) =
[ ] Spec. Selection by X-ray; [ ] Geomarine Sample		Ref. Effort = % Comp. =	± Opt. =

Type Consolidation:	[X] Isotropic [ ] Anistropic	[ ] K_o stress path [ ] 45° stress path	[X] Used automated system: Drained Axial Strain Rate, $\varepsilon_{a,rate}$ (%/h) = ?Value Remarks:
Loading Conditions:	[X] Static [ ] Post Cyclic	[X] Undrained [ ] Drained	[X] Comp. [ ] Ext. [X] Strain [ ] Stress Path
	[X] Constant Cell Pressure [ ] Variable Cell Pressure	[ ] Cyclic (Hz) Rate: [ ] 0.1;	[ ] Stress [ ] Strain 1; Other:

Water Content (WC);	Initial - Trimming Location			Final, W_{at}
	Top ($W_{o,1}$)	Bottom ($W_{o,2}$)	Sides ($W_{o,3}$)	(see below)
Container No	827	885	886	6064
Mass Moist Soil + Cont. (g)	44.97	47.26	120.28	104.57
Mass Dry Soil + Container (g)	41.92	43.54	98.42	86.43
Mass Container (g)	32.35	31.81	32.28	30.83
Water Content, $W_{o,n}$ (%)	31.87	31.71	33.05	32.63
Avg. Initial WC, $W_{o,avg}$ (%)	32.21	Final (W_{at}): [X] Slice ; [ ] Whole Spec.		
[ ] See attached data sheet(s) for additional water contents				

SOIL MASSES:	Initial	Final
Moist + Tare (etc.)(g)	427.87	429.30
Tare (etc.) (g)	0.00	0.00
Mass Moist Spec., M_{ih} (g)	427.87	429.30
Excess Dry Soil (soil not included in final mass measurement)		
Container No.		NA
Mass Dry Soil + Cont. (g)		NA
Mass Container (g)		NA
Mass Excess Dry Soil, $M_{d,es}$ (g)		0.00

Specimen Dimensions, (mm)

	Height			Dia., X indicates with membrane		
	Initial (H_o)	Final (H_{at})		Initial (D_o)	Final (D_{at})	
GB	100.000	100.000	1 T	50.50	57.00	For
1	14.93	-1.42	2 M	51.00	59.00	Wedge
2	14.86	-1.47	3 B	50.50	51.00	Failure
3	14.98	-1.01	1'T			= d_{max}
4	14.98	-1.04	2'M			= d_{min}
5	14.90	-1.58	3'B			= Δd
Avg.	114.93	98.70	Avg.	50.67	55.67	xxxxx

Measuring Devices:
Pi Tape: [X] Dia
Calipers: [ ] Ht.: [ ] Dia
Dial Comparator: [X] Ht.: [ ] Dia
Remarks:

$A_o = \pi D^2/400$ (cm^2)	20.16
V_o (cm^3)	231.72
$A_{alb,m}=\pi (D^*_{at})^2/400$ (cm^2)	25.07
$A_{stw,m}=(d_{min}-2\Delta d)d_{max}\pi/400$ (cm^2)	NA
$D^*_{at}=(D_T+2D_M+D_B)/4$ (mm)	56.50

Estimated Initial Unit Weight

Total, $\gamma_{t,o}$ (lb/ft³) = 115.27 | Dry, $\gamma_{d,o}$ (lb/ft³) = 87.19

Membrane / Filter Paper / Apparatus

Membrane (mm):		Top	Bottom
Number: = 1	Thickness: [ ] Single; [X] Double	0.68	0.52
		0.68	0.51
	Circumference ($C_{rm,o}$)	150.0	150.0
		Total Thickness	Dia.($C_{rm,o}/\pi$)
	Average:	0.30	47.75

Filter Paper: Top + Bottom: [ ] Yes ; [X] No
Filter Strips: [X] Yes ; [ ] No Number = 8
Type of Filter Strips: [ ] Vertical: ¼ in. & Whatman #54
[X] Spiral: ¼ in. & Whatman #1

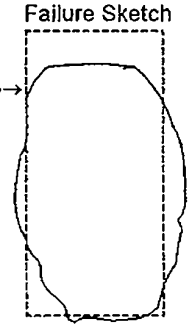
Apparatus: Mass Top Cap, M_{tc} = 53.4 g, 0.12 lbf
Mass Displ. System, M_{ds} (cap, dial, piston, etc.) = NA g, NA lbf

Top Cap Attached: [ ] Yes; [X] No; Piston Dia.(in.) [X] ½; [ ] ¾; [ ] Load Cell: [ ] External [X] Internal
Top Cap - Rotation [ ] Fixed,<1°; [ ] Limited,<5°; [ ] Unlimited, >5°
With: [ ] Frictionless End Caps; [ ] Lat. Movement Top Cap
[ ] Internal LVDT Jacket

[ ] Photo Taken.

Failure Sketch

ε_a = 20% →



Failure Mode:
[X] Bulge
[ ] Wedge
[ ] Parabolic
Wedge/Bulge Ht.= NA (mm)

NA - Not Applicable
GB - Gage Block
Other Remarks:

Final Visual Classification: Sandy Silt (ML), greenish gray

Trimmed / Reconstituted By: VR | Set Up By: TP | Taken Down By: VR
Date: 7/29/2008 | Date: 7/29/2008 | Date: 8/11/2008
Prelim. Calc. By: TP | Final Calc. By: TP | Reviewed By: JM

[ ] See more detailed sketch on attached sheet. Remarks: NA = Not Applicable

TRIAXIAL TEST: Specimen Calculations & Summary(1)

Project Number: 0411-08-1701 | Cell No.: TRX-8 | File Name: B630_UD12c
Task Number: NA | Specific Gravity: 2.700 [ ] Measured; [X] Assumed
Boring No.: B630 | Sample No.: UD12 | Specimen No.: c | Depth (ft): 179.70
Type Test: CIU Triaxial | Specimen: [X] "Undisturbed"; [ ] Reconstituted; [ ]
Calculations Corr. for Salt (dissolved solids): [X] No or, [ ] Yes, with concentration = _____ ppm

	Inital Water Contents (WC), (W_o) over Saturation, (S_o), in (%):						Calculated Mass of Dry Soil (g)	
	Top, $W_{o,1}$	Botttom, $W_{o,2}$	Sides, $W_{o,3}$	Avg., $W_{o,avg}$	Selct., $W_{o,s}$	Back Cal., $W_{o,bc}$	Initial Selected WC, w_o (%)	32.21
W_o	31.87	31.71	33.05	32.21	32.21	32.18	Initial , $M_{d,o}$	323.63
S_o	93.0	92.8	94.7	93.5	93.5	93.5	Final, $M_{d,at}$	323.69
				Measured final mass of moist soil, $M_{t,at}$ (g)		429.30	Selected, M_d	323.63
				Final mass of moist soil corrected for excess dry soil, $M_{tat,c}$ (g)		429.30		

Consolidation Data	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	
Changes in Height (mm) and Volume (cm^3) Within Given Consolidation Stages/Columns	At Initial Seating Stress	During Back-Pressuring	1st Consol. Increment (1)	Column 2 or 3 to 1st Test Stage (1)	Column 4 to 2nd Test Stage	Column 5 to 3rd Test Stage	Column 6 to 4th Test Stage	
Sign Convention: (+) Deformation in compression or Flow out of spec.; (-) Deformation in extension (swell) or Flow into spec.								
Change in Height, $\Delta H_{c,n}$	-0.08	0.05		0.21	NA	NA	NA	
Sum of changes in (+ out)	0.77			4.03	NA	NA	NA	
burette readings, $\Delta b_{r,n}$ (- in)		-2.47	NA	16.38	NA	NA	NA	(2)
Theoretical $\Delta V_{ct,n} = (3V_o \times \Delta H_{c,n}/H_o)$	-0.48	0.31		1.25	NA	NA	NA	
Vol. Factor, $F_v = \Delta b_{r,n} / \Delta V_{t,n}$				3.22	NA	NA	NA	
Corrected $\Delta V_{ct,n} = F_v \times \Delta V_{t,n}$			NA	0.00	NA	NA	NA	(3)
Selected $\Delta V_{c,n}$	0.77	0.31		4.03	NA	NA	NA	

Summary For Test Stages					
Test Stage:	1st = 1	2nd = 2	3rd = 3	4th = 4	
Cell Pressure, $\sigma_{c,n}$ (psi)	153.60	NA	NA	NA	Number of
Back Pressure, $U_{b,n}$ (psi)	49.89	NA	NA	NA	Test Stages = 1
Axial Force Reading, $P_{r,n}$ (lbf)	1.26	NA	NA	NA	
Eff. Consol. Stress (σ'_c or $\sigma'_{v,c}$) (4), (ksf)	15.01	NA	NA	NA	
t_c, ON or in [X] days [ ] hrs	2.00	NA	NA	NA	

At Final Test Stress/Stage - Summary of Calculation of ΔV_c (cm^3) by Different Procedures

By Selected Volumes	By Saturation = 100 %	By Change in Mass (5)	For Diff. in Meas. Vol. (V_o-V_{at}),	For Selected ΔV_c, required
ΔV_c = 5.11	ΔV_c = 5.78	ΔV_c = 1.04	& corr. for ΔH_{td} ΔV_c = NA	G_s for S_c = 100 %: 2.685

At Final Test Stress/Stage - Consolidation Conclusions

$\Delta H_{c,f}$ (mm) = 0.18	$\Delta V_{c,f}$ (cm^3) = 5.11	Back Cal. G_s for S=100% = 2.685	Normalized	Ht. Ch. (%) = 0.29
$\varepsilon_{ac,c}$ (%) = 0.16	$\varepsilon_{vc,f}$ (%) = 2.21		Diff. in:	Vol. Ch. (%) =

Summary of Specimen Physical Properties

Specific Gravity: G_s = 2.700 / Condition:	Height (mm)	Volume (cm^3)	Area (cm^2)	Water Content (%)	Unit Weight Total (pcf)	Unit Weight Dry (pcf)	Saturation (%)	Void Ratio e	Volumetric Water Content	Porosity n	Skempton B para-meter %(6)
Initial:	114.93	231.72	20.16	32.21	115.27	87.19	93.5	0.930	0.4506	0.482	95.0
After to 1st σ'_c	114.75	226.61	19.75	32.65	118.27	89.15	99.4	0.887	0.4671	0.470	NM
Consol.: to 2nd σ'_c											
to 3rd σ'_c											
to 4th σ'_c											

Notes: (1) If the consol. stress in the 1st consol. increment & 1st test stage are equal, log the data in Column 4.

(2) The height changes occuring within each shearing and unloading stage (1 - 4) are recorded in these rows (after Column 3).

(3) The volume changes occuring within each shearing and unloading stage (1 - 4) are calculated/recorded in these rows (after Column 3).

(4) Stresses are corrected for membrane. (5) ~ $M_{t,o}-(M_{tat,c}+\rho_{water} \times \Delta V_{in,column1\&2})$

(6) Initial value is after back pressuring

NA - Not Applicable ON - Over Night; WC - Water Content Remarks: NM = Not Measured

Calculated By: TP Reviewed By: JM

TRIAXIAL TEST: Specimen Calculations Summary(2)

Project Number: 0411-08-1701 | Test Type: CIU Triaxial | App. No.: TRX-8 | File Name: B630_UD12c
Project Name: Turkey Point COL | Task No.: NA | Test No.: 0 | Test Series for: 0

[X] Tube [ ] Field Extruded	[ ] Liner [ ] Remolded	[ ] Tamping	[ ] Constant Effort:	Blows/Tamps per Layer =	
Boring No.: B630	[ ] Reconstituted	[ ] Impact/Rammer	Rammer Wgt.(lbf)=		No. Layers =	
Sample No.: UD12	Compostite No.:	[ ] Pluviated:	Tamper Force (lbf)=		Drop (in.) =	
Depth (ft): 179.7	Specimen No.: c	[ ] Kneading	[ ] Undercompaction:	U_{nl} (%) =	Dia. (in.) =	
[ ] Spec. Selection by X-ray;	[ ] Geomarine Sample		Ref. Effort =	% Comp. =	± Opt. =	

Type Consolidation	[X] Isotropic [ ] Anistropic	[ ] K_o stress path [ ] 45° stress path	[X] Used automated system	Drained Axial Strain Rate, $\varepsilon_{a,rate}$ (%/hr.)?Value	
			Remarks:		
Loading Conditions	[X] Static [ ] Post Cyclic	[X] Undrained [ ] Drained	[X] Comp. [ ] Ext.	[X] Strain [ ] Stress Path	[X] Constant Cell pressure [ ] Variable Cell pressure	[ ] Cyclic (Hz) Rate: [ ] 0.1;	[ ] Stress [ ] Strain 1; Other:

Specific Gravity: G_s = 2.700 Condition:	Height (mm)	Volume (cm^3)	Area (cm^2)	Water Content (%)	Unit Weight Total (pcf)	Unit Weight Dry (pcf)	Saturation (%)	Void Ratio e	Skempton B parameter %(1)
Initial:	114.93	231.72	20.16	32.21	115.27	87.19	93.52	0.93	95.0
After Consol.: to 1st σ'_c	114.75	226.61	19.75	32.65	118.27	89.15	99.35	0.89	NM
to 2nd σ'_c									
to 3rd σ'_c									
to 4th σ'_c									

Unit for Stresses: (ksf)

Consolidation Stress Summary and Loading Summary

Item	Unit	1st Stage	2nd Stage	3rd Stage	4th Stage
Axial Strain during Consol., $\varepsilon_{a,c}$:	%	0.156	NA	NA	NA
Vol. Strain during Consol., $\varepsilon_{v,c}$:	%	2.205	NA	NA	NA
Effective Vertical Stress, σ'_v	(ksf)	15.012	NA	NA	NA
Effective Horizontal Stress, σ'_h:	(ksf)	14.944	NA	NA	NA
Consol. Stress Ratio, k (σ'_h / σ'_v) :	-	0.995			
Induced OCR :	-	1.00	NA	NA	NA
Eff. Average Stress, (σ'_v + σ'_h)/2 :	(ksf)	29.955			
Eff. Mean Stress, (σ'_v + 2*σ'_h)/3 :	(ksf)	14.966			
Undr. Ambient Shear Stress, τ_{ua} :	(ksf)	NA	NA	NA	NA
Undr. Ambient Shear Strain, $\varepsilon_{a,ua}$	%	NA	NA	NA	NA

Notes: See Fugro South, Inc. Notation Listing for definition of symbols and acronyms.
(1) Initial B is after saturation
NA - Not Applicable

Membrane Correction
Type: Bulge
Modulus: 150.0 psi
Diameter: 47.75 mm
Thickness: 0.30 mm

Area Correction
Type: Bulge

Stage	Area Corr. Const.:	Final Area (cm^2):
1st	1.372	25.07
2nd		
3rd		
4th		

Filter Paper Correction
Type: None Type Strips: Sprial #1
Strips: 8
Force: 0.000 lbf/strip

Final Visual Description and Remarks: Sandy Silt (ML), greenish gray

Loading Summary

Stage	Stress Status	ε_a (%)	q (ksf)	p' (ksf)	ΔU (ksf)	σ_1' (ksf)	σ_3' (ksf)
1st	Max Shear Stress	0.74	6.966	15.590	6.344	22.556	8.625
	Max Obliquity	8.22	3.883	6.843	12.005	10.726	2.960
2nd	Max Shear Stress						
	Max Obliquity						
3rd	Max Shear Stress						
	Max Obliquity						
4th	Max Shear Stress						
	Max Obliquity						

Remarks: NM = Not Measured

STAGE 1

Project: 0411-08-1701 Boring No.: B630 Depth (ft.): 179.70
Test Type: CIU Triaxial Sample No.: UD12 Stage No.: 1
Specimen No.: c

Elapsed Time (min)	Axial Strain ε_a (%)	q (ksf)	p' (ksf)	Excess PWP, ΔU (ksf)	Volume Change (cm^3)	Obliquity σ'_1/σ'_3 -	A_f -	E_S (ksf)	E_T (ksf)
0.0	0.000	0.034	14.978	0.000	0.000	1.005	0.000	-	-
0.8	0.020	0.225	15.159	0.028	0.000	1.030	0.026	1899.5	2990.5
1.5	0.032	0.474	15.321	0.123	0.000	1.064	0.110	2722.2	3406.9
2.3	0.052	0.739	15.479	0.242	0.000	1.100	0.145	2726.0	4085.3
3.0	0.063	1.052	15.686	0.329	0.000	1.144	0.152	3220.4	5071.0
3.8	0.077	1.381	15.842	0.512	0.000	1.191	0.179	3489.1	5212.5
4.5	0.089	1.720	16.026	0.678	0.000	1.240	0.189	3786.0	5500.6
5.3	0.102	2.072	16.209	0.827	0.000	1.293	0.198	3980.3	4691.8
6.0	0.117	2.379	16.361	0.969	0.000	1.340	0.205	3996.0	3865.9
6.8	0.135	2.696	16.508	1.161	0.000	1.390	0.213	3948.3	3664.4
7.5	0.152	3.011	16.618	1.368	0.000	1.443	0.224	3920.6	3392.3
8.3	0.171	3.299	16.695	1.578	0.000	1.492	0.237	3829.0	3106.3
9.0	0.189	3.590	16.819	1.742	0.000	1.543	0.241	3759.9	2787.7
9.8	0.210	3.851	16.855	1.961	0.000	1.592	0.254	3627.0	2972.9
10.5	0.228	4.155	16.932	2.207	0.000	1.650	0.263	3617.2	2896.9
11.3	0.251	4.421	16.970	2.436	0.000	1.705	0.273	3495.3	2426.8
12.0	0.271	4.679	17.028	2.623	0.000	1.758	0.279	3425.7	2299.3
12.8	0.294	4.915	17.029	2.851	0.000	1.812	0.290	3316.4	2240.1
13.5	0.316	5.178	17.039	3.107	0.000	1.873	0.300	3256.7	1994.4
14.3	0.338	5.352	17.022	3.305	0.000	1.917	0.308	3143.4	1413.0
15.0	0.365	5.522	16.983	3.508	0.000	1.964	0.317	3007.2	1919.0
15.8	0.381	5.723	16.976	3.717	0.000	2.017	0.324	2988.8	2052.2
16.5	0.404	5.903	16.948	3.932	0.000	2.069	0.332	2905.3	1757.2
17.3	0.423	6.087	16.905	4.143	0.000	2.125	0.341	2864.0	1315.1
18.0	0.454	6.189	16.840	4.311	0.000	2.162	0.349	2713.5	1068.7
18.8	0.473	6.333	16.767	4.536	0.000	2.214	0.358	2662.5	1192.3
19.5	0.497	6.442	16.690	4.725	0.000	2.257	0.366	2577.9	859.5
20.3	0.520	6.535	16.601	4.896	0.000	2.298	0.375	2500.4	753.6
21.0	0.548	6.634	16.531	5.080	0.000	2.340	0.382	2406.7	864.3
21.8	0.567	6.727	16.397	5.292	0.000	2.391	0.394	2362.8	797.9
22.5	0.590	6.792	16.297	5.458	0.000	2.429	0.402	2292.1	251.2
23.3	0.623	6.782	16.158	5.597	0.000	2.447	0.413	2166.2	262.3
24.0	0.648	6.856	16.074	5.751	0.000	2.487	0.420	2104.7	519.0
24.8	0.667	6.899	15.935	5.919	0.000	2.527	0.430	2058.0	276.5
25.5	0.694	6.912	15.815	6.058	0.000	2.553	0.439	1982.9	104.1
26.3	0.722	6.927	15.681	6.228	0.000	2.583	0.449	1910.5	256.9
27.0	0.741	6.966	15.590	6.344	0.000	2.615	0.456	1871.6	172.0
27.8	0.769	6.957	15.453	6.481	0.000	2.638	0.466	1801.2	-79.2

STAGE 1

Elapsed Time (min)	Axial Strain ε_a (%)	q (ksf)	p' (ksf)	Excess PWP, ΔU (ksf)	Volume Change (cm^3)	Obliquity σ'_1/σ'_3 -	A_f -	E_S (ksf)	E_T (ksf)
28.5	0.795	6.945	15.274	6.611	0.000	2.667	0.479	1738.3	-62.9
29.3	0.818	6.941	15.183	6.738	0.000	2.684	0.485	1689.8	-54.5
30.1	0.846	6.930	15.043	6.863	0.000	2.708	0.495	1630.9	144.0
30.8	0.863	6.961	14.936	6.979	0.000	2.746	0.503	1606.2	88.8
33.8	0.975	6.854	14.382	7.425	0.000	2.821	0.544	1399.0	-198.0
36.8	1.069	6.758	13.923	7.799	0.000	2.886	0.578	1258.2	-218.3
39.8	1.181	6.628	13.471	8.138	0.000	2.937	0.614	1116.7	-292.3
42.8	1.281	6.451	12.953	8.436	0.000	2.984	0.658	1001.5	-254.8
45.8	1.383	6.371	12.665	8.680	0.000	3.025	0.682	916.5	-201.2
48.8	1.485	6.246	12.292	8.933	0.000	3.066	0.716	836.8	-207.0
51.8	1.586	6.161	11.980	9.140	0.000	3.118	0.745	772.8	-236.5
54.8	1.693	5.998	11.627	9.349	0.000	3.131	0.781	704.6	-203.2
57.8	1.788	5.949	11.388	9.523	0.000	3.188	0.803	661.5	-165.0
60.8	1.896	5.826	11.116	9.678	0.000	3.203	0.833	611.1	-191.1
63.8	1.994	5.751	10.899	9.827	0.000	3.234	0.857	573.5	-138.1
66.8	2.098	5.687	10.708	9.941	0.000	3.265	0.878	538.8	-127.0
69.8	2.197	5.622	10.490	10.094	0.000	3.310	0.901	508.7	-139.2
72.8	2.302	5.545	10.349	10.163	0.000	3.308	0.920	478.8	-138.4
75.8	2.410	5.475	10.175	10.270	0.000	3.330	0.941	451.4	-86.6
78.8	2.500	5.455	10.065	10.350	0.000	3.367	0.953	433.7	-67.1
81.8	2.604	5.408	9.926	10.459	0.000	3.394	0.970	412.9	-78.9
84.8	2.707	5.374	9.817	10.523	0.000	3.419	0.983	394.5	-93.0
87.8	2.803	5.317	9.678	10.596	0.000	3.438	1.002	377.0	-156.4
90.8	2.913	5.210	9.549	10.638	0.000	3.402	1.024	355.4	-101.4
93.8	3.010	5.206	9.480	10.689	0.000	3.436	1.031	343.7	-54.8
96.8	3.113	5.154	9.370	10.756	0.000	3.445	1.048	328.9	-47.0
99.8	3.208	5.157	9.298	10.814	0.000	3.491	1.054	319.4	-56.4
102.8	3.315	5.093	9.221	10.846	0.000	3.467	1.069	305.2	-101.3
105.8	3.416	5.051	9.124	10.896	0.000	3.480	1.083	293.7	-53.3
108.8	3.510	5.040	9.064	10.943	0.000	3.505	1.091	285.2	-93.5
111.8	3.619	4.951	8.946	10.985	0.000	3.479	1.113	271.8	-104.7
114.8	3.716	4.929	8.872	11.036	0.000	3.500	1.124	263.5	-80.4
117.8	3.816	4.872	8.771	11.069	0.000	3.498	1.141	253.6	-71.2
120.8	3.915	4.858	8.731	11.096	0.000	3.509	1.148	246.4	-43.2
123.8	4.018	4.828	8.664	11.143	0.000	3.517	1.159	238.6	-61.3
126.8	4.117	4.796	8.563	11.191	0.000	3.546	1.173	231.4	-50.3
129.8	4.216	4.778	8.525	11.226	0.000	3.550	1.180	225.0	-84.2
132.8	4.320	4.709	8.417	11.262	0.000	3.541	1.202	216.5	-68.8
135.8	4.421	4.706	8.392	11.278	0.000	3.554	1.205	211.4	-51.6
138.8	4.523	4.657	8.297	11.327	0.000	3.559	1.222	204.4	-86.0
141.8	4.623	4.620	8.224	11.359	0.000	3.564	1.236	198.4	-74.7
144.8	4.738	4.577	8.172	11.389	0.000	3.546	1.249	191.8	-83.4
147.8	4.837	4.531	8.088	11.417	0.000	3.548	1.266	185.9	-74.8

STAGE 1

Elapsed Time (min)	Axial Strain ε_a (%)	q (ksf)	p' (ksf)	Excess PWP, ΔU (ksf)	Volume Change (cm^3)	Obliquity σ'_1/σ'_3 -	A_f -	E_S (ksf)	E_T (ksf)
150.8	4.943	4.501	8.041	11.443	0.000	3.542	1.277	180.7	-50.9
158.4	5.198	4.444	7.918	11.502	0.000	3.559	1.300	169.7	-35.5
165.9	5.450	4.410	7.800	11.575	0.000	3.603	1.320	160.6	-49.0
173.4	5.705	4.320	7.684	11.618	0.000	3.568	1.351	150.2	-58.5
180.9	5.957	4.262	7.571	11.662	0.000	3.576	1.376	142.0	-47.6
188.4	6.212	4.199	7.471	11.690	0.000	3.566	1.401	134.1	-38.9
195.9	6.463	4.163	7.370	11.759	0.000	3.597	1.421	127.8	-46.7
203.4	6.717	4.081	7.259	11.802	0.000	3.568	1.454	120.5	-44.1
210.9	6.967	4.052	7.182	11.832	0.000	3.589	1.470	115.3	-28.6
218.4	7.218	4.009	7.128	11.869	0.000	3.571	1.487	110.1	-36.3
225.9	7.473	3.960	7.048	11.879	0.000	3.565	1.510	105.1	-27.0
233.4	7.715	3.941	6.981	11.931	0.000	3.593	1.523	101.3	-30.3
240.9	7.970	3.884	6.887	11.966	0.000	3.586	1.551	96.6	-22.9
248.4	8.216	3.883	6.843	12.005	0.000	3.623	1.557	93.7	-30.6
255.9	8.475	3.805	6.777	11.991	0.000	3.560	1.587	89.0	-41.0
263.4	8.732	3.777	6.715	12.033	0.000	3.571	1.604	85.7	-25.5
270.9	8.980	3.740	6.647	12.062	0.000	3.574	1.624	82.5	-33.5
278.4	9.234	3.692	6.576	12.090	0.000	3.561	1.648	79.2	-35.3
285.9	9.482	3.652	6.504	12.127	0.000	3.561	1.671	76.3	-25.7
293.4	9.731	3.629	6.442	12.150	0.000	3.580	1.687	73.9	-27.3
300.9	9.991	3.582	6.334	12.228	0.000	3.603	1.718	71.0	-30.4
308.4	10.245	3.550	6.329	12.196	0.000	3.556	1.730	68.6	-22.1
315.9	10.492	3.527	6.277	12.215	0.000	3.565	1.746	66.6	-24.5
323.4	10.740	3.490	6.242	12.225	0.000	3.536	1.764	64.3	-22.7
330.9	10.992	3.470	6.196	12.240	0.000	3.546	1.778	62.5	-16.2
338.4	11.243	3.449	6.153	12.277	0.000	3.551	1.792	60.7	-13.7
345.9	11.496	3.435	6.084	12.315	0.000	3.594	1.807	59.2	-22.5
353.4	11.753	3.391	6.046	12.328	0.000	3.555	1.830	57.1	-34.7
360.9	12.009	3.347	5.978	12.353	0.000	3.544	1.858	55.2	-21.6
368.4	12.257	3.336	5.970	12.340	0.000	3.534	1.864	53.9	-13.6
375.9	12.505	3.313	5.898	12.382	0.000	3.563	1.885	52.4	-31.6
383.4	12.760	3.257	5.840	12.399	0.000	3.521	1.918	50.5	-32.3
390.9	13.011	3.231	5.796	12.409	0.000	3.519	1.936	49.1	-20.6
398.4	13.261	3.205	5.768	12.413	0.000	3.501	1.952	47.8	-14.3
405.9	13.509	3.195	5.734	12.433	0.000	3.517	1.962	46.8	-10.7
413.4	13.752	3.179	5.699	12.462	0.000	3.522	1.975	45.7	-8.6
420.9	14.001	3.174	5.683	12.468	0.000	3.530	1.980	44.9	-22.6
428.4	14.251	3.122	5.611	12.479	0.000	3.509	2.016	43.3	-27.0
435.9	14.500	3.107	5.591	12.489	0.000	3.501	2.027	42.4	-14.2
443.4	14.747	3.087	5.553	12.510	0.000	3.503	2.043	41.4	-13.3
450.4	14.980	3.075	5.530	12.504	0.000	3.504	2.054	40.6	-10.6

SOIL CHEMICAL TESTS

MACTEC

DOCUMENTATION OF TECHNICAL REVIEW
SUBCONTRACTOR WORK PRODUCT

Project Name: Turkey Point COL Project

Project Number: 6468-07-1950

Project Manager: Scott Auger

Project Principal: Tom McDaniel

The report described below has been prepared by the named subcontractor retained in accordance with the MACTEC QAPD. The work and report have been reviewed by a MACTEC technically qualified person. Comments on the work or report, if any, have been satisfactorily addressed by the subcontractor. The attached report is approved in accordance with section QS-7 of MACTEC's QAPD.

The information and data contained in the attached report are hereby released by MACTEC for project use.

REPORT : **Analytical Report Lot #: F8D150138**

SUBCONTRACTOR: **TestAmerica, Earth City, MO**

DATE OF ACCEPTANCE : 7/25/2008

TECHNICAL REVIEWER: William S. Grimes

SENIOR PROJECT PRINCIPAL: J. Allan Tice

MACTEC
3301 Atlantic Avenue, Raleigh, NC 27604

MACTEC

Client **Bechtel Power Corp.** Laboratory **TestAmerica Inc.**

MACTEC Project **6468-07-1950** Data Report Number/Date **Lot# F8D150138/ 4-18-08**

LABORATORY DATA REVIEW CHECKLIST

		YES	NO	NOT APPLICABLE
1.	Laboratory analytical data report appears complete (all data results present for all samples submitted for analysis) and there are no apparent transcription errors:	___	✓[1]	___
2.	Samples analyzed within applicable holding times (based on date of sample collection):*	✓	___	___
3.	Trip blanks, field blanks or laboratory method blanks are free of blank contamination:	✓	___	___
4.	If field duplicate samples collected, calculated results meet Relative Percent Difference guidelines: **	___	___	✓
5.	Surrogate recoveries (organic analyses only) within laboratory reported recovery acceptance ranges:	___	___	✓
6.	If Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples required to meet project objectives, Percent Recoveries (%R) and Relative Percent Difference (RPD) within laboratory reported acceptance ranges:	✓	___	___
7.	Reported detection limits meet project objectives (e.g., are capable of achieving applicable site standards):	✓	___	___
8.	Completed Chain-Of-Custody received noting sample/custody seal condition (with airbill, if appropriate):	✓	___	___
9.	Analytical costs within authorized budget for these services:	✓	___	___

COMMENTS: [1] **Due to a limitation in the laboratory's data reporting system, TestAmerica incorrectly reported that pH was tested by SW-846 9045C, when it was actually tested according to 9045D. This discrepancy is noted in the case narrative.**

Notes: 1. This checklist is intended for use with the laboratory reporting formats typical of most projects. If "no" is answered to one or more of the above checklist questions 1 through 7, a more detailed Data Validation may be required, and a person knowledgeable in Data Validation protocols should be consulted. This checklist should not be used if the project scope requires Data Validation from the onset.

2. * = Based upon EPA Guidance and the applicable analytical method references. See reverse side of checklist for details.

3. ** = Based upon EPA Guidance. Use these criteria on duplicate and sample results which exceed five times the reported detection limit. See reverse side of checklist for details.

Checked by: _____ Date: 7-15-08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 6468071950

FPL Turkey Point COL

Lot #: F8D150138

Al Tice

MACTEC Engineering and Cons.
3301 Atlantic Ave.
Raleigh, NC 27604

TESTAMERICA LABORATORIES, INC.

Ivan Vania
Project Manager

April 18, 2008

Case Narrative
LOT NUMBER: F8D150138

This report contains the analytical results for the eight samples received under chain of custody by TestAmerica St. Louis on April 14, 2008. These samples are associated with your FPL Turkey Point COL project.

The analytical results included in this report meet all applicable quality control procedure requirements.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Method 9045C is listed on the results report due to a limitation of the laboratory's data reporting system. However, method 9045D was used for the analysis of pH. This can be verified by observation of the lab bench worksheets in the raw data package.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

There were no nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F8D150138

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Chloride	MCAWW 300.0A	MCAWW 300.0A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Soil and Waste pH	SW846 9045C	SW846 DI-LEACHA
Sulfate	MCAWW 300.0A	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8D150138

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KLAKP	001	B-706 706-2	02/09/08	
KLALA	003	B-603 603-3	02/14/08	
KLALD	005	B-605 605-20	02/26/08	
KLALE	006	B-607 607-10	03/09/08	
KLALF	007	B-703 703-10	02/05/08	
KLAL2	008	B-704 704-16	02/27/08	
KLAL3	009	B-705 705-11	02/22/08	
KLAL4	010	B-711 711-12	03/06/08	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-706 706-2

General Chemistry

Lot-Sample #...: F8D150138-001 **Work Order #...:** KLAKP **Matrix.....:** SOLID
Date Sampled...: 02/09/08 **Date Received..:** 04/14/08
% Moisture.....: 21

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.3	0.10	No Units	SW846 9045C	04/16/08	8107188
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	8830	509	mg/kg	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 200		Analysis Time..: 11:42		
Percent Moisture	21.4	0.10	%	MCAWW 160.3 MOD	04/16-04/17/08	8106226
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	1190	63.6	mg/kg	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10		Analysis Time..: 11:02		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-603 603-3

General Chemistry

Lot-Sample #...: F8D150138-003 Work Order #...: KLALA Matrix.....: SOLID
Date Sampled...: 02/14/08 Date Received..: 04/14/08
% Moisture.....: 18

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.4	0.10	No Units	SW846 9045C	04/16/08	8107188
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	5430	489	mg/kg	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 200		Analysis Time..: 11:55		
Percent Moisture	18.2	0.10	%	MCAWW 160.3 MOD	04/16-04/17/08	8106226
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	780	61.1	mg/kg	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10		Analysis Time..: 06:47		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-605 605-20

General Chemistry

Lot-Sample #...: F8D150138-005 **Work Order #...:** KLALD **Matrix.....:** SOLID
Date Sampled...: 02/26/08 **Date Received..:** 04/14/08
% Moisture.....: 22

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.3	0.10	No Units	SW846 9045C	04/16/08	8107188
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	5190	514	mg/kg	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 200		Analysis Time..: 12:46		
Percent Moisture	22.2	0.10	%	MCAWW 160.3 MOD	04/16-04/17/08	8106226
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	1180	64.3	mg/kg	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10		Analysis Time..: 07:41		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-607 607-10

General Chemistry

Lot-Sample #...: F8D150138-006 Work Order #...: KLALE Matrix.....: SOLID
Date Sampled...: 03/09/08 Date Received..: 04/14/08
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.4	0.10	No Units	SW846 9045C	04/16/08	8107188
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	4490	248	mg/kg	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 100		Analysis Time..: 12:33		
Percent Moisture	19.5	0.10	%	MCAWW 160.3 MOD	04/16-04/17/08	8106226
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	1140	62.1	mg/kg	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10		Analysis Time..: 07:27		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-703 703-10

General Chemistry

Lot-Sample #...: F8D150138-007 Work Order #...: KLALF Matrix.....: SOLID
Date Sampled...: 02/05/08 Date Received..: 04/14/08
% Moisture.....: 22

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.4	0.10	No Units	SW846 9045C	04/16/08	8107188
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	4730	513	mg/kg	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 200		Analysis Time..: 10:49		
Percent Moisture	22.1	0.10	%	MCAWW 160.3 MOD	04/16-04/17/08	8106226
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	974	64.2	mg/kg	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10		Analysis Time..: 10:35		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-704 704-16

General Chemistry

Lot-Sample #...: F8D150138-008 Work Order #...: KLAL2 Matrix.....: SOLID
Date Sampled...: 02/27/08 Date Received..: 04/14/08
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.7	0.10	No Units	SW846 9045C	04/16/08	8107188
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	7020	469	mg/kg	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 200		Analysis Time..: 12:58		
Percent Moisture	14.8	0.10	%	MCAWW 160.3 MOD	04/16-04/17/08	8106226
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	914	58.7	mg/kg	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10		Analysis Time..: 07:54		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-705 705-11

General Chemistry

Lot-Sample #...: F8D150138-009 Work Order #...: KLAL3 Matrix.....: SOLID
Date Sampled...: 02/22/08 Date Received..: 04/14/08
% Moisture.....: 20

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.7	0.10	No Units	SW846 9045C	04/16/08	8107188
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	2540	250	mg/kg	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 100		Analysis Time..: 12:08		
Percent Moisture	19.8	0.10	%	MCAWW 160.3 MOD	04/16-04/17/08	8106226
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	461	62.4	mg/kg	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10		Analysis Time..: 07:01		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-711 711-12

General Chemistry

Lot-Sample #...: F8D150138-010 Work Order #...: KLAL4 Matrix.....: SOLID
Date Sampled...: 03/06/08 Date Received..: 04/14/08
% Moisture.....: 21

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.3	0.10	No Units	SW846 9045C	04/16/08	8107188
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	4430	254	mg/kg	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 100		Analysis Time..: 12:20		
Percent Moisture	21.1	0.10	%	MCAWW 160.3 MOD	04/16-04/17/08	8106226
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	806	63.4	mg/kg	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10		Analysis Time..: 07:14		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8D150138 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: KLLKX1AA		MB Lot-Sample #:	F8D180000-033	
	ND	2.0	mg/kg	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 1				
		Analysis Time..: 06:04				
Sulfate		Work Order #: KLLK21AA		MB Lot-Sample #:	F8D180000-034	
	ND	5.0	mg/kg	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 1				
		Analysis Time..: 06:04				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8D150138 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)		Work Order #: KLEFM1AA	LCS Lot-Sample#: F8D160000-188		
	100	(99 - 101)	SW846 9045C	04/16/08	8107188
		Dilution Factor: 1	Analysis Time..: 00:00		
Chloride		Work Order #: KLLKX1AC	LCS Lot-Sample#: F8D180000-033		
	96	(90 - 110)	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 1	Analysis Time..: 05:50		
Sulfate		Work Order #: KLLK21AC	LCS Lot-Sample#: F8D180000-034		
	98	(90 - 110)	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 1	Analysis Time..: 05:50		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8D150138 **Matrix.....:** SOLID
Date Sampled...: 02/27/08 **Date Received..:** 04/14/08

Percnt Moisture: 8.0

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: KLAL21AF		MS Lot-Sample #: F8D150138-008	
	104	(90 - 110)	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 200		Analysis Time..: 12:58	
Sulfate		Work Order #...: KLAL21AH		MS Lot-Sample #: F8D150138-008	
	103	(90 - 110)	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10		Analysis Time..: 07:54	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8D150138 **Work Order #...:** KK706-SMP KK706-DUP **Matrix.....:** SOLID

Date Sampled...: 04/11/08 10:00 **Date Received..:** 04/12/08

% Moisture.....: 8.0

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #: F8D120160-002		
	8.0	8.4	%	4.7	(0-30)	MCAWW 160.3 MOD	04/16-04/17/08	8106226

Dilution Factor: 1 Analysis Time..: 00:00

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8D150138 **Work Order #...:** KLALD-SMP KLALD-DUP **Matrix.....:** SOLID

Date Sampled...: 02/26/08 **Date Received..:** 04/14/08

% Moisture.....: 22

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)						SD Lot-Sample #: F8D150138-005		
	8.3	8.1	No Units	2.7	(0-0.0)	SW846 9045C	04/16/08	8107188

Dilution Factor: 1 Analysis Time..: 00:00

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8D150138 **Work Order #...:** KLAL2-SMP **Matrix.....:** SOLID
KLAL2-DUP
Date Sampled...: 02/27/08 **Date Received..:** 04/14/08
% Moisture.....: 15

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F8D150138-008		
	7020	7270	mg/kg	3.5	(0-20)	MCAWW 300.0A	04/18/08	8109033
		Dilution Factor: 200				Analysis Time..: 12:58		
Sulfate						SD Lot-Sample #: F8D150138-008		
	914	915	mg/kg	0.046	(0-20)	MCAWW 300.0A	04/18/08	8109034
		Dilution Factor: 10				Analysis Time..: 07:54		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

F8D150138 CLIENT ANALYSIS SUMMARY

Storage Loc: 2-349
Date Received: 2008-04-14
Analytical Due Date: 2008-04-18
Report Due Date: 2008-04-18
Report Type: W
EDD Code: 00

Project Manager: IV
Quote #: 79192
SDG:
Project: 6468071950
FPL Turkey Point COL
PO#: 200807151
Report to: Kathryn White
Client: 63036 MACTEC Engineering & Consulting Inc

RUSH

#SMPS In LOT: 10

Inform PM of any receiving issues.

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	B-706 706-2			2008-02-09 / 0	KLAKP	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	B-603 603-3			2008-02-14 / 0	KLALA	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
5	B-605 605-20			2008-02-26 / 0	KLALD	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
6	B-607 607-10			2008-03-09 / 0	KLALE	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
7	B-703 703-10			2008-02-05 / 0	KLALF	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A

F8D150138 CLIENT ANALYSIS SUMMARY

Storage Loc: 2-349

Project Manager: IV Quote #: 79192 SDG:

Project: 6468071950 FPL Turkey Point COL

PO#: 200807151 Report to: Kathryn White

Client: 63036 MACTEC Engineering & Consulting Inc

RUSH

#SMPS in LOT: 10

Date Received: 2008-04-14

Analytical Due Date: 2008-04-18

Report Due Date: 2008-04-18

Report Type: W

EDD Code: 00

Inform PM of any receiving issues.

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
8	B-704 704-16			2008-02-27 / 0	KLAL2	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
9	B-705 705-11			2008-02-22 / 0	KLAL3	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
10	B-711 711-12			2008-03-06 / 0	KLAL4	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

LOT# F8D150138

CHAIN OF CUSTODY RECORD
TURKEY POINT COL PROJECT - FPL
MACTEC JOB NO. 6468-07-1950

COC No. TP-08

SAMPLE DESIGNATION	SAMPLE TYPE	TAKEN BY	DATE TAKEN	CHEMICAL ANALYSIS INTENDED USE	REMARKS
B-706 706-5	SAND + ROCK	CB	2/9/08 (3.1-4.6)		
B-706 706-6			2/9/08 (12.9-14.4)	not send	INSUFFICIENT SAMPLE
B-603-603-3			2/14/08 (5.0-6.5)		
B-605 605-10			2/23/08 (30-31.5)	not send	insufficient Sample
B-605 605-20			2/26/08 (154.4-156.4)		
B-607 607-10			3/9/08 (139.5-141)		
B-703 703-10			2/5/08 (123.8-125.3)		
B-704 704-16			2/27/08 (128-129.5)		
B-705 705-11			2/22/08 (33.5-35-0		
B-711 711-12			3/6/08 (130.2-131.7		

1. Relinquished by:	1. Date/Time	1. Received by:	1. Date/Time	
(name) CHANA SAVANNAH (signature)	4/10/08 9:40 AM	(name) AB Cranson (signature)	4/14/08 9:20	
2. Relinquished by:	2. Date/Time	2. Received by:	2. Date/Time	
(name) (signature)		(name) (signature)		

Remarks: If relinquishing to a common carrier or Fed Ex – Record tracking number TRK# ~~7993-0668-8050~~ 7998-3593-0877 on 4/11/08

~~B-706-6~~ B-706 706-6 & ~~B605-605-10~~ are not sent due to insufficient Samples

all Samples obtained from TP-04 DCN No TUR-111

Receiving Laboratory: Please return original form after signing for receipt of samples; keep copy for your records. Retain all portions of unused samples in labeled containers.

Chain of Custody Form Rev 0 - 1/29/08

Page 1 of 1

DCN No. TUR- 300

21 of 22

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F8D150138
- 2634 -

Condition Upon Receipt Form

Client: Mactec COC/RFA No: TR-08 Date: 4-14-08
Quote No: 74192 Initiated By: AB Time: 9:20

Shipping Information

Shipper Name: FE
Multiple Packages Y (N)

Shipping # (s):*				Sample Temperature (s):**			
1.	7998 3593 0877	6.		1.	HMD.at	6.	
2.		7.		2.		7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y (N)	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y N (N/A)	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N (N/A)	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N	If N/A- Was pH taken by original TestAmerica lab?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:
Received out of temp. Ruined out of hold. OK to log per T.V. 4/15/08

Corrective Action:
☐ Client Contact Name: _____ Informed by: _____
☐ Sample(s) processed "as is"
☐ Sample(s) on hold until: _____ If released, notify: _____
Project Management Review: _____ Date: 4-17-8 2634

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

LOT# F8D150138

MACTEC

DOCUMENTATION OF TECHNICAL REVIEW
SUBCONTRACTOR WORK PRODUCT

Project Name: Turkey Point COL Project

Project Number: 6468-07-1950

Project Manager: Scott Auger

Project Principal: Tom McDaniel

The report described below has been prepared by the named subcontractor retained in accordance with the MACTEC QAPD. The work and report have been reviewed by a MACTEC technically qualified person. Comments on the work or report, if any, have been satisfactorily addressed by the subcontractor. The attached report is approved in accordance with section QS-7 of MACTEC's QAPD.

The information and data contained in the attached report are hereby released by MACTEC for project use.

REPORT : **Analytical Report Lot #: F8E060234**

SUBCONTRACTOR: **TestAmerica, Earth City, MO**

DATE OF ACCEPTANCE : 7/25/2008

TECHNICAL REVIEWER: William S. Grimes

SENIOR PROJECT PRINCIPAL: J. Allan Tice

MACTEC
3301 Atlantic Avenue, Raleigh, NC 27604

MACTEC

Client **Bechtel Power Corp.** Laboratory **TestAmerica Inc.**

MACTEC Project **6468-07-1950** Data Report Number/Date **Lot# F8E060234/ 5-12-08**

LABORATORY DATA REVIEW CHECKLIST

		YES	NO	NOT APPLICABLE
1.	Laboratory analytical data report appears complete (all data results present for all samples submitted for analysis) and there are no apparent transcription errors:	___	✓[1]	___
2.	Samples analyzed within applicable holding times (based on date of sample collection):*	✓	___	___
3.	Trip blanks, field blanks or laboratory method blanks are free of blank contamination:	✓	___	___
4.	If field duplicate samples collected, calculated results meet Relative Percent Difference guidelines: **	___	___	✓
5.	Surrogate recoveries (organic analyses only) within laboratory reported recovery acceptance ranges:	___	___	✓
6.	If Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples required to meet project objectives, Percent Recoveries (%R) and Relative Percent Difference (RPD) within laboratory reported acceptance ranges:	✓	___	___
7.	Reported detection limits meet project objectives (e.g., are capable of achieving applicable site standards):	✓	___	___
8.	Completed Chain-Of-Custody received noting sample/custody seal condition (with airbill, if appropriate):	✓	___	___
9.	Analytical costs within authorized budget for these services:	✓	___	___

COMMENTS: [1] **Due to a limitation in the laboratory's data reporting system, TestAmerica incorrectly reported that pH was tested by SW-846 9045C, when it was actually tested according to 9045D.**

Notes: 1. This checklist is intended for use with the laboratory reporting formats typical of most projects. If "no" is answered to one or more of the above checklist questions 1 through 7, a more detailed Data Validation may be required, and a person knowledgeable in Data Validation protocols should be consulted. This checklist should not be used if the project scope requires Data Validation from the onset.

2. * = Based upon EPA Guidance and the applicable analytical method references. See reverse side of checklist for details.

3. ** = Based upon EPA Guidance. Use these criteria on duplicate and sample results which exceed five times the reported detection limit. See reverse side of checklist for details.

Checked by: _____ Date: 7-25-08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 6468071950

FPL Turkey Point COL

Lot #: F8E060234

Al Tice

MACTEC Engineering and Cons.
3301 Atlantic Ave.
Raleigh, NC 27604

TESTAMERICA LABORATORIES, INC.

Ivan Vania
Project Manager

May 12, 2008

Case Narrative
LOT NUMBER: F8E060234

This report contains the analytical results for the six samples received under chain of custody by TestAmerica St. Louis on May 6, 2008. These samples are associated with your FPL Turkey Point COL project.

The analytical results included in this report meet all applicable quality control procedure requirements.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

There were no nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F8E060234

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Chloride	MCAWW 300.0A	MCAWW 300.0A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Soil and Waste pH	SW846 9045C	SW846 DI-LEACHA
Sulfate	MCAWW 300.0A	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8E060234

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KMMHW	001	B-701-701-3	05/05/08	
KMMJC	002	B-701-701-1	05/05/08	
KMMJD	003	B-701-701-8	05/05/08	
KMMJE	004	B-701-701-12	05/05/08	
KMMJF	005	B-715-715-3	05/05/08	
KMMJH	006	B-715-715-11	05/05/08	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-701-701-3

General Chemistry

Lot-Sample #...: F8E060234-001 Work Order #...: KMMHW Matrix.....: SOLID
Date Sampled...: 05/05/08 Date Received..: 05/06/08
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.5	0.10	No Units	SW846 9045C	05/09/08	8130226
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	5050	480	mg/kg	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 200		Analysis Time..: 03:03		
Percent Moisture	16.7	0.10	%	MCAWW 160.3 MOD	05/07-05/08/08	8128051
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	551	60.0	mg/kg	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 10		Analysis Time..: 01:14		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-701-701-1

General Chemistry

Lot-Sample #...: F8E060234-002 Work Order #...: KMMJC Matrix.....: SOLID
Date Sampled...: 05/05/08 Date Received..: 05/06/08
% Moisture.....: 65

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	7.4	0.10	No Units	SW846 9045C	05/09/08	8130226
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	70400	2890	mg/kg	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 500		Analysis Time..: 04:16		
Percent Moisture	65.4	0.10	%	MCAWW 160.3 MOD	05/07-05/08/08	8128051
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	7590	1440	mg/kg	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 100		Analysis Time..: 04:04		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-701-701-8

General Chemistry

Lot-Sample #...: F8E060234-003 Work Order #...: KMMJD Matrix.....: SOLID
Date Sampled...: 05/05/08 Date Received..: 05/06/08
% Moisture.....: 26

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.5	0.10	No Units	SW846 9045C	05/09/08	8130226
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	4290	269	mg/kg	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 100		Analysis Time..: 04:29		
Percent Moisture	25.6	0.10	%	MCAWW 160.3 MOD	05/07-05/08/08	8128051
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	560	67.2	mg/kg	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 10		Analysis Time..: 01:39		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-701-701-12

General Chemistry

Lot-Sample #...: F8E060234-004 Work Order #...: KMMJE Matrix.....: SOLID
Date Sampled...: 05/05/08 Date Received..: 05/06/08
% Moisture.....: 30

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.3	0.10	No Units	SW846 9045C	05/09/08	8130226
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	6960	573	mg/kg	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 200		Analysis Time..: 04:41		
Percent Moisture	30.2	0.10	%	MCAWW 160.3 MOD	05/07-05/08/08	8128051
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	993	71.6	mg/kg	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 10		Analysis Time..: 01:51		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-715-715-3

General Chemistry

Lot-Sample #...: F8E060234-005 **Work Order #...:** KMMJF **Matrix.....:** SOLID
Date Sampled...: 05/05/08 **Date Received..:** 05/06/08
% Moisture.....: 12

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.8	0.10	No Units	SW846 9045C	05/09/08	8130226
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	3250	228	mg/kg	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 100		Analysis Time..: 05:54		
Percent Moisture	12.3	0.10	%	MCAWW 160.3 MOD	05/07-05/08/08	8128051
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	334	57.0	mg/kg	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 10		Analysis Time..: 02:03		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-715-715-11

General Chemistry

Lot-Sample #...: F8E060234-006 Work Order #...: KMMJH Matrix.....: SOLID
Date Sampled...: 05/05/08 Date Received..: 05/06/08
% Moisture.....: 26

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.4	0.10	No Units	SW846 9045C	05/09/08	8130226
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	6090	540	mg/kg	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 200		Analysis Time..: 05:05		
Percent Moisture	26.0	0.10	%	MCAWW 160.3 MOD	05/07-05/08/08	8128051
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	957	67.5	mg/kg	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 10		Analysis Time..: 02:15		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8E060234 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: KM1261AA		MB Lot-Sample #:	F8E090000-370	
	ND	2.0	mg/kg	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 1				
		Analysis Time..: 10:10				
Sulfate		Work Order #: KM1271AA		MB Lot-Sample #:	F8E090000-371	
	ND	5.0	mg/kg	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 1				
		Analysis Time..: 10:10				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E060234 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)		Work Order #: KMWLT1AA	LCS Lot-Sample#: F8E090000-226		
	100	(99 - 101)	SW846 9045C	05/09/08	8130226
		Dilution Factor: 1	Analysis Time..: 00:00		
Chloride		Work Order #: KM1261AC	LCS Lot-Sample#: F8E090000-370		
	97	(90 - 110)	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 1	Analysis Time..: 09:58		
Sulfate		Work Order #: KM1271AC	LCS Lot-Sample#: F8E090000-371		
	96	(90 - 110)	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 1	Analysis Time..: 09:58		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E060234 **Matrix.....:** SOLID
Date Sampled...: 05/05/08 **Date Received..:** 05/06/08

Percnt Moisture: 8.8

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: KMMHW1AF		MS Lot-Sample #: F8E060234-001	
	100	(90 - 110)	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 200		Analysis Time..: 03:03	
Sulfate		Work Order #...: KMMHW1AH		MS Lot-Sample #: F8E060234-001	
	96	(90 - 110)	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 10		Analysis Time..: 01:14	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E060234 **Work Order #...:** KMMT6-SMP KMMT6-DUP **Matrix.....:** SOLID

Date Sampled...: 04/28/08 14:17 **Date Received..:** 05/02/08

% Moisture.....: 8.8

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #: F8E060281-005		
	8.8	9.3	%	5.0	(0-30)	MCAWW 160.3 MOD	05/07-05/08/08	8128051

Dilution Factor: 1 Analysis Time..: 00:00

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E060234 **Work Order #...:** KMMJH-SMP KMMJH-DUP **Matrix.....:** SOLID

Date Sampled...: 05/05/08 **Date Received..:** 05/06/08

% Moisture.....: 26

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)						SD Lot-Sample #: F8E060234-006		
	8.4	8.3	No Units	0.72	(0-0.0)	SW846 9045C	05/09/08	8130226

Dilution Factor: 1 Analysis Time..: 00:00

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E060234 **Work Order #...:** KMMHW-SMP KMMHW-DUP **Matrix.....:** SOLID

Date Sampled...: 05/05/08 **Date Received..:** 05/06/08

% Moisture.....: 17

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride						SD Lot-Sample #: F8E060234-001		
	5050	4980	mg/kg	1.4	(0-20)	MCAWW 300.0A	05/09/08	8130370
		Dilution Factor: 200				Analysis Time..: 03:03		
Sulfate						SD Lot-Sample #: F8E060234-001		
	551	552	mg/kg	0.24	(0-20)	MCAWW 300.0A	05/09/08	8130371
		Dilution Factor: 10				Analysis Time..: 01:14		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

F8E060234 CLIENT ANALYSIS SUMMARY

Storage Loc: 3-79

Project Manager: IV | Quote #: 79192 | SDG:

Project: 6468071950 | FPL Turkey Point COL

PO#: 200807151 | Report to: Al Tice

Client: 63036 MACTEC Engineering & Consulting Inc

RUSH

#SMPS In LOT: 6

Date Received: 2008-05-06

Analytical Due Date: 2008-05-09

Report Due Date: 2008-05-09

Report Type: W

EDD Code: 00

Inform PM of any receiving issues.

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	B-701-701-3			2008-05-05 / 0	KMMHW	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
2	B-701-701-1			2008-05-05 / 0	KMMJC	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
3	B-701-701-8			2008-05-05 / 0	KMMJD	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
4	B-701-701-12			2008-05-05 / 0	KMMJE	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
5	B-715-715-3			2008-05-05 / 0	KMMJF	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A

F8E060234 CLIENT ANALYSIS SUMMARY

Storage Loc: 3-79
Date Received: 2008-05-06
Analytical Due Date: 2008-05-09
Report Due Date: 2008-05-09
Report Type: W
EDD Code: 00

Project Manager: IV
Project: 6468071950
PO#: 200807151
Client: 63036 MACTEC Engineering & Consulting Inc

Quote #: 79192 SDG:
FPL Turkey Point COL
Report to: Al Tice

RUSH

#SMPS in LOT: 6

Inform PM of any receiving issues.

6	B-715-715-11			2008-05-05 / 0	KMMJH	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

TestAmerica - St. Louis Logged in by: VANIAI 2008-05-08 15:47:26 printed on: Tuesday, May 06, 2008 04:51 PM Page 2 of 2

LOT# F8E060234

CHAIN OF CUSTODY RECORD
TURKEY POINT COL PROJECT - FPL
MACTEC JOB NO. 6468-07-1950

COC No 1 of 2

SAMPLE DESIGNATION	SAMPLE TYPE	TAKEN BY	DATE TAKEN	INTENDED USE (ABS-Le-08)	REMARKS
B-701 701-3	Sand & Rock	C. Savanapridi	5/5/08	120g CHEMICAL TESTING	191.69n
B-701-701-1					161.59n
B-701-701-8					199.3 gr
B-701-701-12					205.49r
B-715-715-3					125.89n
B-715-715-11					155.59n

1. Relinquished by:	1. Date/Time	1. Received by:	1. Date/Time	
C. Savanapridi	5/5/08	Angela Dunn	5/6/08 9:15	
(name) (signature)	12:00 PM	(name) (signature)		
2. Relinquished by:	2. Date/Time	2. Received by:	2. Date/Time	
(name) (signature)		(name) (signature)		

Remarks: If relinquishing to a common carrier or Fed Ex – Record tracking number TRK# 7984-3440-0719

Taken Samples from the following JARS B-701-3, B-701-1, B-701-8, B-701-12
B-715-3, B-715-11 (Total 6 JARS)

Receiving Laboratory: Please return original form after signing for receipt of samples; keep copy for your records. Retain all portions of unused samples in labeled containers.

Chain of Custody Form Rev 0 - 1/29/08 Page _____ of _____ DCN No. TUR-748

19 of 22

TestAmerica St. Louis

25409-000-K0A-CY00-00006

GEOTECHNICAL LABORATORY TEST ASSIGNMENT

Date 4/24/2008 Job Name FPL COL Job No. 25409 Requested By John Sturman

Assignment 05

SAMPLE LOCATION				PHYSICAL PROPERTIES										STRENGTH TESTS								COM-PACTION			CONSOLIDATION
Boring No.	Sample Type (Tube Sample Length)	Top of Sample/Core Run Depth, Ft	Sample/Run Number	Moisture Content	Unit Weight	Specific Gravity	Atterberg Limits	Grain Size Analysis: Sieve Only	Grain Size Analysis: Sieve + Hydrometer	Chemical Analysis (pH, chloride, sulphate)	Organic Content	Carbonate Content		Unconsolidated-Undrained Triaxial	Consolidated-Undrained Triaxial (3-stage w/pore-pressure meas.)	Unconfined Compression (Soil)	Confining Pressures (psi)	Direct Shear	TSRC (Assume K_0 = 0.5)	Unconfined Compression (rock)	Unconfined Compression (rock) w/stress-strain measurements	Standard (A, B, C, D)	Modified (A, B, C, D)	CBR	
B-711	Core	34.1	R-1	x	x							x								x					
B-711	Core	35.6	R-2	x	x															x					
B-711	Core	50.9	R-5	x	x															x					
B-711	Core	58.5	R-6	x	x	x														x	perform stress-strain				
B-711	Core	60.7	R-7	x	x							x								x	measurements				
B-711	Core	62.0	R-7	x	x															x	where possible				
B-711	Core	86.7	R-12	x	x															x					
B-711	Core	102.0	R-15	x	x															x					
B-711	Core	104.0	R-15	x	x							x								x					
B-711	Jar	120.5	711-11						x																
B-711	Jar	130.2	711-12					x																	
B-711	Jar	150.2	711-14						x																
B-715	Jar	5	715-3					x		x															
B-715	Jar	10	715-5					x																	
B-715	Jar	21.7	715-8					x																	
B-715	Core	32	R-2	x	x							x								x					
B-715	Core	42	R-4	x	x															x					
B-715	Core	55.4	R-7	x	x															x					
B-715	Core	88	R-13	x	x															x					
B-715	Jar	118.4	715-10						x											x					
B-715	Jar	128.1	715-11						x	x															
B-715	Jar	148.6	715-13					x																	

5 4

Contact John Sturman of Bechtel if there are any questions: Phone (301) 228-6061; e-mail jsturman@BECHTEL.COM.

08/07

25409-000-K0A-CY00-00006

GEOTECHNICAL LABORATORY TEST ASSIGNMENT

Date 4/24/2008 Job Name FPL COL Job No. 25409 Requested By John Sturman

Assignment 05

SAMPLE LOCATION				PHYSICAL PROPERTIES										STRENGTH TESTS								COM-PACTION			CONSOLIDATION
								Grain Size Analysis																	
Boring No.	Sample Type (Tube Sample Length)	Top of Sample/Core Run Depth, Ft	Sample/Run Number	Moisture Content	Unit Weight	Specific Gravity	Atterberg Limits	Sieve Only	Sieve + Hydrometer	Chemical Analysis (pH, chloride, sulphate)	Organic Content	Carbonate Content		Unconsolidated-Undrained Triaxial	Consolidated-Undrained Triaxial (3-stage w/pore-pressure meas.)	Unconfined Compression (Soil)	Confining Pressure (psi)	Direct Shear	TSRC (Assume K_0=1.0)	Unconfined Compression (rock)	Unconfined Compression (rock) w/stress-strain measurements	Standard (A, B, C, D)	Modified (A, B, C, D)	CBR	
B-625	Jar	15.2	625-7					x																	
B-625	Jar	120.4	625-8						x																
B-625	Jar	125.2	625-9						x																
B-701	Jar	0	701-1	x			x	x		x															
B-701	Jar	2.5	701-2					x																	
B-701	Jar	5	701-3					x		x		x													
B-701	Jar	12.5	701-6					x																	
B-701	Core	26.4	R-3 (01)	x	x															x					
B-701	Core	42.3	R06(02)	x	x							x								x					
B-701	Core	51.8	R-8 (03)	x	x														x						
B-701	Core	60.8	R-10 (04	x	x															x					
B-701	Core	62.2	R-10 (05	x	x														x						
B-701	Core	74.3	R-12	x	x															x					
B-701	Jar	115.5	701-8					x		x															
B-701	Jar	122.7	701-9						x																
B-701	Jar	127.5	701-10					x																	
B-701	Jar	147.5	701-12					x		x															
B-701	Jar	197.6	701-18					x																	
B-701	Jar	297.5	701-28						x																
B-701	Jar	347.5	701-33					x																	
B-701	Jar	397.5	701-38					x																	

N 4

Contact John Sturman of Bechtel if there are any questions: Phone (301) 228-8081; e-mail jsturman@BECHTEL.COM.

08/07

LOT# F8E060234

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): - 3053 - F8E060234

Condition Upon Receipt Form

Client: Maxtec COC/RFA No: V-2 Date: 5-6-08
Quote No: 7192 Initiated By: VXB Time: 9:15

Shipping Information

Shipper Name: FE Multiple Packages Y (N)

Shipping # (s):*				Sample Temperature (s):**			
1.	7984 3440 0719	6.		1.	Amb. out	6.	
2.		7.		2.		7.	
3.		8.		3.		8.	
4.		9.		4.		9.	
5.		10.		5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	Y (N)	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y N (N/A)	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N (N/A)	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N	If N/A- Was pH taken by original TestAmerica lab?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:
Received out of temp. - Ok to login IV.

Corrective Action:
☐ Client Contact Name: _____ Informed by: _____
☐ Sample(s) processed "as is"
☐ Sample(s) on hold until: _____ If released, notify: _____
Project Management Review: _____ Date: 5-6-8 3053

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004, REVISED 08/06/07\\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin004 rev11.doc

MACTEC

DOCUMENTATION OF TECHNICAL REVIEW
SUBCONTRACTOR WORK PRODUCT

Project Name: Turkey Point COL Project

Project Number: 6468-07-1950

Project Manager: Scott Auger

Project Principal: Tom McDaniel

The report described below has been prepared by the named subcontractor retained in accordance with the MACTEC QAPD. The work and report have been reviewed by a MACTEC technically qualified person. Comments on the work or report, if any, have been satisfactorily addressed by the subcontractor. The attached report is approved in accordance with section QS-7 of MACTEC's QAPD.

The information and data contained in the attached report are hereby released by MACTEC for project use.

REPORT : **Analytical Report Lot #: F8G110193**

SUBCONTRACTOR: **TestAmerica, Earth City, MO**

DATE OF ACCEPTANCE : 7/25/2008

TECHNICAL REVIEWER: William S. Grimes

SENIOR PROJECT PRINCIPAL: J. Allan Tice

MACTEC

Client **Bechtel Power Corp.** Laboratory **TestAmerica Inc.**

MACTEC Project **6468-07-1950** Data Report Number/Date **Lot# F8G110193/ 7-24-08**

LABORATORY DATA REVIEW CHECKLIST

		YES	NO	NOT APPLICABLE
1.	Laboratory analytical data report appears complete (all data results present for all samples submitted for analysis) and there are no apparent transcription errors:	___	✓[1]	___
2.	Samples analyzed within applicable holding times (based on date of sample collection):*	✓	___	___
3.	Trip blanks, field blanks or laboratory method blanks are free of blank contamination:	✓	___	___
4.	If field duplicate samples collected, calculated results meet Relative Percent Difference guidelines: **	___	___	✓
5.	Surrogate recoveries (organic analyses only) within laboratory reported recovery acceptance ranges:	___	___	✓
6.	If Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples required to meet project objectives, Percent Recoveries (%R) and Relative Percent Difference (RPD) within laboratory reported acceptance ranges:	✓	___	___
7.	Reported detection limits meet project objectives (e.g., are capable of achieving applicable site standards):	✓	___	___
8.	Completed Chain-Of-Custody received noting sample/custody seal condition (with airbill, if appropriate):	✓	___	___
9.	Analytical costs within authorized budget for these services:	✓	___	___

COMMENTS: [1] **Due to a limitation in the laboratory's data reporting system, TestAmerica incorrectly reported that pH was tested by SW-846 9045C, when it was actually tested according to 9045D. This discrepancy is noted in the case narrative.**

Notes: 1. This checklist is intended for use with the laboratory reporting formats typical of most projects. If "no" is answered to one or more of the above checklist questions 1 through 7, a more detailed Data Validation may be required, and a person knowledgeable in Data Validation protocols should be consulted. This checklist should not be used if the project scope requires Data Validation from the onset.

2. * = Based upon EPA Guidance and the applicable analytical method references. See reverse side of checklist for details.

3. ** = Based upon EPA Guidance. Use these criteria on duplicate and sample results which exceed five times the reported detection limit. See reverse side of checklist for details.

Checked by: _____ Date: 7-25-08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 6468071950

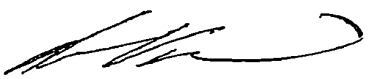
FPL Turkey Point COL

Lot #: F8G110193

Al Tice

MACTEC Engineering and Cons.
3301 Atlantic Ave.
Raleigh, NC 27604

TESTAMERICA LABORATORIES, INC.



Ivan Vania
Project Manager

July 24, 2008

Case Narrative
LOT NUMBER: **F8G110193**

This report contains the analytical results for the sample received under chain of custody by TestAmerica St. Louis on July 10, 2008. This sample is associated with your FPL Turkey Point COL project.

The analytical results included in this report meet all applicable quality control procedure requirements.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Method 9045C is listed on the results report due to a limitation of the laboratory's data reporting system. However, method 9045D was used for the analysis of pH. This can be verified by observation of the lab bench worksheets in the raw data package.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

There were no nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F8G110193

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Chloride	MCAWW 300.0A	MCAWW 300.0A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Soil and Waste pH	SW846 9045C	SW846 DI-LEACHA
Sulfate	MCAWW 300.0A	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8G110193

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KRD31	001	B-601 601-8	07/09/08	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: B-601 601-8

General Chemistry

Lot-Sample #...: F8G110193-001 Work Order #...: KRD31 Matrix.....: SOLID
Date Sampled...: 07/09/08 Date Received..: 07/10/08
% Moisture.....: 12

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	8.9	0.10	No Units	SW846 9045C	07/14/08	8196268
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	6790	226	mg/kg	MCAWW 300.0A	07/22/08	8204501
		Dilution Factor: 100		Analysis Time..: 07:48		
Percent Moisture	11.5	0.10	%	MCAWW 160.3 MOD	07/14-07/15/08	8196234
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	953	56.5	mg/kg	MCAWW 300.0A	07/22/08	8204502
		Dilution Factor: 10		Analysis Time..: 06:56		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8G110193 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: KR4XR1AA		MB Lot-Sample #:	F8G220000-501	
	ND	2.0	mg/kg	MCAWW 300.0A	07/22/08	8204501
		Dilution Factor: 1				
		Analysis Time..: 06:27				
Sulfate		Work Order #: KR4XT1AA		MB Lot-Sample #:	F8G220000-502	
	ND	5.0	mg/kg	MCAWW 300.0A	07/22/08	8204502
		Dilution Factor: 1				
		Analysis Time..: 06:27				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8G110193 Matrix.....: SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)		Work Order #: KRGR41AA	LCS Lot-Sample#: F8G140000-268		
	100	(99 - 101)	SW846 9045C	07/14/08	8196268
		Dilution Factor: 1	Analysis Time..: 00:00		
Chloride		Work Order #: KR4XR1AC	LCS Lot-Sample#: F8G220000-501		
	95	(90 - 110)	MCAWW 300.0A	07/22/08	8204501
		Dilution Factor: 1	Analysis Time..: 06:41		
Sulfate		Work Order #: KR4XT1AC	LCS Lot-Sample#: F8G220000-502		
	94	(90 - 110)	MCAWW 300.0A	07/22/08	8204502
		Dilution Factor: 1	Analysis Time..: 06:41		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8G110193 Matrix.....: SOLID
Date Sampled...: 07/09/08 Date Received..: 07/10/08

Percnt Moisture: 17

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #...: KRD311AG		MS Lot-Sample #: F8G110193-001	
	107	(90 - 110)	MCAWW 300.0A	07/22/08	8204501
		Dilution Factor: 100		Analysis Time..: 07:48	
Sulfate		Work Order #...: KRD311AJ		MS Lot-Sample #: F8G110193-001	
	97	(90 - 110)	MCAWW 300.0A	07/22/08	8204502
		Dilution Factor: 10		Analysis Time..: 06:56	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8G110193 **Work Order #...:** KREN3-SMP **Matrix.....:** SOLID
KREN3-DUP
Date Sampled...: 07/09/08 13:52 **Date Received..:** 07/11/08
% Moisture.....: 17

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture						SD Lot-Sample #: F8G110277-002		
	16.9	17.4	%	2.9	(0-30)	MCAWW 160.3 MOD	07/14-07/15/08	8196234

Dilution Factor: 1 Analysis Time..: 00:00

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8G110193 Work Order #...: KRD31-SMP KRD31-DUP Matrix.....: SOLID

Date Sampled...: 07/09/08 Date Received..: 07/10/08

% Moisture.....: 12

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)						SD Lot-Sample #:	F8G110193-001	
	8.9	9.0	No Units	0.78	(0-0.0)	SW846 9045C	07/14/08	8196268
			Dilution Factor: 1			Analysis Time..: 00:00		
Chloride						SD Lot-Sample #:	F8G110193-001	
	6790	6840	mg/kg	0.78	(0-20)	MCAWW 300.0A	07/22/08	8204501
			Dilution Factor: 100			Analysis Time..: 07:48		
Sulfate						SD Lot-Sample #:	F8G110193-001	
	953	949	mg/kg	0.41	(0-20)	MCAWW 300.0A	07/22/08	8204502
			Dilution Factor: 10			Analysis Time..: 06:56		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

TestAmerica St. Louis

TestAmerica St. Louis Laboratory
pH Method 9045D

Page: 1 of 1

Analyst: SOB

Batch No.: 8196268 Analysis Date: 7-14-8

Lab ID	Sample Aliquot (nom. 20 g)	DI Water Added (nom. 20ml)	Soil Preparation Time	Analysis Time (min. 1 hour after Preparation Time)	Temp (°C)	pH Reading	Comments
pH 4 Standard	—	—	1200	1315	22.1	4.00	
pH 7 Standard	—	—	|	|	22.1	7.02	
pH 10 Standard	—	—	|	|	22.1	10.03	
LCS/ICV	—	—	|	|	22.1	7.03	
KRD31	20.0	20.0	|	|	21.6	8.93	
KRD31X	20.0	20.0	|	|	21.3	9.00	
CCV	—	—	↓	↓	21.7	7.03	

Control Limits (Water): LCS =99 - 101

SOP	Rev	Date
STL-WC-0011	9	10/18/2007

File: Slsvr01\Wet Chem Results\pH, modified 02/21/07

F8G110193 CLIENT ANALYSIS SUMMARY

Storage Loc: 2-131
Date Received: 2008-07-10
Analytical Due Date: 2008-07-24
Report Due Date: 2008-07-25
Report Type: W
EDD Code: 00

Project Manager: IV
Project: 6468071950
PO#: 200807151
Client: 63036 MACTEC Engineering & Consulting Inc

Quote #: 79192 SDG:
FPL Turkey Point COL
Report to: Al Tice
#SMPS in LOT: 0

Inform PM of any receiving issues.

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	A
1	B-601 601-8			2008-07-09 / 0	KRD31	SOLID

SAMPLE COMMENTS:

XX	CX	MCAW W	300.0A	SOLID, 300.0A, Chloride (300.0A, Ion Chr	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	CY	MCAW W	300.0A	SOLID, 300.0A, Sulfate (300.0A, Ion Chro	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	OZ	SW846	9045C	SOLID, 9045C, pH (9045C) - Non-Aqueous	82	LEACHATE, DI (Routine)	01	STANDARD TEST SET	PROT: B	WRK LOC	06
XX	WM	MCAW W	160.3 MOD	SOLID, 160.3 MOD, Percent Moisture	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

TestAmerica - St. Louis Logged in by: BRUNSONA 2008-07-11 11:37:06 printed on: Friday, July 11, 2008 12:47 PM Page 1 of 1

LOT# F8G110193

CWF 3759

CHAIN OF CUSTODY RECORD
TURKEY POINT COL PROJECT - FPL
MACTEC JOB NO. 6468-07-1950

COC No. TP-31

SAMPLE DESIGNATION	SAMPLE TYPE	TAKEN BY	DATE TAKEN	INTENDED USE	REMARKS
B-601 601-8	SOIL	CD	7/9/08	CHEMICAL ANALYSIS by Test America ~~In accordance w WI No 19~~ 7/9/08	H1 9R. 1205 CD 07.10.08

1. Relinquished by: Savonuprid, Cavongsay (name) (signature)	1. Date/Time 7/9/08 9:00AM	1. Received by: FedEx # 7900 4905 2175 (name) (signature)	1. Date/Time		
2. Relinquished by: (name) (signature)	2. Date/Time	2. Received by: (name) (signature)	2. Date/Time 07-10-08 0930		

Remarks: If relinquishing to a common carrier or Fed Ex – Record tracking number

Taken from original jar # B-601 601-8

Jan 7/9/08

Receiving Laboratory: Please return original form after signing for receipt of samples; keep copy for your records. Retain all portions of unused samples in labeled containers.

Chain of Custody Form Rev 0 - 1/29/08

Page 1 of 1

ORIGINAL

DCN No. TUR- 428

TestAmerica St. Louis

13 of 14

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F8G110193
- 3759 -

Condition Upon Receipt Form

Client: Mactec COC/RFA No: TP-31 Date: 07.10.08
Quote No: 79192 Initiated By: Time: 0930

Shipping Information

Shipper Name: FedEx
Shipping # (s):*
1. 7905 4905 2175 6.
2. 7.
3. 8.
4. 9.
5. 10.

Multiple Packages Y (N)
Sample Temperature (s):**
1. 3 6.
2. 7.
3. 8.
4. 9.
5. 10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N (N/A)	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N	If N/A- Was pH taken by original TestAmerica lab?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N ?	Is sample volume sufficient for analysis?	14.	Y N	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:

No analyses on C-O-C.

Corrective Action:
☐ Client Contact Name: Informed by:
☐ Sample(s) processed "as is"
☐ Sample(s) on hold until: If released, notify:
Project Management Review: Date: 7-2-08

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

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Carbonate Content Test Results

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-601 (DH) ZHU 7-25-08	**Sample No.:**	601-5
Depth:	9.7-11.2'	**Lab No.:**	8656
Tested By:	BM	**Reviewed By:**	SW
Test Date:	05/13/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.4
0.25	6.2
0.50	7.2
1	7.7
2	7.8
4	8.0
8	8.1
10	8.2
15	8.3
20	8.3
25	8.3

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4.4
	0.25	6.2
	0.50	7.2
	1	7.7
	2	7.8
	4	8.0
	8	8.1
	10	8.2
	15	8.3
	20	8.3
	25	8.3

Chamber Pressure: 8.3 psi Pan # R-23

Calcium Carbonate Content: 92.98 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Balance	416
Chamber	2676
Pressure Transducer	2773 2774

Balance 416
No 40 sieve 1187
Oven 144
50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. : 6468-07-1950 **Project Name:** Turkey Point COL Project-FPL

Boring No.: B-601 DH **Sample No.:** B-601 DH-18

Depth: 198.4-199.9 Ft. **Lab No.:** 8992

Tested By: BNL **Reviewed By:** JW

Test Date: 7/15/08 **Review Date:** 7/17/08

Leak Check of the Chamber

Time min (See BNL 7/15/08)	Pressure (psi)
0.10	1.0
0.25	1.4
0.50	1.5
1	1.7
2	2.0
4	2.3
8	2.5
10	2.6
15	2.6

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	1.0
	0.25	1.4
	0.50	1.5
	1	1.7
	2	2.0
	4	2.3
	8	2.5
	10	2.6
	15	2.6

Chamber Pressure: 2.6 psi Pan # AB-39

Calcium Carbonate Content: ~~11.203~~ 29.13 ~~BNL~~ % 7/15/08

Calibration Factor: ~~11.203~~ ~~29.13~~ ~~BNL~~ 7/15/08 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Balance	416
Oven	500

Equipment	LID No.
No. 40 sieve	BNL 7/15/08 5608
50ml Flask	1240
Pressure Transducer	2773 2774

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-601 (DH) ZHU 7-25-08	**Sample No.:**	601-23
Depth:	248.4-249.9'	**Lab No.:**	8657
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/13/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.1
0.25	0.1
0.50	0.2
1	0.2
2	0.7
4	BM 05/13/08 1.0
8	1.6
10	1.8
15	1.9
20	1.9
25	

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	0.1
	0.25	0.1
	0.50	0.2
	1	0.2
	2	0.7
	4	BM 05/13/08 1.0
	8	1.6
	10	1.8
	15	1.9
	20	1.9
	25	N/A

Chamber Pressure: 1.9 psi Pan # C-28

Calcium Carbonate Content: 21.29 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Balance	416
Chamber	21076
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 144
50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-603	**Sample No.:**	603-3
Depth:	5.0-6.5'	**Lab No.:**	8643
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/9/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	5.0
0.25	6.3
0.50	7.2
1	7.6
2	7.8
4	~~8.0~~ 7.8
8	8.0
10	8.0
15	8.0

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	5.0
	0.25	6.3
	0.50	7.2
	1	7.6
	2	7.8
	4	7.8
	8	8.0
	10	8.0
	15	8.0

Chamber Pressure: 8.0 psi Pan # C-44

Calcium Carbonate Content: 89.62 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-603	**Sample No.:**	603-5
Depth:	10.0-11.5'	**Lab No.:**	8644
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/9/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	5.0
0.25	6.8
0.50	7.1
1	7.8
2	8.1
4	8.1
8	8.2
10	8.2
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	5.0
	0.25	6.8
	0.50	7.1
	1	7.8
	2	8.1
	4	8.1
	8	8.2
	10	8.2
	15	N/A

Chamber Pressure: 8.2 psi Pan # C-27

Calcium Carbonate Content: 91.8 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-603	**Sample No.:**	603-8
Depth:	120.5-122'	**Lab No.:**	8645
Tested By:	BAS	**Reviewed By:**	JW
Test Date:	5/9/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	1.0
0.25	1.5
0.50	1.6
1	1.6
2	1.7
4	1.7
8	1.7
10	1.7
15	1.7

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	1.0
	0.25	1.5
	0.50	1.6
	1	1.6
	2	1.7
	4	1.7
	8	1.7
	10	1.7
	15	1.7

Chamber Pressure: 1.7 psi Pan # R-34

Calcium Carbonate Content: 19.05 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-603	**Sample No.:**	603-11
Depth:	136.4-137.9'	**Lab No.:**	8646
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/09/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	2.5
0.25	3.3
0.50	3.5
1	3.6
2	3.6
4	3.6
8	3.6
10	3.6
15	3.6

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	2.5
	0.25	3.3
	0.50	3.5
	1	3.6
	2	3.6
	4	3.6
	8	3.6
	10	3.6
	15	3.6

Chamber Pressure: 3.6 psi Pan # V-55

Calcium Carbonate Content: 40.33 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Pressure Transducer	2773 2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-605	**Sample No.:**	605-4
Depth:	7.5-9.0'	**Lab No.:**	8647
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/09/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.6
0.25	6.3
0.50	7.0
1	7.6
2	7.8
4	7.9
8	7.9
10	7.9
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.6
	0.25	6.3
	0.50	7.0
	1	7.6
	2	7.8
	4	7.9
	8	7.9
	10	7.9
	15	N/A

Chamber Pressure: 7.9 psi Pan # V-80

Calcium Carbonate Content: 88.50 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-605	**Sample No.:**	605-12
Depth:	119.9-121.4'	**Lab No.:**	8648
Tested By:	BM	**Reviewed By:**	SW
Test Date:	05/09/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	1.6
0.25	2.1
0.50	2.2
1	2.3
2	2.4
4	2.4
8	2.4
10	2.4
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	1.6
	0.25	2.1
	0.50	2.2
	1	2.3
	2	2.4
	4	2.4
	8	2.4
	10	2.4
	15	N/A

Chamber Pressure: 2.4 psi Pan # V-32

Calcium Carbonate Content: 26.89 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774

Balance 416
No. 40 Sieve 1187
Oven 144
50ml Flask 1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. : 6468-07-1950 **Project Name:** Turkey Point COL Project-FPL

Boring No.: B-605 **Sample No.:** 605-15

Depth: 131.4-132.9 **Lab No.:** 8723

Tested By: BM 5/21/08 **Reviewed By:** SW

Test Date: 5/22/08 **Review Date:** 5/22/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	1.1
0.25	1.4
0.50	2.0
1	2.1
2	2.2
4	2.4
8	2.6
10	2.7
15	2.7
20	2.7

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	1.1
	0.25	1.4
	0.50	2.0
	1	2.1
	2	2.2
	4	2.4
	8	2.6
	10	2.7
	15	2.7
	20	2.7

Chamber Pressure: 2.7 psi Pan # K-15

Calcium Carbonate Content: 30.25 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2671P
Balance	4116
Oven	500

Equipment	LID No.
No. 40 sieve	1187
50ml Flask	1240
Pressure Transducer	2773 2774

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-605	**Sample No.:**	605-18
Depth:	144.9-146.4'	**Lab No.:**	8625
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.5
0.25	0.8
0.50	0.9
1	1.1
2	1.2
4	1.6
8	2.0
10	2.1
15	2.1
20	2.1

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.5
	0.25	0.8
	0.50	0.9
	1	1.1
	2	1.2
	4	1.6
	8	2.0
	10	2.1
	15	2.1
	20	2.1

Chamber Pressure: 2.1 psi Pan # V-25

Calcium Carbonate Content: 23.53 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No. 40 sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-605	**Sample No.:**	605-26
Depth:	184.5-186.0'	**Lab No.:**	8626
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.8
0.25	1.1
0.50	1.2
1	1.3
2	1.5
4	1.9
8	2.0
10	2.1
15	2.1
20	2.1

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	0.8
	0.25	1.1
	0.50	1.2
	1	1.3
	2	1.5
	4	1.9
	8	2.0
	10	2.1
	15	2.1
	20	2.1

Chamber Pressure: 2.1 psi Pan # V-24

Calcium Carbonate Content: 23.53 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-607	**Sample No.:**	607-3
Depth:	5.0-6.5'	**Lab No.:**	8627
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	5.0
0.25	6.4
0.50	7.4
1	7.8
2	7.9
4	7.9
8	7.9
10	7.9
15	7.9

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	5.0
	0.25	6.4
	0.50	7.4
	1	7.8
	2	7.9
	4	7.9
	8	7.9
	10	7.9
	15	7.9

Chamber Pressure: 7.9 psi Pan # C-37

Calcium Carbonate Content: 8.50 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773 2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-607	**Sample No.:**	R-3
Depth:	25.7-26.5'	**Lab No.:**	8659 A
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.7
0.25	5.4
0.50	6.4
1	6.7
2	6.9
4	6.9
8	7.0
10	7.0
15	7.0

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	3.7
	0.25	5.4
	0.50	6.4
	1	6.7
	2	6.9
	4	6.9
	8	7.0
	10	7.0
	15	7.0

Chamber Pressure: 7.0 psi Pan # K-9

Calcium Carbonate Content: 78.42 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21670
Balance	416
Pressure Transducer	2773 2774
No. 40 sieve	1187
Oven	500
50ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-607	**Sample No.:**	R-3
Depth:	25.7-26.5'	**Lab No.:**	8659 B
Tested By:	BNL	**Reviewed By:**	JCW
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.7
0.25	5.4
0.50	6.4
1	6.7
2	6.9
4	6.9
8	6.9
10	6.9
15	6.9

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	3.7
	0.25	5.4
	0.50	6.4
	1	6.7
	2	6.9
	4	6.9
	8	6.9
	10	6.9
	15	6.9

Chamber Pressure: 6.9 psi Pan # F-70

Calcium Carbonate Content: 87.30 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Balance	416
Pressure Transducer	2773 2774
No. 40 sieve	1187
Oven	500
50ml flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-607	**Sample No.:**	R-3
Depth:	25.7-26.5'	**Lab No.:**	8659 C
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.8
0.25	5.5
0.50	6.5
1	6.8
2	7.0
4	7.1
8	7.1
10	7.1
15	7.1

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	3.8
	0.25	5.5
	0.50	6.5
	1	6.8
	2	7.0
	4	7.1
	8	7.1
	10	7.1
	15	7.1

Chamber Pressure: 7.1 psi Pan # K-1

Calcium Carbonate Content: 79.54 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773 2774
No. 40 Sieve	1187
Oven	500
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-607	**Sample No.:**	R-19
Depth:	99.7-100.5'	**Lab No.:**	8660 A
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.9
0.25	5.7
0.50	6.7
1	7.1
2	7.2
4	7.3
8	7.3
10	7.3
15	7.3

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	3.9
	0.25	5.7
	0.50	6.7
	1	7.1
	2	7.2
	4	7.3
	8	7.3
	10	7.3
	15	7.3

Chamber Pressure: 7.3 psi Pan # V-69

Calcium Carbonate Content: 81.78 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50 ml Flask 1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-607	**Sample No.:**	R-19
Depth:	99.7-100.5'	**Lab No.:**	8660 B
Tested By:	BM	**Reviewed By:**	JRD
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.2
0.25	5.7
0.50	6.7
1	7.1
2	7.2
4	7.2
8	7.2
10	7.2
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4.2
	0.25	5.7
	0.50	6.7
	1	7.1
	2	7.2
	4	7.2
	8	7.2
	10	7.2
	15	N/A

Chamber Pressure: 7.2 psi Pan # C-23

Calcium Carbonate Content: 80.1 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50 ml Flask 1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-607	**Sample No.:**	R-19
Depth:	99.7-100.5'	**Lab No.:**	8660 C
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.0
0.25	5.6
0.50	6.7
1	7.0
2	7.2
4	7.3
8	7.3
10	7.3
15	7.3

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.0
	0.25	5.6
	0.50	6.7
	1	7.0
	2	7.2
	4	7.3
	8	7.3
	10	7.3
	15	7.3

Chamber Pressure: 7.3 psi Pan # V-8

Calcium Carbonate Content: 81.78 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21676
Balance	416
Pressure Transducer	2773 2774
No. 40 Sieve	1187
Oven	500
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-607	**Sample No.:**	607-9
Depth:	129.5-131.0'	**Lab No.:**	8628
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	1.2
0.25	1.6
0.50	1.7
1	1.7
2	1.7
4	1.7
8	1.7
10	1.7
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	1.2
	0.25	1.6
	0.50	1.7
	1	1.7
	2	1.7
	4	1.7
	8	1.7
	10	1.7
	15	N/A

Chamber Pressure: 1.7 psi Pan # R-45

Calcium Carbonate Content: 19.05 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2674
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-608 (DH) 리밍 7-25-08	**Sample No.:**	R-15 (CS-03)
Depth:	105.2-106.0'	**Lab No.:**	8713 A
Tested By:	BM	**Reviewed By:**	JC
Test Date:	05/14/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.3
0.25	5.4 5.6
0.50	6.5
1	6.9
2	6.9
4	6.9
8	6.9
10	6.9
15	6.9

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.3
	0.25	5.6
	0.50	6.5
	1	6.9
	2	6.9
	4	6.9
	8	6.9
	10	6.9
	15	6.9

Chamber Pressure: 6.9 psi Pan # A-9

Calcium Carbonate Content: 77.30 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773 2774

No. 40 sieve 1187
Oven 500
50 ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-608 (DH) ZHU 7-25-08	**Sample No.:**	R-15 (CS-03)
Depth:	105.2-106.0'	**Lab No.:**	8713 B
Tested By:	DM	**Reviewed By:**	JW
Test Date:	05/14/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.9
0.25	5.8
0.50	6.7
1	6.9
2	7.0
4	7.0
8	7.0
10	7.0
15	7.0

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.9
	0.25	5.8
	0.50	6.7
	1	6.9
	2	7.0
	4	7.0
	8	7.0
	10	7.0
	15	7.0

Chamber Pressure: 7.0 psi Pan # C-35

Calcium Carbonate Content: 7.42 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21676
Balance	4116
Pressure Transducer	2773 2774
No 40 Sieve	1187
Oven	500
50 mL Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-608 (DH) 7-25-08	**Sample No.:**	R-15 (CS-03)
Depth:	105.2-106.0'	**Lab No.:**	8713 C
Tested By:	BnL	**Reviewed By:**	JW
Test Date:	5/14/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.4
0.25	5.8
0.50	6.5
1	6.9
2	7.0
4	7.0
8	7.0
10	7.0
15	7.0

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4.4
	0.25	5.8
	0.50	6.5
	1	6.9
	2	7.0
	4	7.0
	8	7.0
	10	7.0
	15	7.0

Chamber Pressure: 7.0 psi Pan # P-13

Calcium Carbonate Content: 78.42 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50 ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-608 (DH) ZH 7-25-08	**Sample No.:**	608-17
Depth:	178-179.5'	**Lab No.:**	8717
Tested By:	RM	**Reviewed By:**	JW
Test Date:	5/16/08	**Review Date:**	5/19/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.6
0.25	0.8
0.50	1.0
1	1.3
2	1.8
4	1.9
8	2.0
10	2.0
15	2.0

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	0.6
	0.25	0.8
	0.50	1.0
	1	1.3
	2	1.8
	4	1.9
	8	2.0
	10	2.0
	15	2.0

Chamber Pressure: 2.0 psi Pan # AB-37

Calcium Carbonate Content: 22.41 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Balance	416
Pressure Transducer	2773 2774
Oven	500
No. 40 Sieve	1187
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-608 (DH) ZHU 2-25-08	**Sample No.:**	608-22
Depth:	228-229.5'	**Lab No.:**	8718
Tested By:	BNL	**Reviewed By:**	JW
Test Date:	5/16/08	**Review Date:**	5/19/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.5
0.25	0.7
0.50	0.9
1	1.1
2	1.5
4	2.2
8	~~2.4~~ 2.9
10	3.0
15	3.0
20	3.0

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	0.5
	0.25	0.7
	0.50	0.9
	1	1.1
	2	1.5
	4	2.2
	8	~~2.4~~ 2.9
	10	3.0
	15	3.0
	20	3.0

Chamber Pressure: 3.0 psi Pan # AB-38

Calcium Carbonate Content: 33.61 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	~~2773~~ 2774

Oven 500

No. 40 Sieve 1187

50ml Flask 1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. : 6468-07-1950 | Project Name: Turkey Point COL Project-FPL

Note 1: Boring No.: B-608 ~~(DH) ZHU 7-25-08~~ 5 | Sample No.: 608-28 **605-28**

Depth: 194.5-196' | Lab No.: 8716

Tested By: DH | Reviewed By: JW

Test Date: 5/16/08 | Review Date: 5/19/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.5
0.25	0.7
0.50	0.9
1	1.1
2	1.5
4	1.9
8	2.2
10	~~2.3~~ 2.4
15	2.4
20	2.4

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.5
	0.25	0.7
	0.50	0.9
	1	1.1
	2	1.5
	4	1.9
	8	2.2
	10	2.4
	15	2.4
	20	2.4

Chamber Pressure: 2.4 psi Pan # F-114

Calcium Carbonate Content: 26.89 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Note 1:
The correct sample identification is B-605 605-28. See attached correspondance.

ZHU
7-25-08

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773
	2774
Oven	500
No. 40 Sieve	1187
50ml Flask	1240

Ulker, Zeynep

From: Moore, Roy
Sent: Monday, June 02, 2008 11:12 AM
To: Ulker, Zeynep
Subject: FW: carbonate testing

Attachments: s2d31409F99106B7929C976A095386C68F8_1.pdf

Zeynep – Does this answer your question from last week?

Roy Moore
(404) 817- 0302

From: Wang, Jianren
Sent: Monday, June 02, 2008 11:08 AM
To: Moore, Roy
Subject: RE: carbonate testing

Roy, please see the attached for the revised table reflecting the correct boring no. The boring number we put on the table came from the COC. That means they have incorrect sample information on the COC. We sent a copy of the COC to

s2d31409F99106B7
929C976A095386...

Raleigh right after we received the samples as instructed by WI. .

Jianren Wang, P.E.

Principal Engineer/Manager, Laboratory Services
MACTEC Engineering and Consulting
396 Plasters Ave
Atlanta, GA 30324
Office (404) 873-4761 | Fax (404) 817-0221
Email jwang@mactec.com | Web www.mactec.com

From: Moore, Roy
Sent: Friday, May 30, 2008 10:38 AM
To: Wang, Jianren
Cc: Ulker, Zeynep; Lynch, John
Subject: FW: carbonate testing

Jianren,

Please see the note below and either revise the table or let us know otherwise.

Roy Moore
(404) 817- 0302

From: Ulker, Zeynep
Sent: Friday, May 30, 2008 10:35 AM
To: Moore, Roy
Subject: RE: carbonate testing

Roy,

I checked the boring log for B-608. The last sample is SS 24 and it is at around 240 feet. The sample that was tested was at 195 ft and is most probably B-605-28.

I spoke with Al and he suggested looking at the COC to see if there was a mistake there which would need to be followed up with an NCR. If there was a mistake in the reporting this is not necessary and all we need is the revised results table from you. A copy of that table is attached.

Please check the COC and send it along with the revised table ASAP. Thank you.

<< File: 20080530102550.tif >>

Zeynep Huri Ulker
Geotechnical Professional
Mactec Engineering and Consulting
Raleigh, NC 27604
Tel: (919) 831-8053
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MACTEC

Determination of Carbonate Content of Soils
ASTM D 4373-02

Project No.: 6468-07-1950
Project Name: Turkey Point COL Project-FPL
Tested By: BM
Test Date: 5/16/08-5/19/08

Reviewed By: JW
Review Date: 6/2/08
Office: MACTEC Atlanta

Sample Information				ASTM D 4373-02
Boring No.	Sample No.	Depth (ft.)	Lab ID No.	Calcite Equivalent (%)
B-605	605-28	194.5-196.0	8716	26.89
B-608	608-17	178.0-179.5	8717	22.41
B-608	608-22	228.0-229.5	8718	33.61
TP 701	701-1	3.0-4.5	8719	91.86
TP 601	601-1	3.2-5.0	8720	88.50

Table No.5. Results for Carbonate Content Testing per ASTM D 4373-02.

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-619	**Sample No.:**	619-6
Depth:	12.1-13.6'	**Lab No.:**	8629
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	5.0
0.25	6.5
0.50	7.3
1	7.9
2	8.0
4	BM 5/12/08 8.0 8.1
8	8.1
10	8.1
15	8.1

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	5.0
	0.25	6.5
	0.50	7.3
	1	7.9
	2	8.0
	4	8.1
	8	8.1
	10	8.1
	15	8.1

Chamber Pressure: 8.1 psi Pan # R-52

Calcium Carbonate Content: 90.74 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773 2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-619	**Sample No.:**	619-8
Depth:	121.6-123.1'	**Lab No.:**	8630
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.6
0.25	1.0
0.50	1.0
1	1.1
2	1.1
4	1.1
8	1.1
10	1.1
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	0.6
	0.25	1.0
	0.50	1.0
	1	1.1
	2	1.1
	4	1.1
	8	1.1
	10	1.1
	15	N/A

Chamber Pressure: 1.1 psi Pan # V-31

Calcium Carbonate Content: 12.32 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773 2774
Balance	2116
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-701 (DH) ZHU 7-25-08	**Sample No.:**	701-3
Depth:	5.1-6.6'	**Lab No.:**	8658
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/13/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.3
0.25	6.4
0.50	7.4
1	7.9
2	7.9
4	8.0
8	8.1
10	8.2
15	8.2
20	8.2

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.3
	0.25	6.4
	0.50	7.4
	1	7.9
	2	7.9
	4	8.0
	8	8.1
	10	8.2
	15	8.2
	20	8.2

Chamber Pressure: 8.2 psi Pan # V-75

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Balance	416
Chamber	2674
Pressure Transducer	2773
	2774

No. 40 Sieve 1187
Oven 144
50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-701 (DH) ZHU 7-25-08	**Sample No.:**	R-6 (CS-02)
Depth:	42.3-43.4'	**Lab No.:**	8714 A
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.5
0.25	6.5
0.50	7.6
1	8.0
2	8.2
4	8.2
8	8.3
10	8.3
15	8.3

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.5
	0.25	6.5
	0.50	7.6
	1	8.0
	2	8.2
	4	8.2
	8	8.3
	10	8.3
	15	8.3

Chamber Pressure: 8.3 psi Pan # R-31

Calcium Carbonate Content: 92.98 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Balance	416
Pressure Transducer	2773
	2774
No. 40 Sieve	1187
Oven	500
50ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-701 (OH) ZHU 7-25-08	**Sample No.:**	R-6 (CS-02)
Depth:	42.3-43.4'	**Lab No.:**	8714 B
Tested By:	BM	**Reviewed By:**	JZ
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.6
0.25	6.5
0.50	7.6
1	7.8
2	8.2
4	8.3
8	8.4
10	8.4
15 BM 5/15/08	8.4 8.5
25	8.5

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4.6
	0.75	6.5
	0.50	7.6
	1	7.8
	2	8.2
	4	8.3
	8	8.4
	10	8.4
	15	BM 5/15/08 8.4 8.5
	25	8.5

Chamber Pressure: 8.5 psi Pan # V-26

Calcium Carbonate Content: 95.33 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50 ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-701 (DH) ZHU 7-25-08	**Sample No.:**	R-6 (CS-02)
Depth:	42.3-43.4'	**Lab No.:**	8714 C
Tested By:	BM	**Reviewed By:**	JC
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	5.0
0.25	6.5
0.50	7.6
1	7.9
2	8.1
4	8.2
8	8.2
10	8.2
15	8.2

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	5.0
	0.25	6.5
	0.50	7.6
	1	7.9
	2	8.1
	4	8.2
	8	8.2
	10	8.2
	15	8.2

Chamber Pressure: 8.2 psi Pan # R-33

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. : 6468-07-1950 **Project Name:** Turkey Point COL Project-FPL

Boring No.: B-701 DH **Sample No.:** B-701 DH-22

Depth: 237.9-239.0 Ft. **Lab No.:** 8963

Tested By: BM **Reviewed By:** JW

Test Date: 7/15/08 **Review Date:** 7/17/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.4
0.25	0.5
0.50	0.6
1	0.7
2	BM 7/15/08 ~~1.0~~ 1.0
4	1.4
8	1.8
10	1.8
15	1.8

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.4
	0.25	0.5
	0.50	0.6
	1	0.7
	2	1.0
	4	1.4
	8	1.8
	10	1.8
	15	1.8

Chamber Pressure: 1.8 psi Pan # Z-34

Calcium Carbonate Content: ~~11.203~~ 20.17 ~~%~~ BM 7/15/08

Calibration Factor: ~~11.203~~ ~~20.17~~ BM 7/15/08 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Oven	500

Equipment	LID No.
No. 40 sieve	~~BM 7/15/08~~ 568
50ml Flask	1240
Pressure Transducer	2773 2774

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL
Boring No.:	B-701 (DH) ZHY 7-25-08	**Sample No.:**	R-24
Depth:	467.7-468.5 Ft	**Lab No.:**	8771
Tested By:	BN	**Reviewed By:**	JW
Test Date:	6/04/08	**Review Date:**	6/4/08

Leak Check of the Chamber

Time Minutes	Pressure (psi)
0.10	2.4
0.25	2.7
0.50	3.0
1	3.5
2	3.9
4	5.0
8	6.7
10	7.5
15	7.8

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time Minutes	Pressure (psi)
1.01	0.10	2.4
	0.25	2.7
	0.50	3.0
	1	3.5
	2	3.9
	4	5.0
	8	6.7
	10	7.5
	15	7.8

Chamber Pressure: 7.8 psi Pan # R-66

Calcium Carbonate Content: 87.38 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	20716
Balance	416
Oven	144

Equipment	LID No.
No. 40 sieve	1187
50ml Flask	1240
Pressure Transducer	2773 2774

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL
Boring No.:	B-701 (DH) ZHU 7-25-08	**Sample No.:**	R-32
Depth:	509.0-509.8 Ft	**Lab No.:**	8772
Tested By:	BAL	**Reviewed By:**	JW
Test Date:	06/04/08	**Review Date:**	6/4/08

Leak Check of the Chamber

Time Minutes	Pressure (psi)
0.10	4.9
0.25	6.6
0.50	7.6
1	7.9
2	8.0
4	8.3
8	8.3
10	8.3
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time Minutes	Pressure (psi)
1.01	0.10	4.9
	0.25	6.6
	0.50	7.6
	1	7.9
	2	8.0
	4	8.3
	8	8.3
	10	8.3
	15	N/A

Chamber Pressure: 8.3 psi Pan # AB-12

Calcium Carbonate Content: 92.98 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	26746
Balance	416
Oven	144

Equipment	LID No.
No. 40 sieve	187
50ml Flask	1240
Pressure Transducer	2773 2774

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. : 6468-07-1950 **Project Name:** Turkey Point COL

Boring No.: B-701 (DH) ZHU 7-25-08 **Sample No.:** R-51

Depth: 601.8-602.6 Ft. **Lab No.:** 8773

Tested By: BH **Reviewed By:** JW

Test Date: 6/4/08 **Review Date:** 6/4/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.2
0.25	4.2
0.50	4.8
1	5.0
2	5.6
4	6.1
8	6.8
10	6.9
15	6.9

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	3.2
	0.25	4.2
	0.50	4.8
	1	5.0
	2	5.6
	4	6.1
	8	6.8
	10	6.9
	15	6.9

Chamber Pressure: 6.9 psi Pan # A-3

Calcium Carbonate Content: 78.70 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21976
Balance	416
Oven	144

Equipment	LID No.
No. 40 sieve	11877
50ml Flask	1940
Pressure Transducer	2773 2774

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-703	**Sample No.:**	703-6
Depth:	12.3-13.8'	**Lab No.:**	8631
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	2.9
0.25	4.9
0.50	5.9
1	7.0
2	7.6
4	7.7
8	7.9
10	7.9
15	7.9

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	2.9
	0.25	4.9
	0.50	5.9
	1	7.0
	2	7.6
	4	7.7
	8	7.9
	10	7.9
	15	7.9

Chamber Pressure: 7.9 psi Pan # R-64

Calcium Carbonate Content: 88.50 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-703	**Sample No.:**	703-9 R
Depth:	118.6-120.1	**Lab No.:**	8722
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/20/08	**Review Date:**	5/20/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.8
0.25	1.1
0.50	1.1
1	1.1
2	1.1
4	BM 5/20/08 1.1
8	1.1
10	1.1
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.8
	0.25	1.1
	0.50	1.1
	1	1.1
	2	1.1
	4	BM 5/20/08 1.1
	8	1.1
	10	1.1
	15	N/A

Chamber Pressure: 1.1 psi Pan # W-7

Calcium Carbonate Content: 12.32 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	26740
Balance	416
Oven	500

Equipment	LID No.
No. 40 sieve	1187
50ml Flask	1240
Pressure Transducer	2773 2774

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-703	**Sample No.:**	703-15
Depth:	148.5-150.0'	**Lab No.:**	8633
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.6
0.25	1.0
0.50	1.0
1	1.1
2	1.3
4	1.6
8	1.7
10	1.8
15	1.8

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.6
	0.25	1.0
	0.50	1.0
	1	1.1
	2	1.3
	4	1.6
	8	1.7
	10	1.8
	15	1.8

Chamber Pressure: 1.8 psi Pan # D-13

Calcium Carbonate Content: 20.17 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Pressure Transducer	2773 2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-704 (DH) ZHU 7-25-08	**Sample No.:**	704-15
Depth:	123.0-124.5'	**Lab No.:**	8634
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.6
0.25	1.0
0.50	1.1
1	1.1
2	1.1
4	1.1
8	1.1
10	1.1
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.6
	0.25	1.0
	0.50	1.1
	1	1.1
	2	1.1
	4	1.1
	8	1.1
	10	1.1
	15	N/A

Chamber Pressure: 1.1 psi Pan # R-79

Calcium Carbonate Content: 12.32 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773 2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-704 (OH) ZHU 7-25-08	**Sample No.:**	704-21
Depth:	150.0-151.5'	**Lab No.:**	8635
Tested By:	BH	**Reviewed By:**	JW
Test Date:	05/12/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.5
0.25	1.0
0.50	1.0
1	1.1
2	1.3
4	1.5
8	1.6
10	1.6
15	1.6

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.5
	0.25	1.0
	0.50	1.0
	1	1.1
	2	1.3
	4	1.5
	8	1.6
	10	1.6
	15	1.6

Chamber Pressure: 1.6 psi Pan # C-45

Calcium Carbonate Content: 17.92 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-705	**Sample No.:**	705-4
Depth:	7.5-9.0'	**Lab No.:**	8636
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/13/08	**Review Date:**	5/13/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.6
0.25	6.3
0.50	7.3
1	7.9
2	7.9
4	8.2
8	8.2
10	8.2
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4.6
	0.25	6.3
	0.50	7.3
	1	7.9
	2	7.9
	4	8.2
	8	8.2
	10	8.2
	15	N/A

Chamber Pressure: 8.2 psi Pan # V-61

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774

Balance 416
No. 40 sieve 1187
Oven 144
50ml Flask 1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-705	**Sample No.:**	705-14
Depth:	128.5-130.0'	**Lab No.:**	8618
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/8/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	1.3
0.25	1.7
0.50	1.7
1	1.8
2	1.8
4	1.8
8	1.8
10	1.8
15	1.8

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	1.3
	0.25	1.7
	0.50	1.7
	1	1.8
	2	1.8
	4	1.8
	8	1.8
	10	1.8
	15	1.8

Chamber Pressure: 1.8 psi Pan # R-29

Calcium Carbonate Content: 20.17 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No 40 Sieve	1187
Oven	500
50ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-705	**Sample No.:**	705-24
Depth:	178.5-180.0'	**Lab No.:**	8619
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/8/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.5
0.25	0.8
0.50	1.0
1	1.3
2	1.6
4	2.0
8	2.1
10	2.1
15	2.1

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.5
	0.25	0.8
	0.50	1.0
	1	1.3
	2	1.6
	4	2.0
	8	2.1
	10	2.1
	15	2.1

Chamber Pressure: 2.1 psi Pan # V-82

Calcium Carbonate Content: 23.53 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

n/a % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No 40 Sieve	1187
Oven	500
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-706	**Sample No.:**	706-2
Depth:	3.1-4.6'	**Lab No.:**	8637
Tested By:	BW	**Reviewed By:**	JW
Test Date:	5/9/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.7
0.25	5.7
0.50	6.2
1	7.3
2	7.5
4	7.7
8	7.7
10	7.7
15	7.7

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	3.7
	0.25	5.7
	0.50	6.2
	1	7.3
	2	7.5
	4	7.7
	8	7.7
	10	7.7
	15	BW 5/9/08 ~~7.5~~ 7.7

Chamber Pressure: 7.7 psi Pan # V-19

Calcium Carbonate Content: 16.26 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773 2774
Balance	416
No 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-706	**Sample No.:**	706-6
Depth:	12.9-14.4'	**Lab No.:**	8638
Tested By:	BM	**Reviewed By:**	JO
Test Date:	5/9/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.3
0.25	6.2
0.50	7.0
1	7.8
2	8.0
4	8.1
8	8.2
10	8.2
15	8.2

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4.3
	0.25	6.2
	0.50	7.0
	1	7.8
	2	8.0
	4	8.1
	8	8.2
	10	8.2
	15	8.2

Chamber Pressure: 8.2 psi Pan # V-81

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773 2774
Balance	416
No.40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-706	**Sample No.:**	706-11
Depth:	125.9-127.4'	**Lab No.:**	8639
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/9/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time MIN	Pressure (psi)
0.10	1.3
BM 5/14/08 ~~1.20~~ 0.25	1.7
0.50	1.8
1	1.8
2	1.8
4	1.9
8	1.9
10	1.9
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time MIN	Pressure (psi)
1.00	0.10	1.3
	0.25	1.7
	0.50	1.8
	1	1.8
	2	1.8
	4	1.9
	8	1.9
	10	1.9
	15	N/A

Chamber Pressure: 1.9 psi Pan # R-25

Calcium Carbonate Content: 21.29 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1260

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-706	**Sample No.:**	706-15
Depth:	145-146.9'	**Lab No.:**	8640
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/9/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.6
0.25	0.9
0.50	1.0
1	1.2
2	1.3
4	1.4
8	1.5
10	1.5
15	1.5

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.6
	0.25	0.9
	0.50	1.0
	1	1.2
	2	1.3
	4	1.4
	8	1.5
	10	1.5
	15	1.5

Chamber Pressure: 1.5 psi Pan # C-13

Calcium Carbonate Content: 16.80 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-707	**Sample No.:**	707-6
Depth:	12.5-14.0'	**Lab No.:**	8620
Tested By:	BLY	**Reviewed By:**	JW
Test Date:	5/8/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.8
0.25	6.2
0.50	6.5
1	7.0
2	8.0
4	8.2
8	8.2
10	8.2
15	8.2

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	3.8
	0.25	6.2
	0.50	6.5
	1	7.0
	2	8.0
	4	8.2
	8	8.2
	10	8.2
	15	8.2

Chamber Pressure: 8.2 psi Pan # R-76

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No 40 Sieve	1187
Oven	500
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-707	**Sample No.:**	707-14
Depth:	125.3-126.8'	**Lab No.:**	8621
Tested By:	BM	**Reviewed By:**	JCW
Test Date:	5/8/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	1.3
0.25	1.5
0.50	1.5
1	1.7
2	1.7
4	1.8
8	1.8
10	1.8
15	1.8

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	1.3
	0.25	1.5
	0.50	1.5
	1	1.7
	2	1.7
	4	1.8
	8	1.8
	10	1.8
	15	1.8

Chamber Pressure: 1.8 psi Pan # R-43

Calcium Carbonate Content: 20.17 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2607
Pressure Transducer	2773
	2774
Balance	416
No 40 Sieve	1187
Oven	500
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-707	**Sample No.:**	707-18
Depth:	145.5-147'	**Lab No.:**	8624
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/8/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	0.6
0.25	0.9
0.50	1.1
1	1.2
2	1.4
4	1.5
8	1.6
10	1.6
15	1.6

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	0.6
	0.25	0.9
	0.50	1.1
	1	1.2
	2	1.4
	4	1.5
	8	1.6
	10	1.6
	15	1.6

Chamber Pressure: 1.6 psi Pan # V-522

Calcium Carbonate Content: 17.92 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Pressure Transducer	2773 2774

Balance 416
No 40 Sieve 1187
Oven 500
50 ml Flask 1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	711-3
Depth:	5.0-6.5'	**Lab No.:**	8622
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/8/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	5.0
0.25	6.6
0.50	7.5
1	8.0
2	8.3
4	8.4
8	8.5
10	8.5
15	8.5

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	5.0
	0.25	6.6
	0.50	7.5
	1	8.0
	2	8.3
	4	8.4
	8	8.5
	10	8.5
	15	8.5

Chamber Pressure: 8.5 psi Pan # V-72

Calcium Carbonate Content: 95.23 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	26076
Pressure Transducer	2773 / 2774
Balance	416
No 40 Sieve	1187
Oven	500
50 ml Flask	1240

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CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	R-1
Depth:	34.1-34.9'	**Lab No.:**	8661 A
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.4
0.25	6.1
0.50	7.4
1	7.9
2	8.1
4	8.2
8	8.2
10	8.2
15	8.2

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4
	0.25	6.1
	0.50	7.4
	1	7.9
	2	8.1
	4	8.2
	8	8.2
	10	8.2
	15	8.2

Chamber Pressure: 8.2 psi Pan # R-38

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21676
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50 ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	R-1
Depth:	34.1-34.9'	**Lab No.:**	8661 B
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.3
0.25	6.5
0.50	7.7
1	8.0
2	8.2
4	8.3
8	8.4
10	8.4
15	8.4

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4.3
	0.25	6.5
	0.50	7.7
	1	8.0
	2	8.2
	4	8.3
	8	8.4
	10	8.4
	15	8.4

Chamber Pressure: 8.4 psi Pan # R-63

Calcium Carbonate Content: 94.11 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Balance	416
Pressure Transducer	2773 2774

No. 40 sieve 1187

Oven 500

50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	R-1
Depth:	34.1-34.9'	**Lab No.:**	8661 C
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/15/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.0
0.25	6.0
0.50	7.4
1	7.9
2	8.1
4	8.2
8	8.2
10	8.2
15	8.2

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4.0
	0.25	6.0
	0.50	7.4
	1	7.9
	2	8.1
	4	8.2
	8	8.2
	10	8.2
	15	8.2

Chamber Pressure: 8.2 psi Pan # C-25

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl
N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21676
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50 ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	R-7
Depth:	60.7-61.5'	**Lab No.:**	8662 A
Tested By:	BM	**Reviewed By:**	JJO
Test Date:	05/14/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.5
0.25	4.8
0.50	BM 5/14/08 ~~5.6~~ 5.7
1	5.8
2	5.9
4	6.0
8	6.0
10	6.0
15	6.0

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	3.5
	0.25	4.8
	0.50	5.7
	1	5.8
	2	5.9
	4	6.0
	8	6.0
	10	6.0
	15	6.0

Chamber Pressure: 6.0 psi Pan # V-11

Calcium Carbonate Content: 67.22 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21676
Balance	416
Pressure Transducer	2773
	2774
No. 40 Sieve	1187
Oven	500
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	R-7
Depth:	60.7-61.5'	**Lab No.:**	8662 B
Tested By:	BNL	**Reviewed By:**	JW
Test Date:	5/14/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.5
0.25	4.8
0.50	5.6
1	6.0
2	6.0
4	6.0
8	6.0
10	6.0
15	6.0

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	3.5
	0.25	4.8
	0.50	5.6
	1	6.0
	2	6.0
	4	6.0
	8	6.0
	10	6.0
	15	6.0

Chamber Pressure: 6.0 psi Pan # R-48

Calcium Carbonate Content: 67.22 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	R-7
Depth:	60.7-61.5'	**Lab No.:**	8662 C
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/14/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.6
0.25	5.0
0.50	5.9
1	6.0
2	6.1
4	6.1
8	6.1
10	6.1
15	6.1

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	3.6
	0.25	5.0
	0.50	5.9
	1	6.0
	2	6.1
	4	6.1
	8	6.1
	10	6.1
	15	6.1

Chamber Pressure: 6.1 psi Pan # V-4

Calcium Carbonate Content: 68.34 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21676
Balance	416
Pressure Transducer	2773 2774

No. 40 sieve 1187
Oven 500
50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	R-15
Depth:	104-104.8'	**Lab No.:**	8663 A
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/14/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.2
0.25	5.9
0.50	6.8
1	7.1
2	7.2
4	7.3
8	7.3
10	7.3
15	7.3

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.2
	0.25	5.9
	0.50	6.8
	1	7.1
	2	7.2
	4	7.3
	8	7.3
	10	7.3
	15	7.3

Chamber Pressure: 7.3 psi Pan # C-33

Calcium Carbonate Content: 81.78 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773 2774

No. 40 sieve 1187
Oven 500
50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	R-15
Depth:	104-104.8'	**Lab No.:**	8663 B
Tested By:	BM	**Reviewed By:**	JRD
Test Date:	05/14/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.2
0.25	5.9
0.50	6.9
1	7.3
2	7.4
4	7.4
8	7.4
10	7.4
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.2
	0.25	5.9
	0.50	6.9
	1	7.3
	2	7.4
	4	7.4
	8	7.4
	10	7.4
	15	N/A

Chamber Pressure: 7.4 psi Pan # R-74

Calcium Carbonate Content: 82.90 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	R-15
Depth:	104-104.8'	**Lab No.:**	8663 C
Tested By:	BNL	**Reviewed By:**	JE
Test Date:	5/14/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.0
0.25	5.9
0.50	6.8
1	7.0
2	7.3
4	7.3
8	7.4
10	7.4
15	7.4

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.0
	0.25	5.9
	0.50	6.8
	1	7.0
	2	7.3
	4	7.3
	8	7.4
	10	7.4
	15	7.4

Chamber Pressure: 7.4 psi Pan # R-5

Calcium Carbonate Content: 82.90 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	26716
Balance	416
Pressure Transducer	2773 2774
No. 40 Sieve	1187
Oven	500
50 mL Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-711	**Sample No.:**	711-11
Depth:	120.5-122.0'	**Lab No.:**	8623
Tested By:	BM	**Reviewed By:**	JV
Test Date:	05/08/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	1.3
0.25	1.6
0.50	1.8
1	1.8
2	1.8
4	1.8
8	1.9
10	1.9
15	1.9

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
2.00	0.10	1.3
	0.25	1.6
	0.50	1.8
	1	1.8
	2	1.8
	4	1.8
	8	1.9
	10	1.9
	15	1.9

Chamber Pressure: 1.9 psi Pan # V-18

Calcium Carbonate Content: 10.64 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

5.6012 % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No 40 Sieve	1187
Oven	500
50ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-715	**Sample No.:**	R-2 (CS-01)
Depth:	32.8-33.6'	**Lab No.:**	8715 A
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/16/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.8
0.25	6.5
0.50	7.5
1	7.9
2	8.1
4	8.2
8	8.2
10	8.2
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.8
	0.25	6.5
	0.50	7.5
	1	7.9
	2	8.1
	4	8.2
	8	8.2
	10	8.2
	15	N/A

Chamber Pressure: 8.2 psi Pan # K-14

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21716
Balance	4116
Pressure Transducer	2773 2774

No. 40 sieve 1187
Oven 500
50 ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-715	**Sample No.:**	R-2 (CS-01)
Depth:	32.8-33.6'	**Lab No.:**	8715 B
Tested By:	BNL	**Reviewed By:**	JLJ
Test Date:	5/16/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.8
0.25	6.5
0.50	7.6
1	8.0
2	8.2
4	8.2
8	8.2
10	8.2
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	4.8
	0.25	6.5
	0.50	7.6
	1	8.0
	2	8.2
	4	8.2
	8	8.2
	10	8.2
	15	N/A

Chamber Pressure: 8.2 psi Pan # AB-20

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187
Oven 500
50ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-715	**Sample No.:**	R-2 (CS-01)
Depth:	32.8-33.6'	**Lab No.:**	8715 C
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/16/08	**Review Date:**	5/16/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	5.0
0.25	6.5
0.50	7.7
1	8.0
2	8.0
4	8.1
8	8.3
10	8.3
15	8.3

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	5.0
	0.25	6.5
	0.50	7.7
	1	8.0
	2	8.0
	4	8.1
	8	8.3
	10	8.3
	15	8.3

Chamber Pressure: 8.3 psi Pan # F-208

Calcium Carbonate Content: 92.98 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Balance	416
Pressure Transducer	2773 2774

No. 40 Sieve 1187

Oven 500

50 ml Flask 1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-730	**Sample No.:**	730-3
Depth:	3.9-5.4'	**Lab No.:**	8641
Tested By:	BM	**Reviewed By:**	JW
Test Date:	05/09/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	4.4
0.25	6.0
0.50	6.3
1	7.5
2	7.9
4	8.0
8	8.0
10	8.1
15	8.1

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time Min	Pressure (psi)
1.01	0.10	4.4
	0.25	6.0
	0.50	6.3
	1	7.5
	2	7.9
	4	8.0
	8	8.0
	10	8.1
	15	8.1

Chamber Pressure: 8.1 psi Pan # R-53

Calcium Carbonate Content: 90.74 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	2676
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	B-730	**Sample No.:**	730-8
Depth:	19.6-21.1'	**Lab No.:**	8642
Tested By:	BM	**Reviewed By:**	JW
Test Date:	5/9/08	**Review Date:**	5/12/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	3.8
0.25	6.0
0.50	6.9
1	7.6
2	7.9
4	7.9
8	7.9
10	7.9
15	7.9

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	3.8
	0.25	6.0
	0.50	6.9
	1	7.6
	2	7.9
	4	7.9
	8	7.9
	10	7.9
	15	7.9

Chamber Pressure: 7.9 psi Pan # P-28

Calcium Carbonate Content: 88.50 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21676
Pressure Transducer	2773
	2774
Balance	416
No. 40 Sieve	1187
Oven	144
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	TP601	**Sample No.:**	601-1
Depth:	3.2-5.0'	**Lab No.:**	8720
Tested By:	BNL	**Reviewed By:**	JW
Test Date:	5/16/08	**Review Date:**	5/19/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	7.9
0.25	7.9
0.50	7.9
1	7.8
2	7.8
4	7.9
8	7.9
10	7.9
15	N/A

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.01	0.10	4.4
	0.25	6.5
	0.50	7.4
	1	7.8
	2	7.8
	4	7.9
	8	7.9
	10	7.9
	15	N/A

Chamber Pressure: 7.9 psi Pan # K-5

Calcium Carbonate Content: 88.50 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21076
Balance	416
Pressure Transducer	2773 2774
Oven	500
No. 40 Sieve	1187
50 ml Flask	1240

MACTEC

CALCIUM CARBONATE CONTENT

(ASTM D4373-02)

Project No. :	6468-07-1950	**Project Name:**	Turkey Point COL Project-FPL
Boring No.:	TP701	**Sample No.:**	701-1
Depth:	3.0-4.5'	**Lab No.:**	8719
Tested By:	BWL	**Reviewed By:**	JW
Test Date:	5/16/08	**Review Date:**	5/19/08

Leak Check of the Chamber

Time min	Pressure (psi)
0.10	5.0
0.25	6.6
0.50	7.5
1	7.9
2	8.1
4	8.1
8	8.2
10	8.2
15	8.2

Pressure Readings for Calcium Carbonate Content

Weight of Soil (g)	Time min	Pressure (psi)
1.00	0.10	5.0
	0.25	6.6
	0.50	7.5
	1	7.9
	2	8.1
	4	8.1
	8	8.2
	10	8.2
	15	8.2

Chamber Pressure: 8.2 psi Pan # AB-70

Calcium Carbonate Content: 91.86 %

Calibration Factor: 11.203 % / psi, for 1 gram of soil and 20 ml 1 N HCl

N/A % / psi, for 2 grams of soil and 20 ml 1 N HCl

Equipment	LID No.
Chamber	21676
Balance	416
Pressure Transducer	2773
	2774
Oven	500
No. 40 sieve	1187
50 ml Flask	1240

APPENDIX E.2

LABORATORY TEST RESULTS ON ROCK CORES

Summary Of Laboratory Testing
Turkey Point COL Project
MACTEC Job No. 6468-07-1950

ASTM D 7012-07
Compressive Strength And Elastic Moduli Of Intact Rock Core

SAMPLE ID	AS RECEIVED MOISTURE CONTENT	SPECIMEN DIAMETER (INCH)	SPECIMEN HEIGHT (INCH)	L/D Ratio	DIMENSIONAL REQUIREMENTS	DRY UNIT WEIGHT (pcf)	TEST DURATION (TIME TO FAILURE IN MINUTES : SECONDS)	Strain Rate (in/min)	UNCONFINED COMPRESSIVE STRENGTH, (PSI)	TYPE OF BREAK
B-601/R3/39.9'-41.0'	4.3%	3.26	7.19	2.3	See Note (1)	140.6	9:09	20-60 lbs/sec	4823 (7)	COLUMNAR
B-601/R4/43.5'-44.6'	8.4%	3.26	7.06	2.2	See Note (1)	130.4	3:36	0.03	2,384	CONE
B-601/R5/50.2'-53.1'	12.0%	3.25	7.19	2.2	See Note (1)	120.4	3:33	0.03	1962	SHEAR
B-601/R6/52.0'-53.1'	17.0%	3.26	7.28	2.3	See Note (1)	114.4	9:38	0.008	1559	SHEAR
B-601/R9/66.7'-67.8'	14.2%	3.27	7.19	2.3	See Note (1)	119.3	2:14	0.03	1197	SHEAR
B-601/R14/92.9'-94.0'	12.7%	3.25	7.26	2.3	See Note (1)	115.5	6:43	0.008	938	SHEAR
B-601/T14/94.3'-95.4'	14.1%	3.24	7.14	2.3	See Note (1)	102.0	6:08	0.008	812	SHEAR
B-601/R15/99.7-100.8	13.4%	3.23	7.16	2.2	See Note (1)	112.8	1:37 (8)	20-60 lbs/sec	413	SHEAR
B-608/R2/41.3'-42.1'	4.2%	2.40	5.17	2.2	See Note (1)	144.2	7:08	20-60 lbs/sec	5416(7)	CONE
B-608/R3/42.9'-43.7'	4.4%	2.41	5.11	2.2	See Note (1)	142.1	12:54	0.008	4160	CONE
B-616/R6/61.2'-62.0'	10.5%	2.40	5.15	2.3	See Note (1)	122.8	2:33	0.03	2245	CONE/SHEAR
B-621/R4/43.8'-44.5'	7.1%	2.40	5.15	2.2	See Note (1)	131.1	3:42	0.03	3178	SHEAR
B-621/R17/107.3'-108.1'	17.9%	2.40	5.26	2.2	See Note (1)	96.3	3:36	0.008	443	SHEAR
B-701/R3/26.4'-27.5'	11.7%	3.26	7.34	2.3	See Note (1)	104.2	3:38	0.008	309	SHEAR
B-701/R6/42.3'-43.4'	7.1%	3.24	7.03	2.2	See Note (1)	141.7	10:30	20-60 lbs/sec	5665 (7)	COLUMNAR

Note (1): Because of core conditions, preparation according to ASTM D 4543 and achieving dimensional tolerances of ASTM D 4543 was not feasible. Cores were capped for testing

Note (2): Material Type: Limestone

Note (3): Confining Pressure: None

Note (4): Laboratory Temperature During Testing was 23.9 degrees Celsius

Note (5): Load Direction approximately perpendicular to general bedding.

Note (6): See individual test sheets for more information.

Note (7): Due to higher than anticipated loads, compressive testing had to be completed using a higher capacity testing frame.

Note (8): Test Duration time was less than 2 minutes due to a compressive load at failure that was less than anticipated.

Reviewed by: MK 5-13-08

Summary Of Laboratory Testing
Turkey Point COL Project
MACTEC Job No. 6468-07-1950

ASTM D 7012-07
Compressive Strength And Elastic Moduli Of Intact Rock Core

SAMPLE ID	AS RECEIVED MOISTURE CONTENT	SPECIMEN DIAMETER (INCH)	SPECIMEN HEIGHT (INCH)	L/D Ratio	DIMENSIONAL REQUIREMENTS	DRY UNIT WEIGHT (pcf)	TEST DURATION (TIME TO FAILURE IN MINUTES : SECONDS)	Strain Rate (in/min)	UNCONFINED COMPRESSIVE STRENGTH, (PSI)	TYPE OF BREAK
B-608/R15/105.2'-106.0'	18.5%	2.39	5.06	2.2	See Note (1)	101.5	2:51	0.008	430	SHEAR
B-611/R3/36.6'-37.7'	9.7%	2.39	5.36	2.3	See Note (1)	125.1	2:39	0.03	2,806	SHEAR
B-611/R5/43.7'-44.5'	5.8%	2.40	5.20	2.2	See Note (1)	136.5	11:34	0.008	3603	SHEAR
B-611/R10/68.7'-69.5'	4.1%	2.39	5.10	2.2	See Note (1)	142.5	8:10	0.008	2471	SHEAR
B-614/R5/52.1'-52.9'	12.9%	2.40	5.08	2.1	See Note (1)	122.7	2:58	0.03	3550	SHEAR
B-614/R11/831'-83.9'	17.3%	2.39	5.06	2.2	See Note (1)	110.8	4:37	0.008	990	SHEAR
B-616/R1/36.1'-36.9'	12.9%	2.39	5.01	2.1	See Note (1)	106.2	4:50	0.008	1050	SHEAR
B-620/R8/61.6'-62.4'	8.6%	2.41	5.25	2.2	See Note (1)	125.5	5:03	0.008	1356	SHEAR
B-702/R8/70.1'-70.8'	3.1%	2.40	5.26	2.2	See Note (1)	143.7	9:22	0.008	2976	SHEAR
B-715/R4/42.0'-42.8'	14.2%	2.36	5.15	2.2	See Note (1)	133.7	8:21	20-60 lbs/sec	5831 (7)	SHEAR
B-715/R2/32.8'-33.6'	4.5%	2.36	5.16	2.3	See Note (1)	130.1	7:48	0.008	2173	SHEAR
B-715/R7/55.4'-56.2'	8.6%	2.36	5.19	2.3	See Note (1)	138.1	3:25	0.03	4062	CONE/SHEAR
B-715/R13/88.0'-88.8'	3.0%	2.36	4.97	2.2	See Note (1)	148.7	2:53	0.03	3485	CONE/SHEAR
B-737/R3/42.7'-43.5'	3.3%	2.37	5.18	2.2	See Note (1)	151.4	10:23	20-60 lbs/sec	7800 (7)	SHEAR
B-737/R3/44.3'-45.1'	4.0%	2.36	5.17	2.2	See Note (1)	149.8	8:26	20-60 lbs/sec	5112 (7)	COLUMNAR

Note (1): Because of core conditions, preparation according to ASTM D 4543 and achieving dimensional tolerances of ASTM D 4543 was not feasible. Cores were capped for testing

Note (2): Material Type: Limestone

Note (3): Confining Pressure: None

Note (4): Laboratory Temperature During Testing was 23.9 degrees Celsius

Note (5): Load Direction approximately perpendicular to general bedding.

Note (6): See individual test sheets for more information.

Note (7): Due to higher than anticipated loads, compressive testing had to be completed using a higher capacity testing frame.

Reviewed by: MA 5-13-08

Summary Of Laboratory Testing
Turkey Point COL Project
MACTEC Job No. 6468-07-1950

ASTM D 7012-07
Compressive Strength And Elastic Moduli Of Intact Rock Core

SAMPLE ID	AS RECEIVED MOISTURE CONTENT	SPECIMEN DIAMETER (INCH)	SPECIMEN HEIGHT (INCH)	L/D Ratio	DIMENSIONAL REQUIREMENTS	DRY UNIT WEIGHT (pcf)	TEST DURATION (TIME TO FAILURE IN MINUTES : SECONDS)	Strain Rate (in/min)	UNCONFINED COMPRESSIVE STRENGTH, (PSI)	TYPE OF BREAK
B-701/R8/51.8'-52.9'	8.2%	3.24	7.10	2.2	See Note (1)	131.4	4:11	0.03	2,323	CONE
B-701/R10/60.8'-61.9'	10.1%	3.26	7.17	2.2	See Note (1)	133.5	8:15	20-60 lbs/sec	2921 (7)	SHEAR
B-701/R10/62.2'-63.3'	6.7%	3.26	7.14	2.2	See Note (1)	123.0	2:07	0.008	172	SHEAR
B-701/R12/74.3'-75.4'	7.6%	3.25	7.20	2.3	See Note (1)	137.7	12:52	0.008	2099	SHEAR

Note (1): Because of core conditions, preparation according to ASTM D 4543 and achieving dimensional tolerances of ASTM D 4543 was not feasible. Cores were capped for testing
Note (2): Material Type: Limestone
Note (3): Confining Pressure: None
Note (4): Laboratory Temperature During Testing was 23.9 degrees Celsius
Note (5): Load Direction approximately perpendicular to general bedding.
Note (6): See individual test sheets for more information.
Note (7): Due to higher than anticipated loads, compressive testing had to be completed using a higher capacity testing frame.
Note (8): Test Duration time was less than 2 minutes due to a compressive load at failure that was less than anticipated.

Reviewed by: MM 5-13-08

Summary Of Laboratory Testing
Turkey Point COL Project
MACTEC Job No. 6468-07-1950

ASTM D 7012-07
Compressive Strength And Elastic Moduli Of Intact Rock Core

SAMPLE ID	AS RECEIVED MOISTURE CONTENT	SPECIMEN DIAMETER (INCH)	SPECIMEN HEIGHT (INCH)	L/D Ratio	DIMENSIONAL REQUIREMENTS	DRY UNIT WEIGHT (pcf)	TEST DURATION (TIME TO FAILURE IN MINUTES :	Strain Rate (in/min)	UNCONFINED COMPRESSIVE STRENGTH, (PSI)	TYPE OF BREAK
B-607/R3/25.7'-26.5'	10.6%	2.39	5.21	NA	See Note (1)	103.9	NA	NA	NA	Core Broke During Capping Procedure
B-607/R5/33.9'-34.7'	13.0%	2.39	4.92	2.1	See Note (1)	112.1	5:30	0.01	1559	SHEAR
B-607/R6/40.7'-41.5'	10.5%	2.39	4.95	2.1	See Note (1)	120.5	7:23	0.008	1963	SHEAR
B-607/R8/50.4'-51.2'	11.8%	2.39	4.98	2.1	See Note (1)	123.8	2:11	0.05	3266	SHEAR
B-607/R10/58.6'-59.4'	9.4%	2.38	4.98	2.1	See Note (1)	133.9	1:45 (8)	0.03	1418	SHEAR
B-607/R19/99.7'-100.5'	13.6%	2.37	5.02	2.1	See Note (1)	110.1	3:55	0.008	350	SHEAR
B-619/R4/29.0'-29.8'	20.6%	2.39	4.77	2.1	See Note (1)	108.4	6:21	0.008	935	SHEAR
B-619/R8/49.4'-50.2'	6.8%	2.40	4.90	2.1	See Note (1)	134.4	6:11	0.03	4413	CONE/SHEAR
B-711/R1/34.1'-34.9'	14.1%	2.39	4.99	2.1	See Note (1)	108.1	2:54	0.03	907	SHEAR
B-711/R2/35.6'-36.4'	13.0%	2.40	4.94	2.1	See Note (1)	105.2	3:15	0.008	1417	SHEAR
B-711/R5/50.9'-51.7'	7.3%	2.39	4.98	2.1	See Note (1)	135.3	6:08	0.03	4051	CONE/SHEAR
B-711/R6/59.5'-60.3'	9.0%	2.39	5.10	2.2	See Note (1)	132.6	5:21	0.03	3129	SHEAR
B-711/R7/60.7'-61.5'	6.6%	2.39	4.98	2.1	See Note (1)	138.9	5:48	0.03	3194	SHEAR
B-711/R7/62.0'-62.8'	5.5%	2.40	4.90	2.1	See Note (1)	142.5	12:11	20-60 lbs/sec	5031 (7)	CONE/SHEAR
B-711/R12/86.7'-87.5'	7.8%	2.40	4.95	2.1	See Note (1)	133.0	7:40	0.008	1133	SHEAR
B-711/R15/102.0'-102.8'	15.0%	2.40	5.01	2.1	See Note (1)	99.2	9:54	0.008	378	SHEAR
B-711/R15/104.0'-104.8'	14.4%	2.39	4.97	2.1	See Note (1)	102.9	6:20	0.008	367	SHEAR

Note (1): Because of core conditions, preparation according to ASTM D 4543 and achieving dimensional tolerances of ASTM D 4543 was not feasible. Cores were capped for testing

Note (2): Material Type: Limestone

Note (3): Confining Pressure: None

Note (4): Laboratory Temperature During Testing was 23.9 degrees Celsius

Note (5): Load Direction approximately perpendicular to general bedding.

Note (6): See individual test sheets for more information.

Note (7): Due to higher than anticipated loads, compressive testing had to be completed using a higher capacity testing frame.

Note (8): Test Duration time was less than 2 minutes due to a compressive load at failure that was less than anticipated.

Reviewed by: MM 5-13-08

Summary Of Laboratory Testing
Turkey Point COL Project
MACTEC Job No. 6468-07-1950

ASTM D 7012-07
Compressive Strength And Elastic Moduli Of Intact Rock Core

SAMPLE ID	AS RECEIVED MOISTURE CONTENT	SPECIMEN DIAMETER (INCH)	SPECIMEN HEIGHT (INCH)	L/D Ratio	DIMENSIONAL REQUIREMENTS	DRY UNIT WEIGHT (pcf)	TEST DURATION (TIME TO FAILURE IN MINUTES : SECONDS)	Strain Rate (in/min)	UNCONFINED COMPRESSIVE STRENGTH, (PSI)	TYPE OF BREAK
B-602/R10/52.2'-53.0'	15.8%	2.37	4.94	2.1	See Note (1)	110.8	5:32	0.008	883	SHEAR
B-602/R10/54.4'-55.2'	23.2%	2.40	5.31	NA	See Note (1)	94.1	NA	NA	NA	Core Broke During Capping Procedure
B-602/R16/79.5'-80.3'	6.2%	2.40	5.04	2.2	See Note (1)	139.8	3:23	0.03	3665	SHEAR
B-604/R4/49.8'-50.6'	12.1%	2.40	5.19	2.4	See Note (1)	126.0	4:55	0.03	4012	CONE
B-604/R4/50.6'-51.4'	12.1%	2.40	5.07	2.2	See Note (1)	123.2	10:13	0.008	3175	SHEAR
B-604/R10/80.2'-81.0'	7.9%	2.40	5.03	2.2	See Note (1)	133.5	4:34	0.03	3183	SHEAR
B-606/R18/74.3'-75.1'	7.7%	2.38	5.25	2.2	See Note (1)	132.1	7:21	0.008	2188	SHEAR
B-606/R19/80.1'-80.9'	8.9%	2.39	5.03	2.2	See Note (1)	125.0	10:04	0.008	2752	SHEAR
B-609/R1/29.0'-29.8'	10.5%	2.40	5.24	2.2	See Note (1)	111.4	5:58	0.008	416	SHEAR
B-609/R1/30.1'-30.9'	15.8%	2.41	4.99	2.1	See Note (1)	109.4	5:39	0.008	1494	SHEAR
B-609/R22/101.9'-102.7'	13.2%	2.39	5.20	2.3	See Note (1)	110.3	4:43	0.008	587	SHEAR
B-610/R3/27.6'-28.4'	16.6%	2.40	5.12	2.2	See Note (1)	112.7	2:56	0.03	1239	SHEAR
B-610/R3/29.6'-30.4'	20.0%	2.39	4.97	2.1	See Note (1)	107.9	6:12	0.008	1446	SHEAR
B-611/R1/28.7'-29.5'	11.9%	2.39	5.07	2.2	See Note (1)	120.6	5:45	0.008	1480	SHEAR
B-708/R16/102.2'-103.0	12.9%	2.39	5.38	NA	See Note (1)	97.2	NA	NA	NA	Core Broke During Capping Procedure

Note (1): Because of core conditions, preparation according to ASTM D 4543 and achieving dimensional tolerances of ASTM D 4543 was not feasible. Cores were capped for testing

Note (2): Material Type: Limestone

Note (3): Confining Pressure: None

Note (4): Laboratory Temperature During Testing was 23.9 degrees Celsius

Note (5): Load Direction approximately perpendicular to general bedding.

Note (6): See individual test sheets for more information.

Reviewed by: MM 5-13-08

Summary Of Laboratory Testing
Turkey Point COL Project
MACTEC Job No. 6468-07-1950

ASTM D 7012-07
Compressive Strength And Elastic Moduli Of Intact Rock Core

SAMPLE ID	AS RECEIVED MOISTURE CONTENT	SPECIMEN DIAMETER (INCH)	SPECIMEN HEIGHT (INCH)	L/D Ratio	DIMENSIONAL REQUIREMENTS	DRY UNIT WEIGHT (pcf)	TEST DURATION (TIME TO FAILURE IN MINUTES : SECONDS)	Strain Rate (in/min)	UNCONFINED COMPRESSIVE STRENGTH, (PSI)	TYPE OF BREAK
B-606/R7/32.0'-32.8'	11.4%	2.39	5.35	2.3	See Note (1)	124.4	7:08	0.008	1,764	SHEAR
B-606/R8/33.5'-34.3'	11.9%	2.40	5.15	2.2	See Note (1)	114.7	5:23	0.008	772	SHEAR
B-606/R12/52.2'-53.0'	5.6%	2.40	5.29	2.3	See Note (1)	144.0	5:01	20-60 lbs/sec	4991 (7)	SHEAR
B-609/R6/50.1'-50.9'	10.8%	2.40	5.28	2.2	See Note (1)	126.0	8:53	0.008	2551	SHEAR
B-609/R16/79.6'-80.4'	7.9%	2.38	5.16	2.2	See Note (1)	127.8	6:39	0.008	1865	SHEAR
B-610/R13/77.6'-78.4'	8.8%	2.40	5.24	2.2	See Note (1)	130.9	3:17	0.03	3000	SHEAR
B-611/R15/92.9'-93.7'	13.0%	2.39	5.30	NA	See Note (1)	107.1	NA	NA	NA	Core Broke During Capping Procedure
B-611/R18/108.7'-109.5'	22.7%	2.39	5.16	NA	See Note (1)	96.2	NA	NA	NA	Core Broke During Capping Procedure
B-620/R4/40.6'-41.4'	11.1%	2.40	4.71	2.0	See Note (1)	125.5	2:32	0.03	2556	SHEAR
B-702/R8/72.0'-72.8'	6.9%	2.39	5.11	2.2	See Note (1)	138.5	7:38	0.008	2251	SHEAR
B-702/R11/86.9'-87.7'	5.5%	2.39	5.17	2.2	See Note (1)	133.7	5:39	0.008	1364	SHEAR
B-702/R14/102.2'-103.0'	12.5%	2.39	5.17	NA	See Note (1)	104.4	NA	NA	NA	Core Broke During Capping Procedure
B-708/R3/37.8'-38.6'	6.3%	2.40	5.08	2.2	See Note (1)	134.6	11:26	0.008	3924	CONE
B-708/R6/50.7'-51.5'	6.4%	2.40	5.24	2.2	See Note (1)	138.8	5:35	0.03	4414	SHEAR
B-708/R8/61.4'-62.2'	5.7%	2.40	5.29	2.3	See Note (1)	138.6	12:49	0.008	4230	SHEAR

Note (1): Because of core conditions, preparation according to ASTM D 4543 and achieving dimensional tolerances of ASTM D 4543 was not feasible. Cores were capped for testing
Note (2): Material Type: Limestone
Note (3): Confining Pressure: None
Note (4): Laboratory Temperature During Testing was 23.9 degrees Celsius
Note (5): Load Direction approximately perpendicular to general bedding.
Note (6): See individual test sheets for more information.
Note (7): Due to higher than anticipated loads, compressive testing had to be completed using a higher capacity testing frame.

Reviewed by: MM 5-13-08

Summary Of Laboratory Testing
Turkey Point COL Project
MACTEC Job No. 6468-07-1950

ASTM D 7012-07
Compressive Strength And Elastic Moduli Of Intact Rock Core

SAMPLE ID	AS RECEIVED MOISTURE CONTENT	SPECIMEN DIAMETER (INCH)	SPECIMEN HEIGHT (INCH)	L/D Ratio	DIMENSIONAL REQUIREMENTS	DRY UNIT WEIGHT (pcf)	TEST DURATION (TIME TO FAILURE IN MINUTES : SECONDS)	Strain Rate (in/min)	UNCONFINED COMPRESSIVE STRENGTH, (PSI)	TYPE OF BREAK
B-701/R-24/467.7'-468.5'	20.4%	2.36	5.20	2.3	See Note (1)	108.8	6:57	0.008	94	CONE/SHEAR
B-701/R-28/487.4'-488.2'	17.7%	2.33	5.18	2.3	See Note (1)	113.8	4:57	0.008	18	CONE/SHEAR
B-701/R-32/509.0'-509.8'	20.2%	2.37	3.36	NA	See Note (1)	105.7	NA	NA	NA	Core Broke During Sawing Process
B-701/R-42/556.4'-557.2'	24.4%	2.36	5.11	2.2	See Note (1)	99.9	10:02	0.008	310	CONE/SHEAR
B-701/R-51/601.8'-602.6'	19.7%	2.35	4.24	NA	See Note (1)	107.6	NA	NA	NA	Core Broke During Sawing Process

Note (1): Because of core conditions, preparation according to ASTM D 4543 and achieving dimensional tolerances of ASTM D 4543 was not feasible. Cores were capped for testing
Note (2): Material Type: Limestone
Note (3): Confining Pressure: None
Note (4): Laboratory Temperature During Testing was 23.9 degrees Celsius
Note (5): Load Direction approximately perpendicular to general bedding.
Note (6): See individual test sheets for more information.
Note (7): Due to higher than anticipated loads, compressive testing had to be completed using a higher capacity testing frame.

Reviewed by: 6-5-08
STEVE KISER

Summary Of Laboratory Testing
Turkey Point COL Project
MACTEC Job No. 6468-07-1950

ASTM D854-06
Specific Gravity Of Soils Solids By Water Pycnometer
Method B

SAMPLE IDENTIFICATION	Test Temperature (°C)	Dry Weight of Rock (grams)	Weight of Water & Pycnometer (grams)	Weight of Dealred Sample, Water, & Pycnometer (grams)	Specific Gravity (At Test Temperature)	Temperature Coefficient Factor	Specific Gravity (at 20°C)
B-607 / R-3 / 25.7'-26.5'	24.1	92.4	360.78	418.30	2.65	0.99907	2.65
B-711 / R-6 / 59.5'-60.3'	24.1	100.39	362.57	425.51	2.68	0.99907	2.68

Notes:
(1) Sample was prepared by crushing a section of the specified core to a size that would pass the #4 sieve as specified in WI-22 Rev.2

Reviewed By: MM 5-21-08

MACTEC

Data Testing Sheet For The Standard Test Method For Laboratory Determination of Water Content of Soil and Rock by Mass

ASTM D2216-05

Project No.	6468-07-1950	Tested By	T. HALL
Project Name	Turkey Point COL	Test Date	5-15-08
Boring No.	N/A	Reviewed By	D Kapitsky
Sample Depth	N/A	Review Date	5-19-08
Sample No.	N/A	MACTEC Lab Location	Charlotte, NC
Assignment Sheet Date	W1-22		

Boring No.	Sample No.	Depth (Ft)	Tare No.	Tare Wt. (grams)	Wet Soil + Tare (grams)	Dry Soil + Tare (grams)	Water Wt (grams)	Dry Soil Wt (grams)	Moisture Content (%)
B-610	R-7	499-507	FLY	106.97	460.72	421.59	39.13	314.62	12.4 ✓
B-620	R-6	51.2-52.0	PEBBLE	115.07	311.59	287.90	23.69	172.83	13.7 ✓
—	—	—	—	—	—	—	—	—	—

Equipment used	Equipment ID #
Scale	1112
Oven	SL00-2
N/A	N/A
↓	↓

Form Approved By Project Principle:
Name: [signature]
Date: 5/7/08

Reviewed By: MK 5-20-08

MACTEC

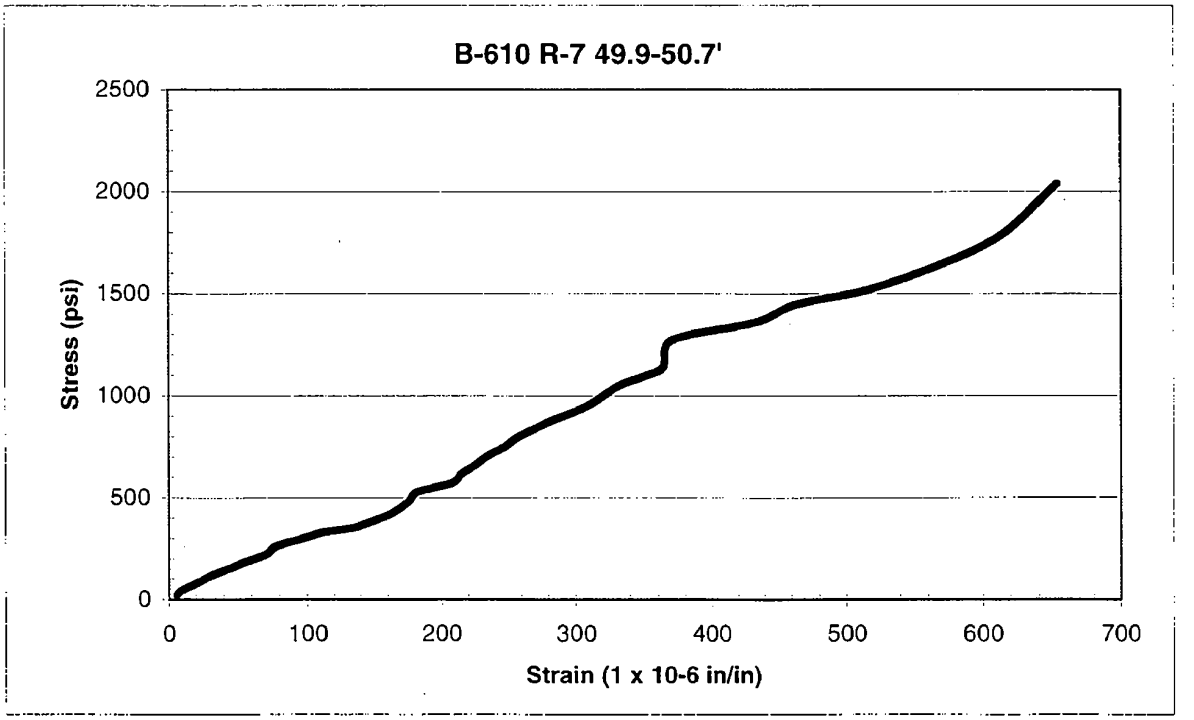
MACTEC ENGINEERING AND CONSULTING

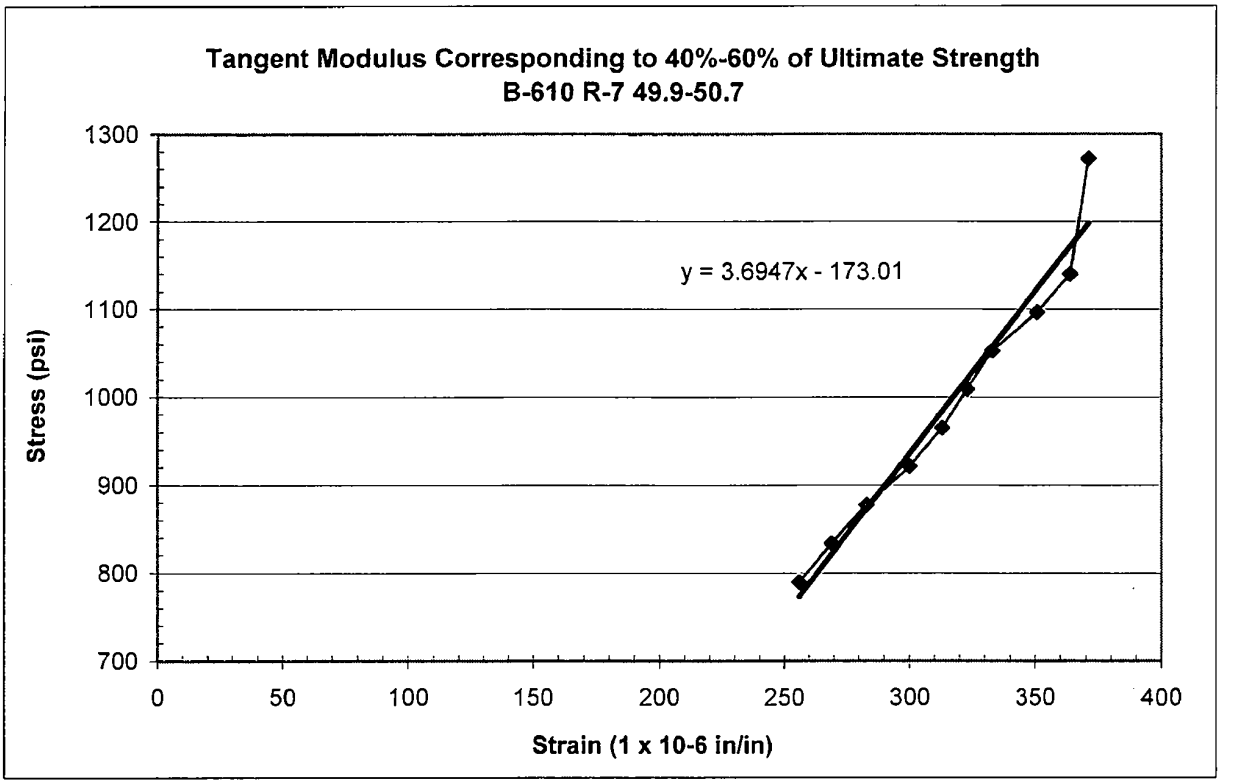
ELASTIC MODULI OF INTACT ROCK CORE SPECIMENS IN UNIAXIAL COMPRESSION
ASTM D 7012-07

PROJECT NAME: TURKEY POINT COL
MACTEC PROJECT NUMBER: 6468-07-1950
DATE: 7/8/2008
BORING NUMBER: B-610
SAMPLE DEPTH: 49.9-50.7 feet

Tested by: M. Hamlett
Test Date: 5/20/2008
Reviewed by: MM
Review Date: 7/24/08

TEST DATA	
Rock Type	N/A
Moisture Condition, %	12.4
Specimen Diameter, inch	2.41
Specimen Length, inch	5.27
Length/Diameter Ratio	2.2
Unit Weight (lbs/ft3)	125.0
Test Duration (time to failure in minutes:seconds)	2:46
Unconfined Compressive Strength, psi (from test)	2038
Unconfined Compressive Strength, psi (with L/D correction)	-
Type of Break	Shear
Young's Modulus, ksi x1000	3.7





B-610 R-7 49.9-50.7'		
Load (lbs)	Stress	Strain
100	21.9	6
200	43.9	9
300	65.8	16
400	87.7	23
500	109.6	29
600	131.6	36
700	153.5	45
800	175.4	53
900	197.4	62
1000	219.3	70
1100	241.2	74
1200	263.2	78
1300	285.1	89
1400	307.0	101
1500	328.9	111
1600	350.9	134
1700	372.8	144
1800	394.7	153
1900	416.7	161
2000	438.6	167
2200	482.5	176
2400	526.3	182
2600	570.2	208
2800	614.0	215
3000	657.9	225
3200	701.8	234

B-610 R-7 49.9-50.7'		
Load (lbs)	Stress	Strain
3400	745.6	247
3600	789.5	256
3800	833.3	269
4000	877.2	283
4200	921.1	300
4400	964.9	313
4600	1008.8	323
4800	1052.6	333
5000	1096.5	351
5200	1140.4	364
5800	1271.9	371
6200	1359.6	434
6600	1447.4	465
7000	1535.1	525
8000	1754.4	606
9295.5	2038.5	653

MACTEC

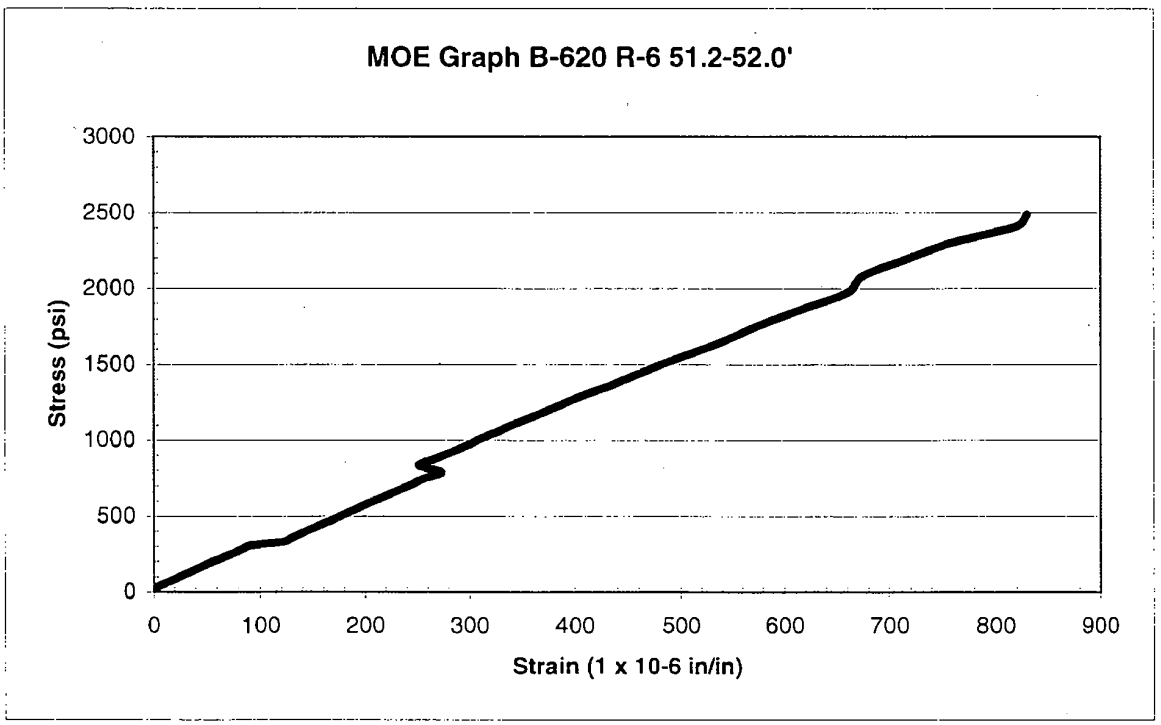
MACTEC ENGINEERING AND CONSULTING

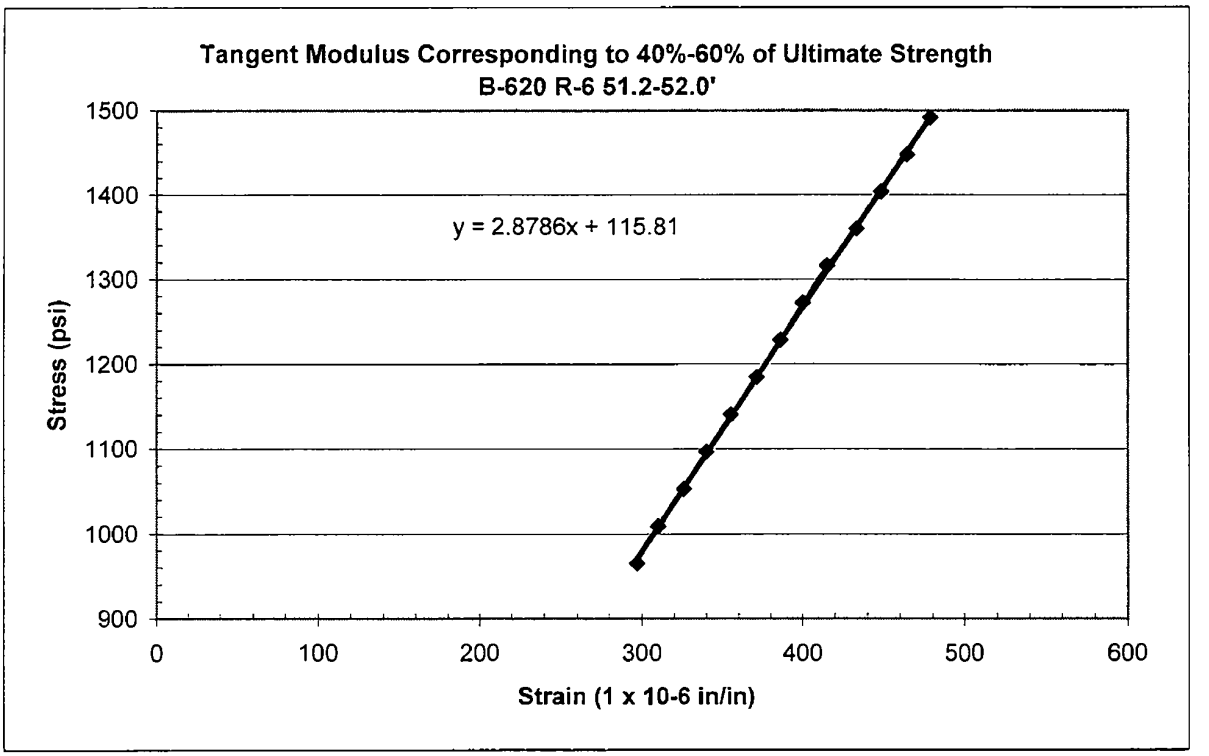
ELASTIC MODULI OF INTACT ROCK CORE SPECIMENS IN UNIAXIAL COMPRESSION
ASTM D 7012-07

PROJECT NAME: TURKEY POINT COL
MACTEC PROJECT NUMBER: 6468-07-1950
DATE: 7/8/2008
BORING NUMBER: B-620
SAMPLE DEPTH: 51.2-52.0 feet

Tested by: M. Hamlett
Test Date: 5/20/2008
Reviewed by: [signature]
Review Date: 7/24/08

TEST DATA	
Rock Type	N/A
Moisture Condition, %	13.7
Specimen Diameter, inch	2.41
Specimen Length, inch	5.02
Length/Diameter Ratio	2.1
Unit Weight (lbs/ft3)	122.7
Test Duration (time to failure in minutes:seconds)	11:00
Unconfined Compressive Strength, psi (from test)	2487
Unconfined Compressive Strength, psi (with L/D correction)	-
Type of Break	Shear
Young's Modulus, ksi x1000	2.9





B-610 R-7 49.9-50.7'		
Load (lbs)	Stress	Strain
100	21.93	1
200	43.86	7
300	65.79	14
400	87.72	21
500	109.65	28
600	131.58	35
700	153.51	42
800	175.44	49
900	197.37	55
1000	219.30	63
1100	241.23	70
1200	263.16	77
1300	285.09	84
1400	307.02	91
1500	328.95	122
1600	350.88	128
1700	372.81	135
1800	394.74	142
1900	416.67	149
2000	438.60	156
2200	482.46	171
2400	526.32	185
2600	570.18	199
2800	614.04	213
3000	657.89	228
3200	701.75	243

B-610 R-7 49.9-50.7'		
Load (lbs)	Stress	Strain
3400	745.61	256
3600	789.47	273
3800	833.33	252
4000	877.19	267
4200	921.05	283
4400	964.91	297
4600	1008.77	310
4800	1052.63	326
5000	1096.49	340
5200	1140.35	355
5400	1184.21	371
5600	1228.07	386
5800	1271.93	400
6000	1315.79	415
6200	1359.65	433
6400	1403.51	448
6600	1447.37	464
6800	1491.23	478
7000	1535.09	495
7500	1644.74	539
8000	1754.39	576
8500	1864.04	618
9000	1973.68	661
9500	2083.33	675
10000	2192.98	716
10500	2302.63	760
11000	2412.28	821
11342.1	2487.30	830

Prepared By _____
Checked By ZHU 7/24/08

TABLE 4.5
SUMMARY OF LABORATORY TEST RESULTS - CARBONATE CONTENT
ASTM D 4373-02
TURKEY POINT COL
MACTEC PROJECT NO. 6468-07-1950

Boring No.	Sample No.	Depth (ft.)	Calcite Equivalent (%)
B-601 (DH)	601DH-5	9.7-11.2	92.98
B-601 (DH)	601DH-18	198.4-199.9	29.13
B-601 (DH)	601DH-23	248.4-249.9	21.29
B-603	603-3	5.0-6.5	86.30
B-603	603-5	10.0-11.5	91.90
B-603	603-8	120.5-122.0	19.10
B-603	603-11	136.4-137.9	40.30
B-605	605-4	7.5-9.0	88.50
B-605	605-12	119.9-121.4	26.90
B-605	605-15	131.4-132.9	30.25
B-605	605-18	144.9-146.4	23.53
B-605	605-26	184.5-186.0	23.53
B-605	605-28	194.5-196.0	26.89
B-607	607-3	5.0-6.5	88.50
B-607	607-9	129.5-131.0	19.05
B-608 (DH)	608DH-17	178.0-179.5	22.41
B-608 (DH)	608DH-22	228.0-229.5	33.61
B-619	619-6	12.1-13.6	90.74
B-619	619-8	121.6-123.1	12.32
B-701 (DH)	701DH-3	5.1-6.6	91.86
B-701 (DH)	701DH-22	237.5-239.0	20.17
B-703	703-6	12.3-13.8	88.50
B-703	703-9	118.6-120.1	12.32
B-703	703-15	148.5-150.0	20.17
B-704 (DH)	704DH-15	123.0-124.5	12.32
B-704 (DH)	704DH-21	150.0-151.5	17.92
B-705	705-4	7.5-9.0	91.86
B-705	705-14	128.5-130.0	20.20
B-705	705-24	178.5-180.0	23.50

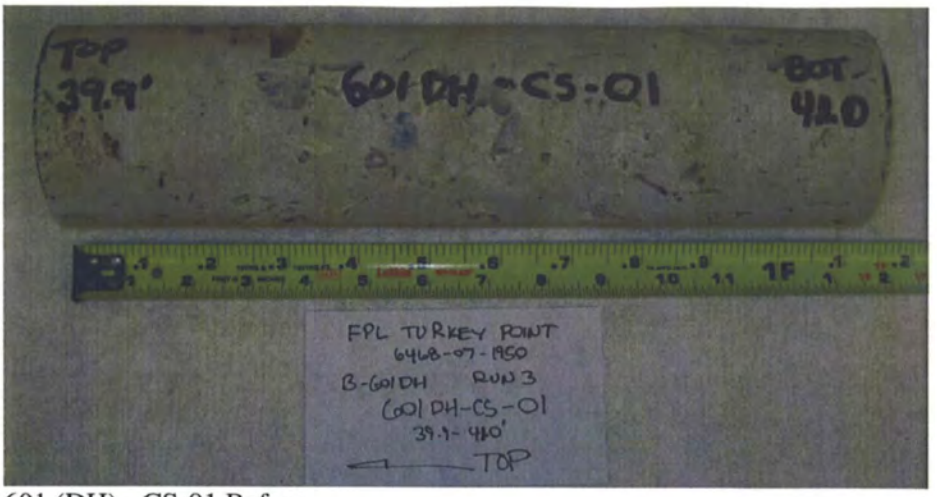
Prepared By _____
Checked By_____

TABLE 4.5
SUMMARY OF LABORATORY TEST RESULTS - CARBONATE CONTENT
ASTM D 4373-02
TURKEY POINT COL
MACTEC PROJECT NO. 6468-07-1950

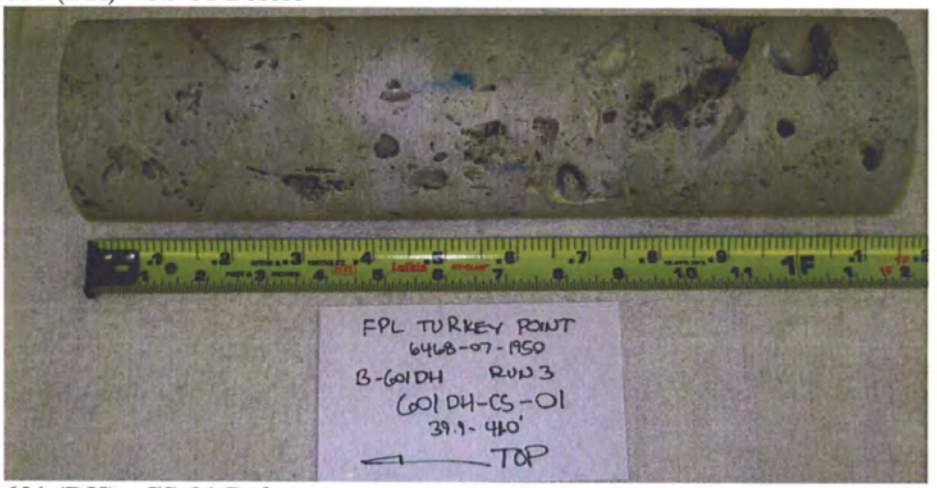
Boring No.	Sample No.	Depth (ft.)	Calcite Equivalent (%)
B-706	706-2	3.1-4.6	86.30
B-706	706-6	12.9-14.4	91.90
B-706	706-11	125.9-127.4	21.30
B-706	706-15	145.0-146.9	16.80
B-707	707-6	12.5-14.0	91.90
B-707	707-14	125.3-126.8	20.20
B-707	707-18	145.5-147.0	17.90
B-711	711-3	5.0-6.5	95.20
B-711	711-11	120.5-122.0	10.60
B-715	715-CS-01	32.8-33.6	92.23*
B-730	730-3	3.9-5.4	90.70
B-730	730-8	19.6-21.1	88.50
TP-601	601-1	3.2-5.0	88.50
TP-701	701-1	3.0-4.5	91.86

*Value shown is the average of three separate tests.

Photographs Rock Cores Unconfined Compression "Before & After"

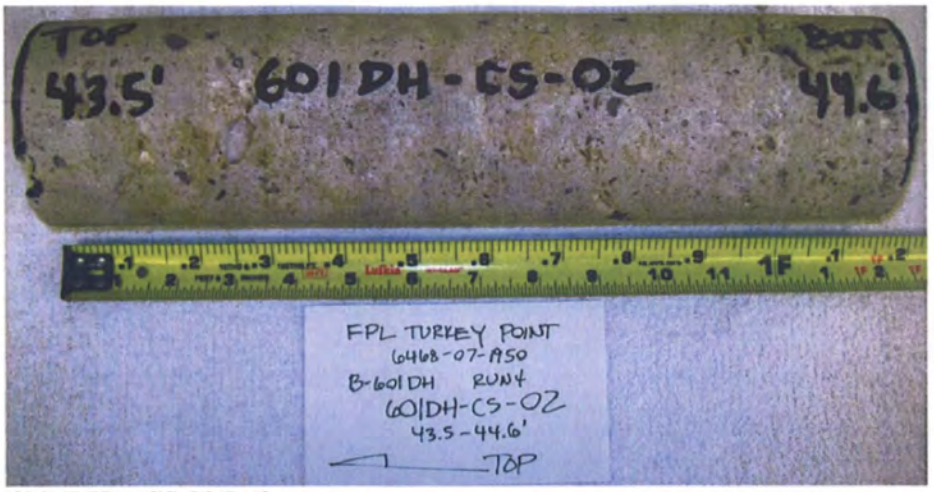


601 (DH) - CS-01 Before



601 (DH) - CS-01 Before

601 (DH) - CS-01 After

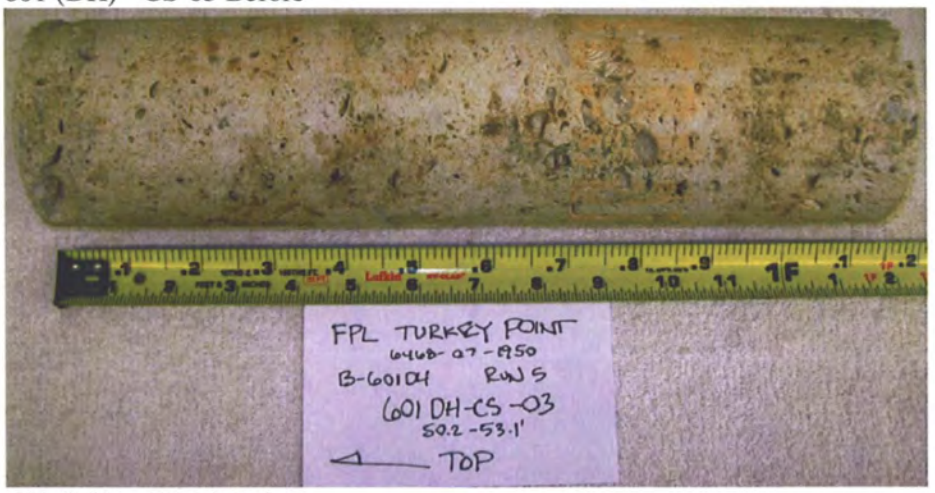


601 (DH) - CS-02 Before

601 (DH) - CS-02 Before

601 (DH) - CS-02 After

601 (DH) - CS-03 Before



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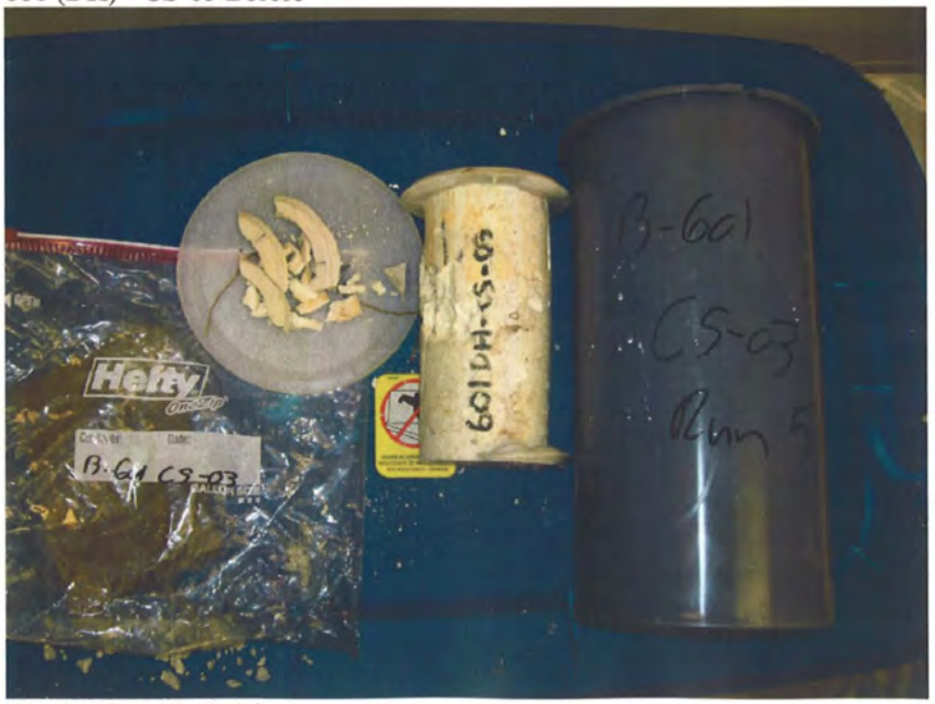

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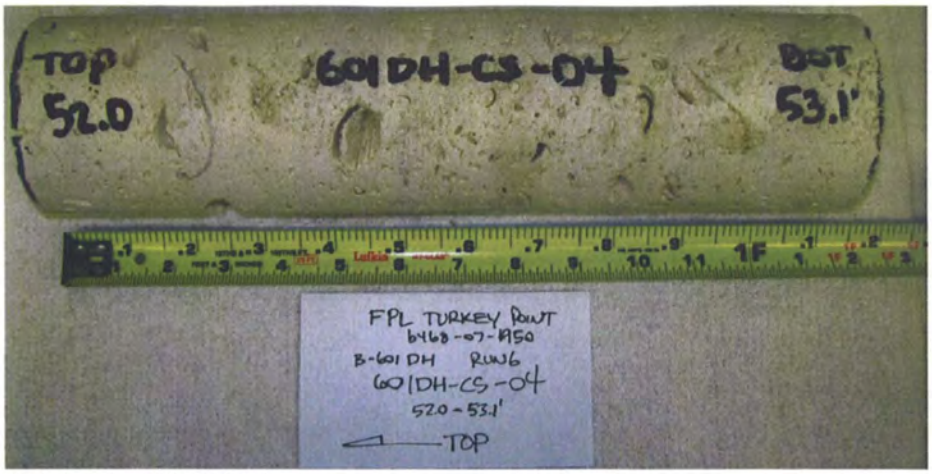

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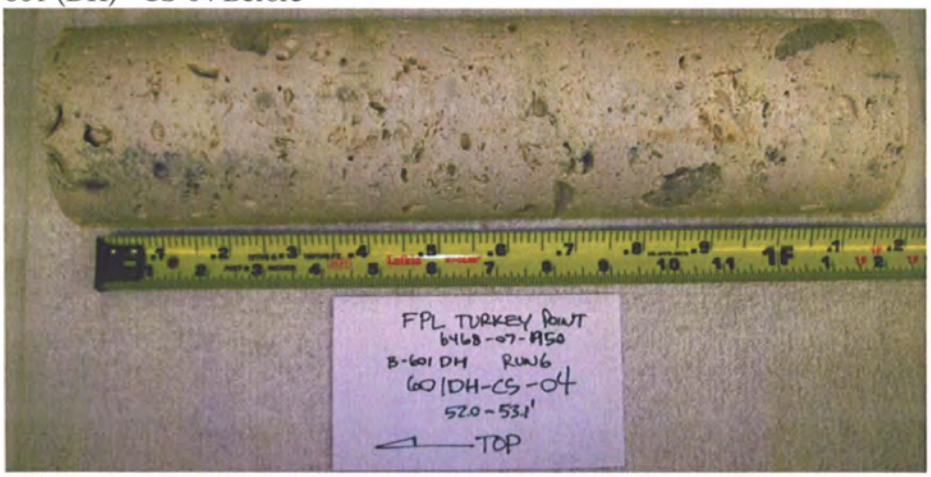

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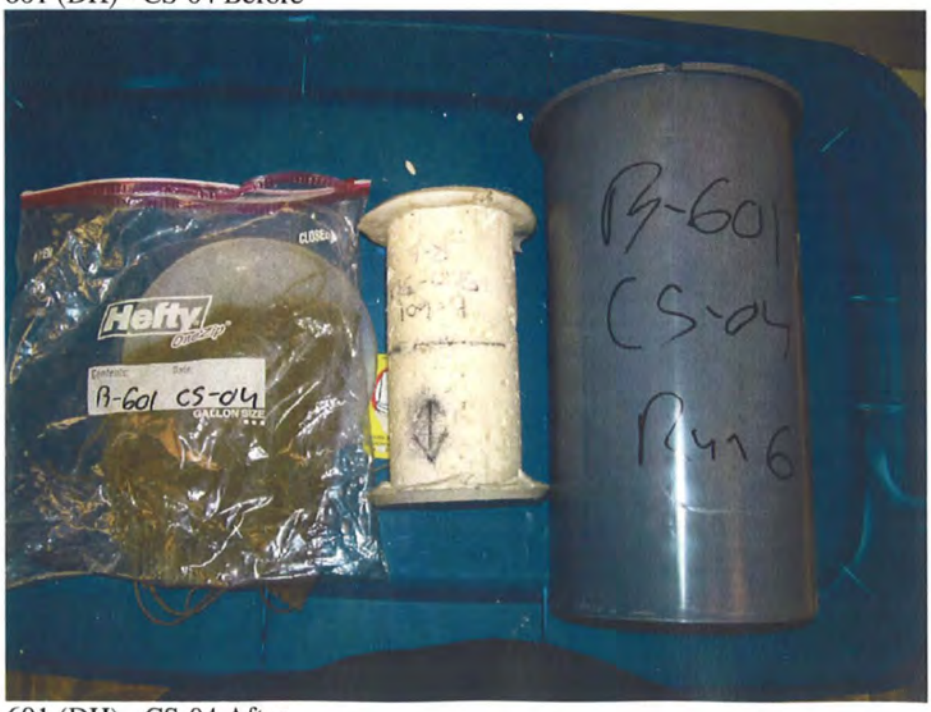

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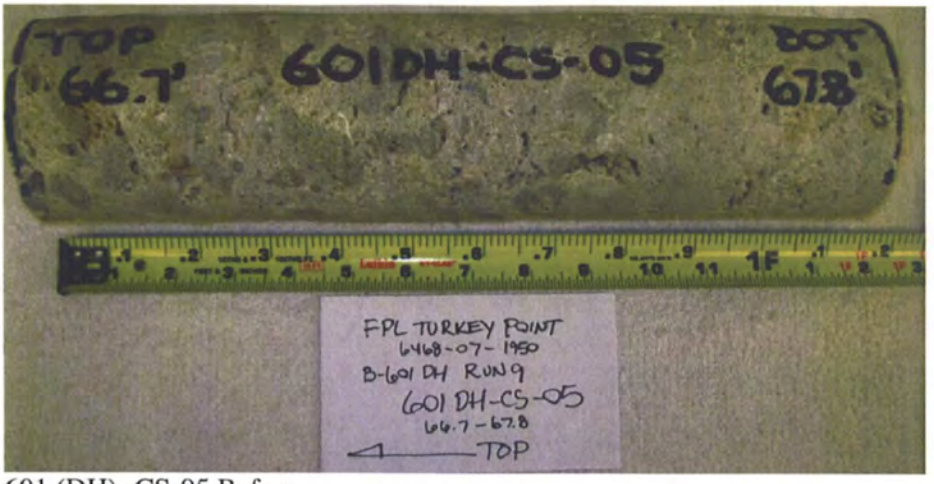
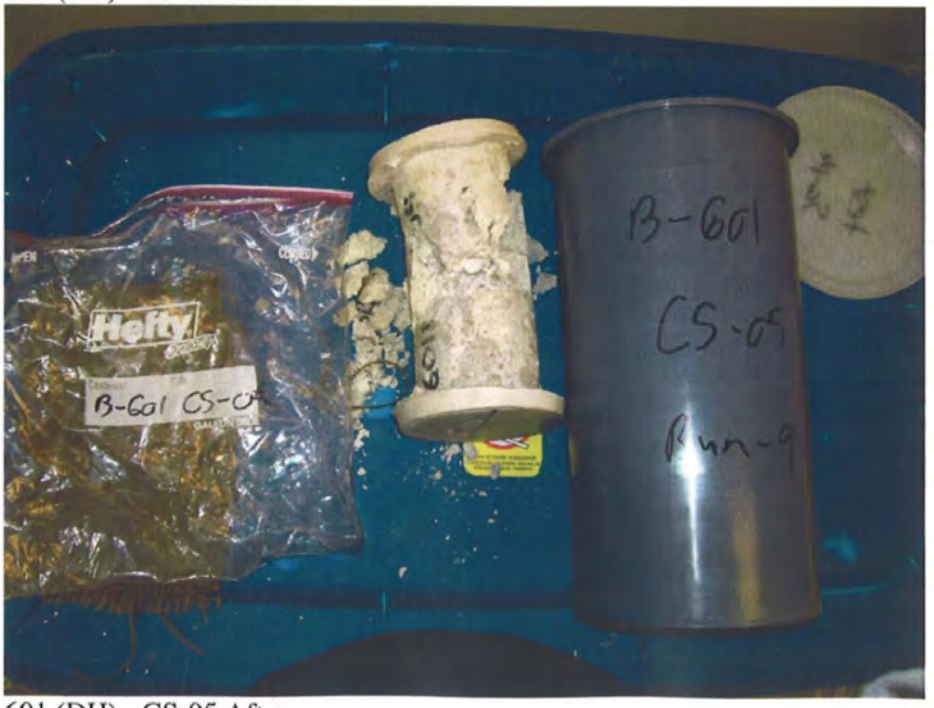


601 (DH)- CS-05 Before

601 (DH) - CS-05 Before



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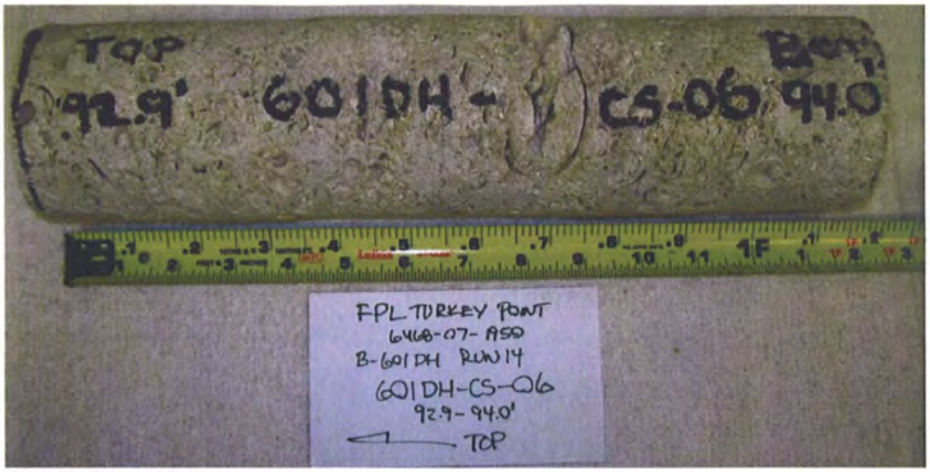

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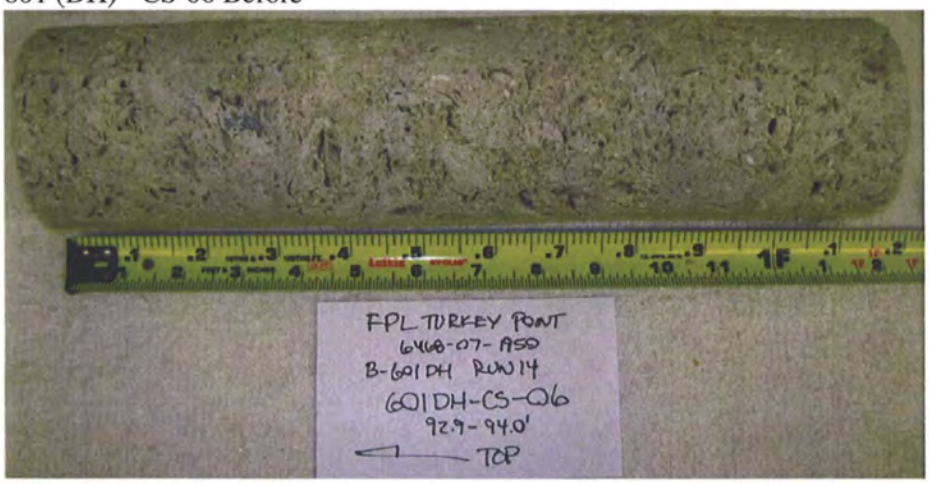
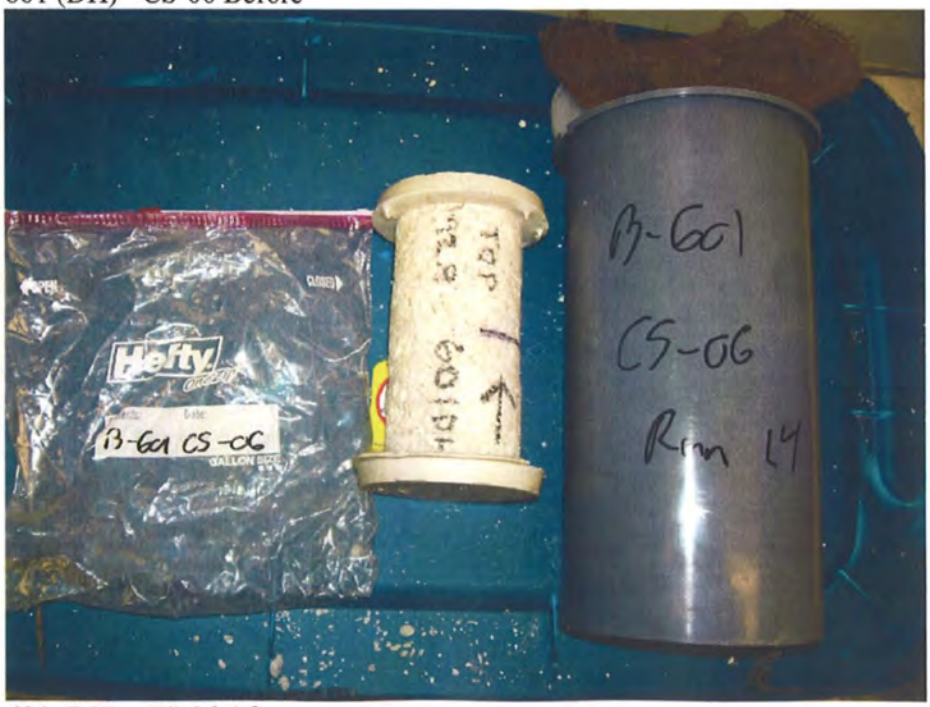
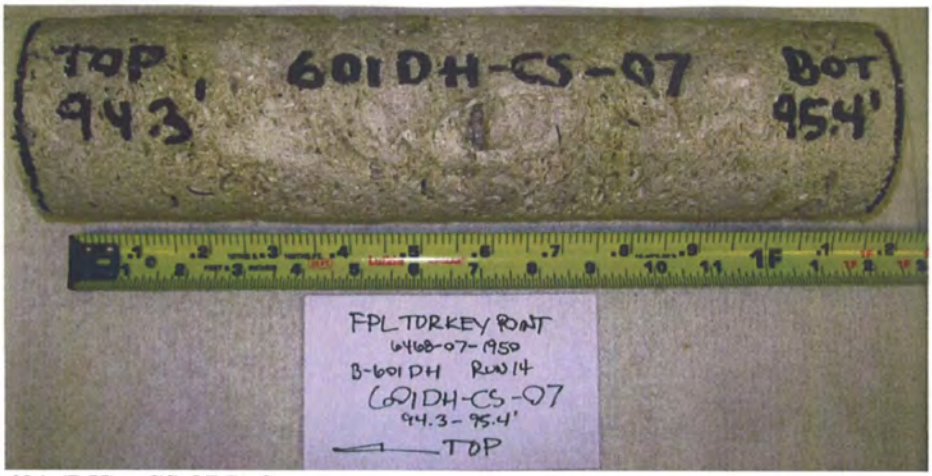


601 (DH) - CS-06 Before



601 (DH) - CS-06 After



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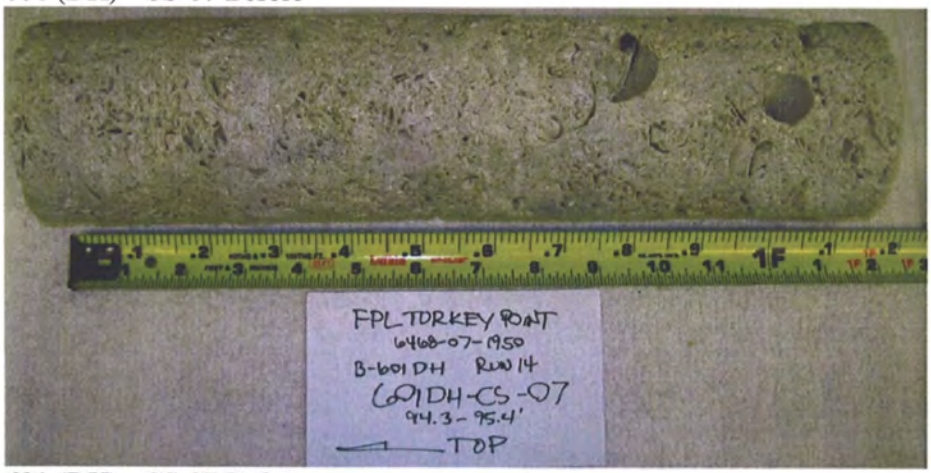

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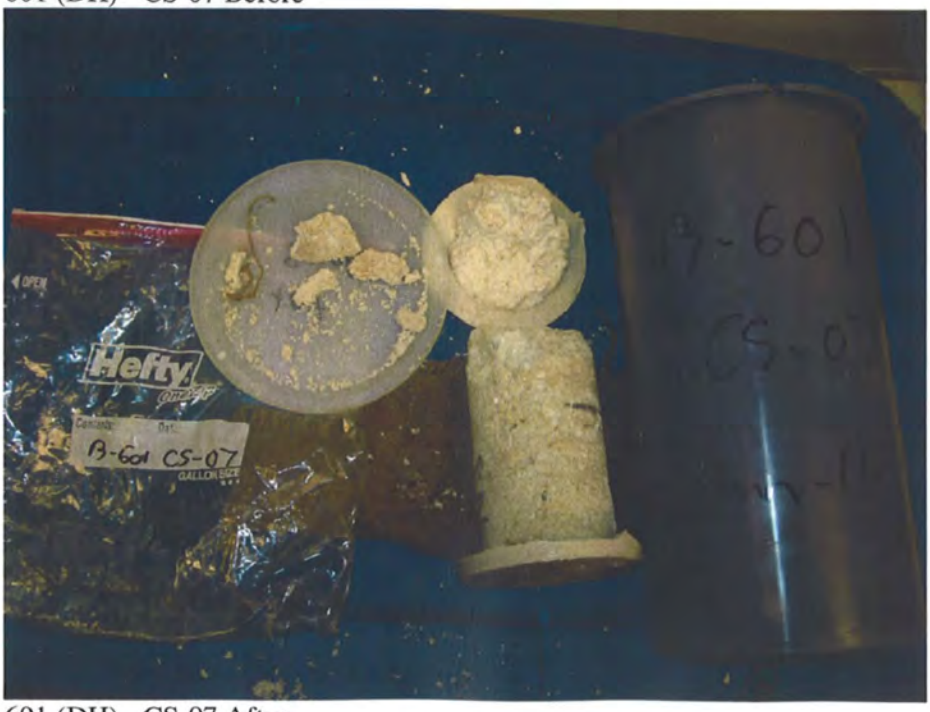

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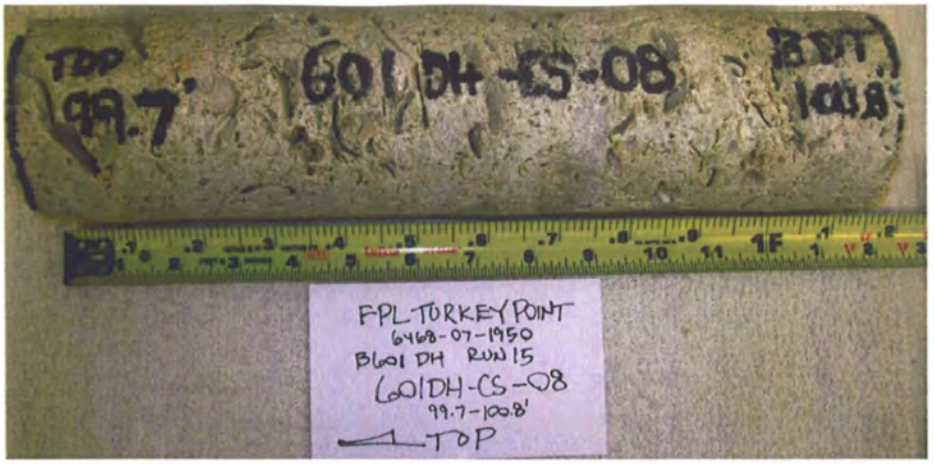
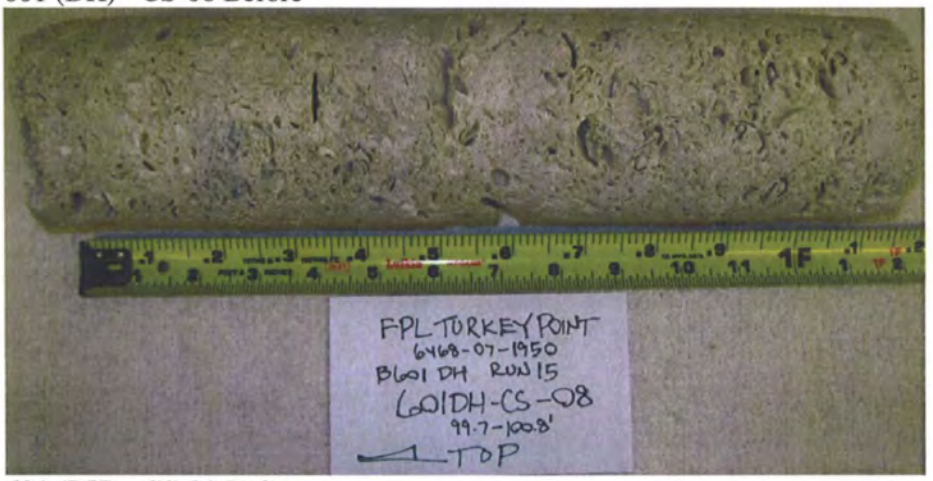


601 (DH) - CS-08 Before



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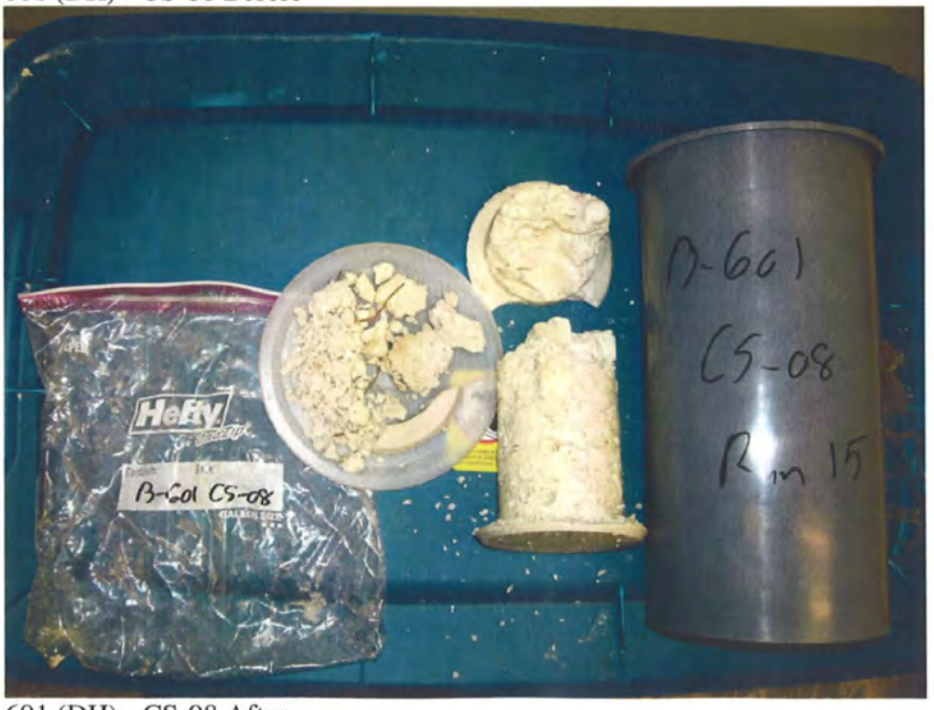

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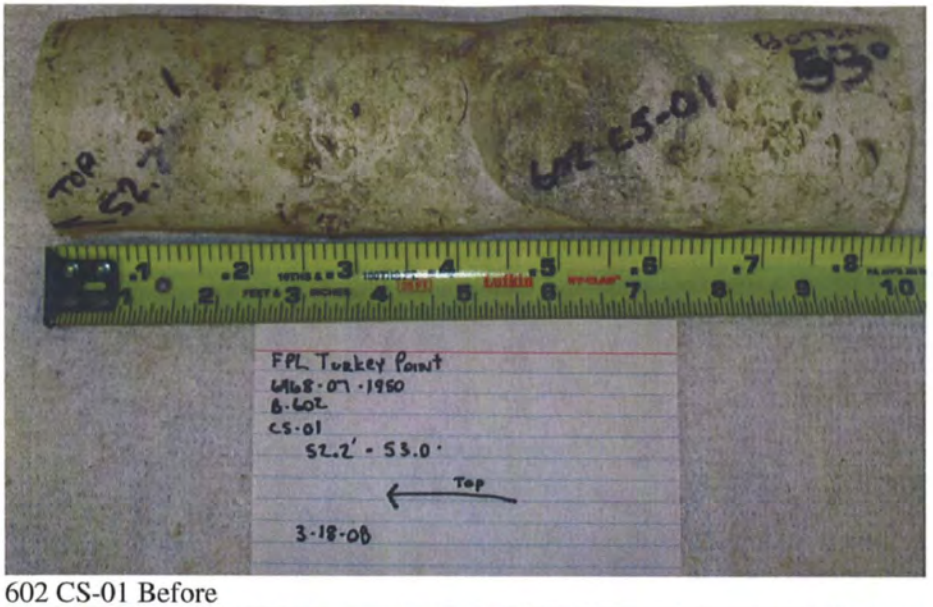
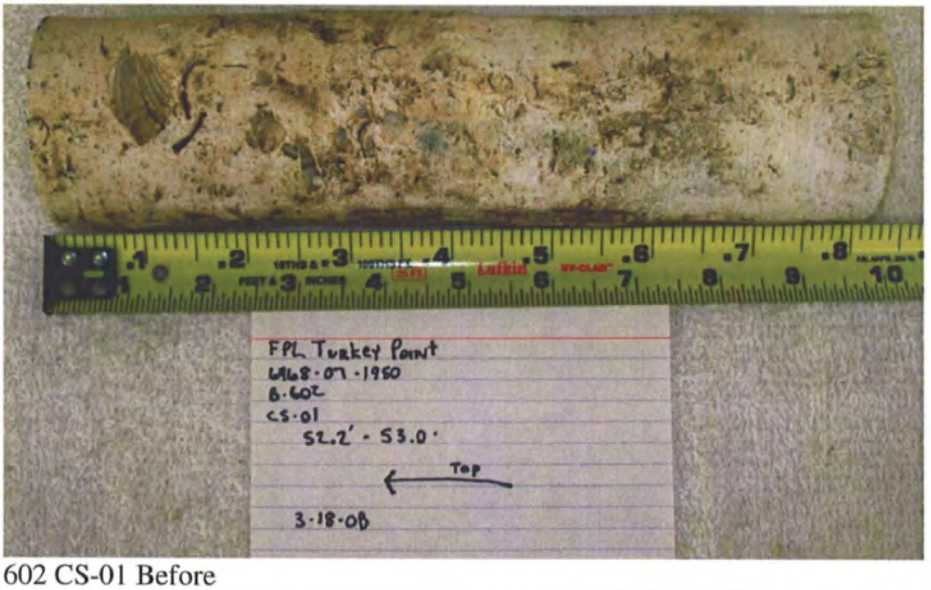
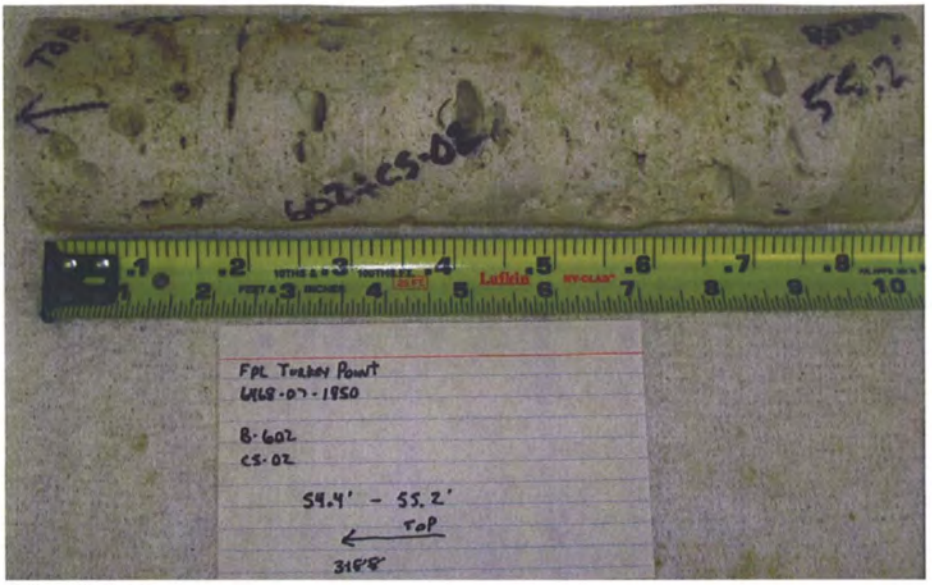


602 CS-01 Before



602 CS-01 Before

602 CS-01 After



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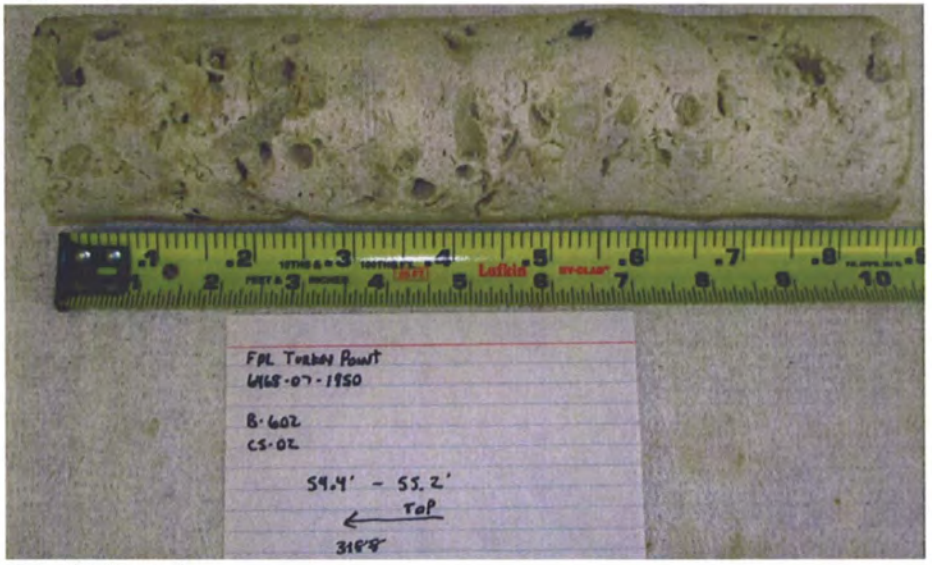
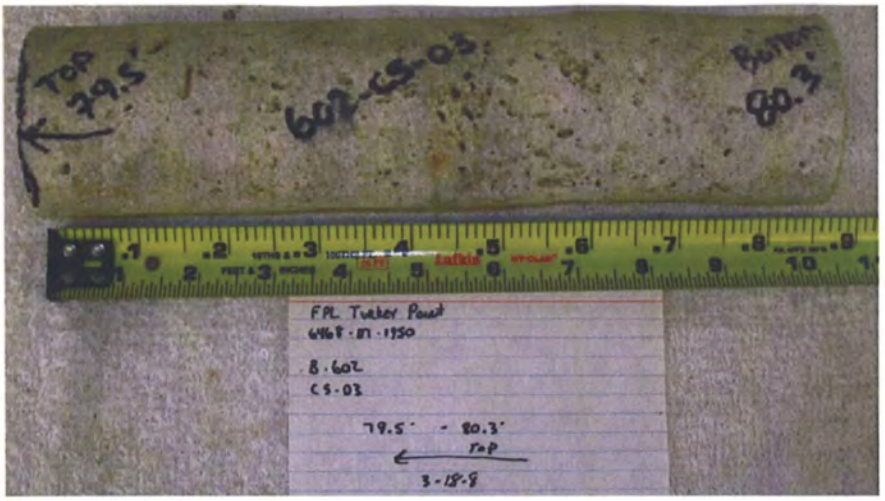


602 CS-02 Before

602 CS-02 After



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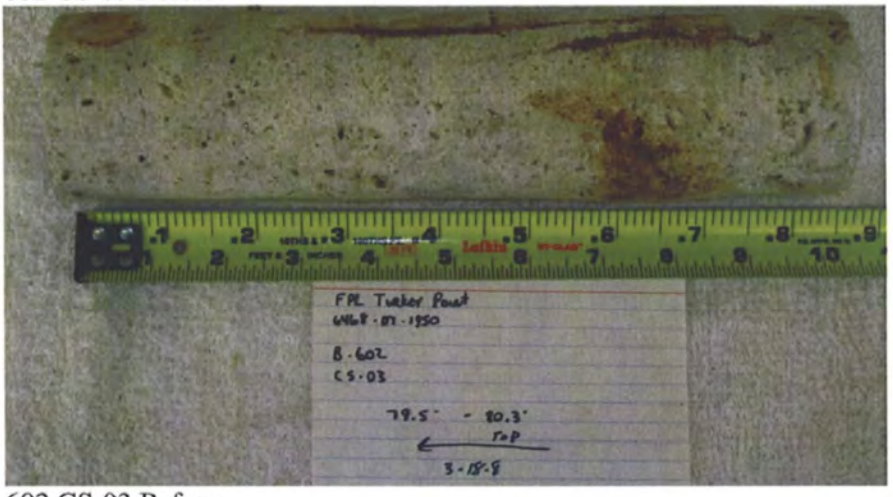
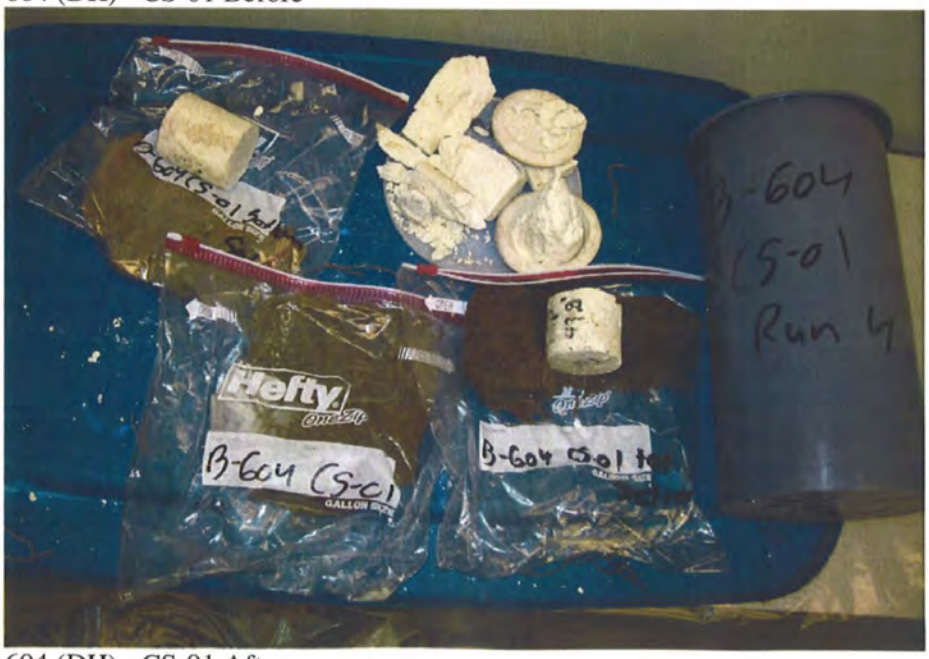


602 CS-03 Before

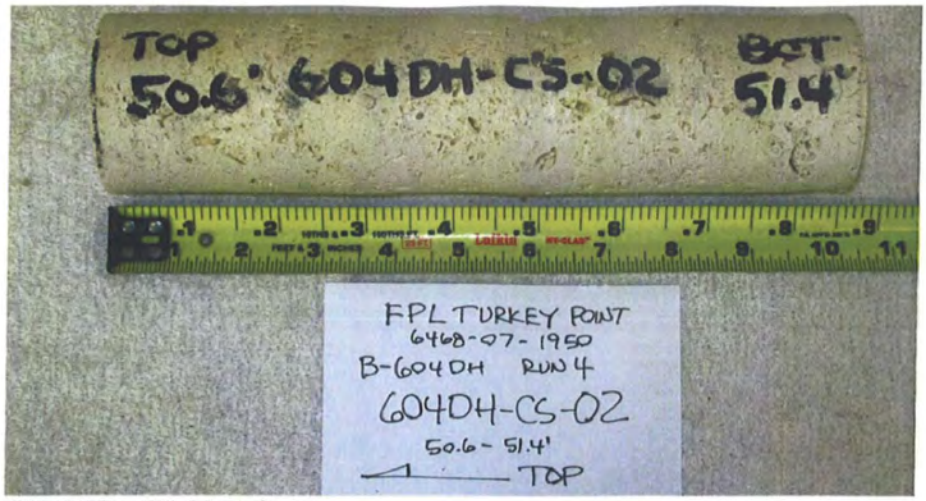
602 CS-03 After

604 (DH) - CS-01 Before

604 (DH) - CS-01 Before



604 (DH) - CS-01 After



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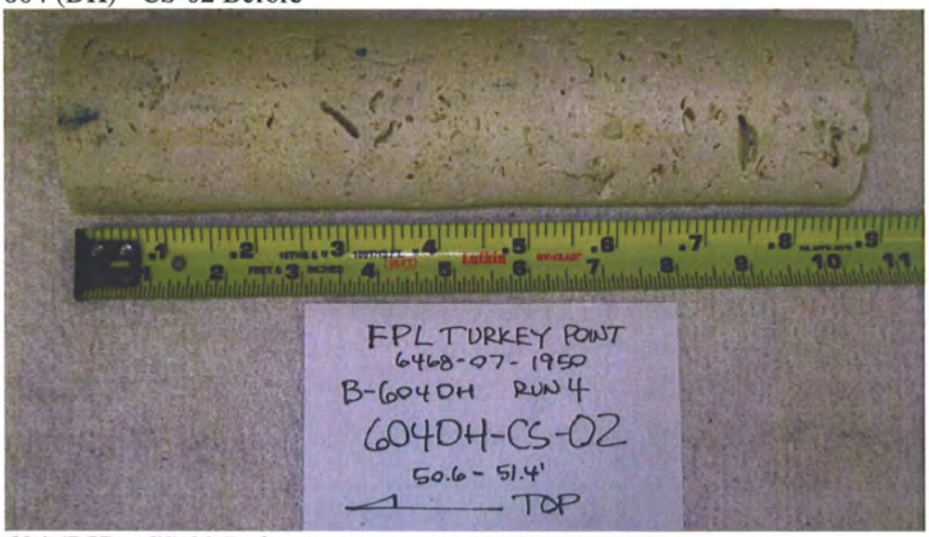
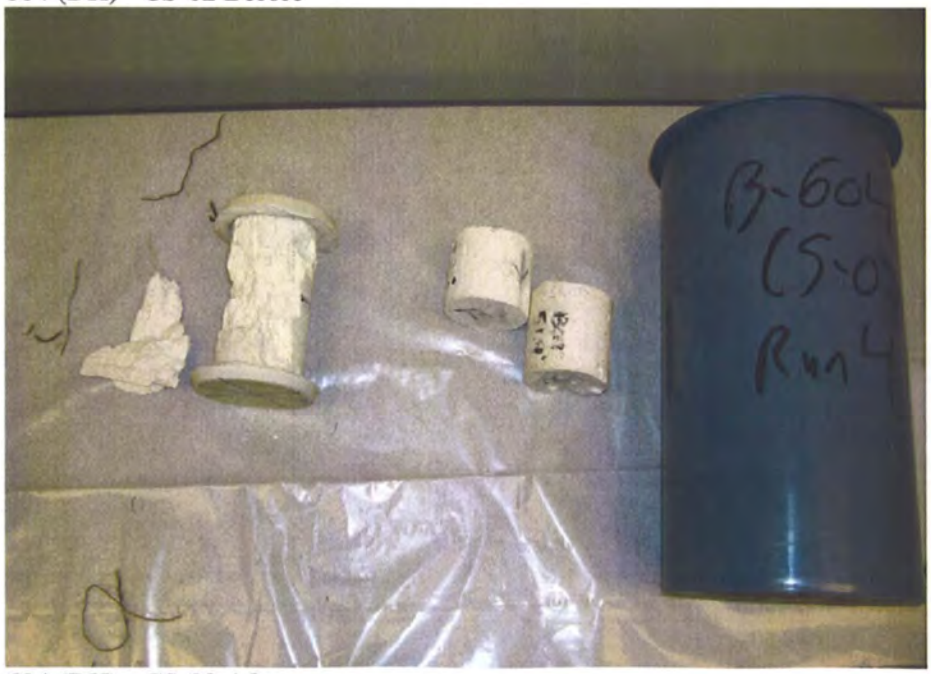
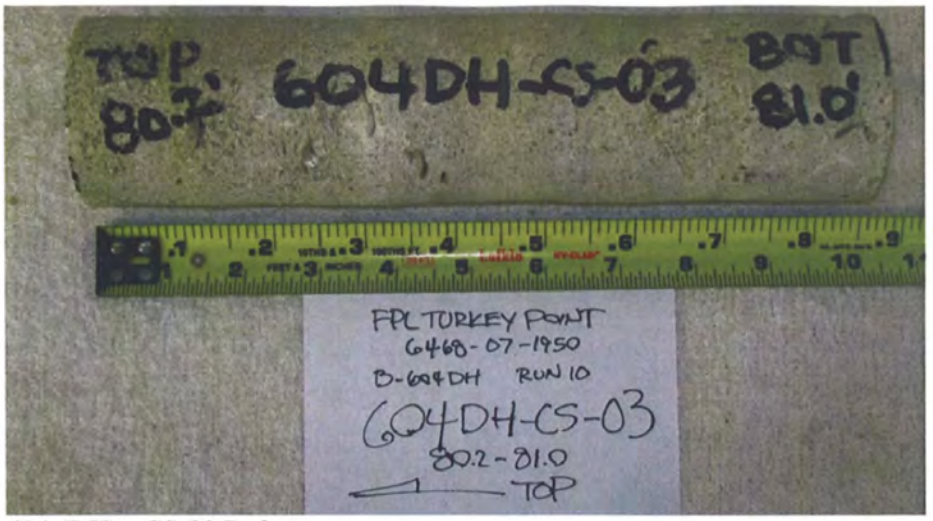


604 (DH) - CS-02 Before

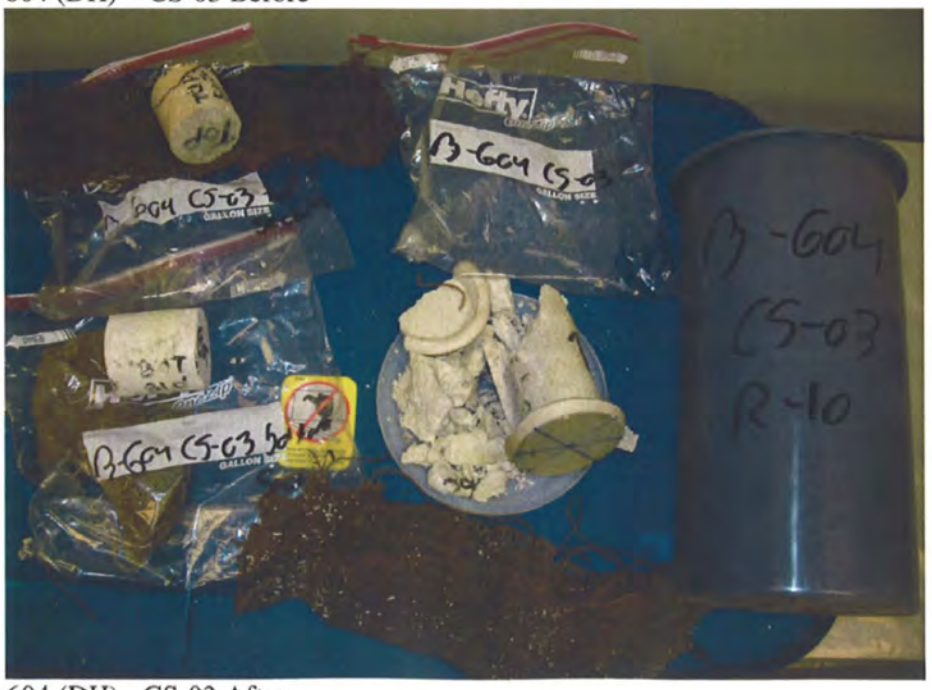


604 (DH) - CS-02 After



604 (DH) - CS-03 Before

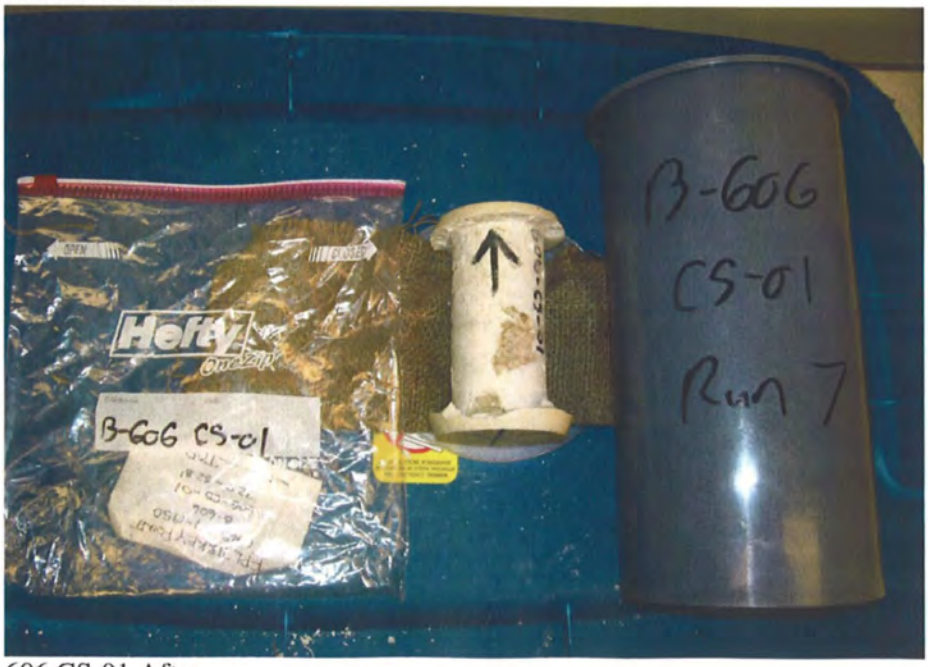
604 (DH) - CS-03 Before



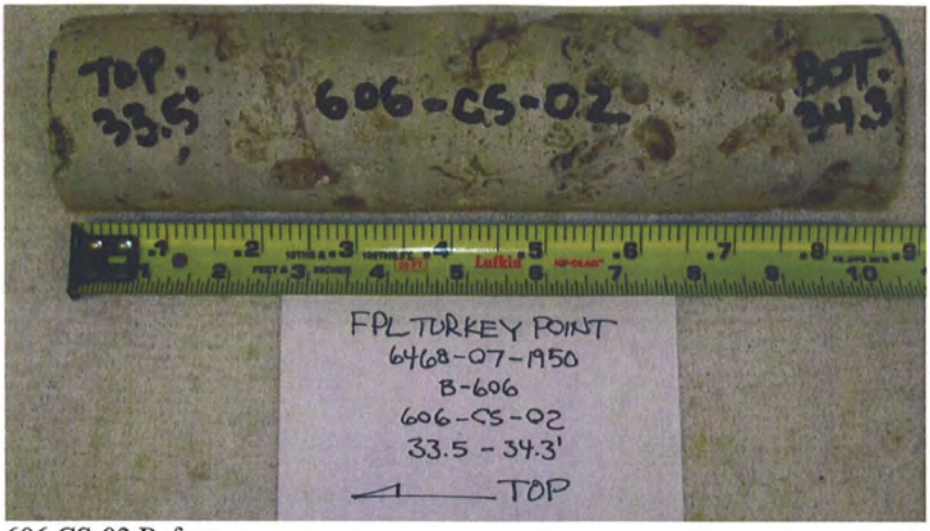
604 (DH) - CS-03 After

606 CS-01 Before

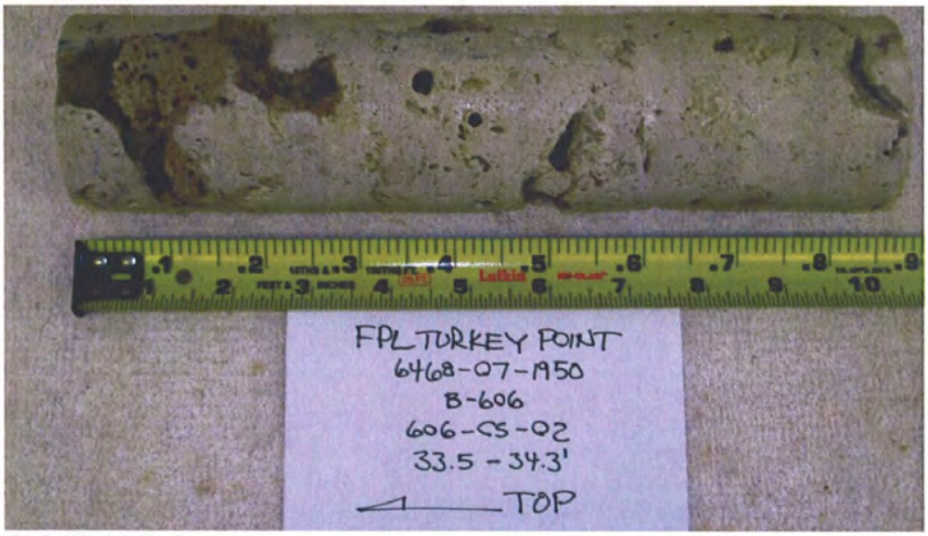
606 CS-01 Before



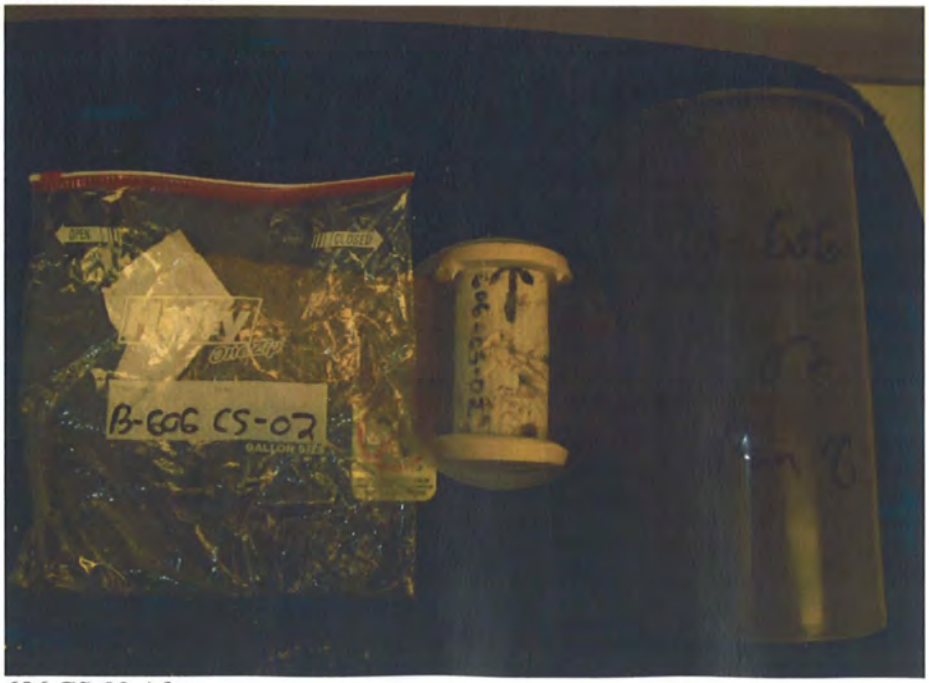
606 CS-01 After



606 CS-02 Before

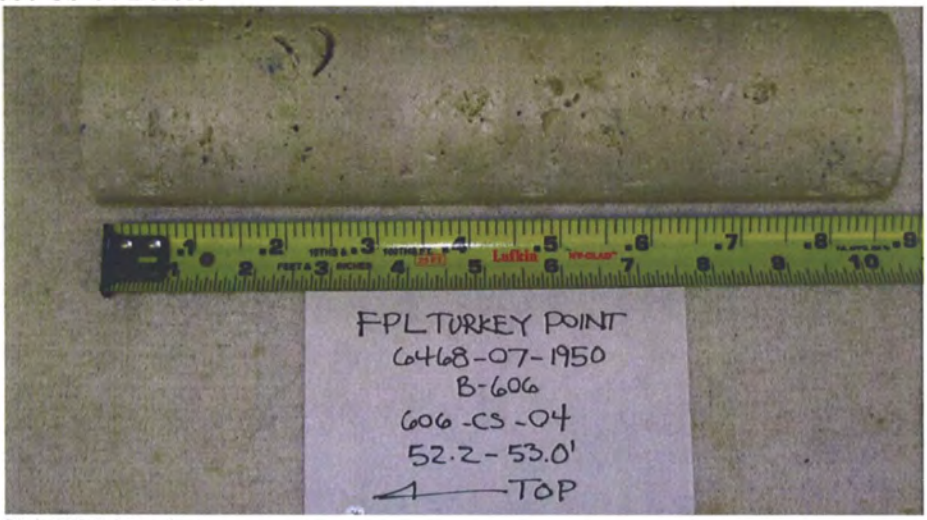


606 CS-02 Before

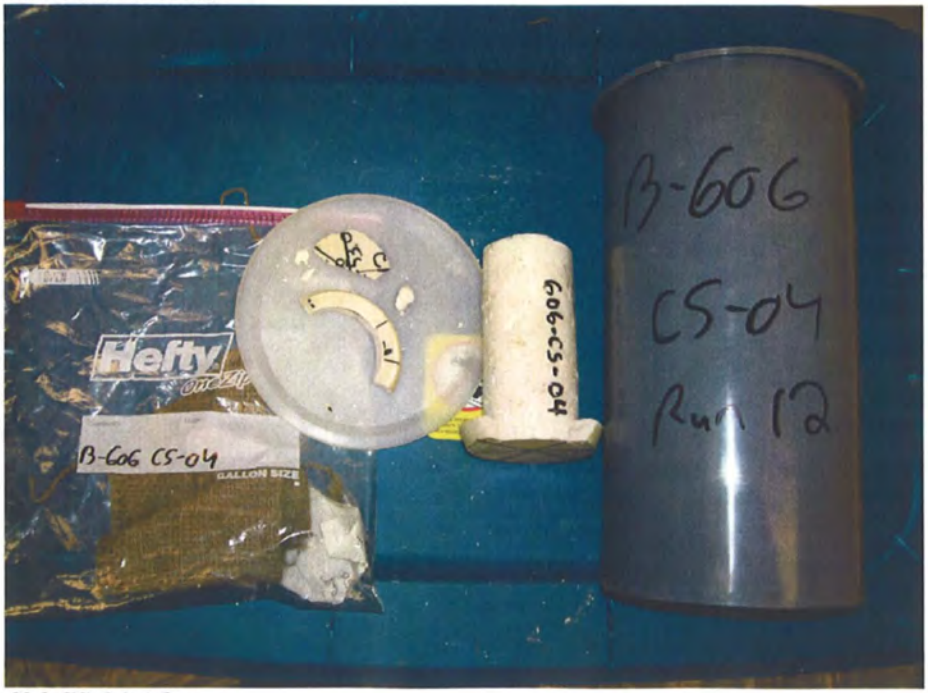


606 CS-02 After

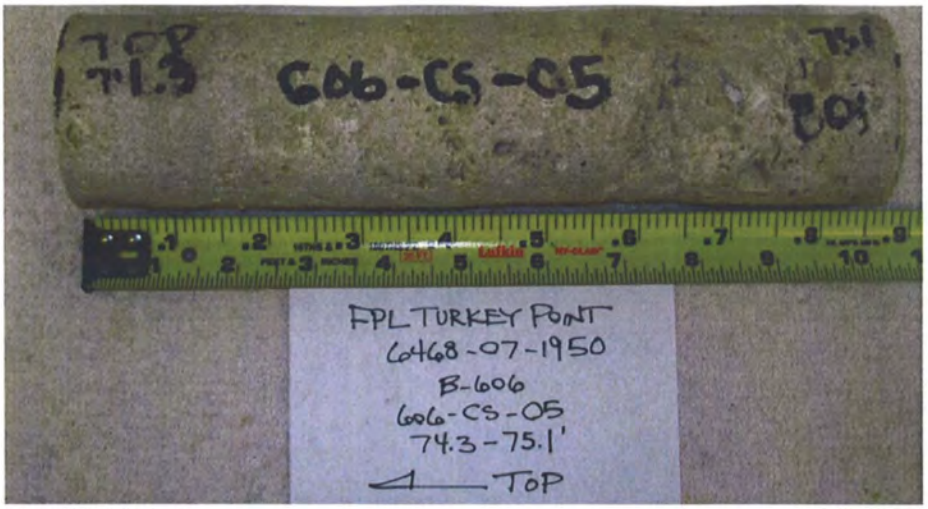
606 CS-04 Before



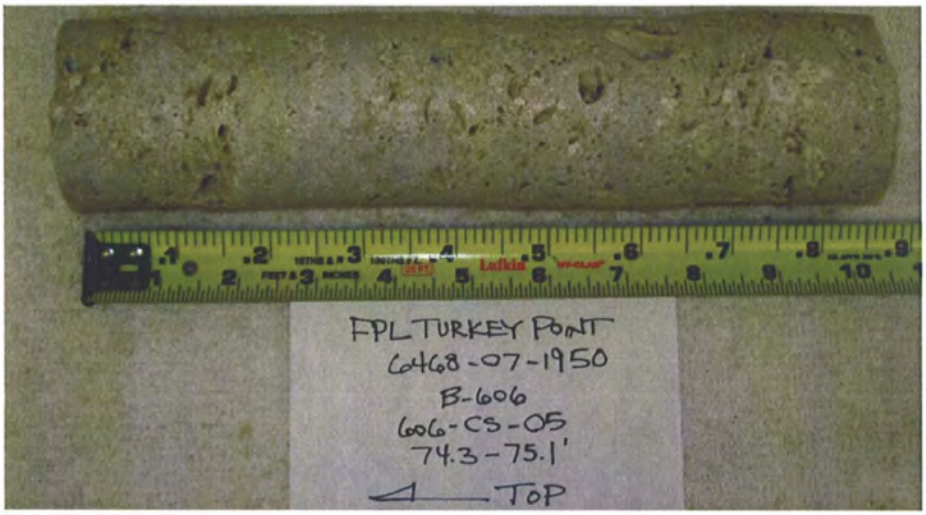
606 CS-04 Before



606 CS-04 After



606 CS-05 Before



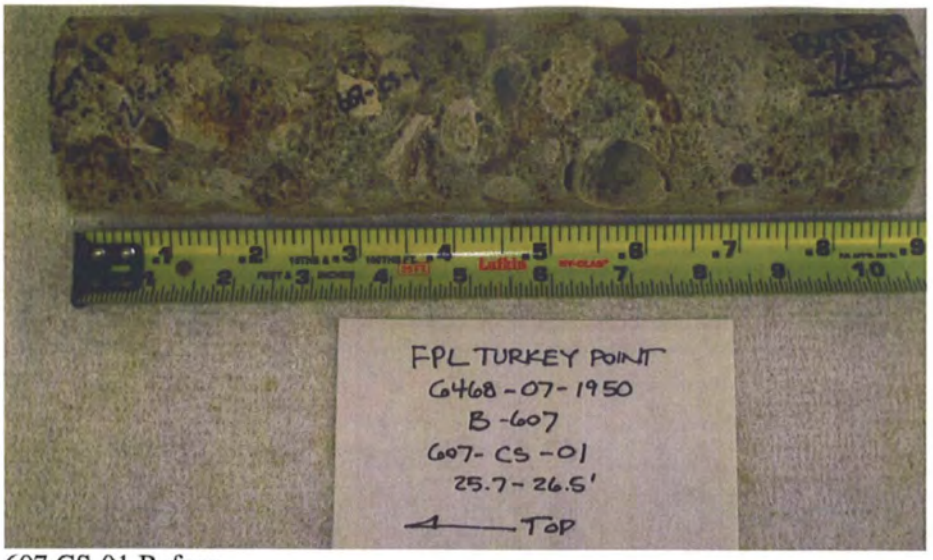
606 CS-05 Before

606 CS-05 After

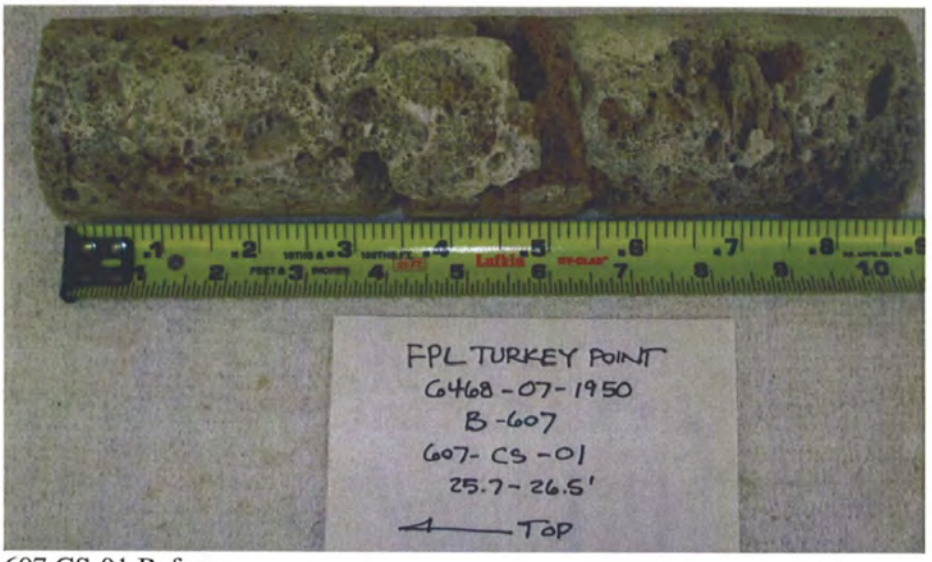
606 CS-06 Before

606 CS-06 Before

606 CS-06 After

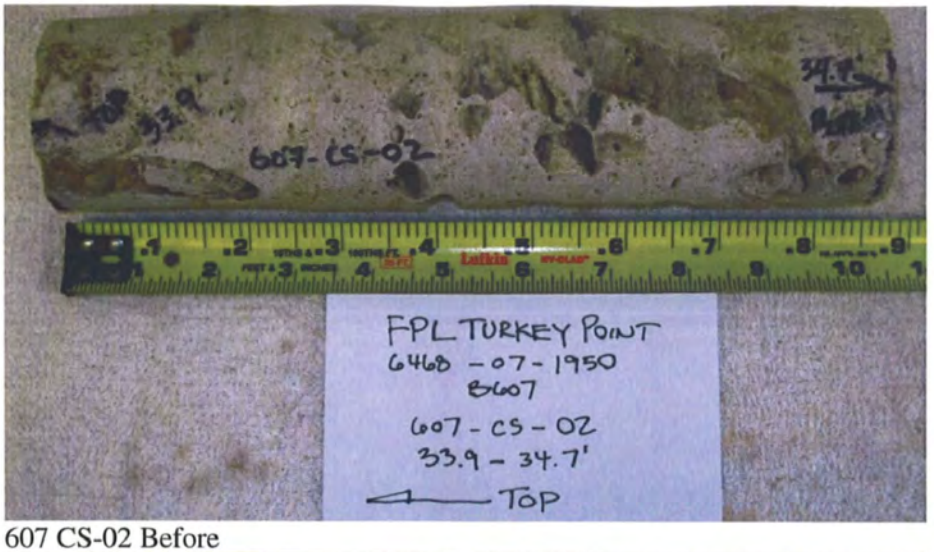


607 CS-01 Before

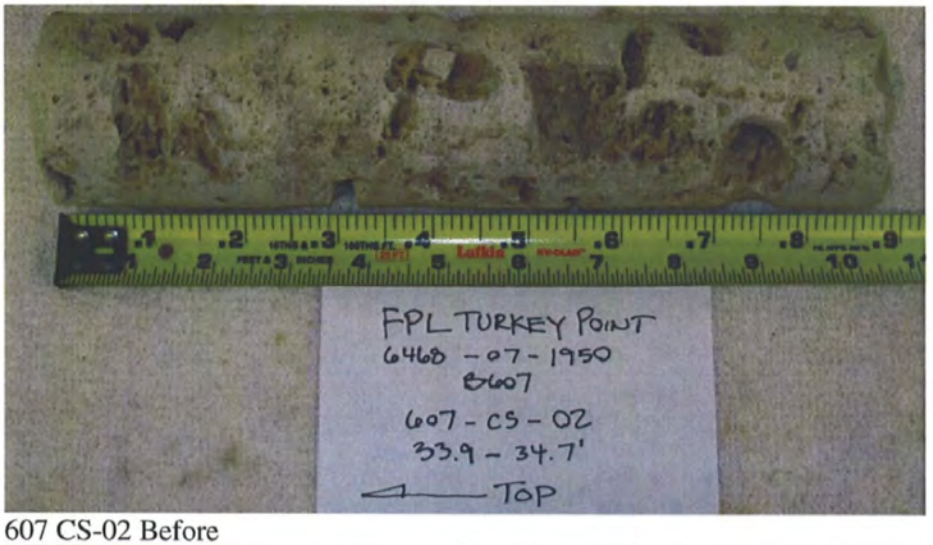


607 CS-01 Before

607 CS-01 After



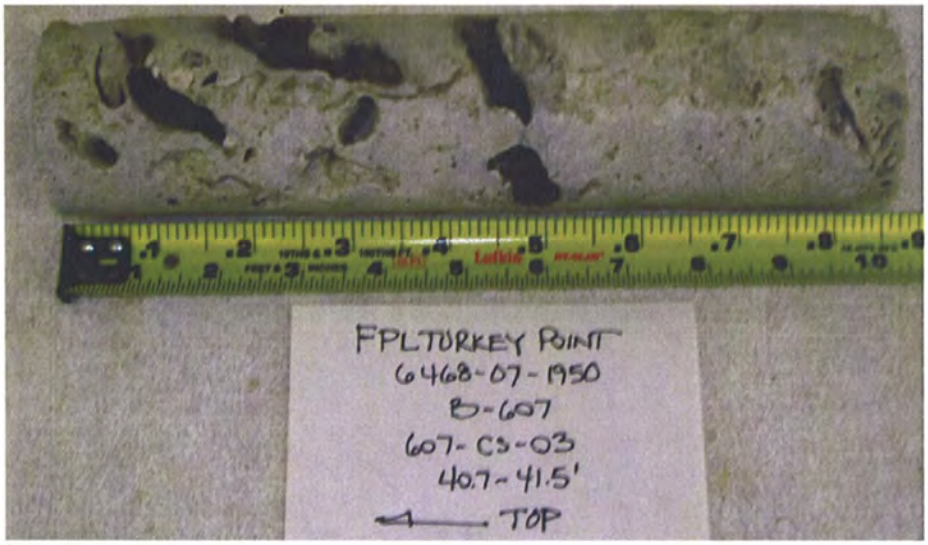
607 CS-02 Before



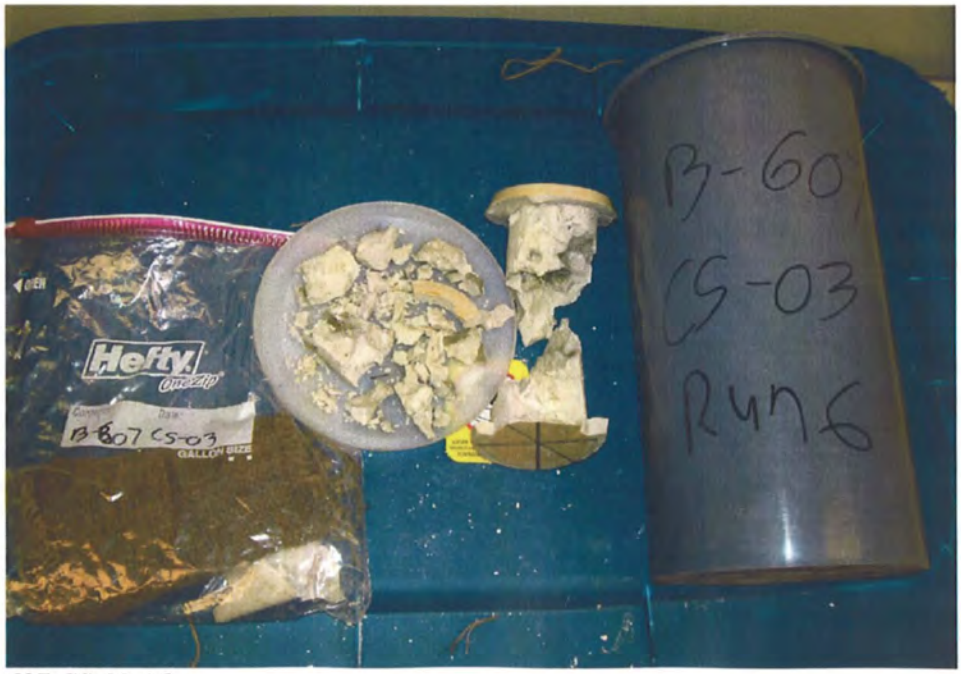
607 CS-02 Before

607 CS-02 After

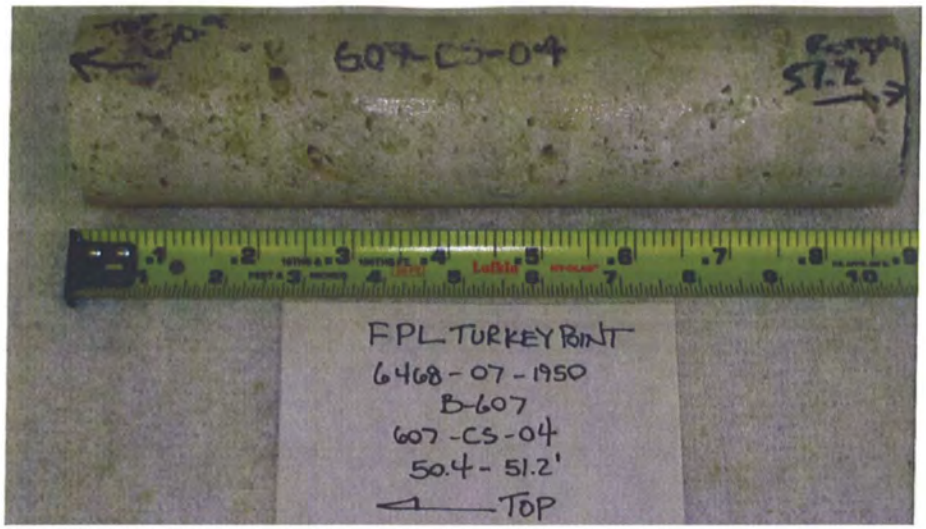
607 CS-03 Before



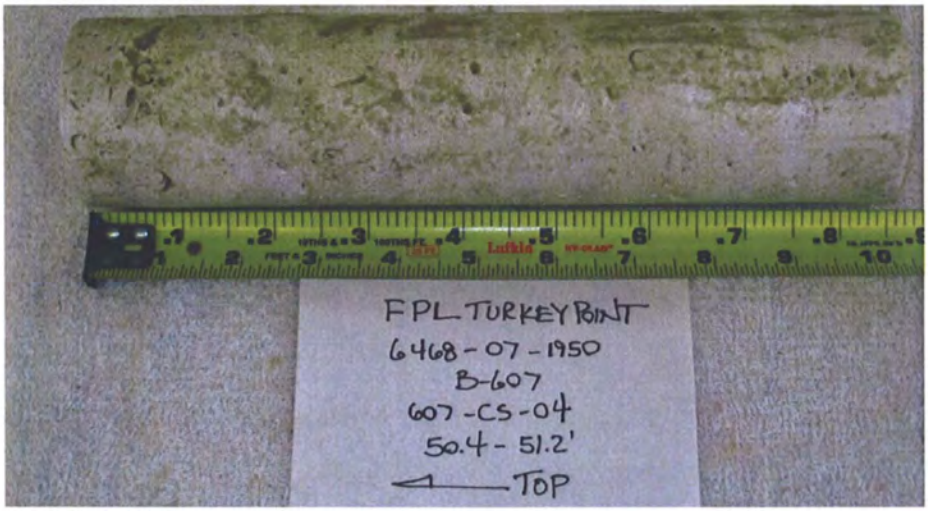
607 CS-03 Before



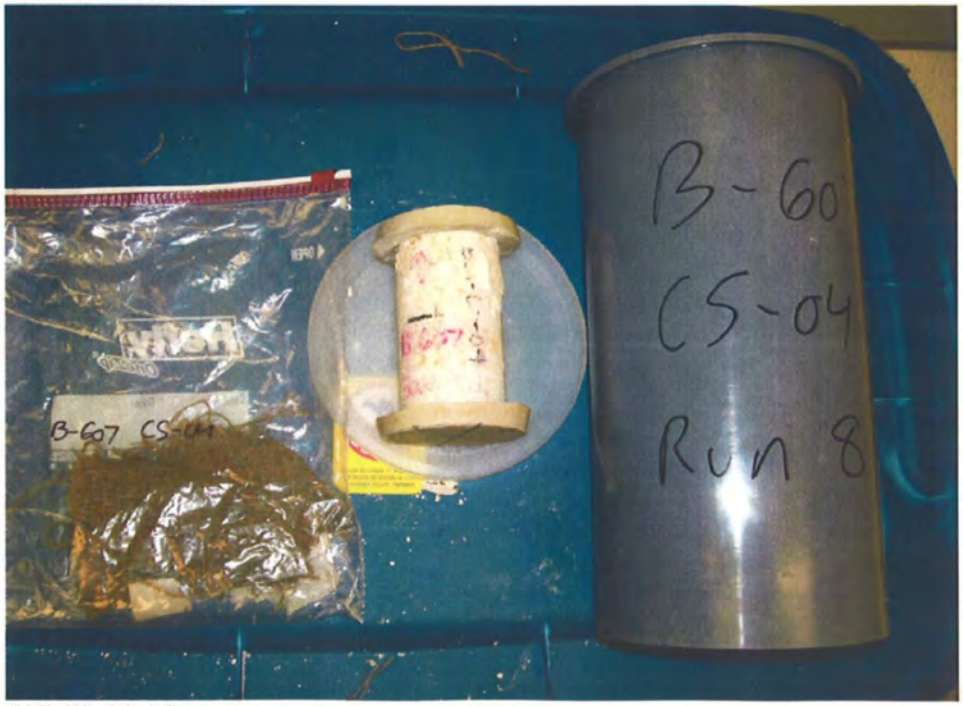
607 CS-03 After



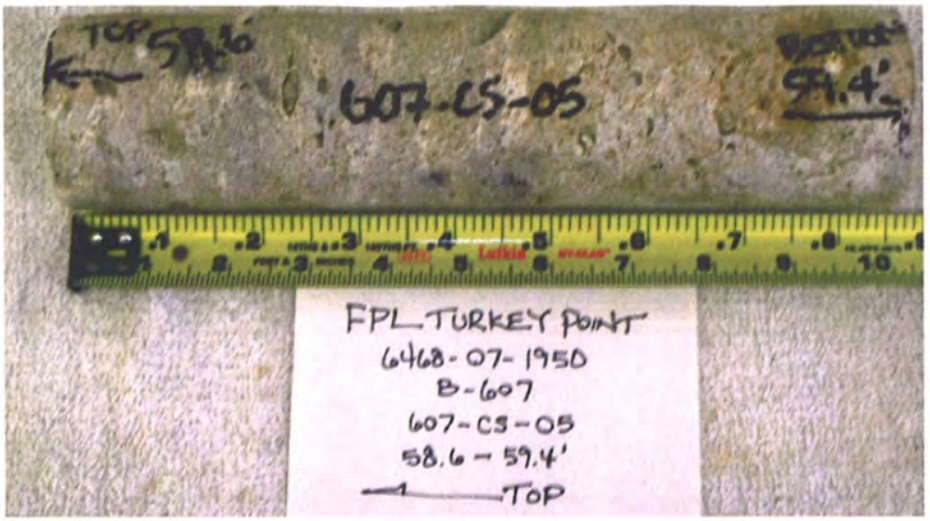
607 CS-04 Before



607 CS-04 Before



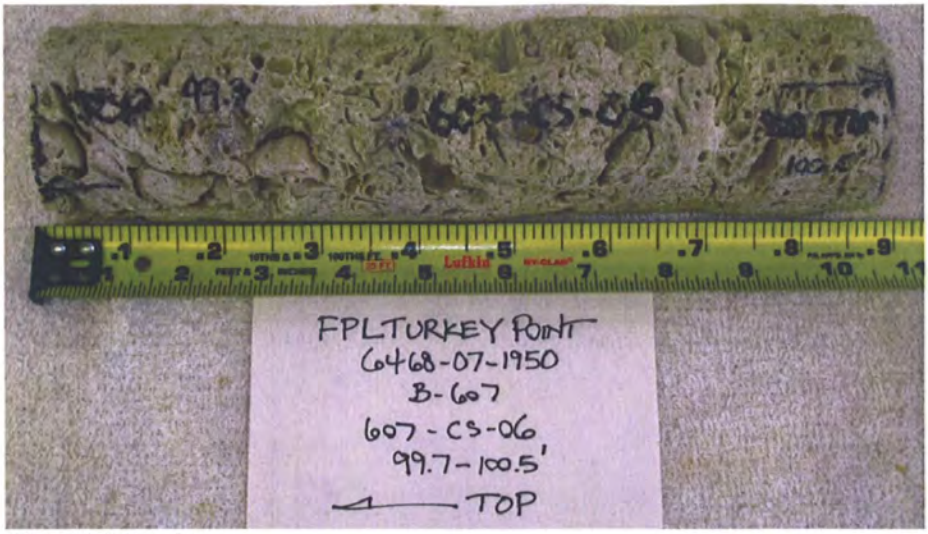
607 CS-04 After



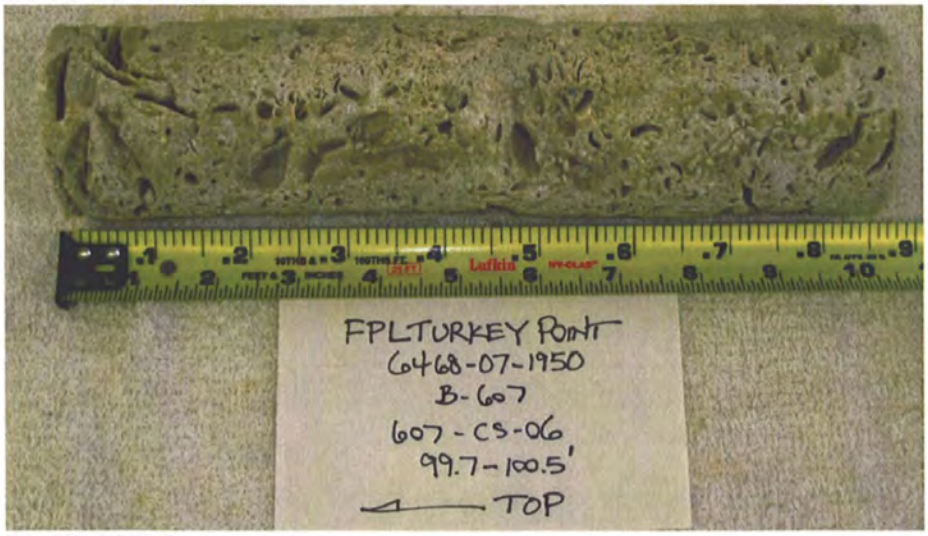
607 CS-05 Before

607 CS-05 Before

607 CS-05 After



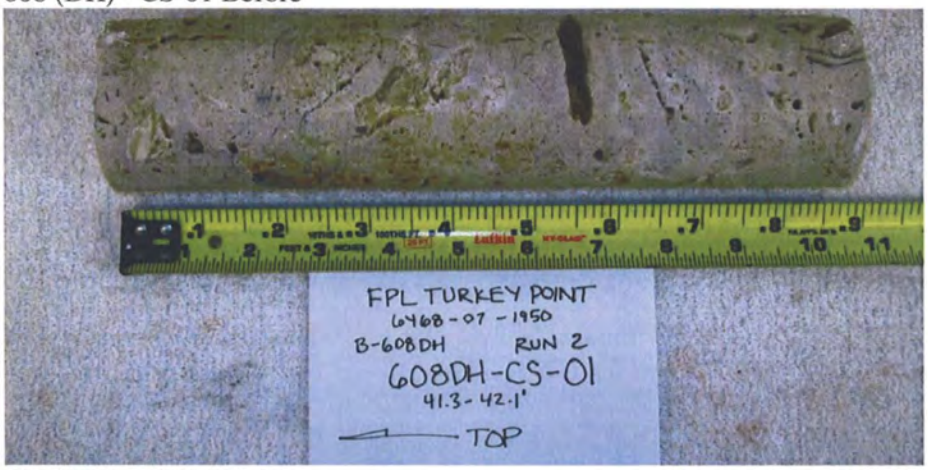
607 CS-06 Before



607 CS-06 Before

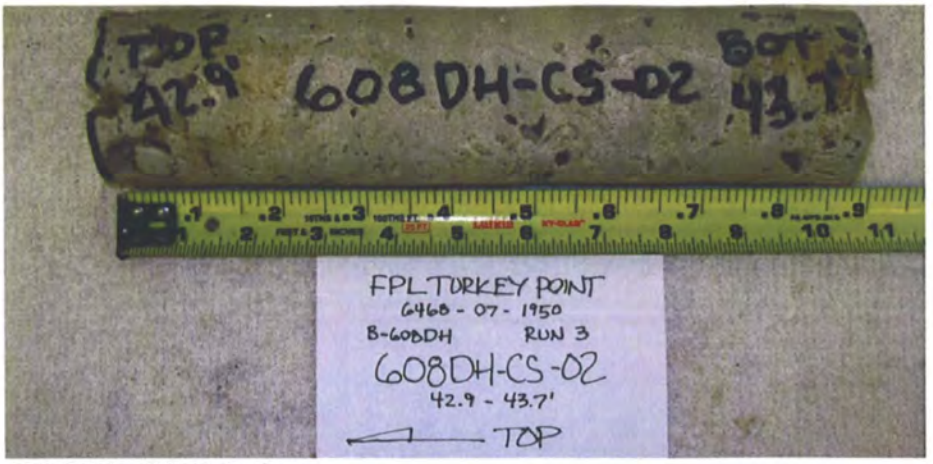
607 CS-06 After

608 (DH) - CS-01 Before

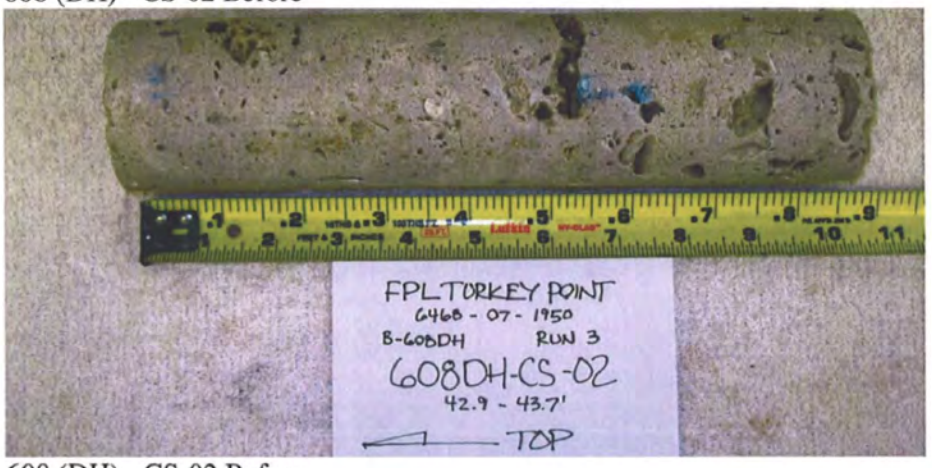


608 (DH) - CS-01 Before

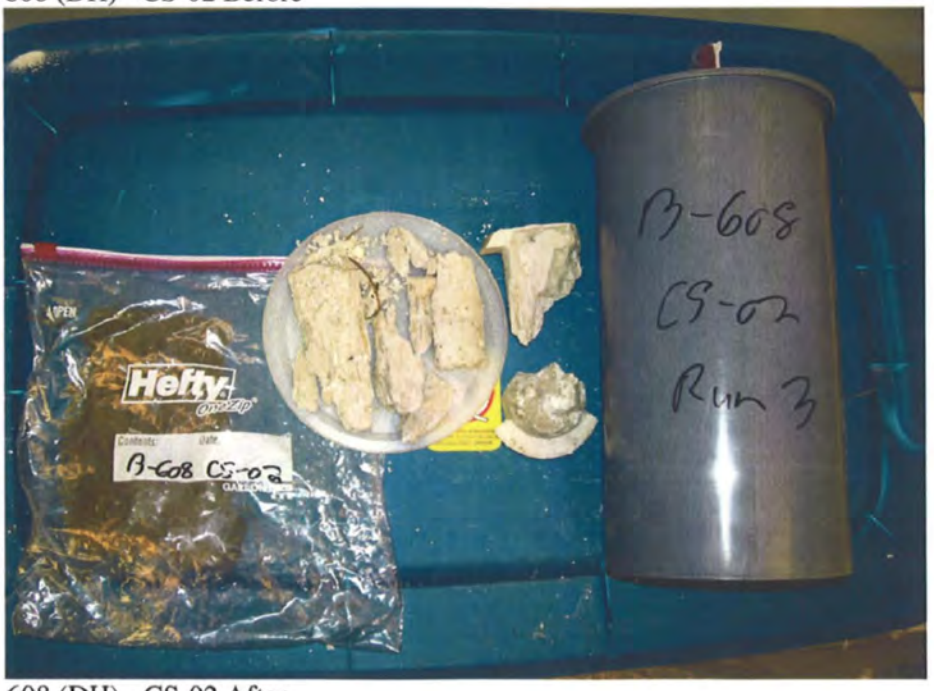
608 (DH) - CS-01 After



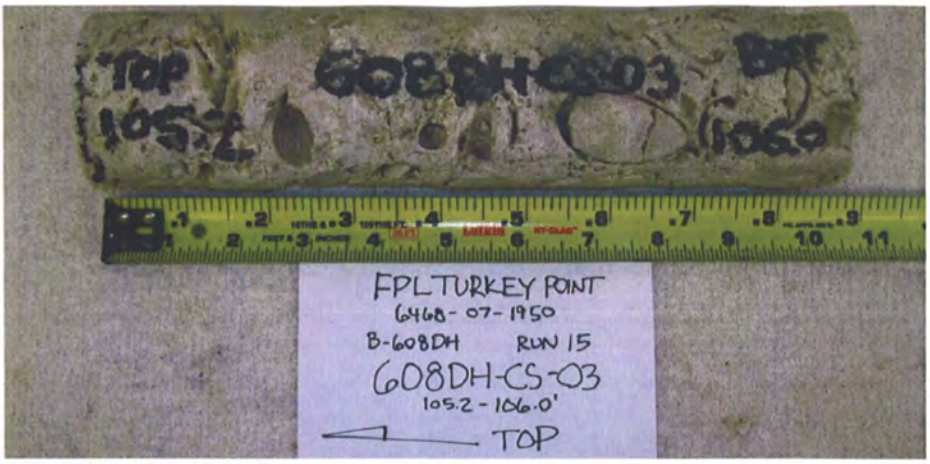
608 (DH) - CS-02 Before



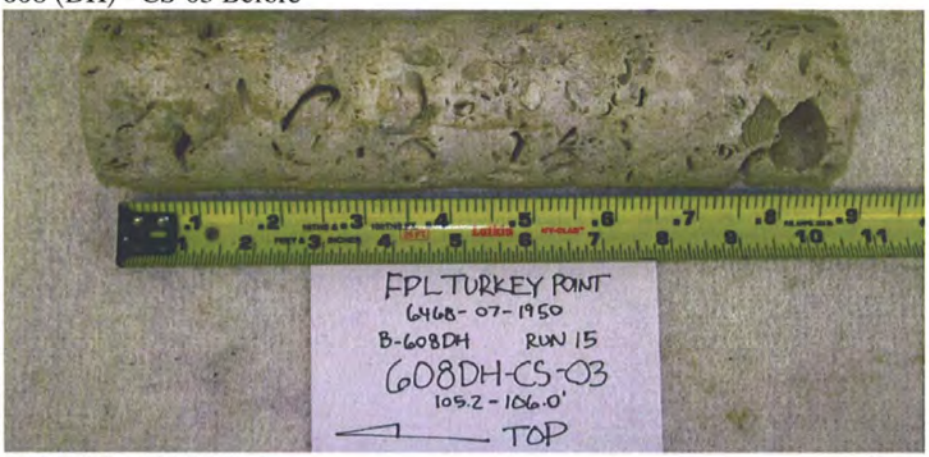
608 (DH) - CS-02 Before



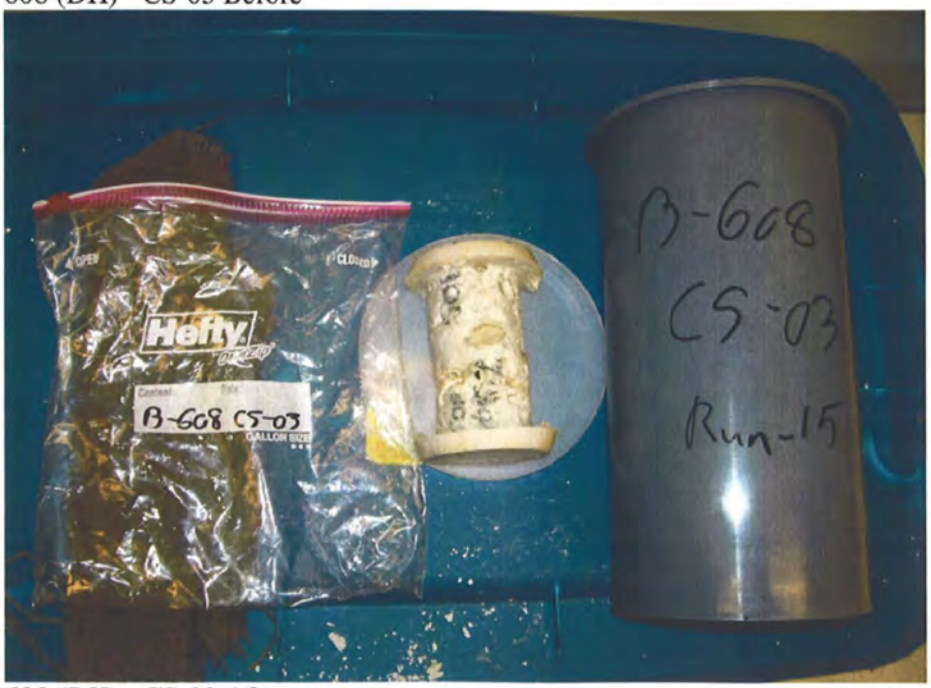
608 (DH) - CS-02 After



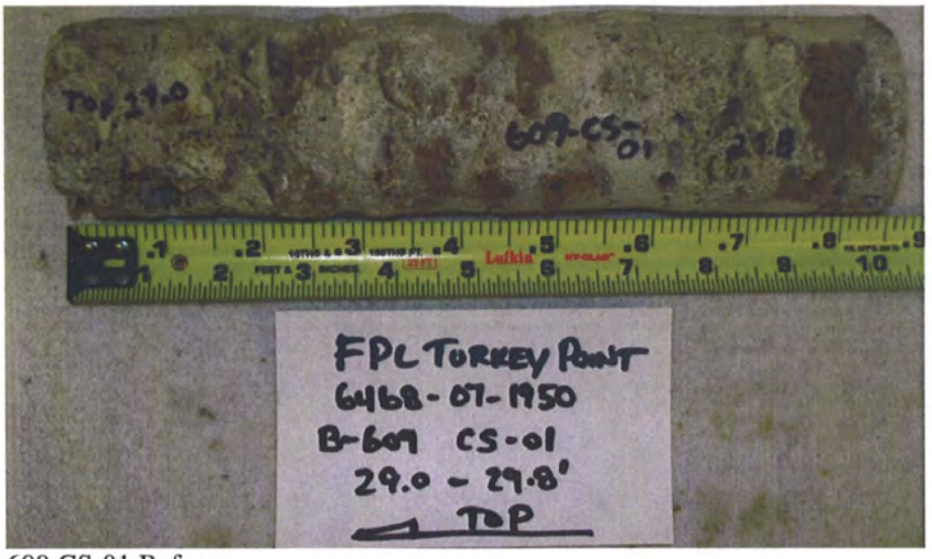
608 (DH) - CS-03 Before



608 (DH) - CS-03 Before



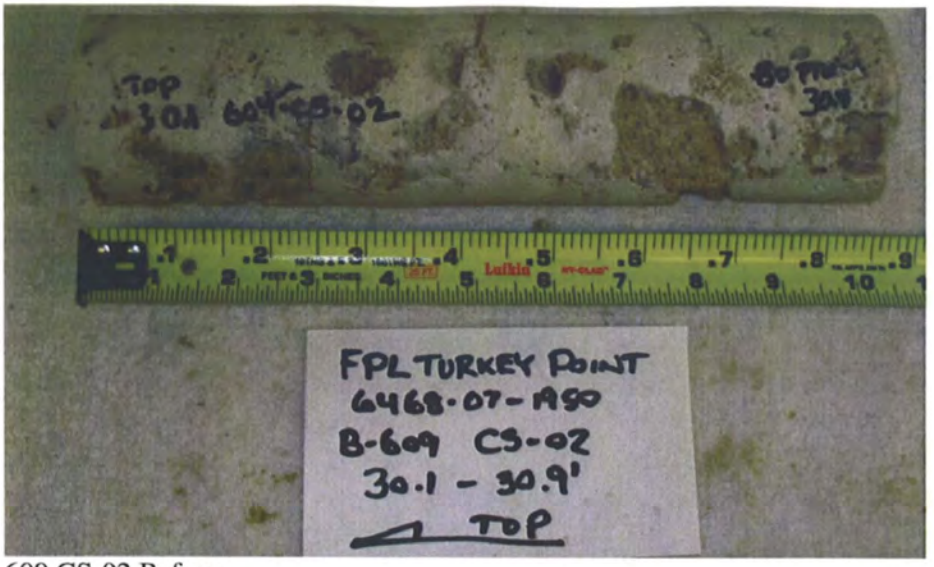
608 (DH) - CS-03 After



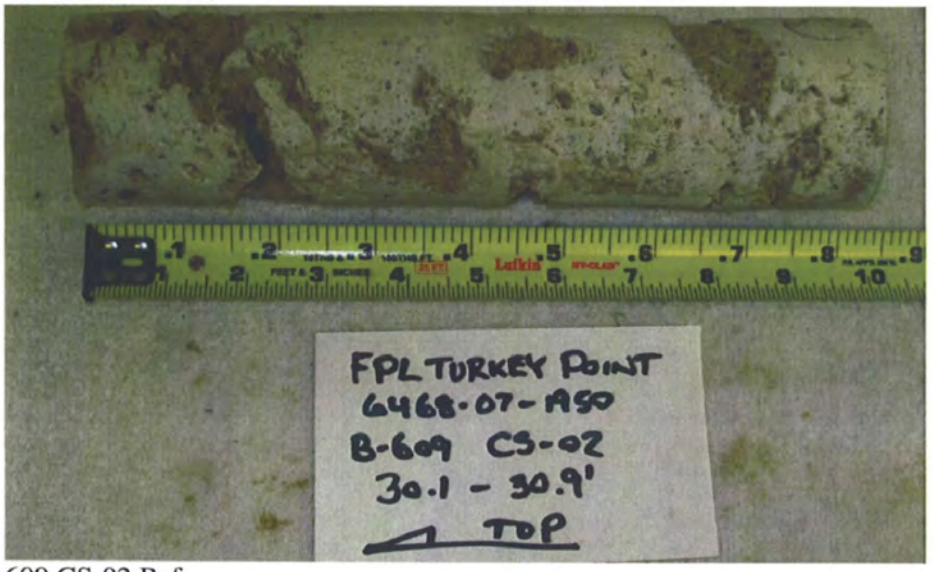
609 CS-01 Before

609 CS-01 Before

609 CS-01 After

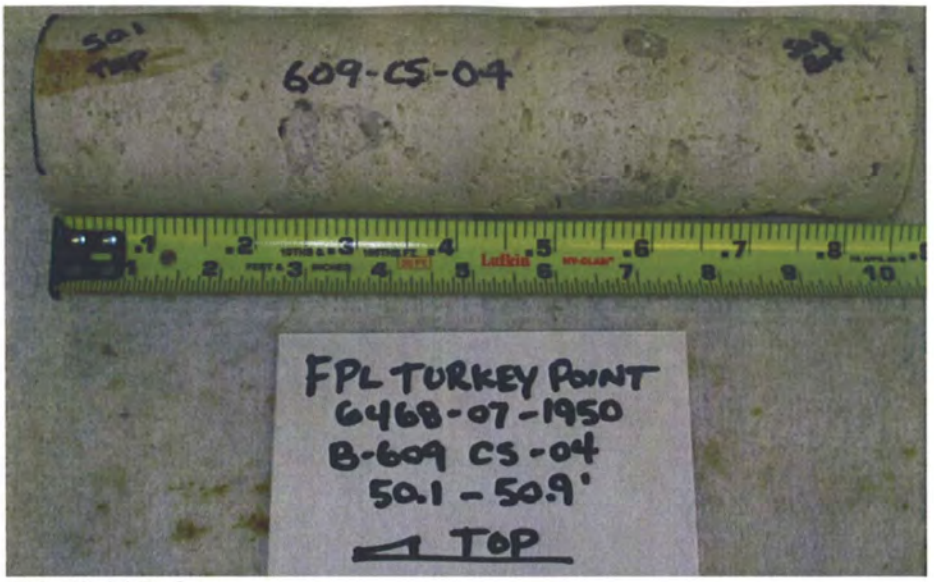


609 CS-02 Before

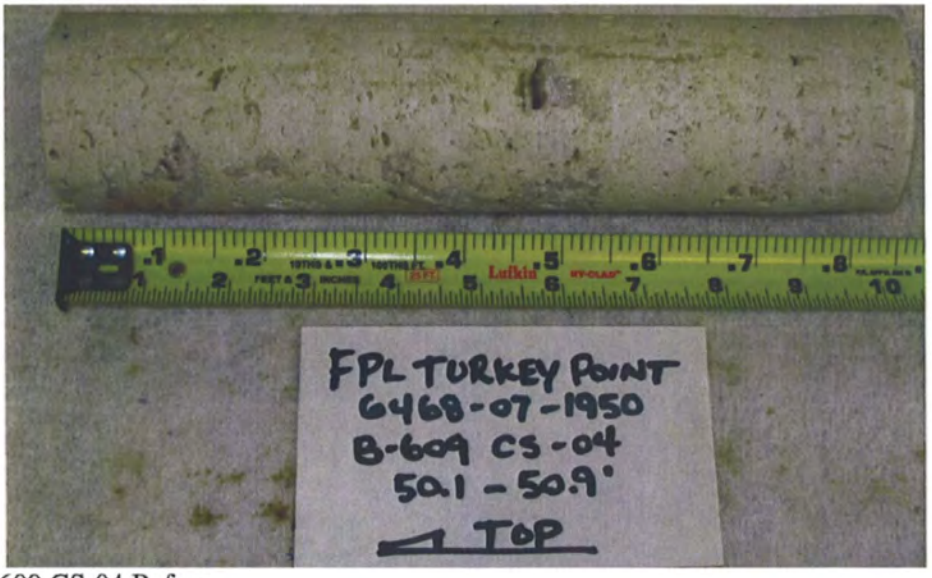


609 CS-02 Before

609 CS-02 After



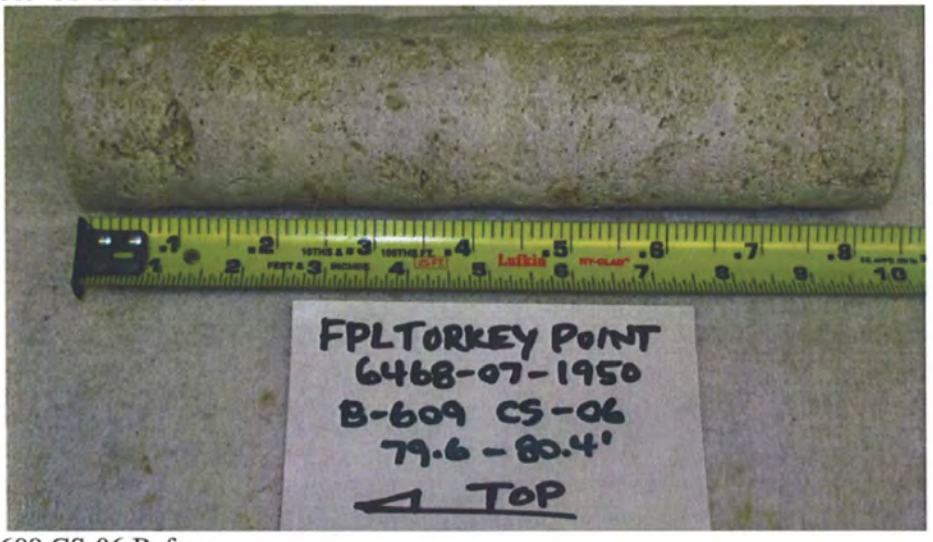
609 CS-04 Before



609 CS-04 Before

609 CS-04 After

609 CS-06 Before



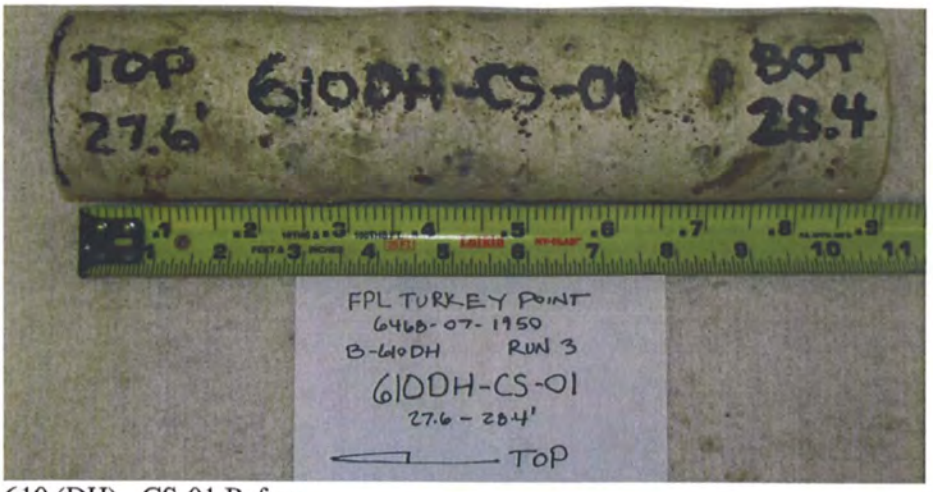
609 CS-06 Before

609 CS-06 After

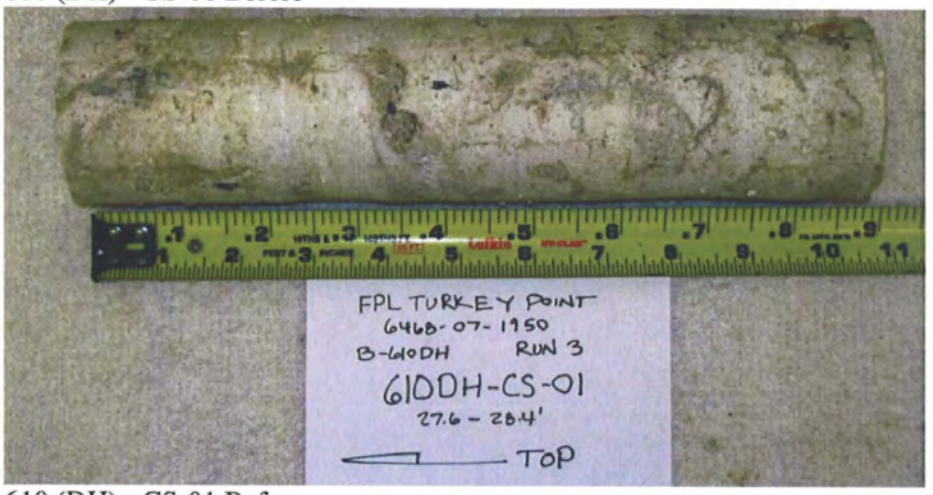
609 CS-07 Before

609 CS-07 Before

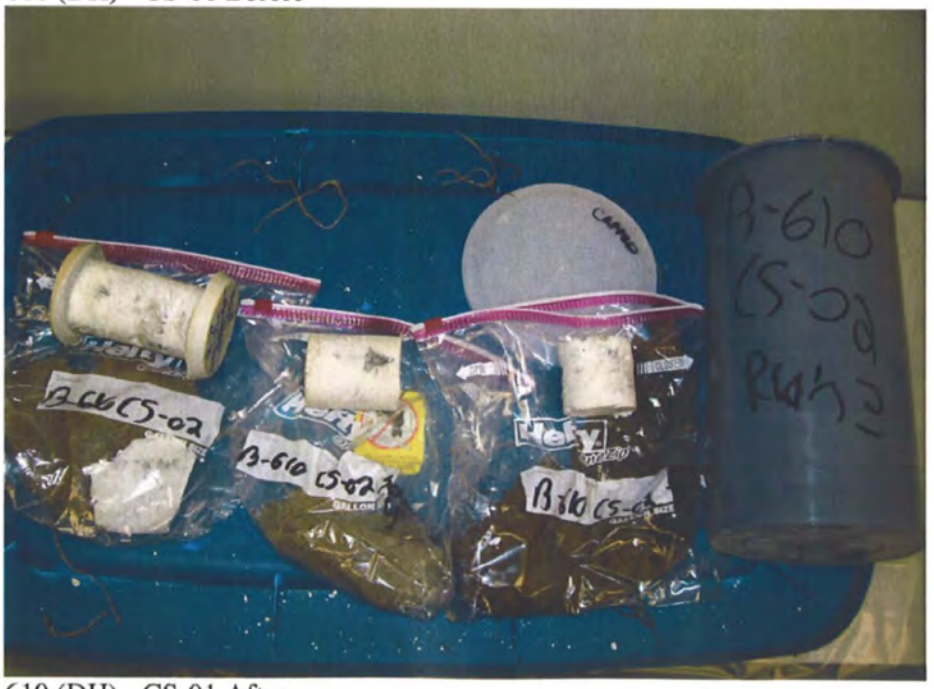
609 CS-07 After



610 (DH) - CS-01 Before

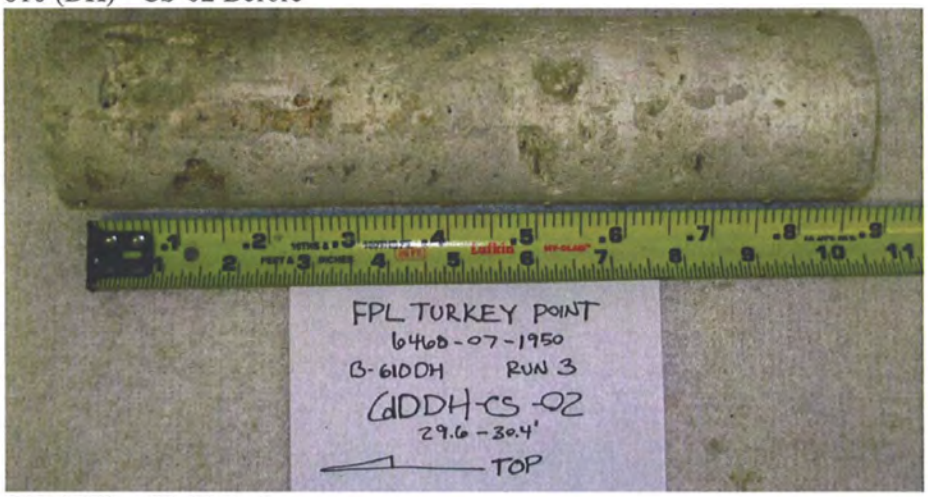


610 (DH) - CS-01 Before



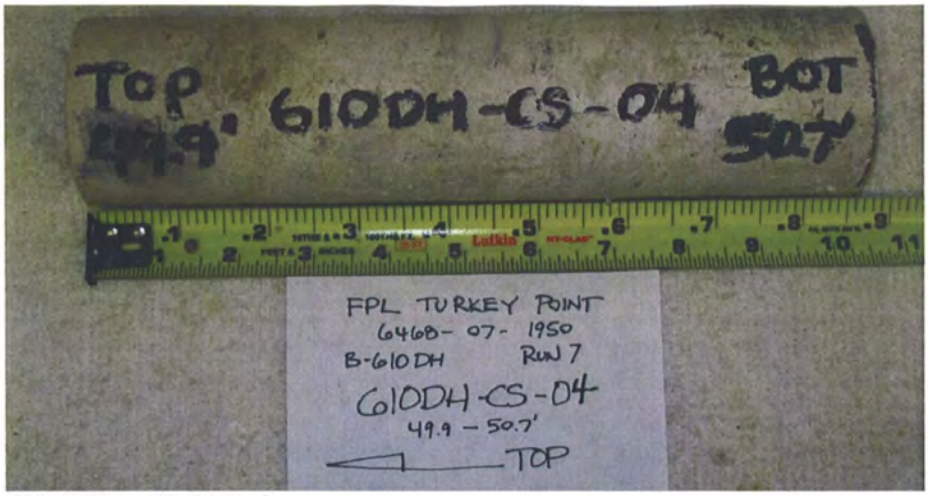
610 (DH) - CS-01 After

610 (DH) - CS-02 Before

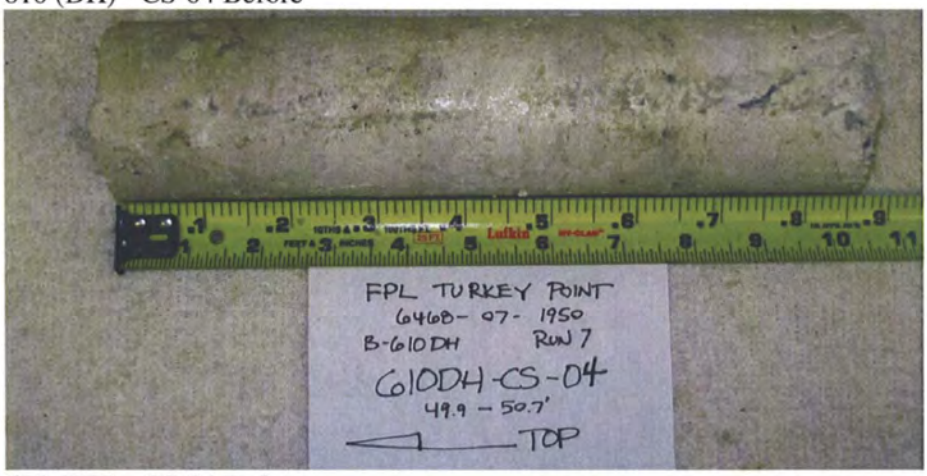


610 (DH) - CS-02 Before

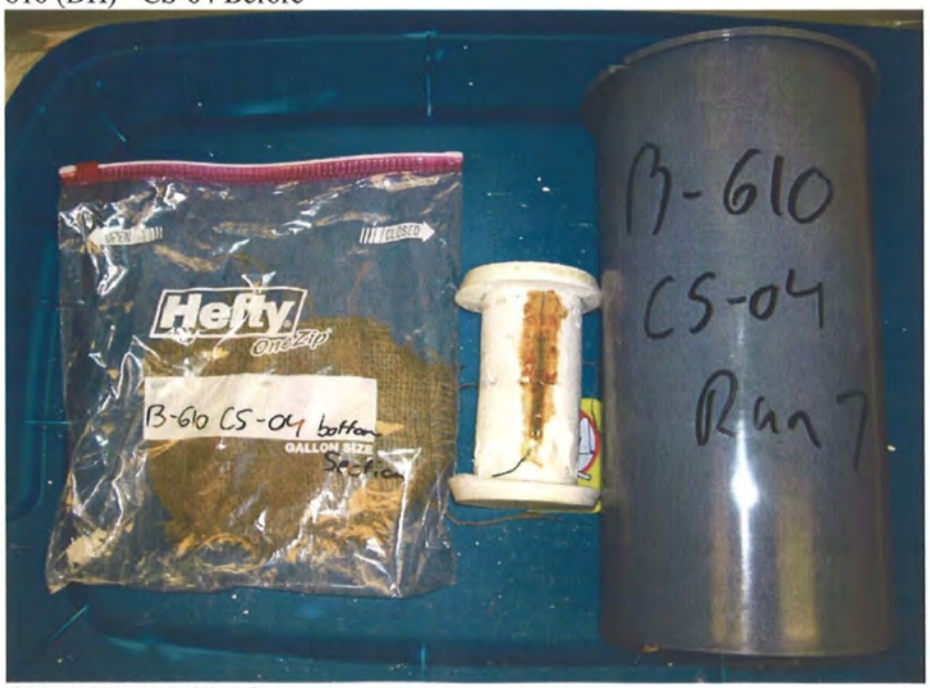
610 (DH) - CS-02 After



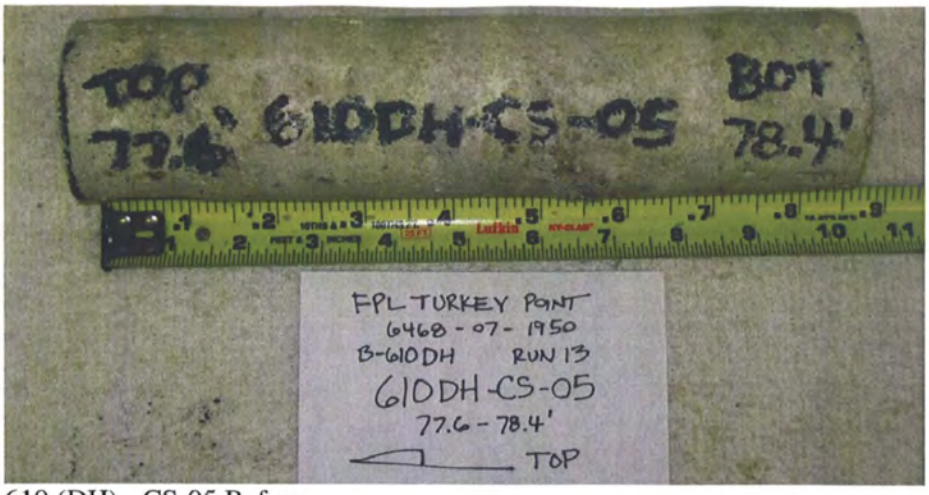
610 (DH) - CS-04 Before



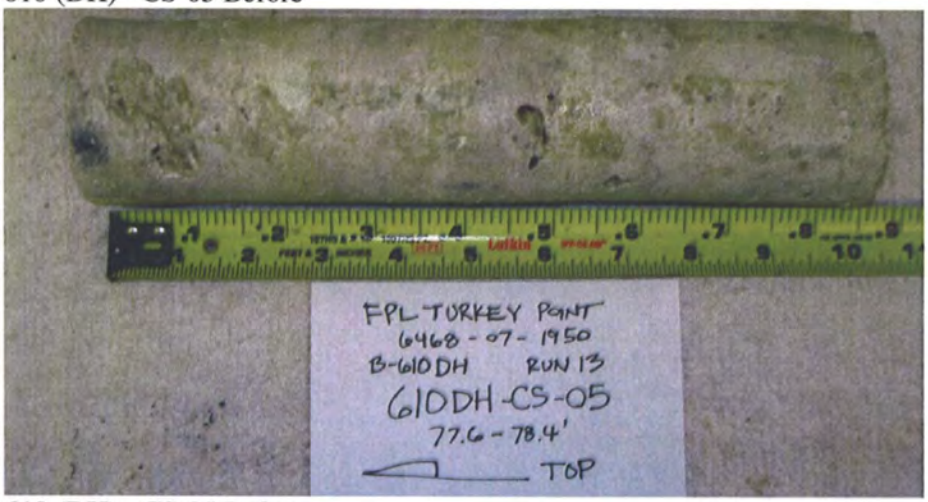
610 (DH) - CS-04 Before



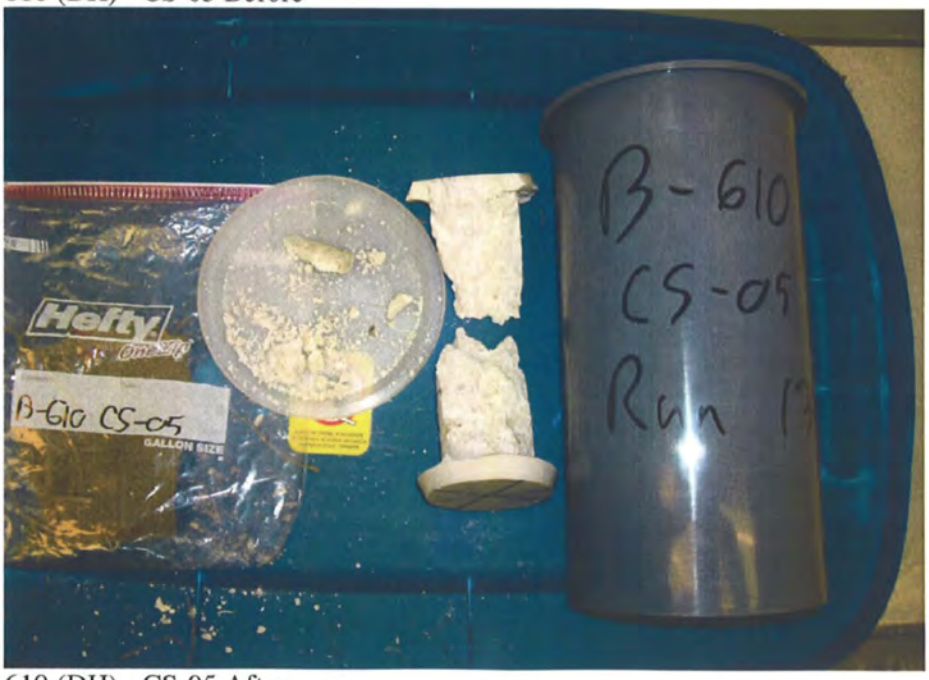
610 (DH) - CS-04 After



610 (DH) - CS-05 Before



610 (DH) - CS-05 Before

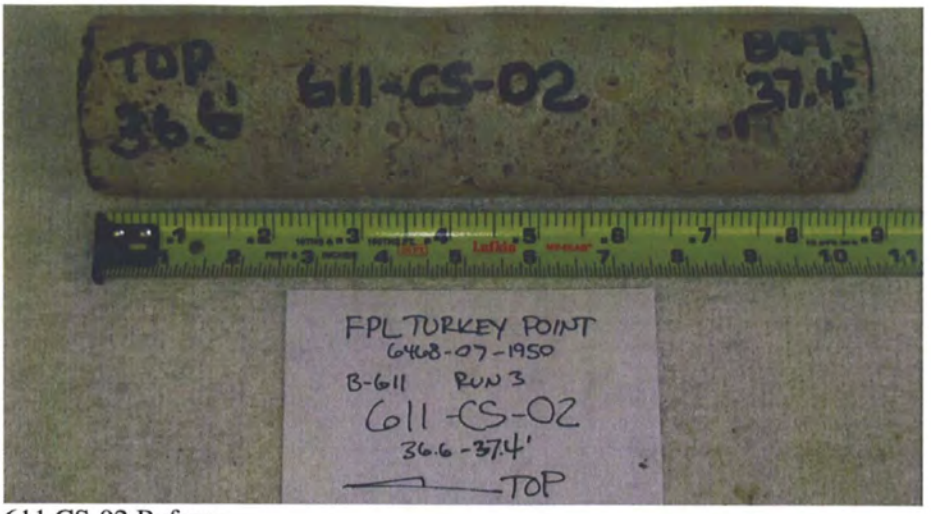


610 (DH) - CS-05 After

611 CS-01 Before

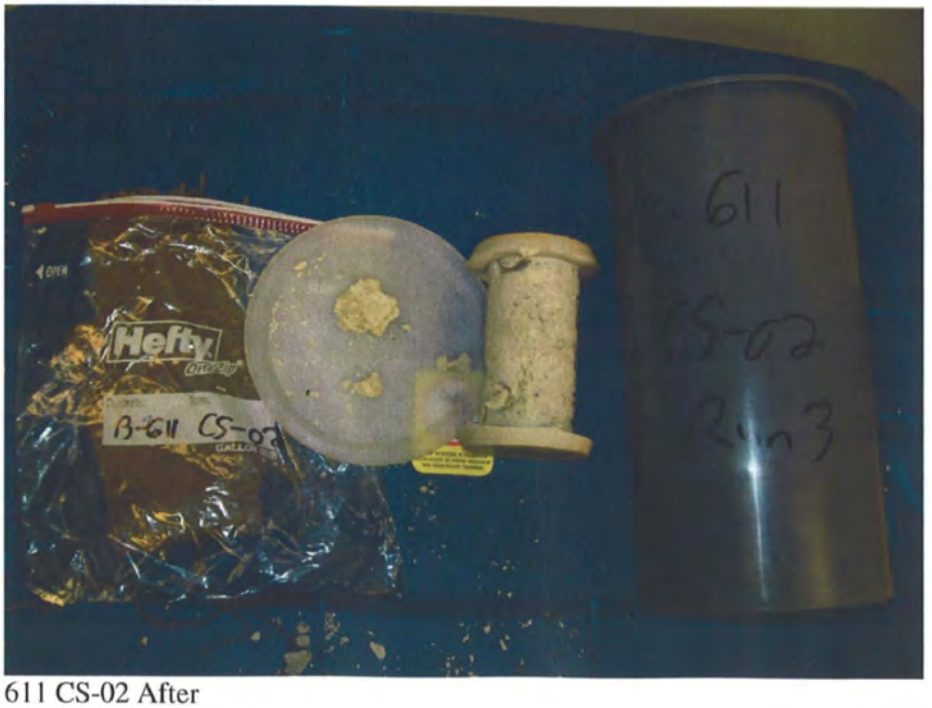
611 CS-01 Before

611 CS-01 After



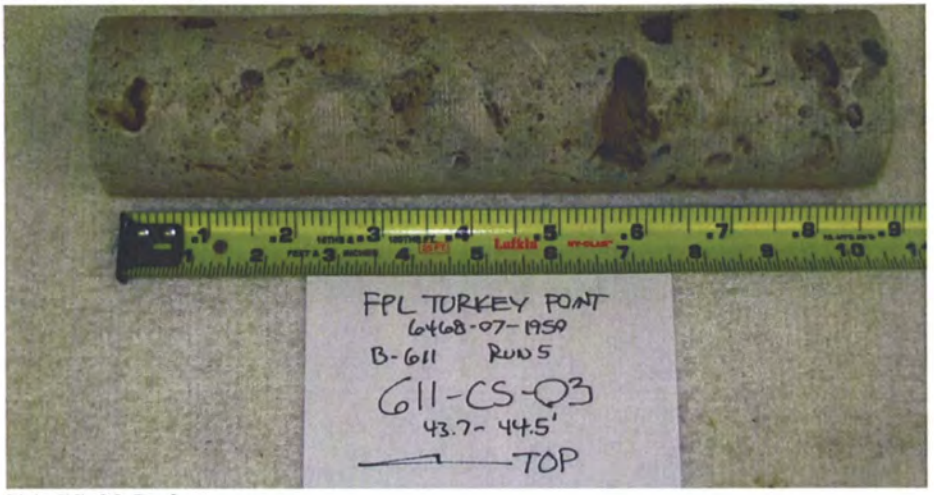
611 CS-02 Before

611 CS-02 Before



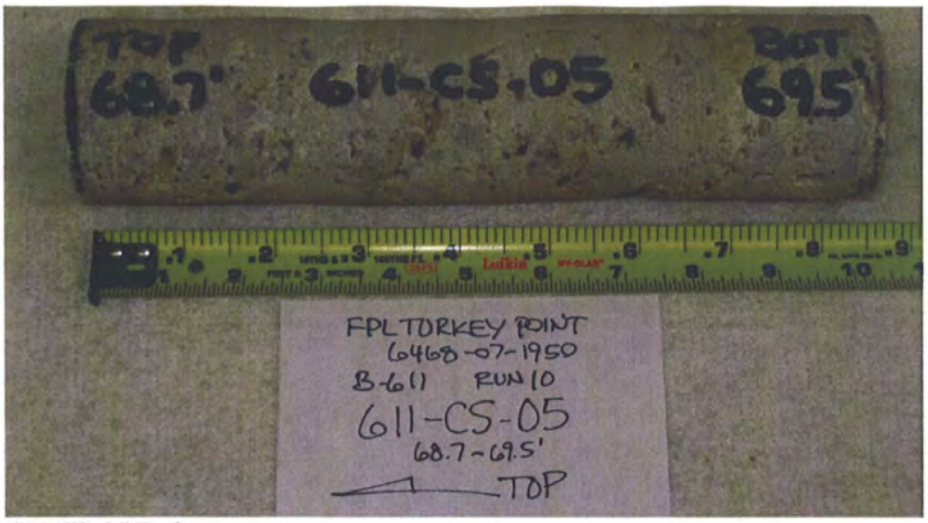
611 CS-02 After

611 CS-03 Before

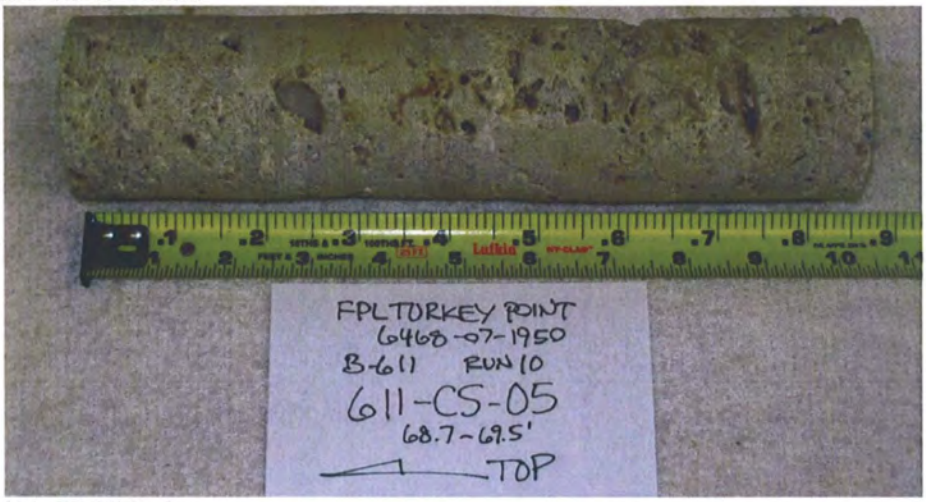


611 CS-03 Before

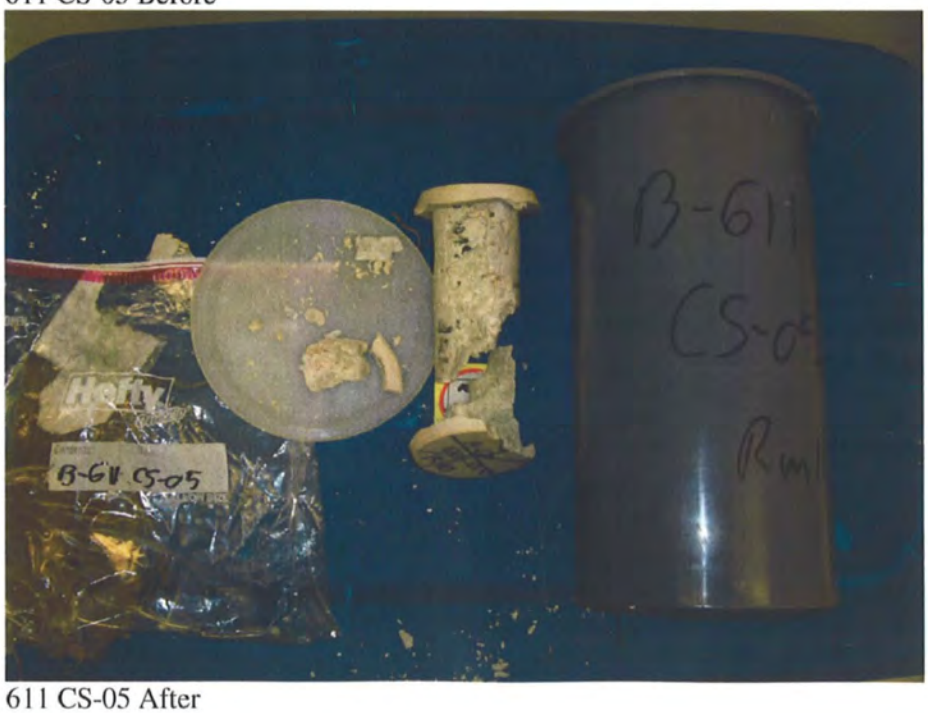
611 CS-03 After



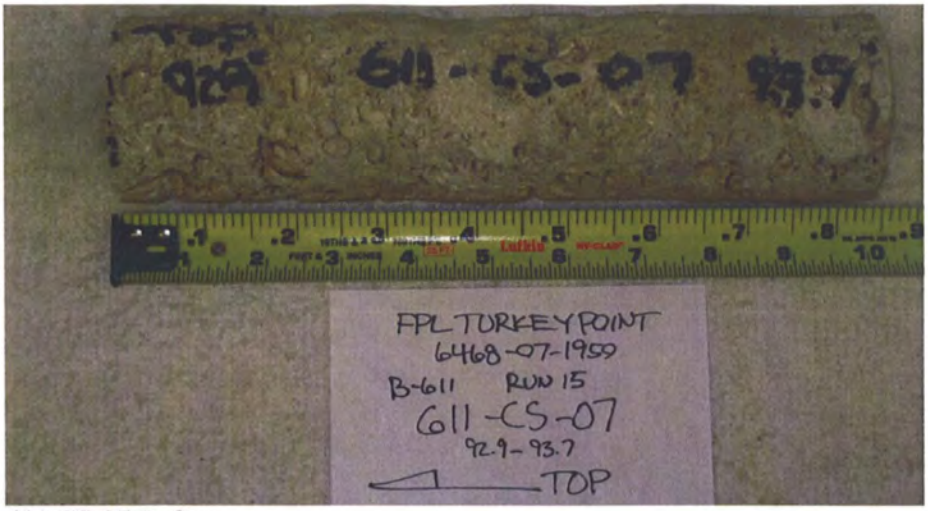
611 CS-05 Before



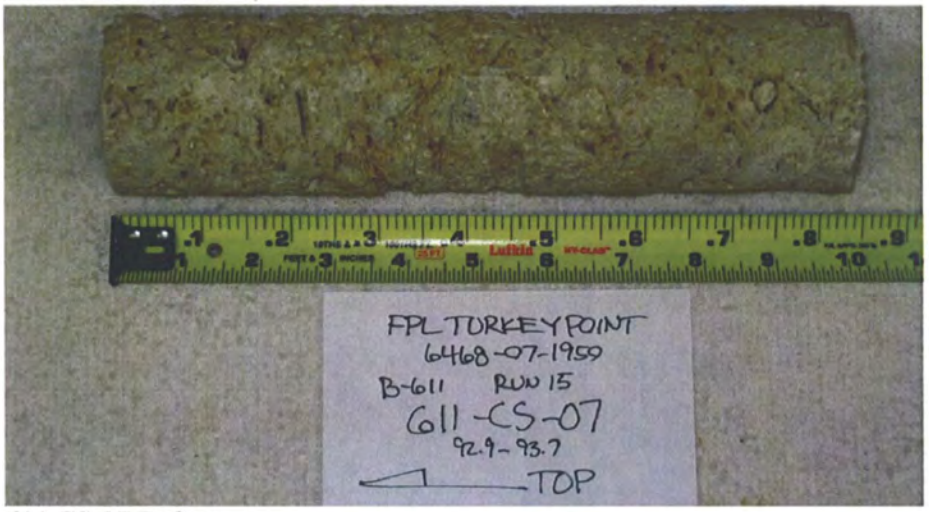
611 CS-05 Before



611 CS-05 After

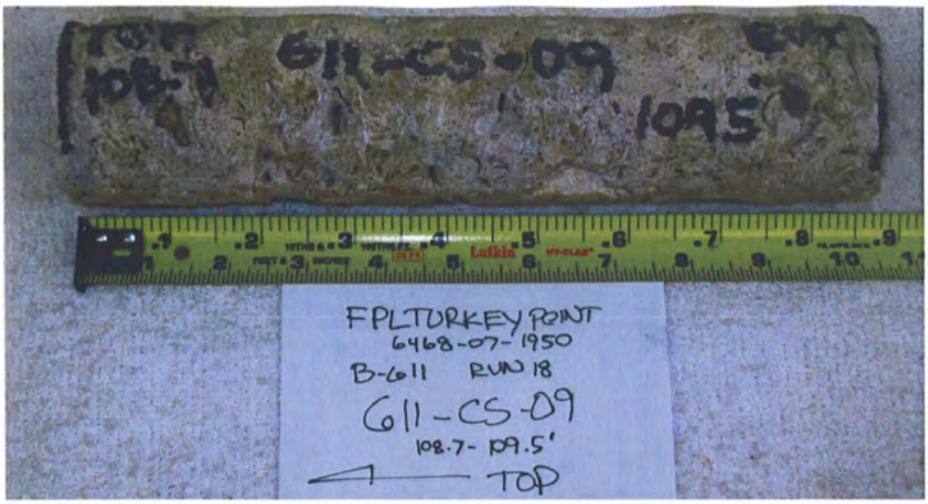


611 CS-07 Before

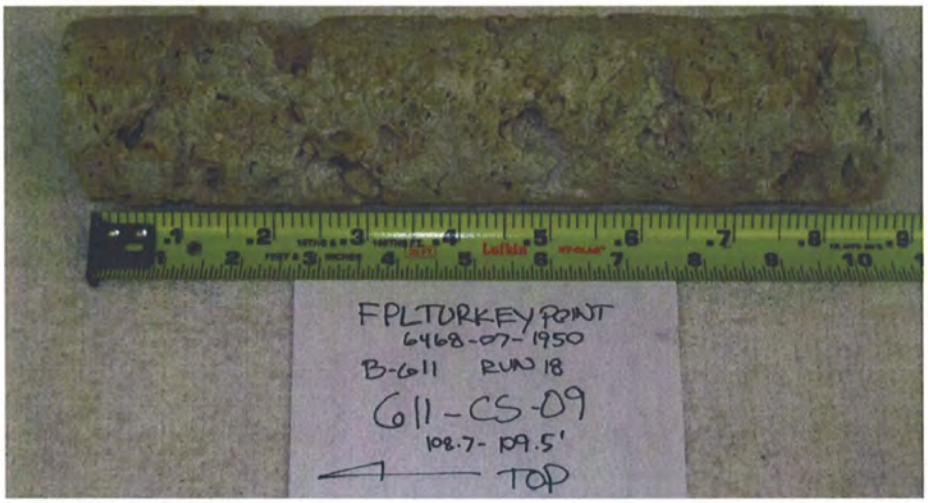


611 CS-07 Before

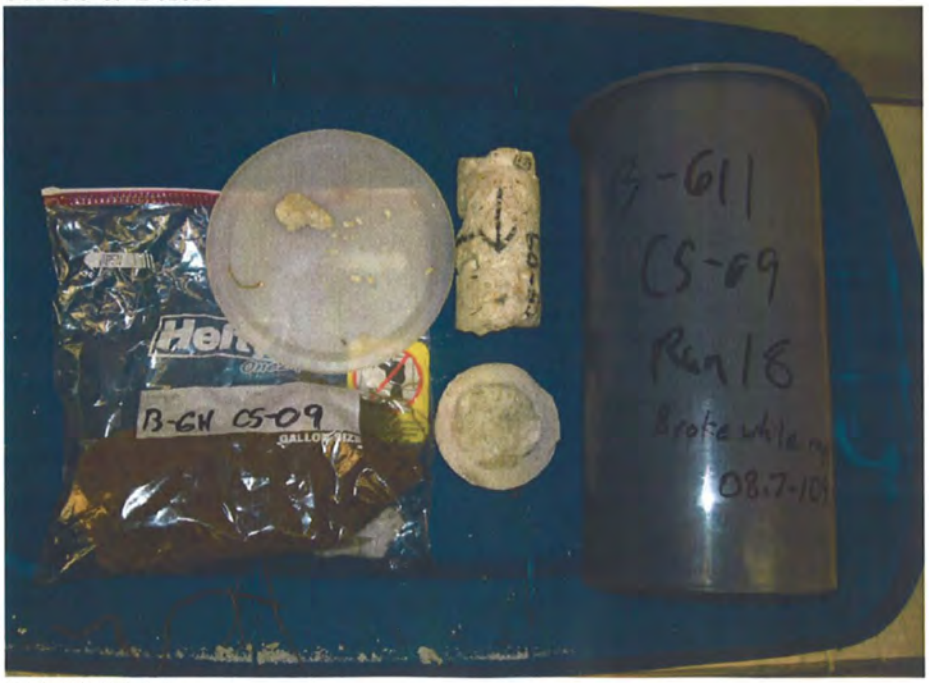
611 CS-07 After



611 CS-09 Before



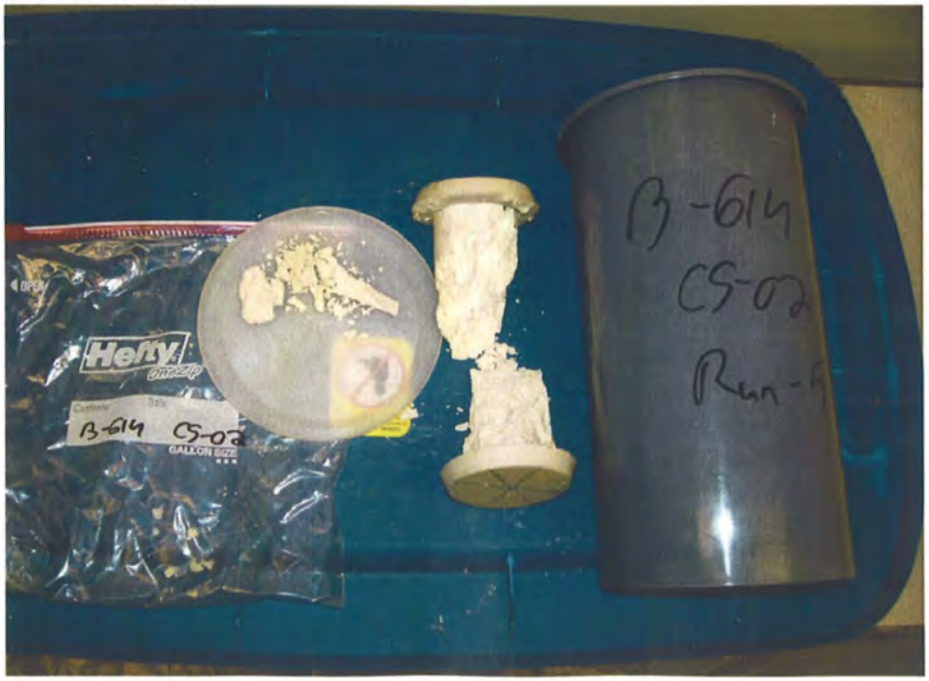
611 CS-09 Before



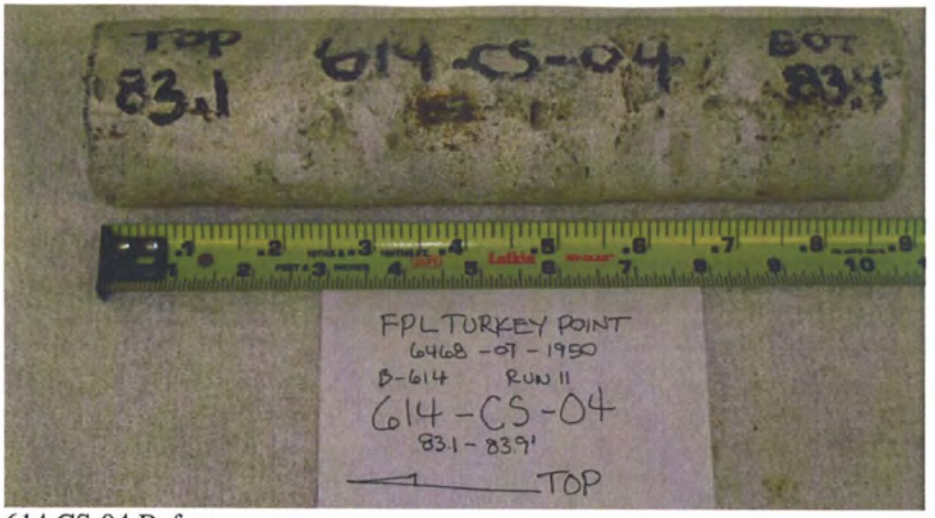
611 CS-09 After

614 CS-02 Before

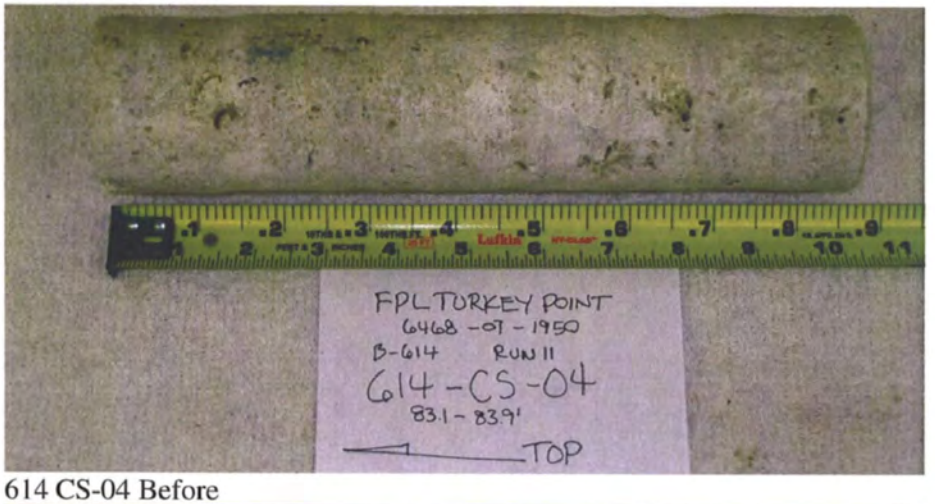
614 CS-02 Before



614 CS-02 After

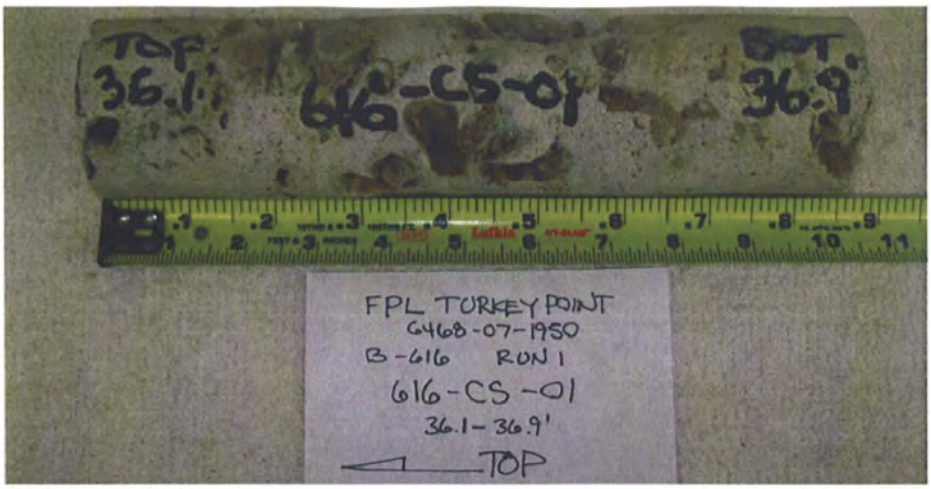


614 CS-04 Before

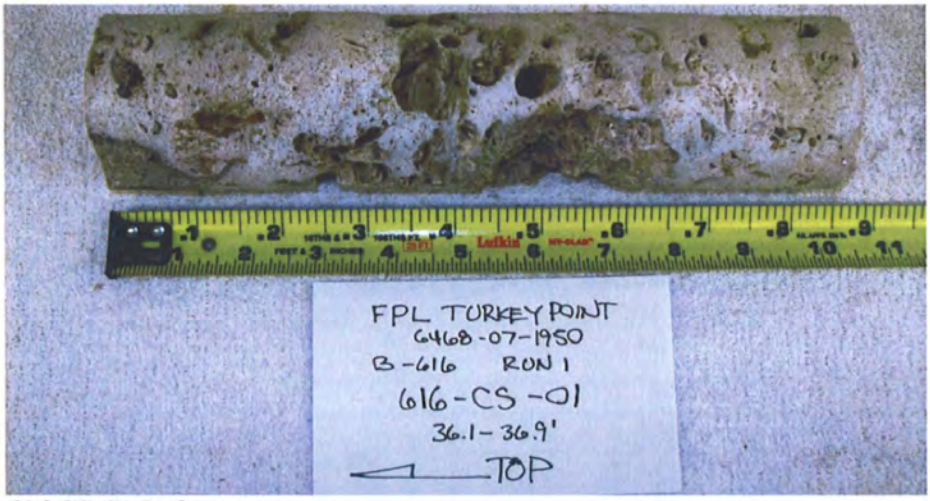


614 CS-04 Before

614 CS-04 After

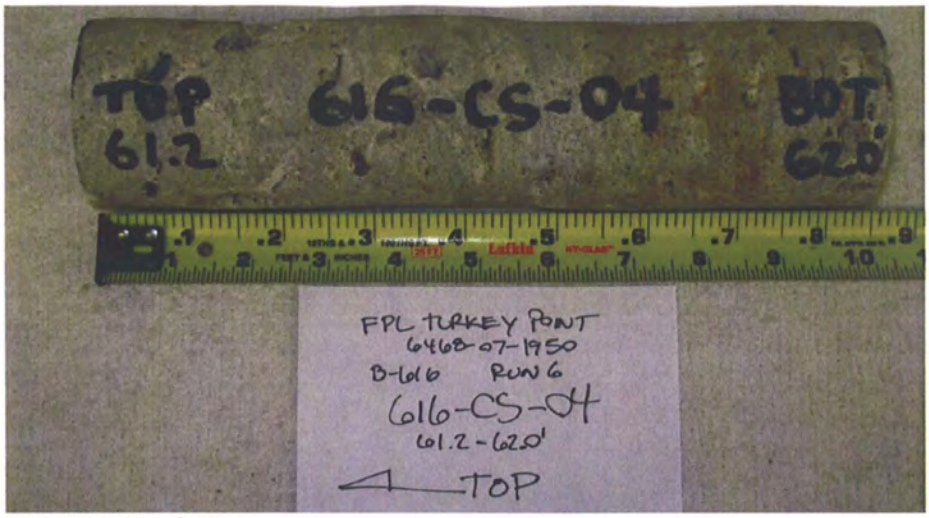


616 CS-01 Before

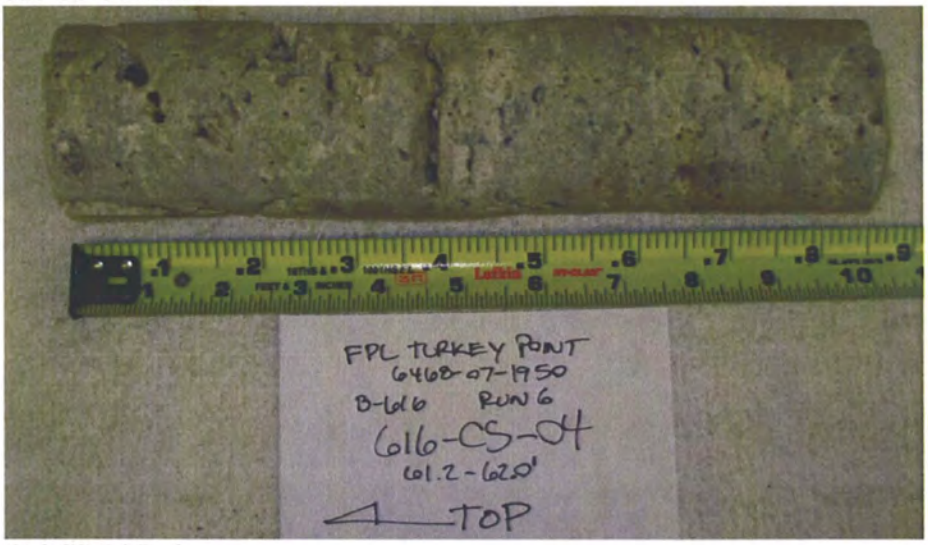


616 CS-01 Before

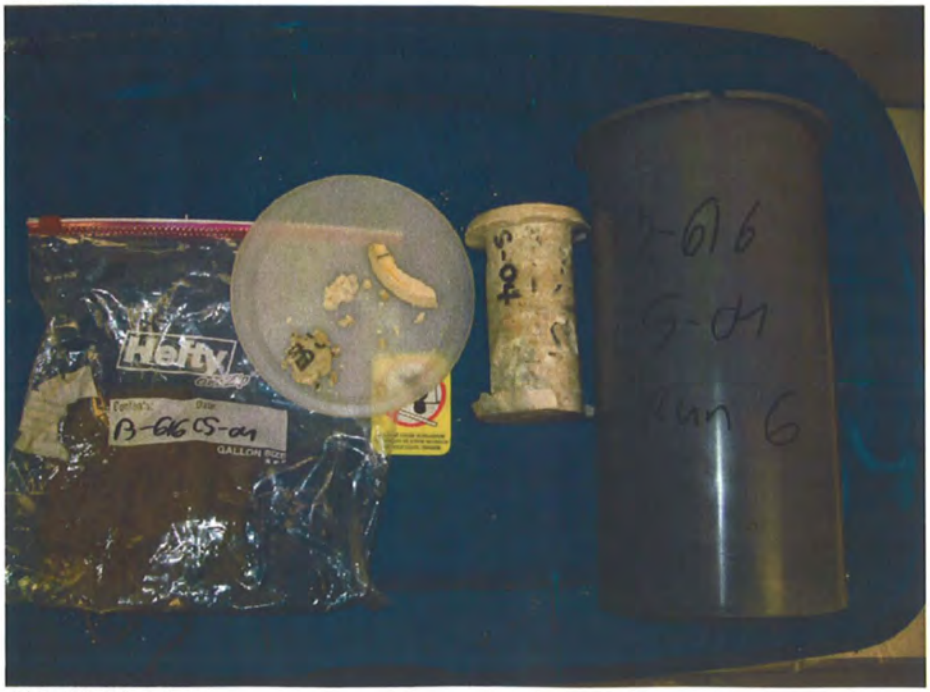
616 CS-01 After



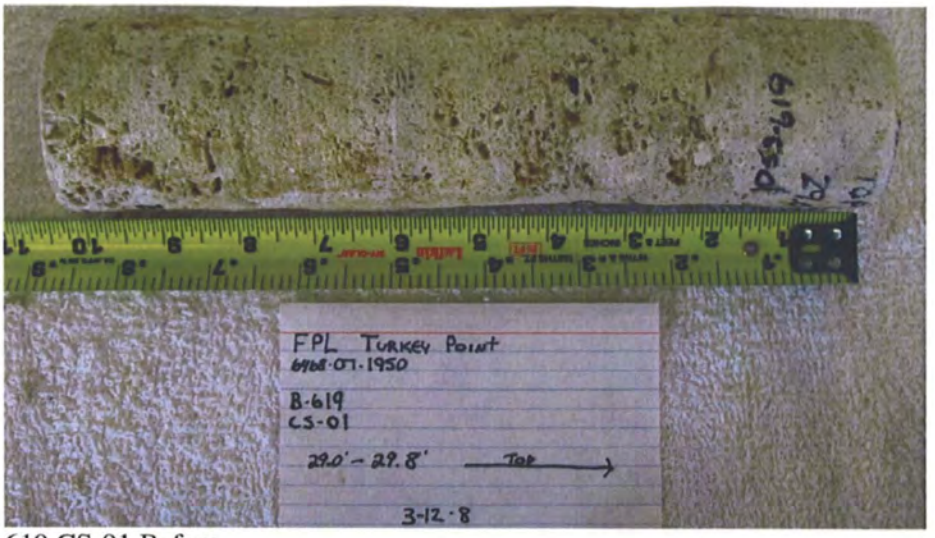
616 CS-04 Before



616 CS-04 Before

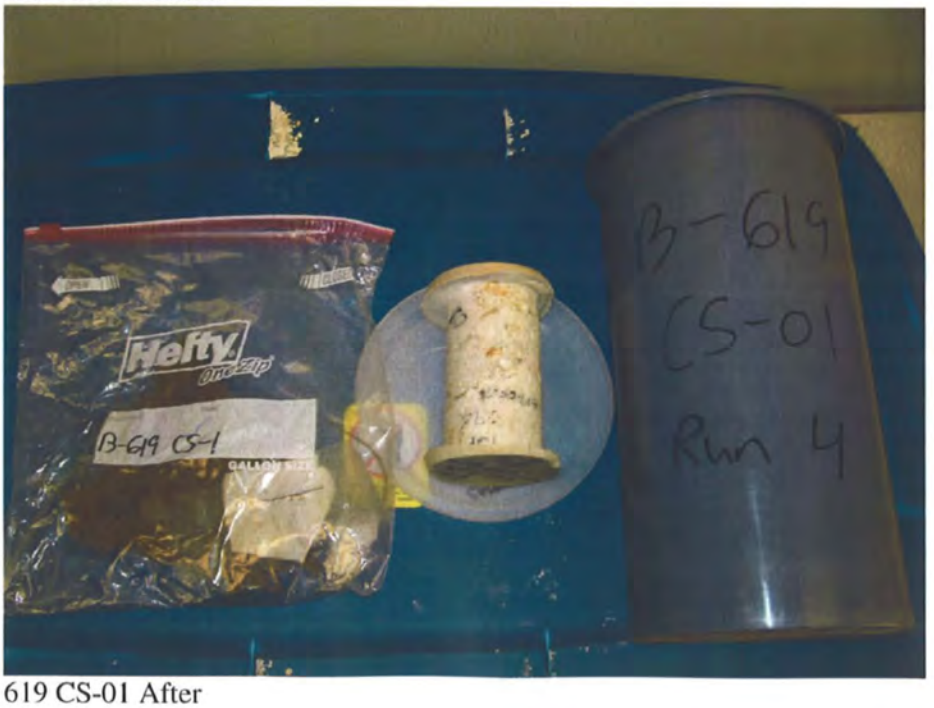


616 CS-04 After

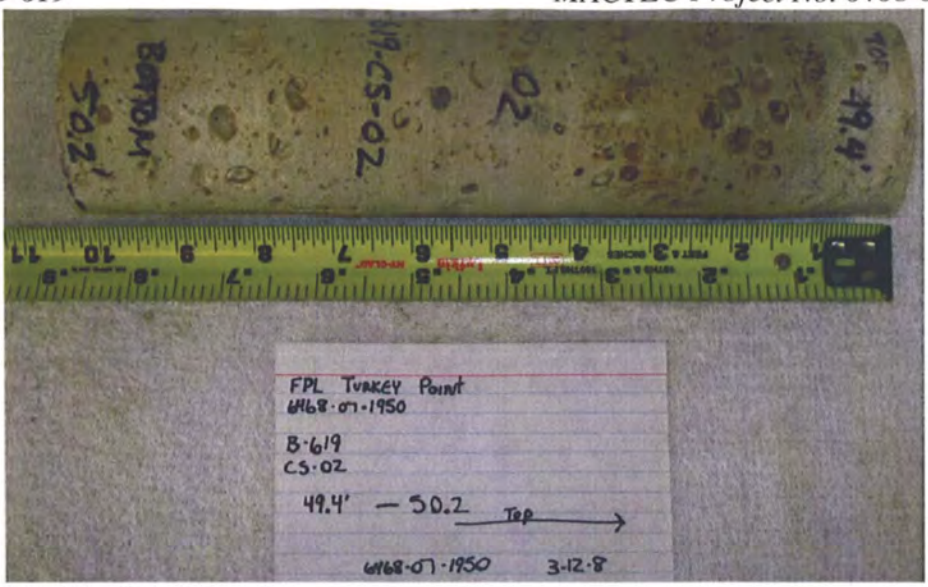


619 CS-01 Before

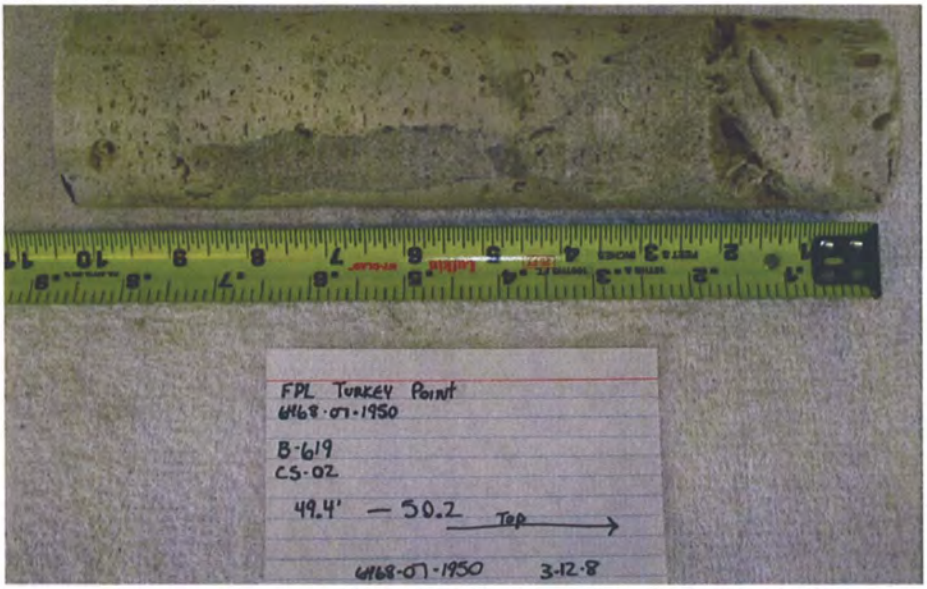
619 CS-01 Before



619 CS-01 After

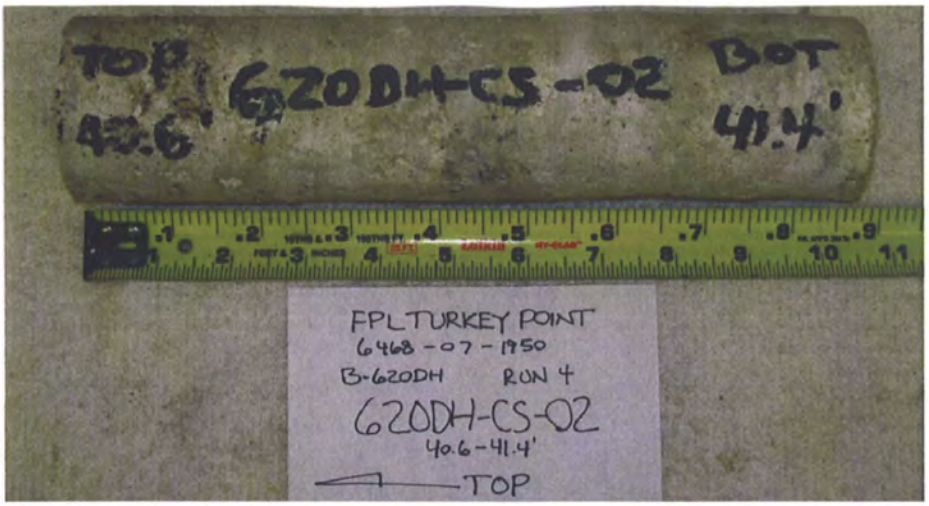


619 CS-02 Before

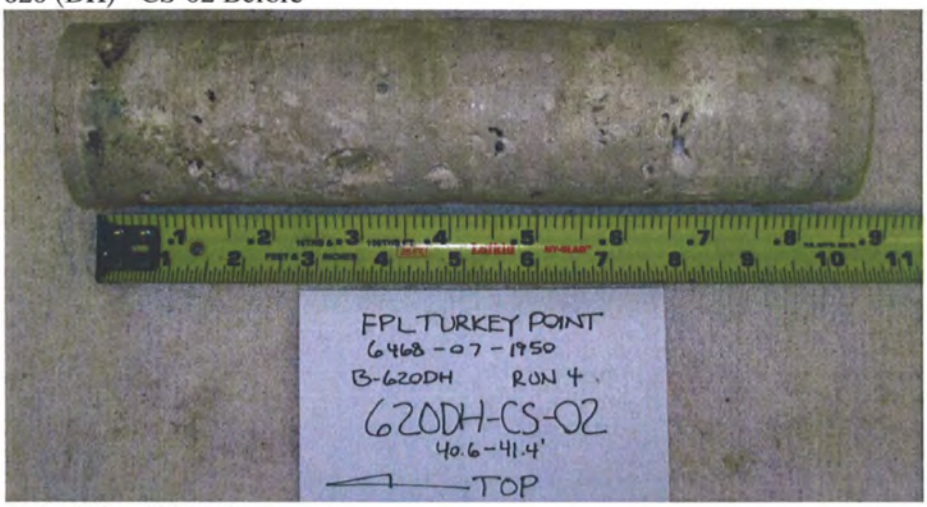


619 CS-02 Before

619 CS-02 After

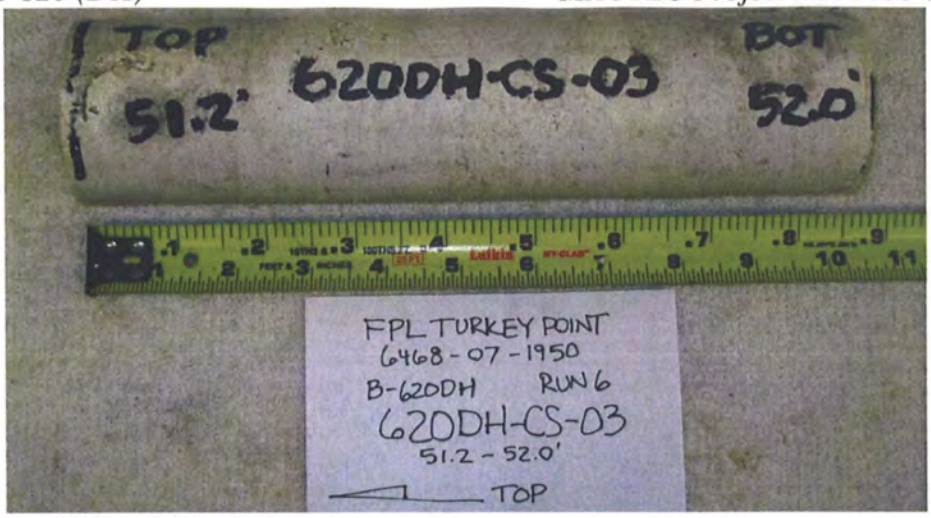


620 (DH) - CS-02 Before

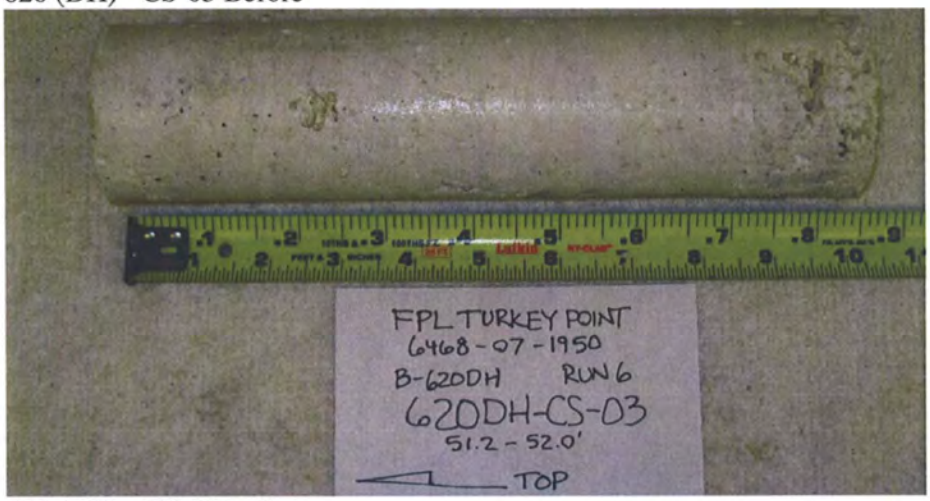


620 (DH) - CS-02 Before

620 (DH) - CS-02 After



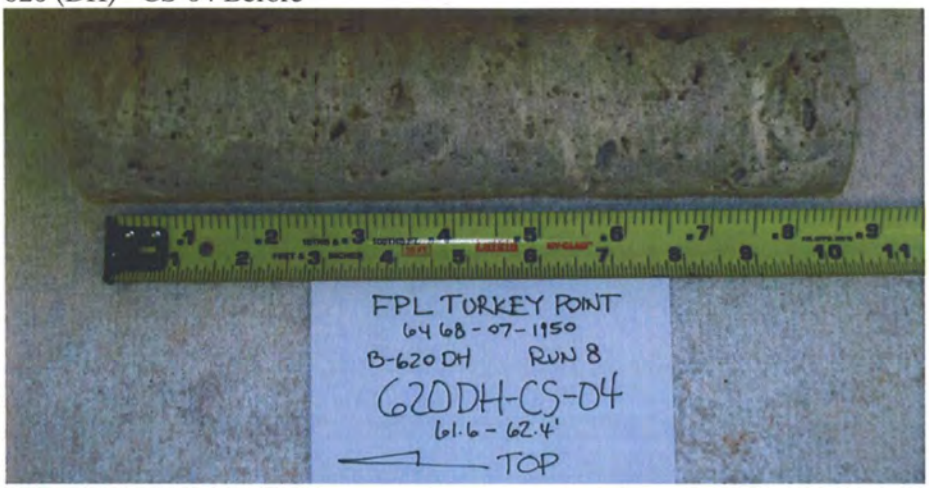
620 (DH) - CS-03 Before



620 (DH) - CS-03 Before

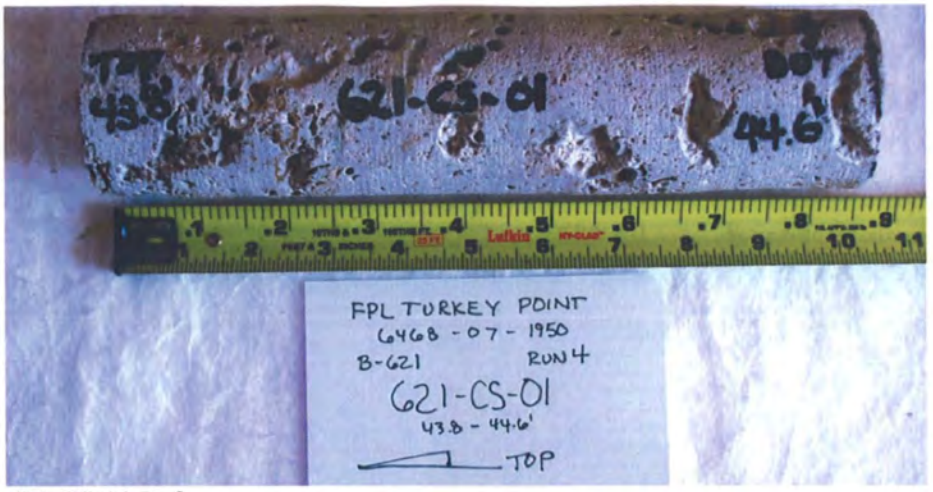
620 (DH) - CS-03 After

620 (DH) - CS-04 Before

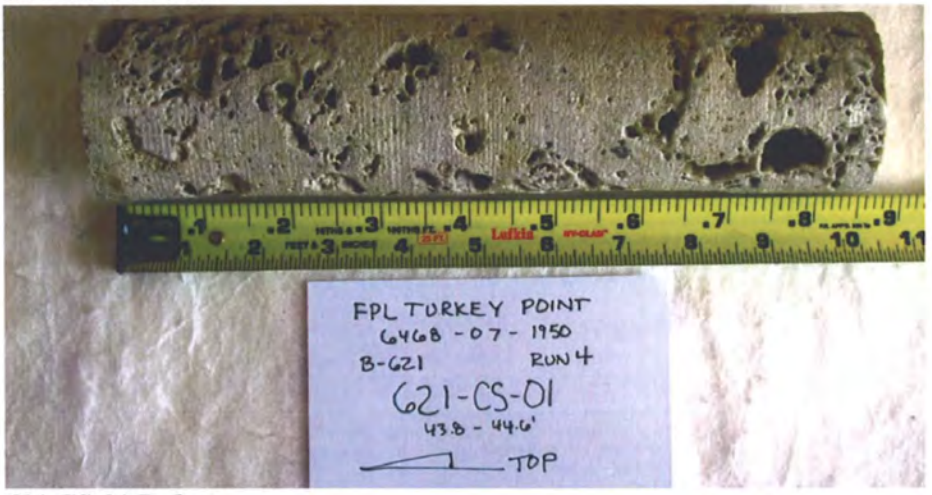


620 (DH) - CS-04 Before

620 (DH) - CS-04 After



621 CS-01 Before



621 CS-01 Before

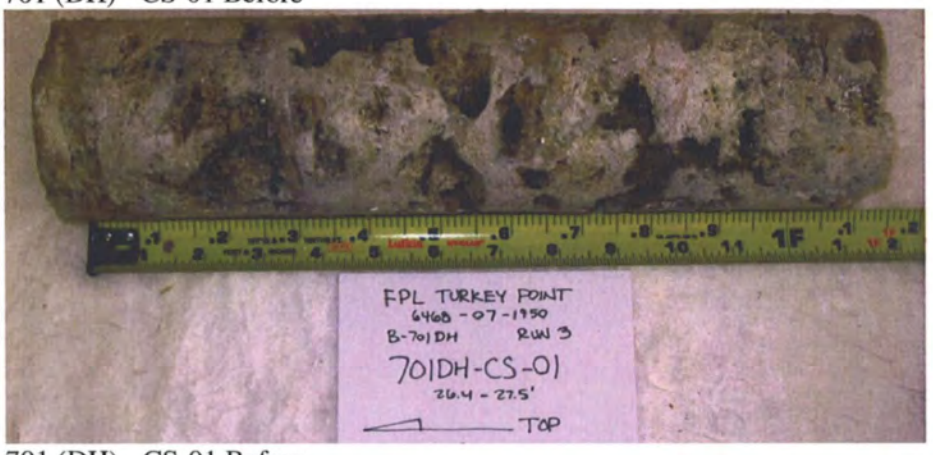
621 CS-01 After

621 CS-04 Before

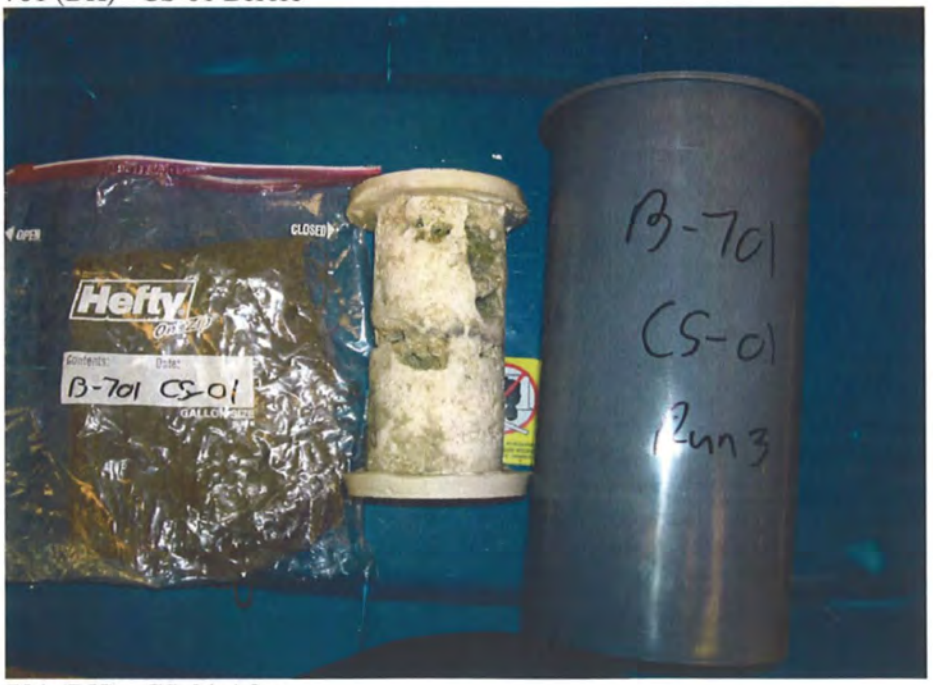
621 CS-04 Before

621 CS-04 After

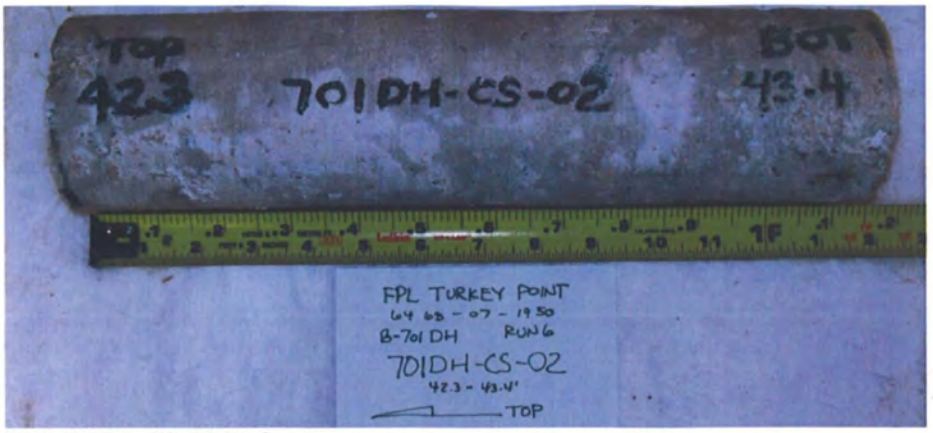
701 (DH) - CS-01 Before



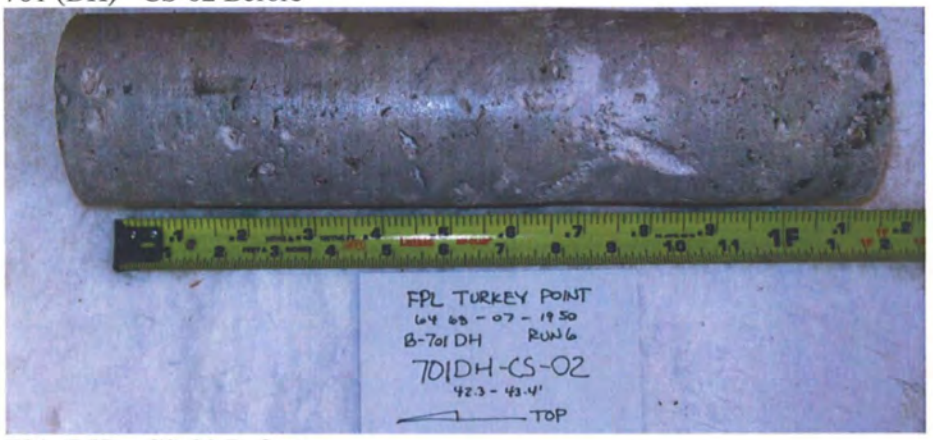
701 (DH) - CS-01 Before



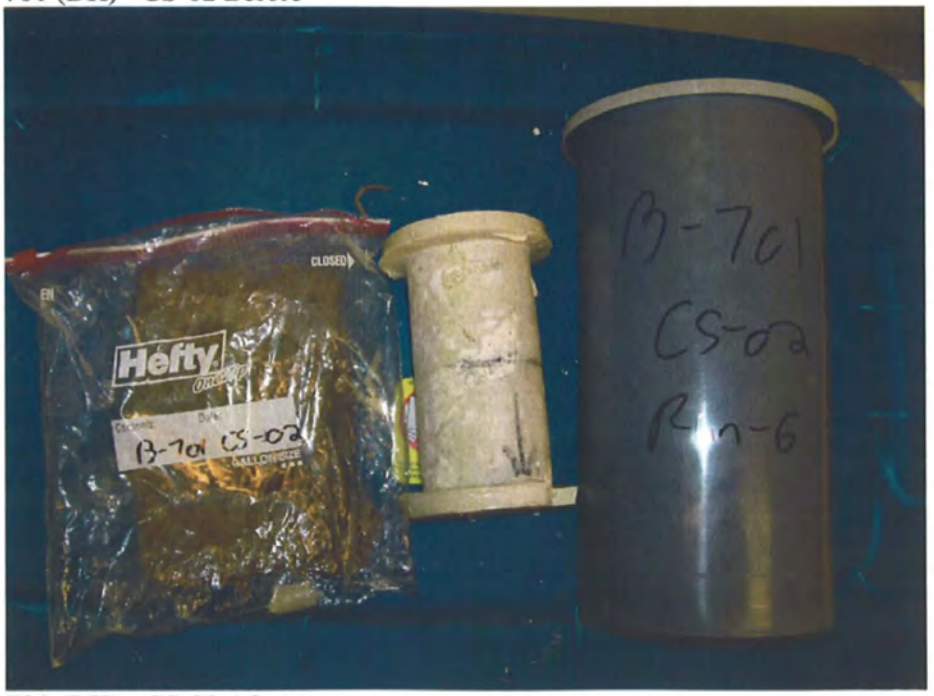
701 (DH) - CS-01 After



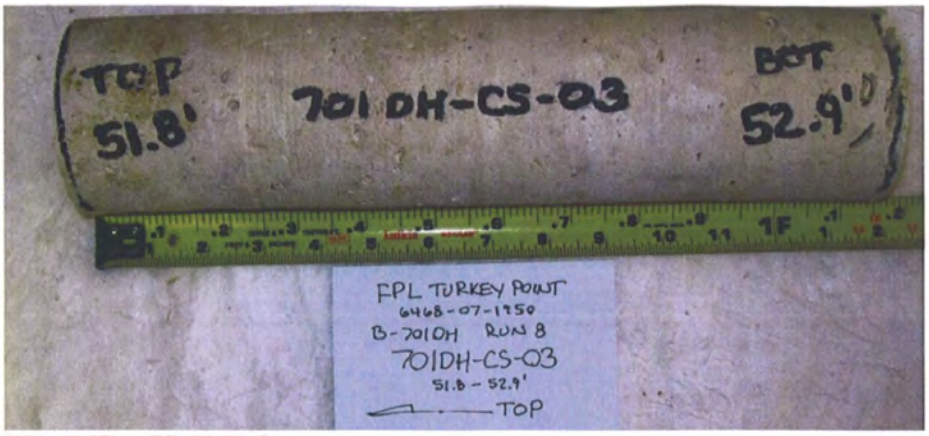
701 (DH) - CS-02 Before



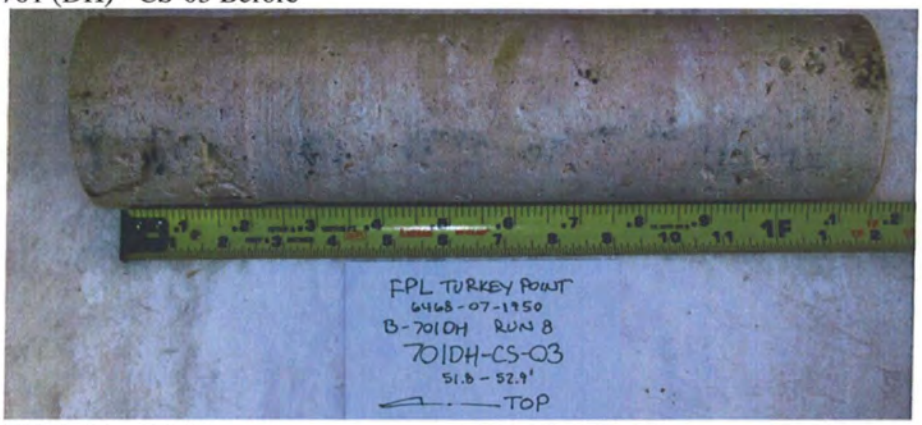
701 (DH) - CS-02 Before



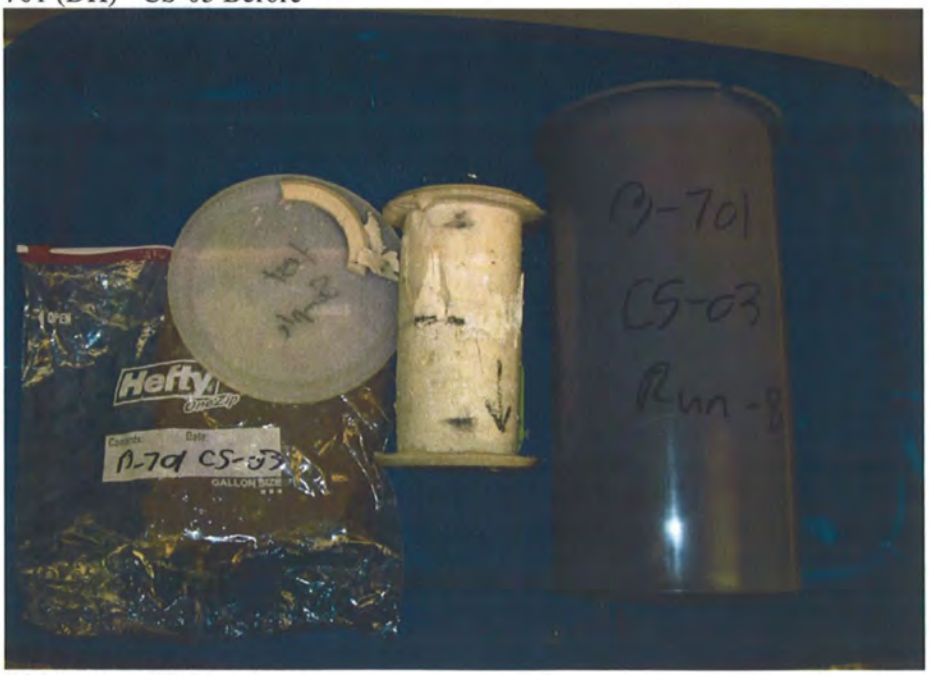
701 (DH) - CS-02 After



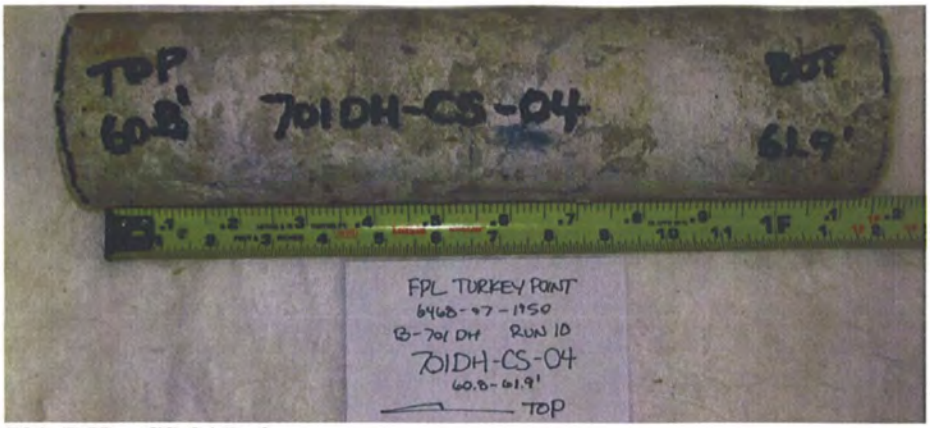
701 (DH) - CS-03 Before



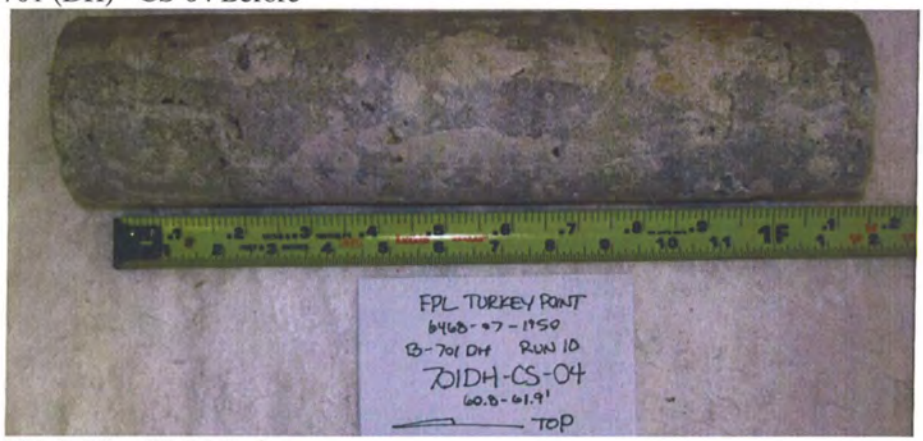
701 (DH) - CS-03 Before



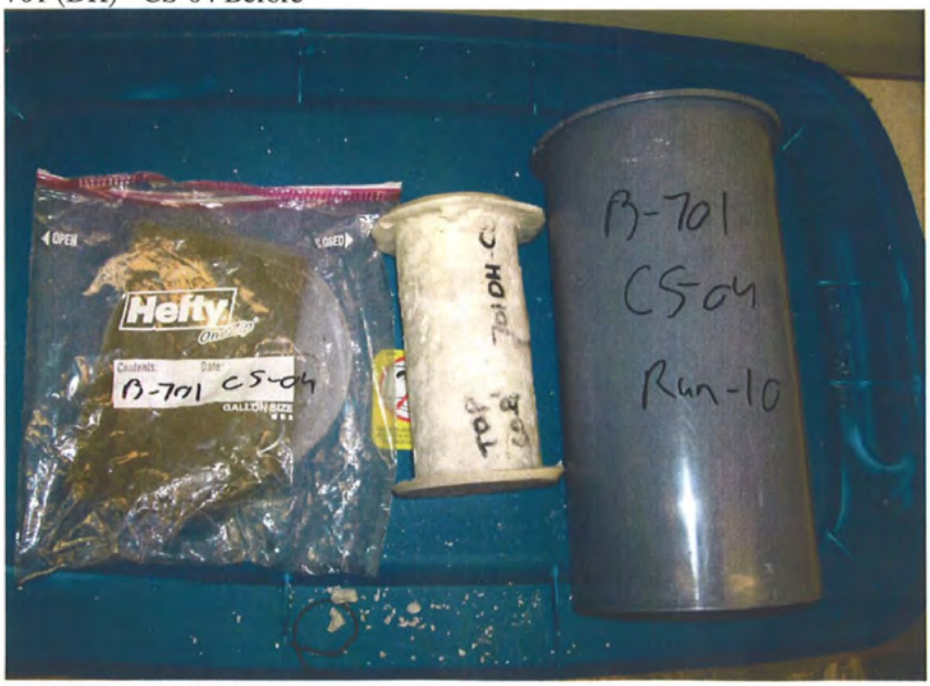
701 (DH) - CS-03 After



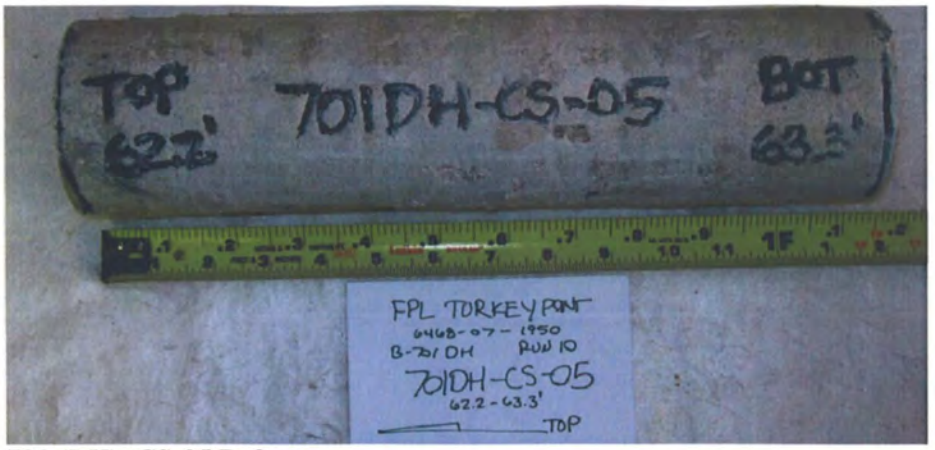
701 (DH) - CS-04 Before



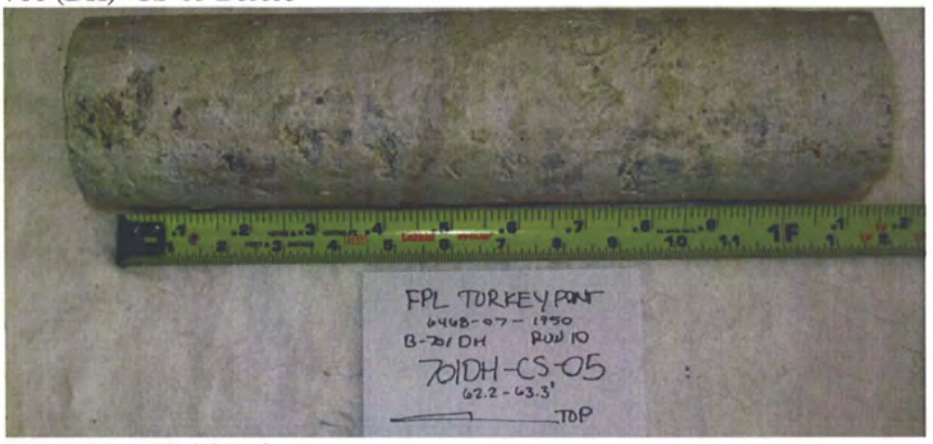
701 (DH) - CS-04 Before



701 (DH) - CS-04 After

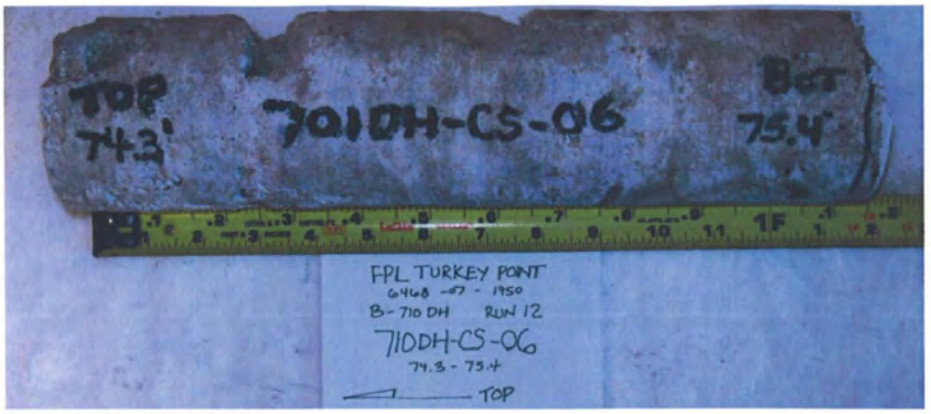


701 (DH)- CS-05 Before



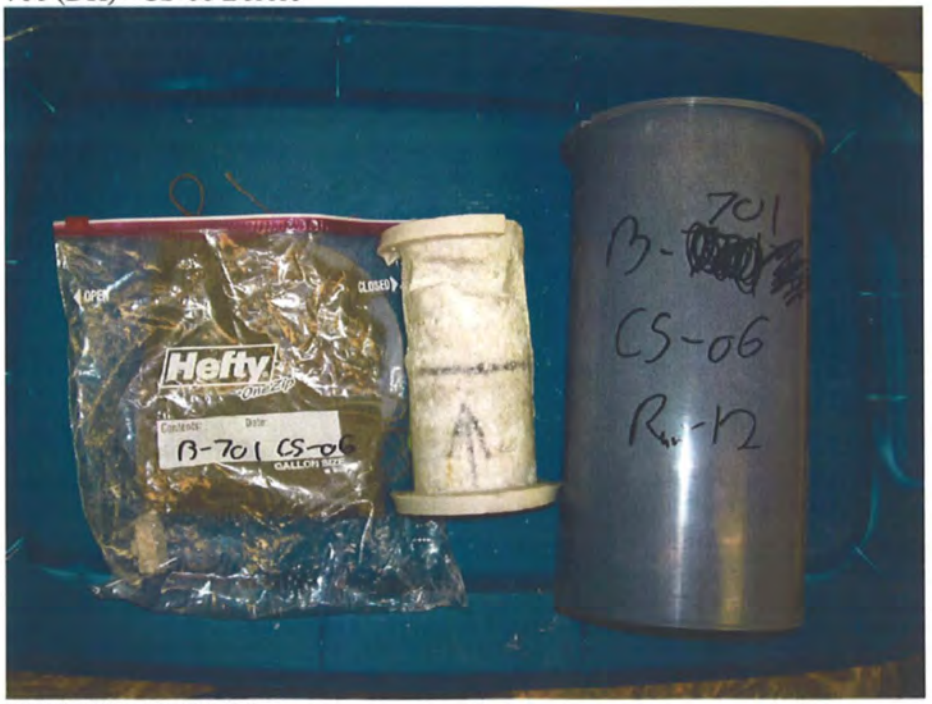
701 (DH) - CS-05 Before

701 (DH) - CS-05 After



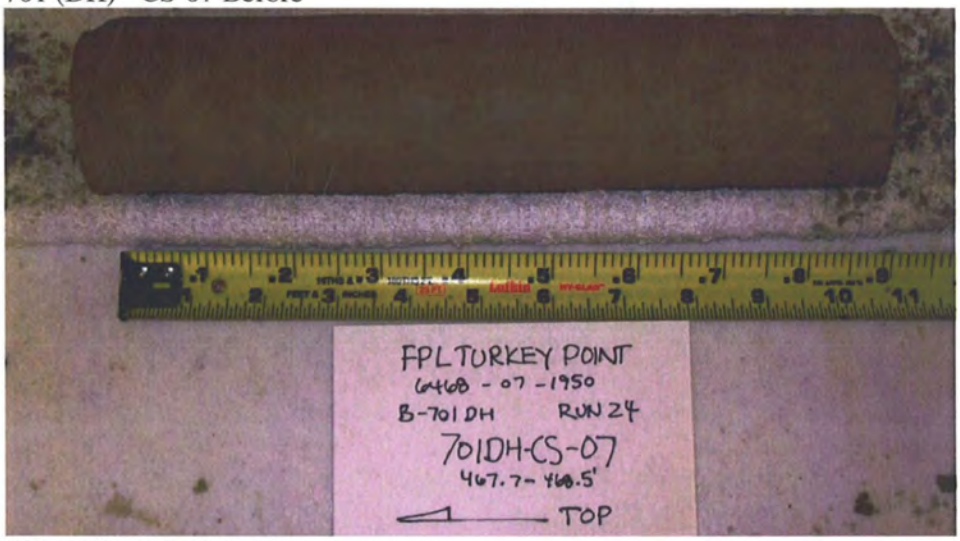
701 (DH) - CS-06 Before

701 (DH) - CS-06 Before

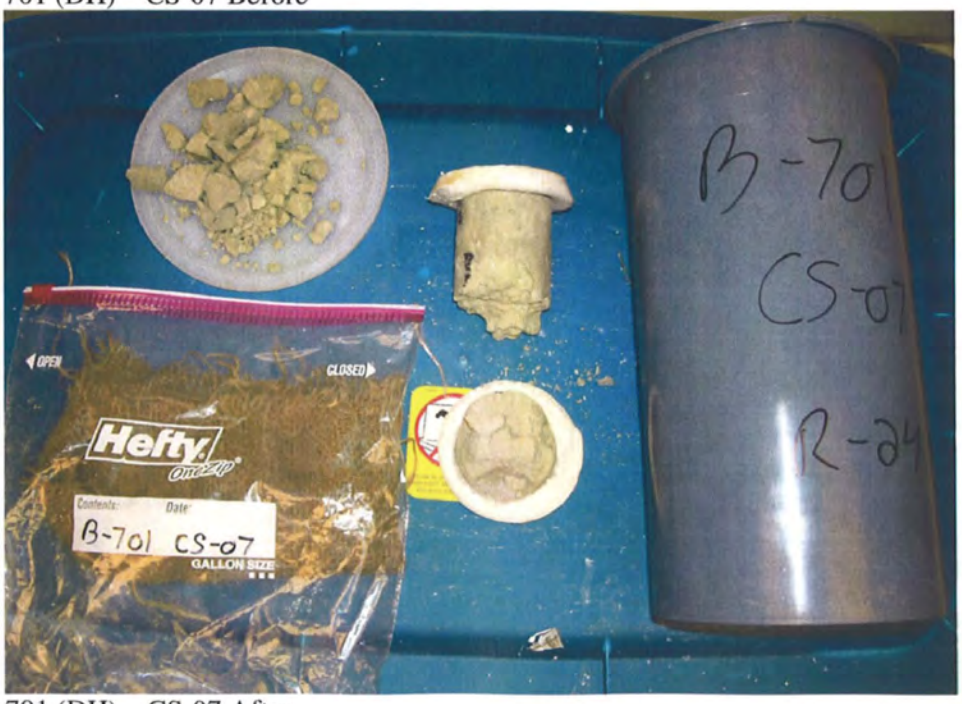


701 (DH) - CS-06 After

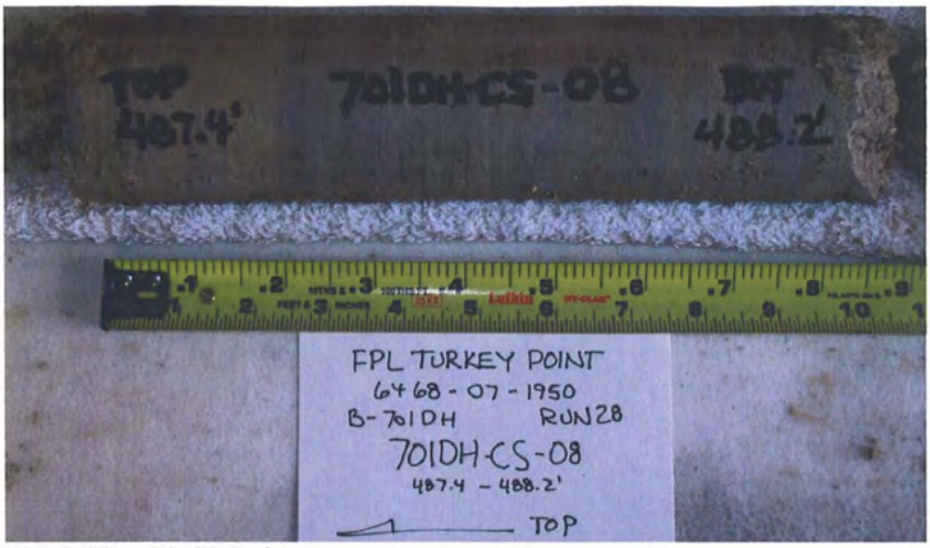
701 (DH) - CS-07 Before



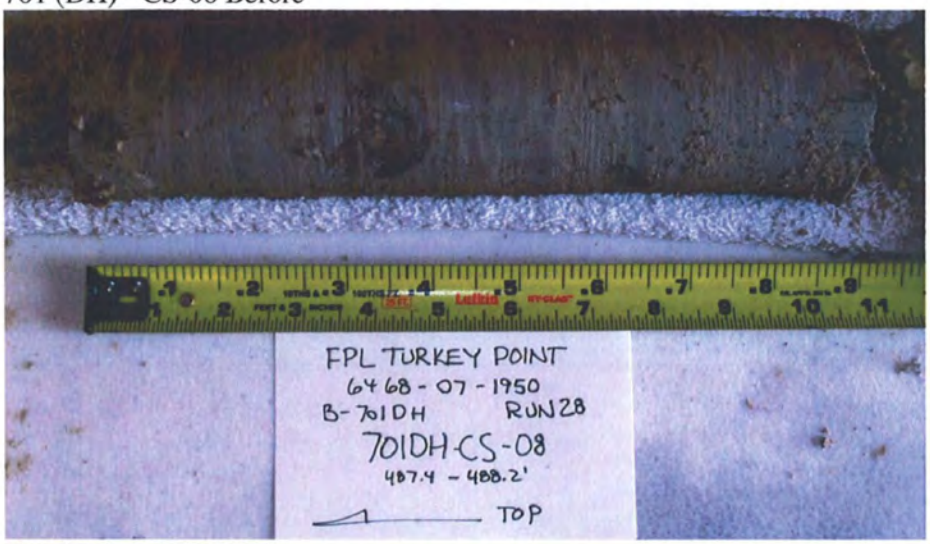
701 (DH) – CS-07 Before



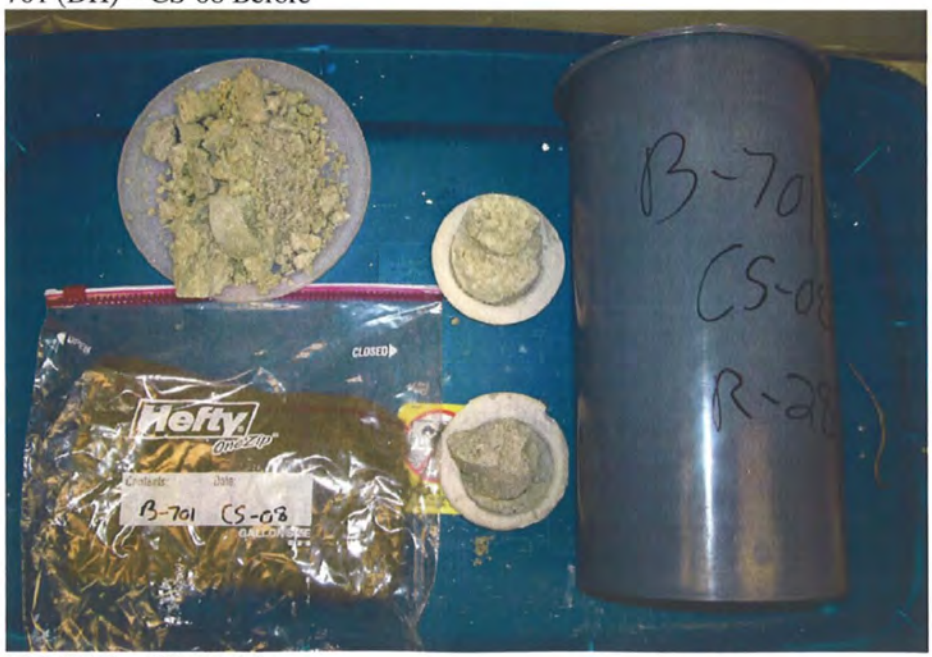
701 (DH) – CS-07 After



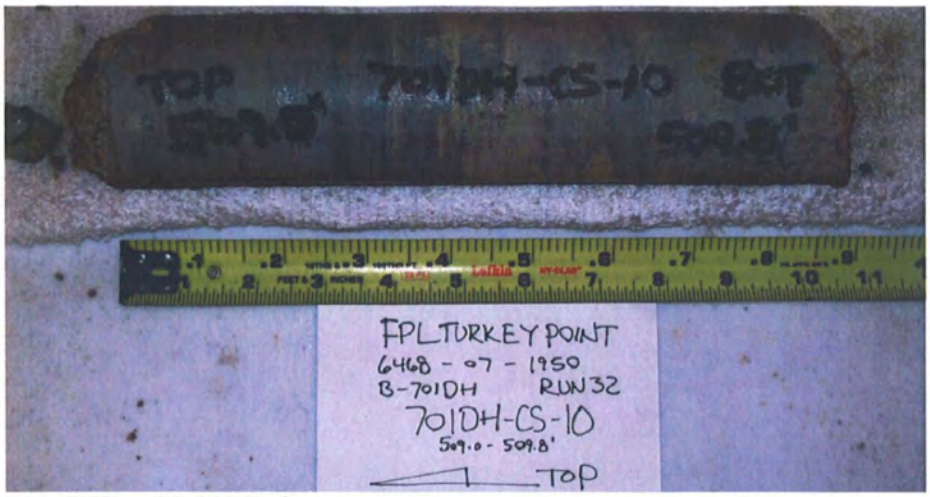
701 (DH) - CS-08 Before



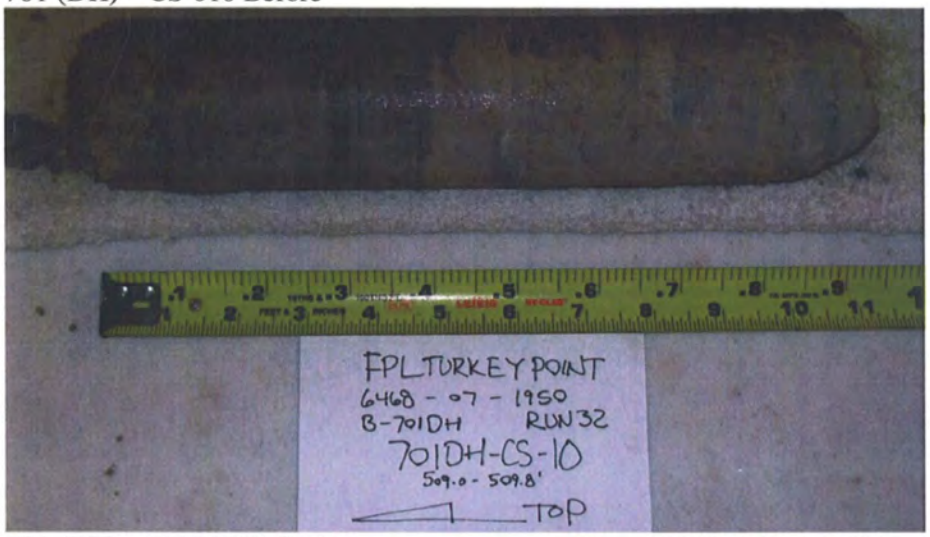
701 (DH) – CS-08 Before



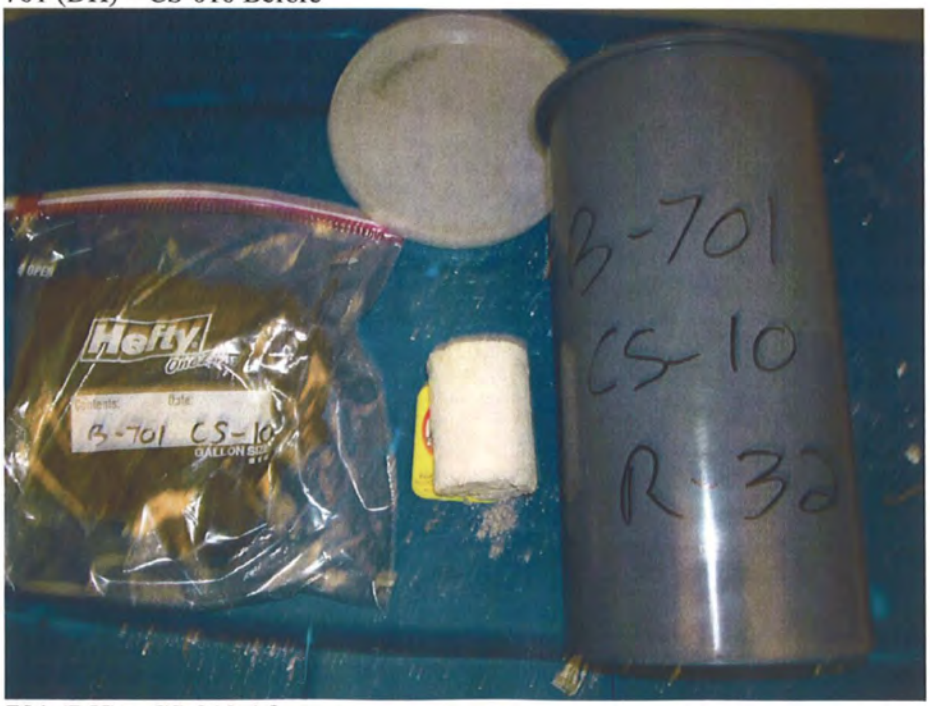
701 (DH) - CS-08 After



701 (DH) – CS-010 Before

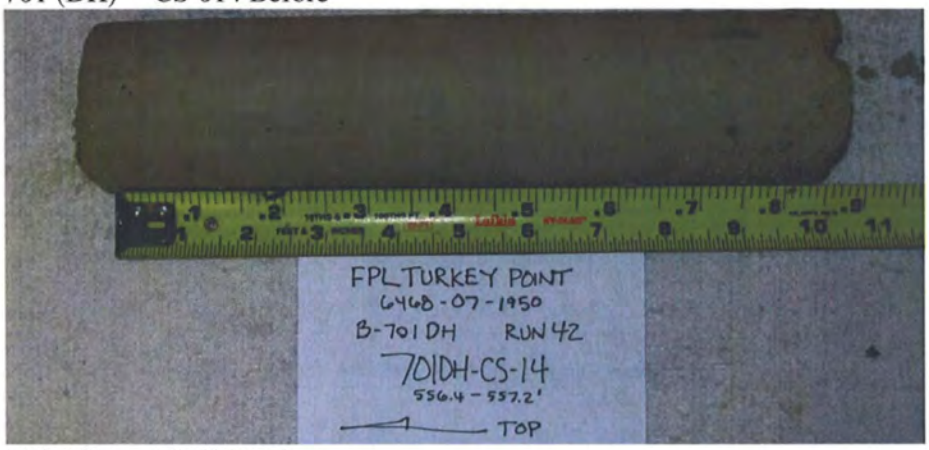


701 (DH) – CS-010 Before



701 (DH) – CS-010 After

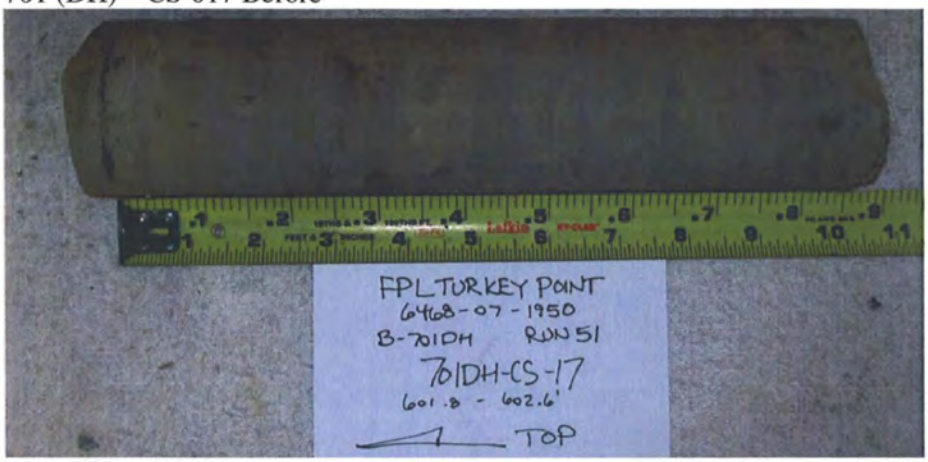
701 (DH) – CS-014 Before



701 (DH) – CS-014 Before

701 (DH) – CS-014 After

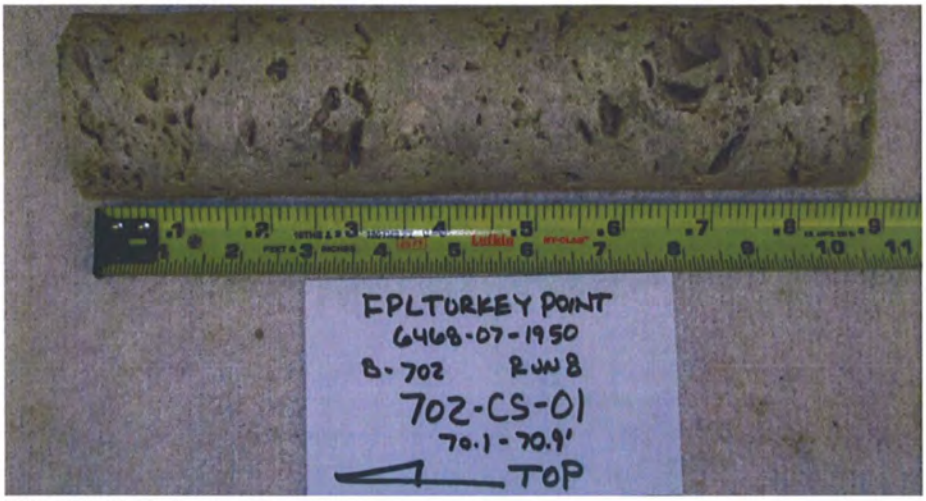
701 (DH) – CS-017 Before



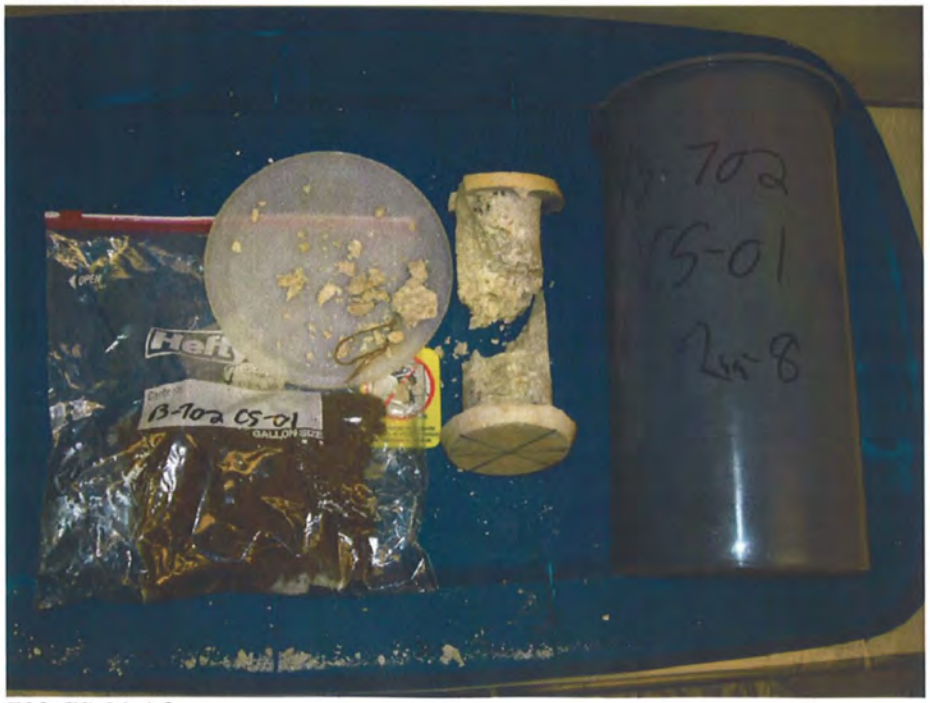
701 (DH) – CS-017 Before

701 (DH) – CS-017 After

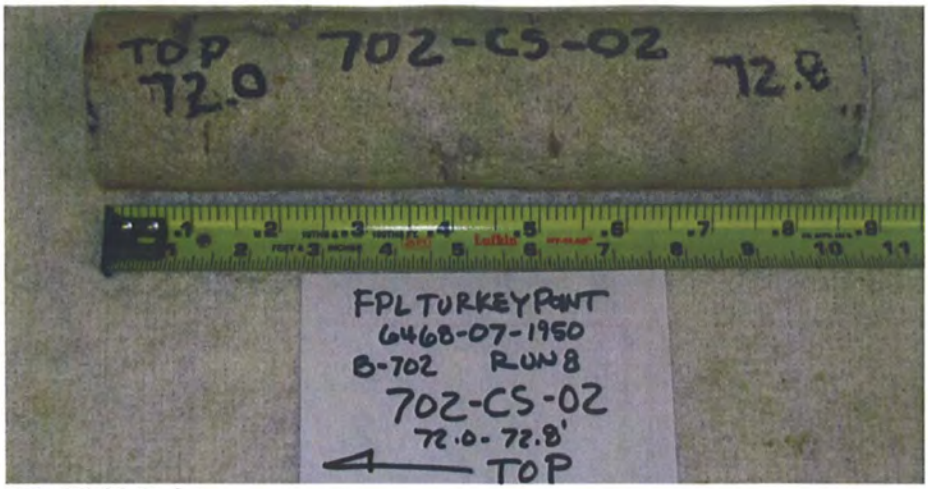
702 CS-01 Before



702 CS-01 Before

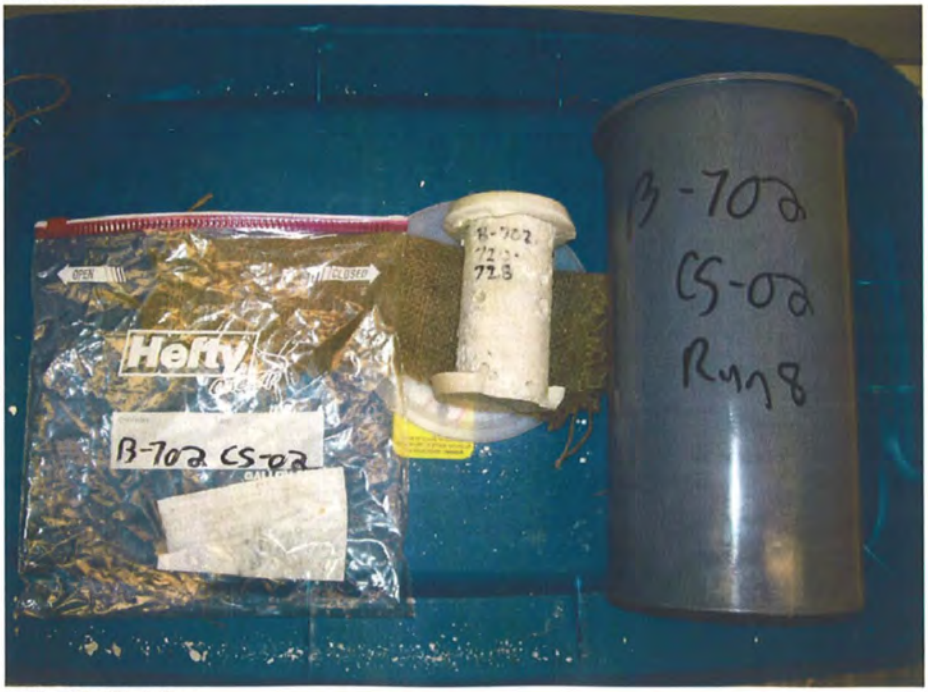


702 CS-01 After

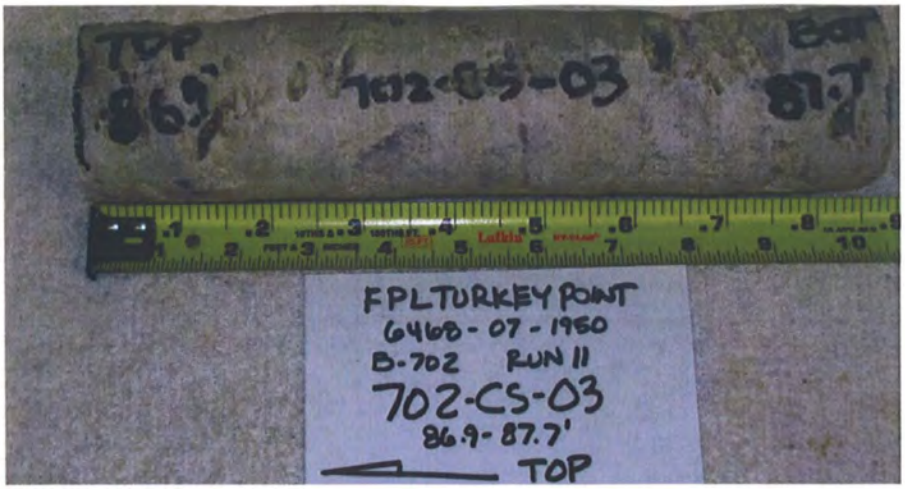


702 CS-02 Before

702 CS-02 Before

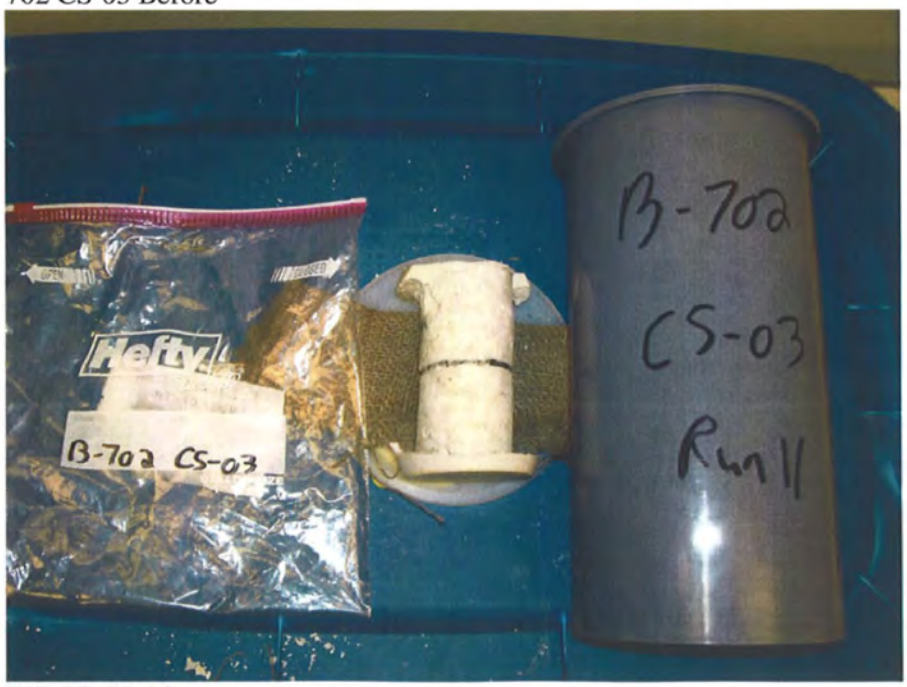


702 CS-02 After

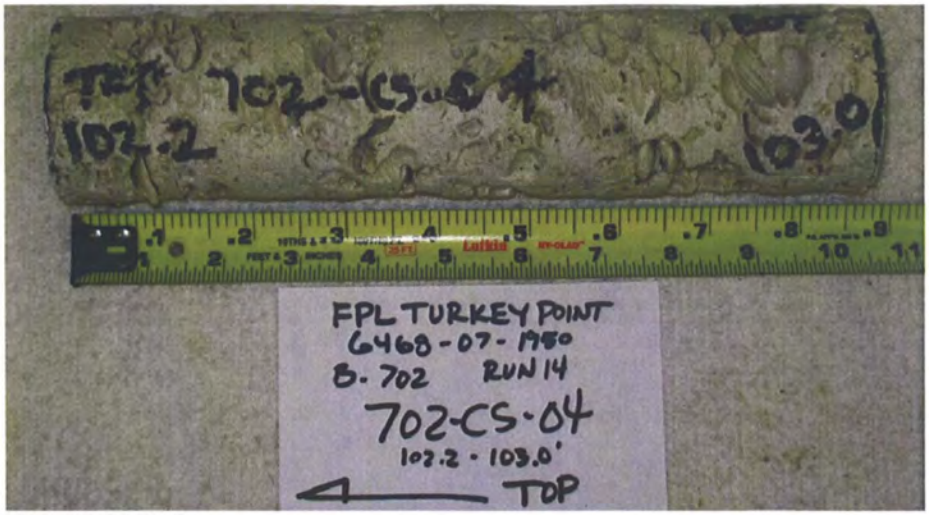


702 CS-03 Before

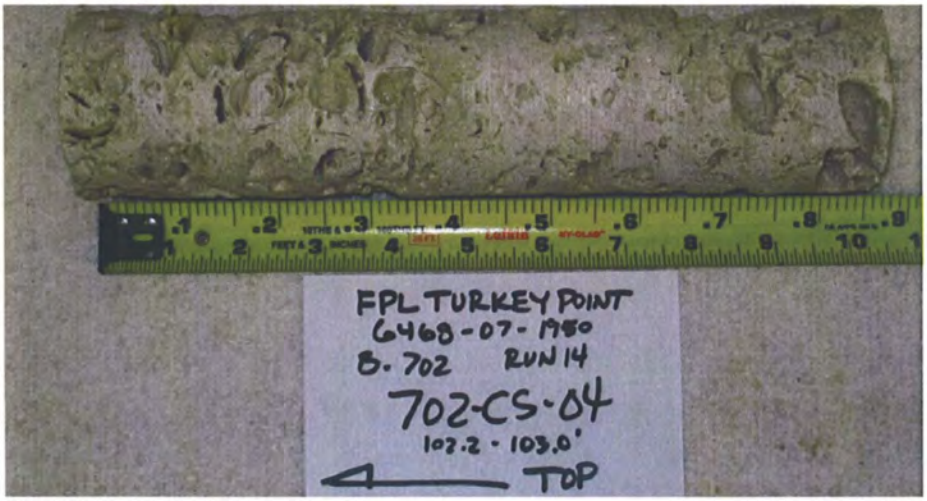
702 CS-03 Before



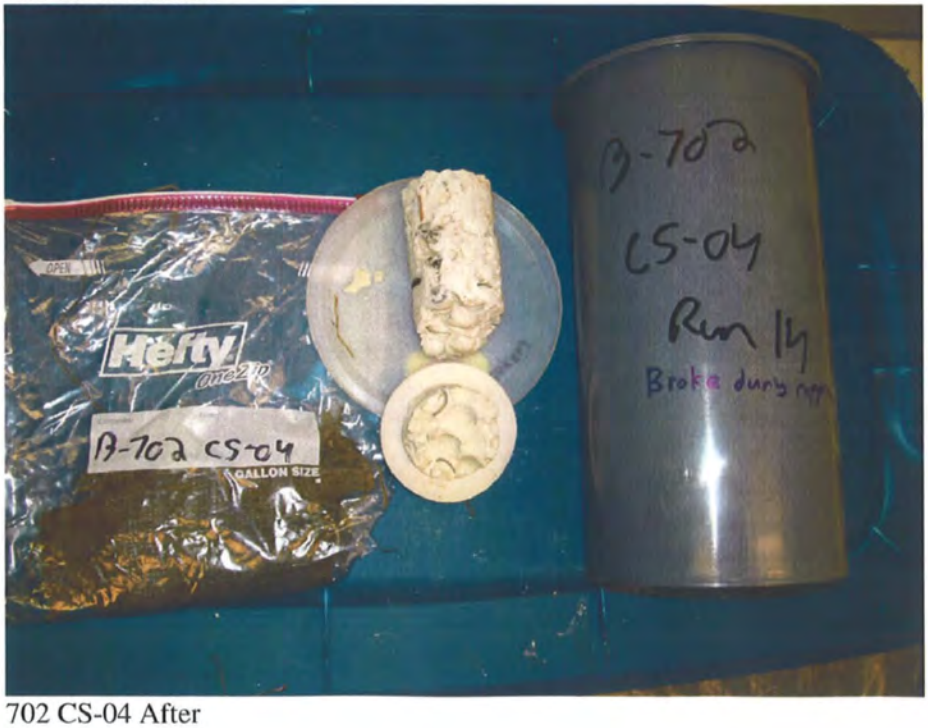
702 CS-03 After



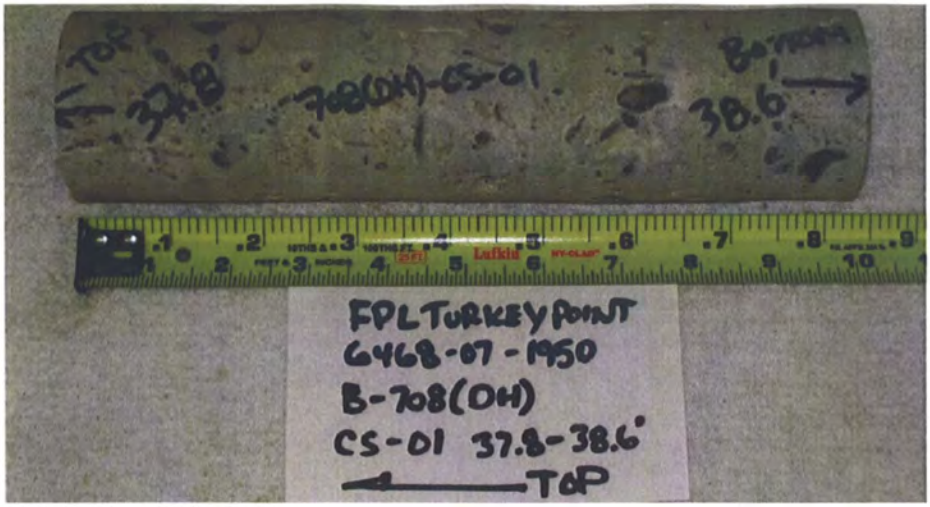
702 CS-04 Before



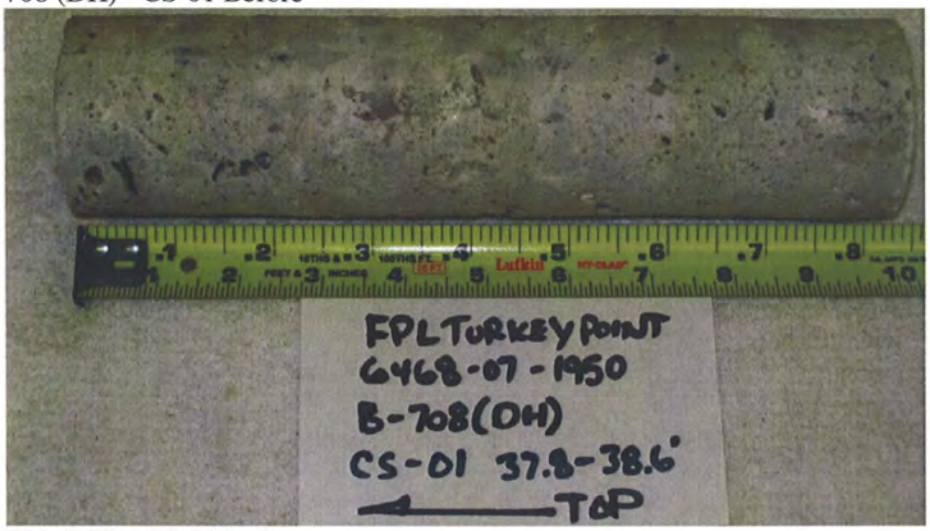
702 CS-04 Before



702 CS-04 After

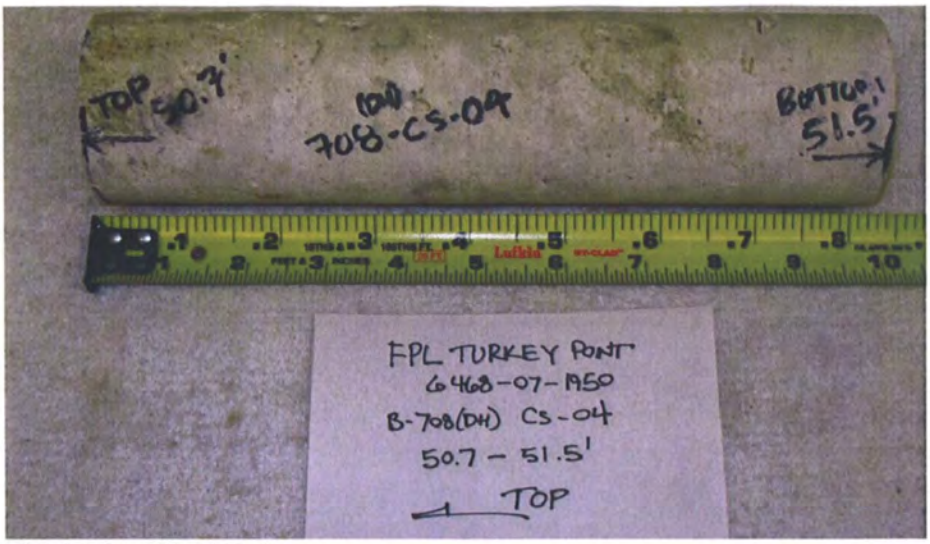


708 (DH) - CS-01 Before

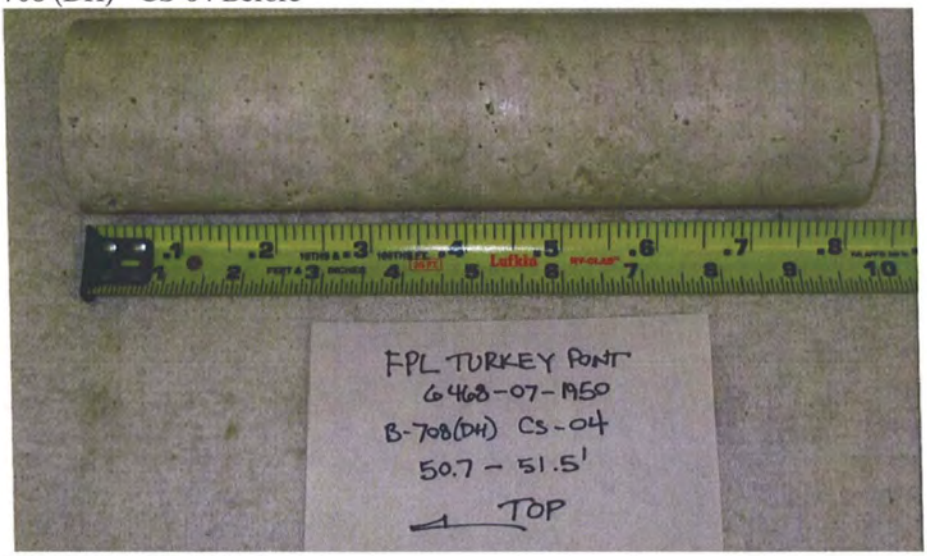


708 (DH) - CS-01 Before

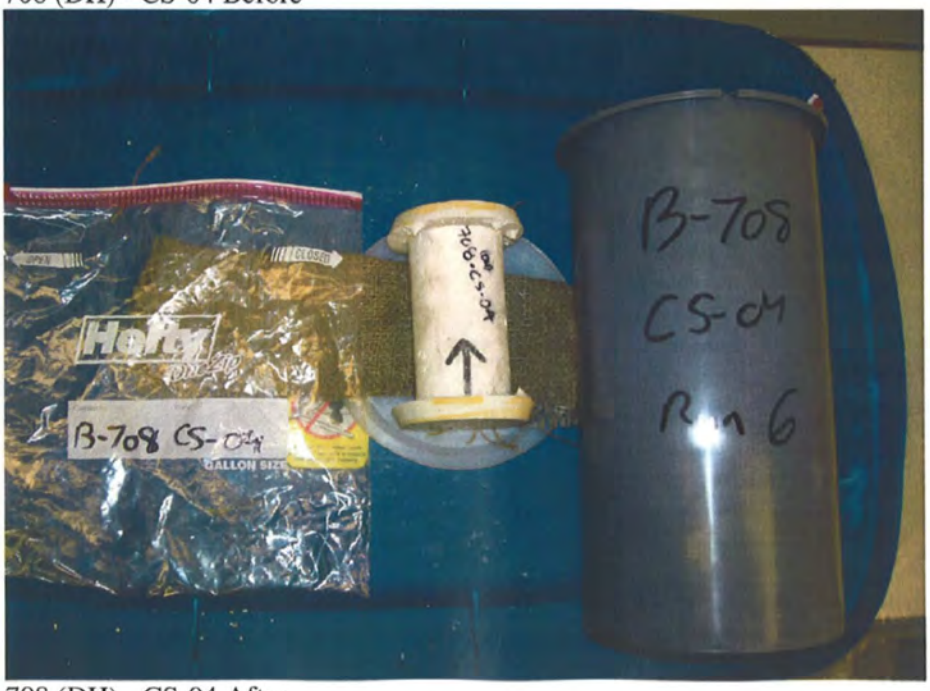
708 (DH) - CS-01 After



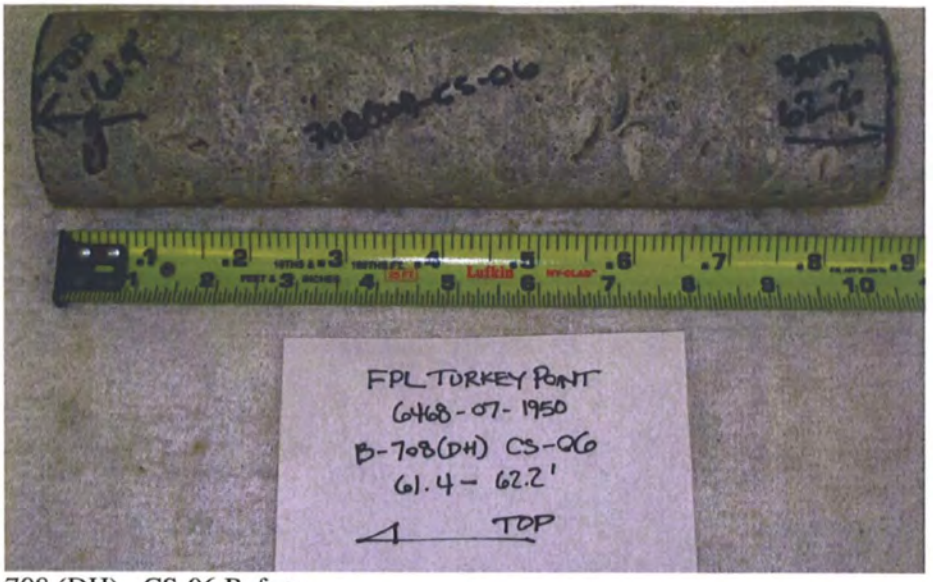
708 (DH) - CS-04 Before



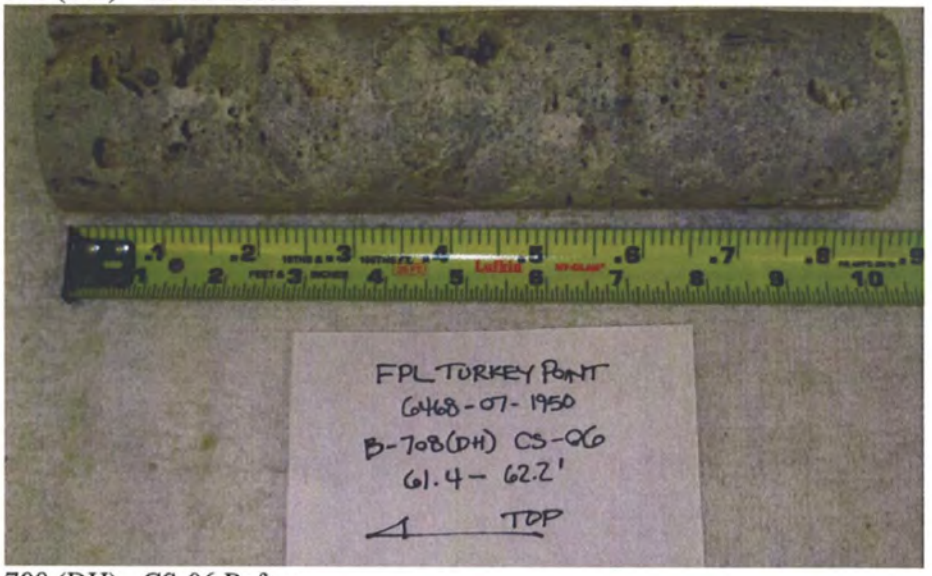
708 (DH) - CS-04 Before



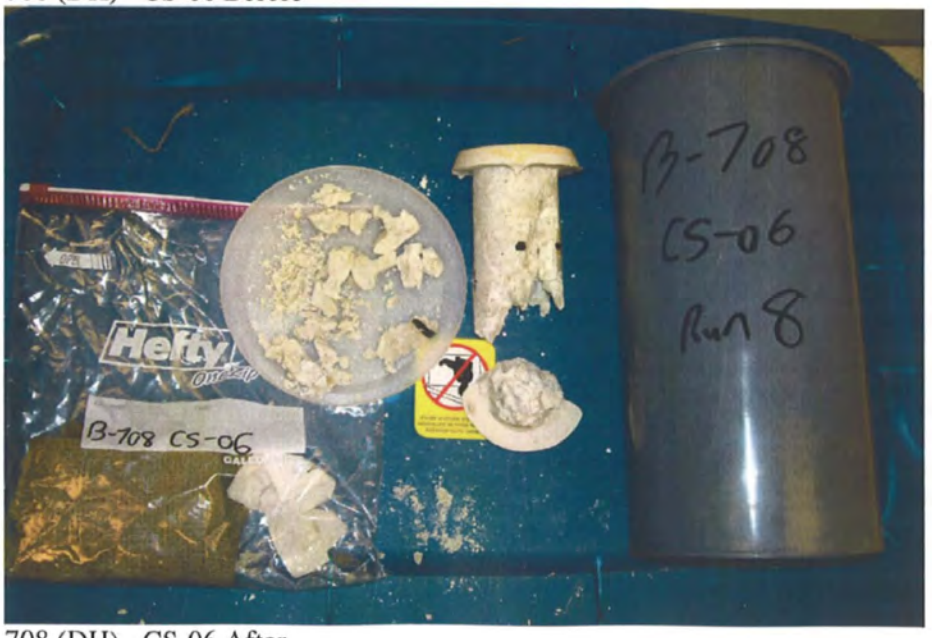
708 (DH) - CS-04 After



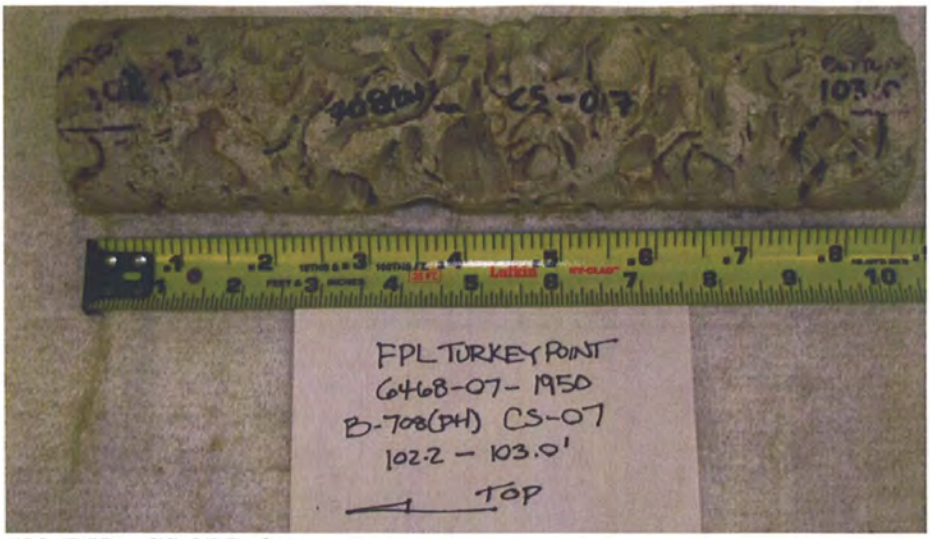
708 (DH) - CS-06 Before



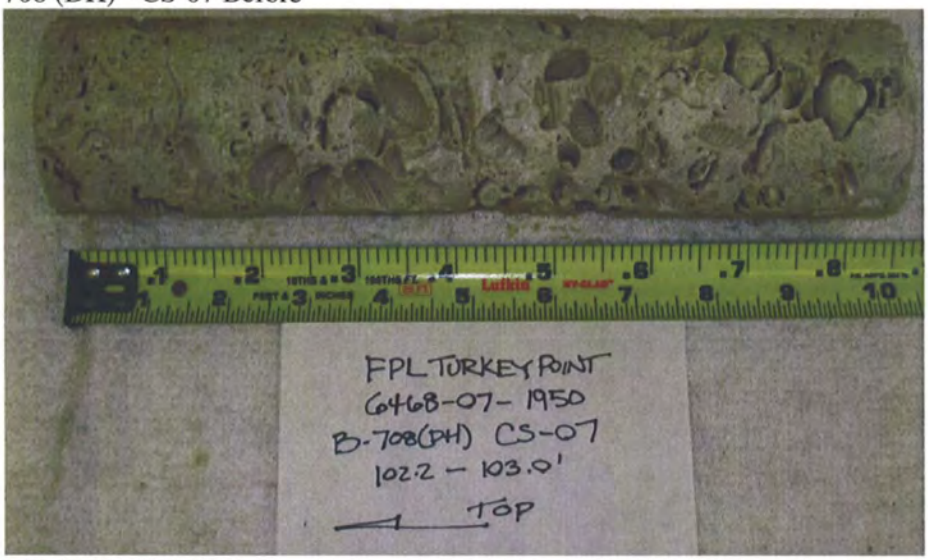
708 (DH) - CS-06 Before



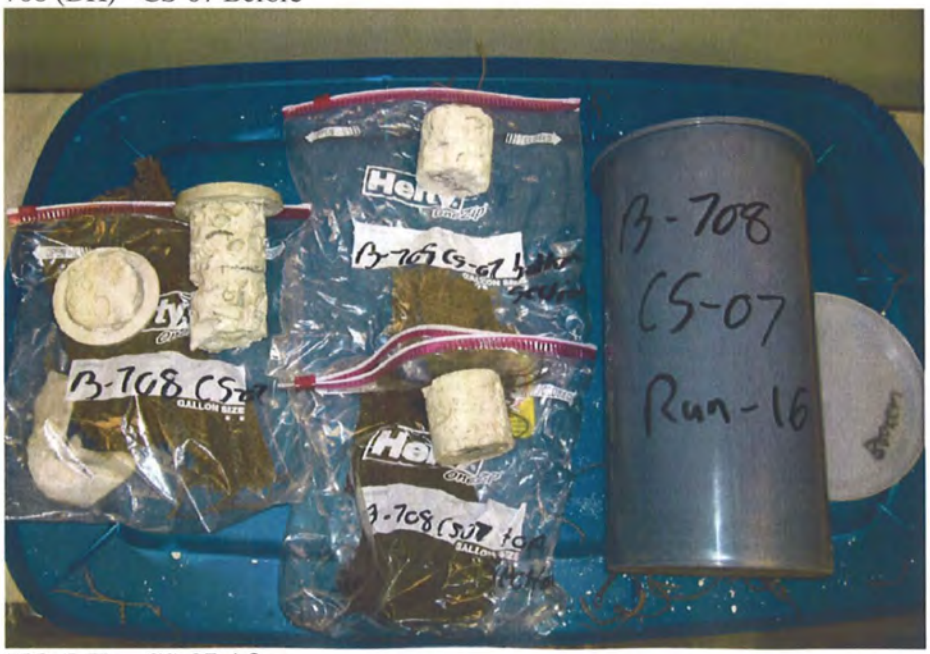
708 (DH) - CS-06 After



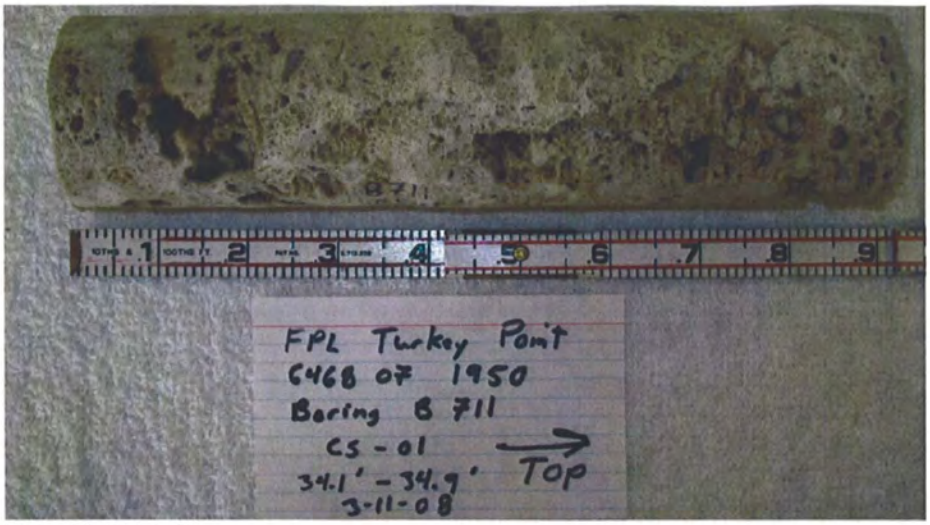
708 (DH) - CS-07 Before



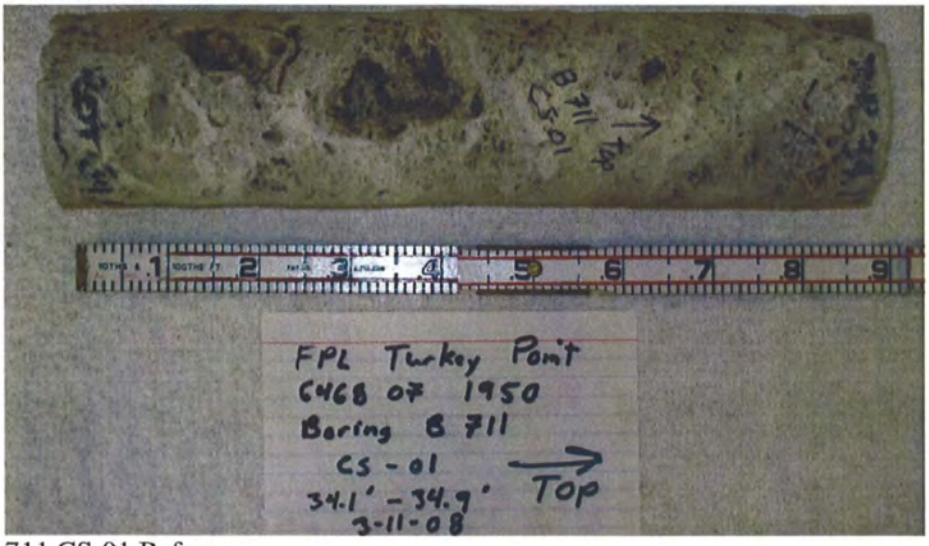
708 (DH) - CS-07 Before



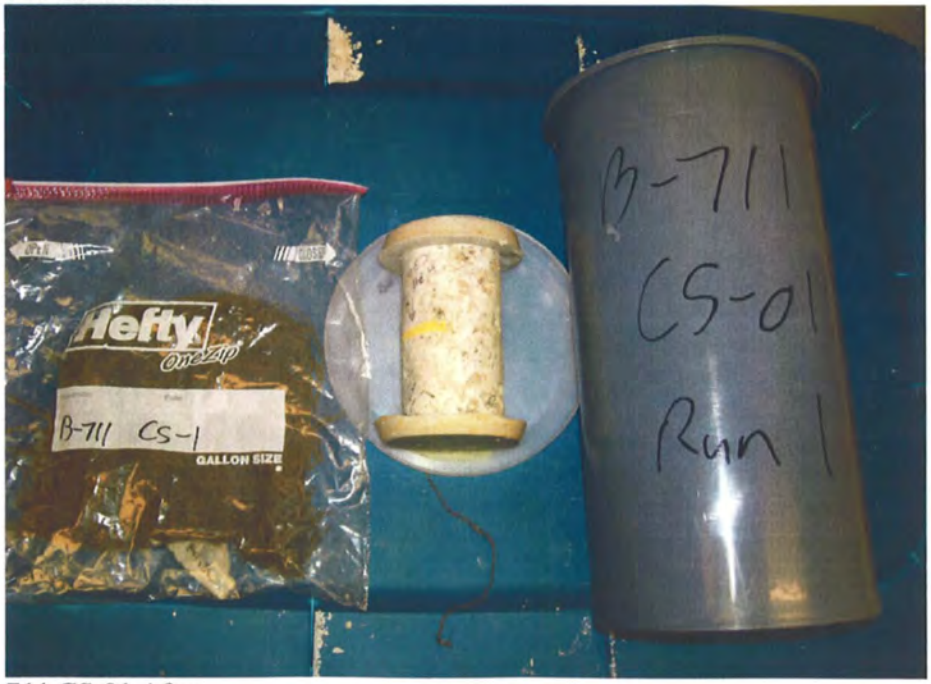
708 (DH) - CS-07 After



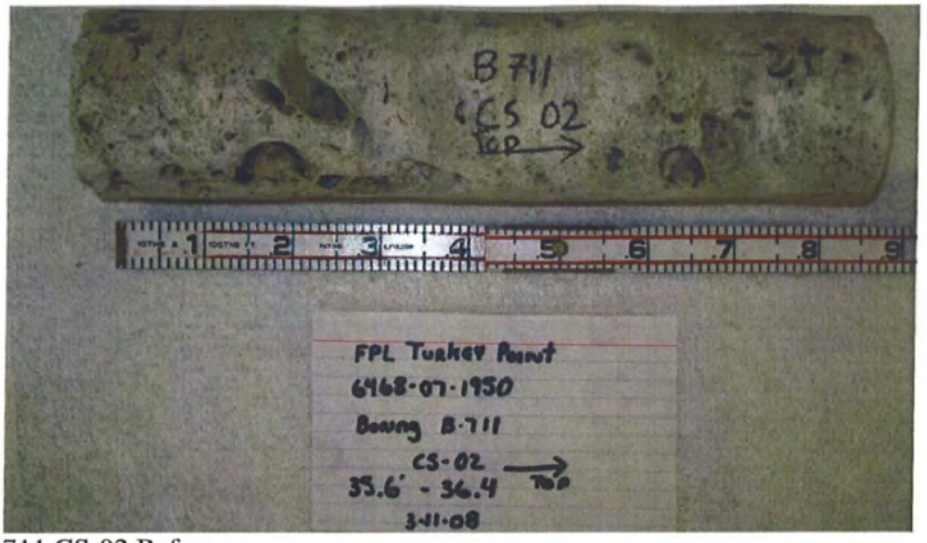
711 CS-01 Before



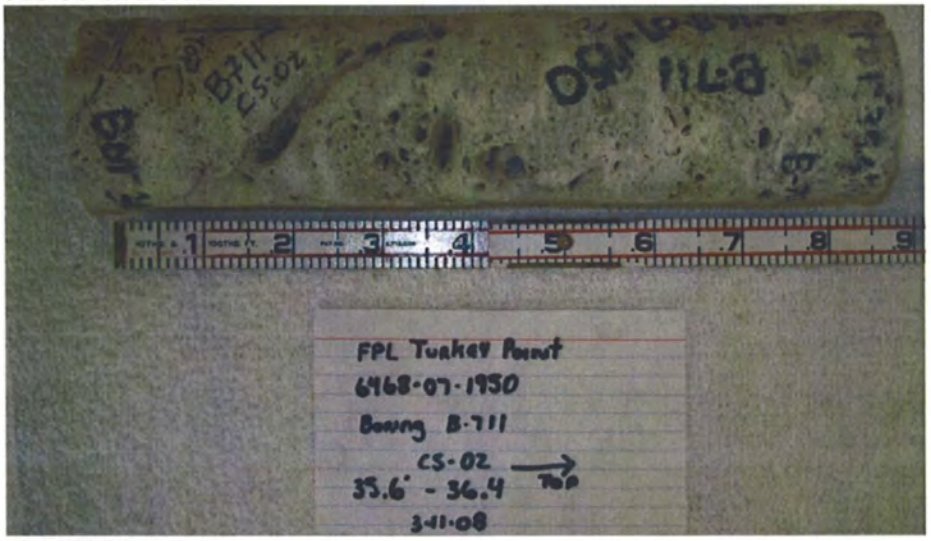
711 CS-01 Before



711 CS-01 After

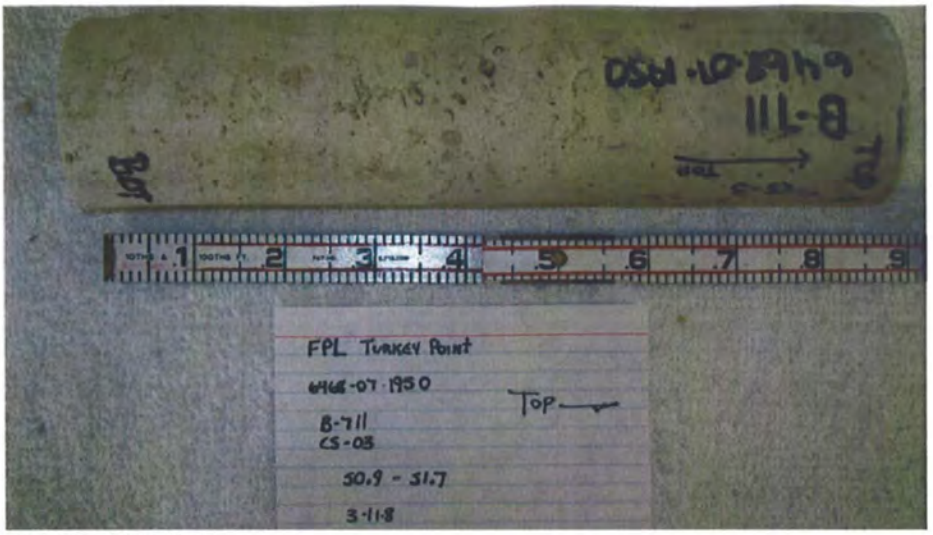


711 CS-02 Before

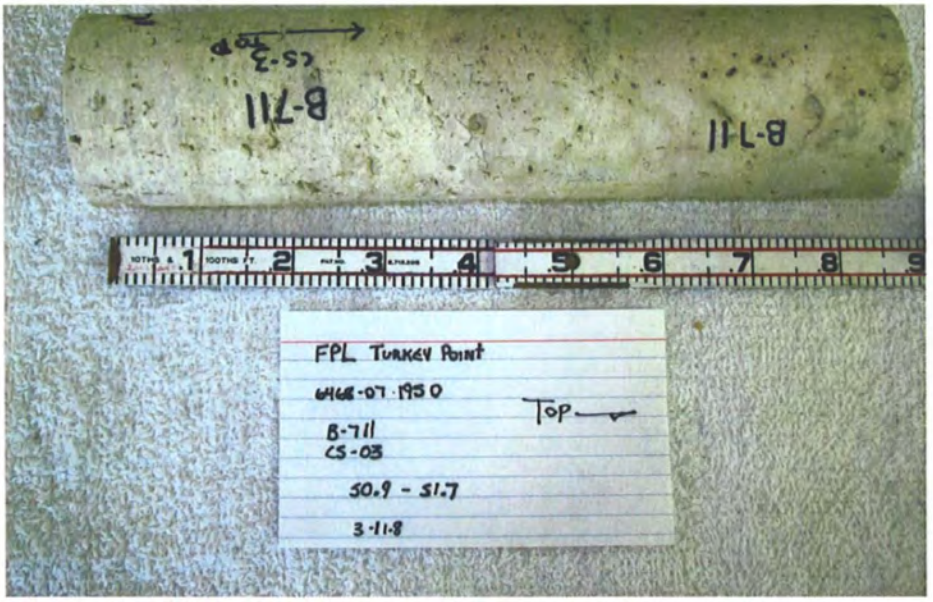


711 CS-02 Before

711 CS-02 After

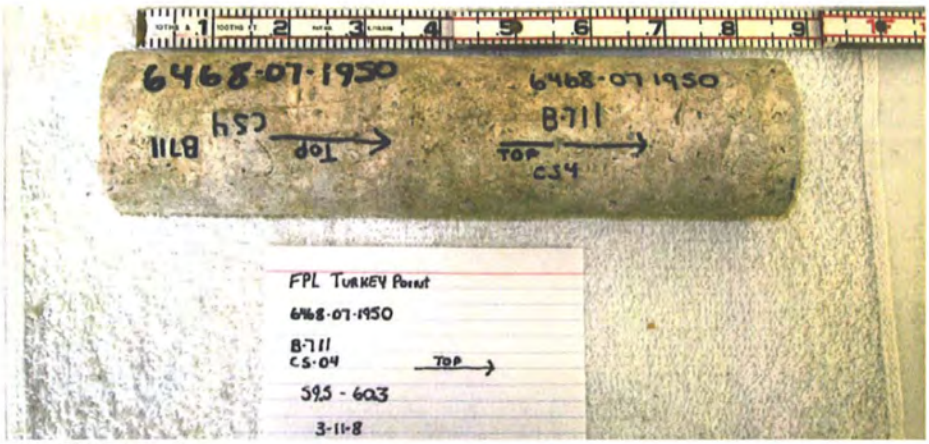


711 CS-03 Before



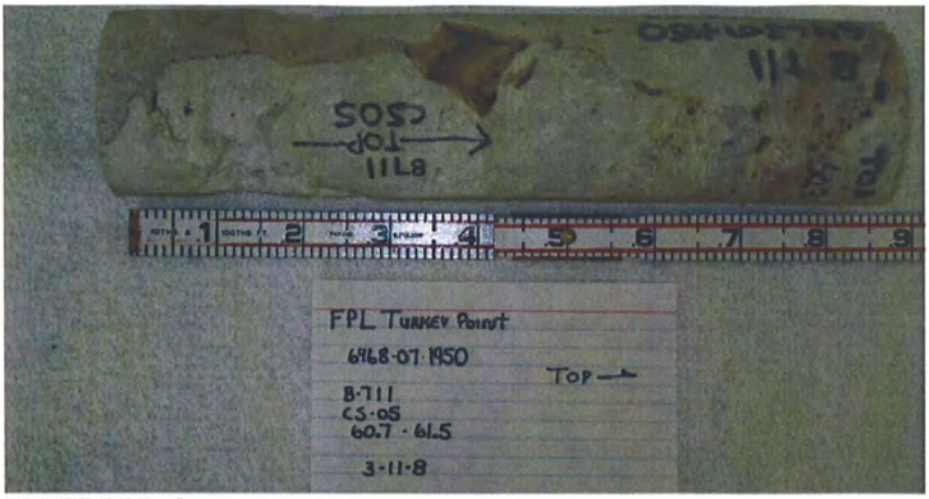
711 CS-03 Before

711 CS-03 After



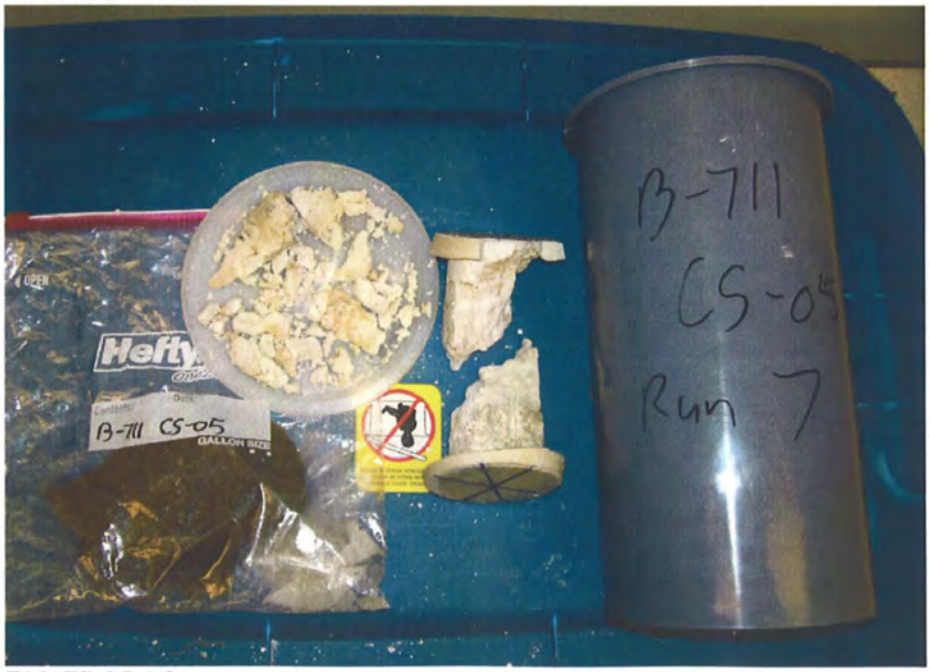
711 CS-04 Before

711 CS-04 After

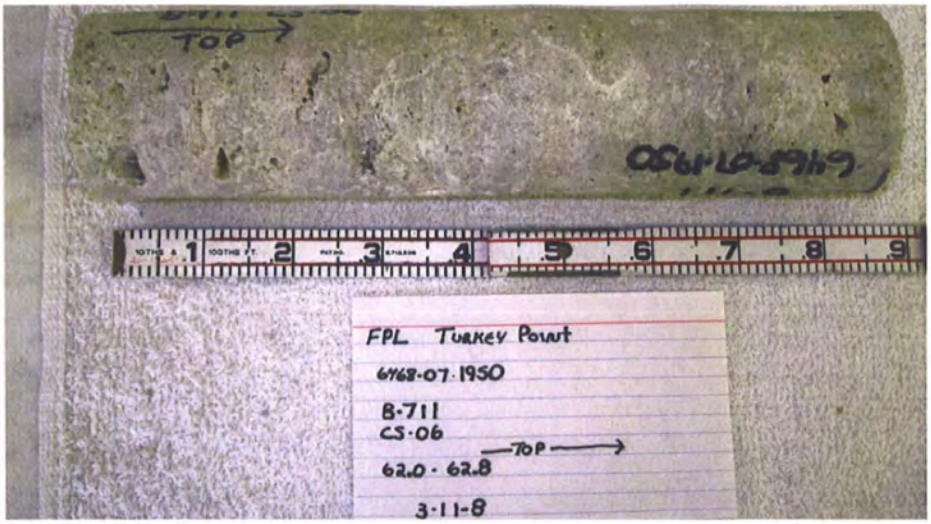


711 CS-05 Before

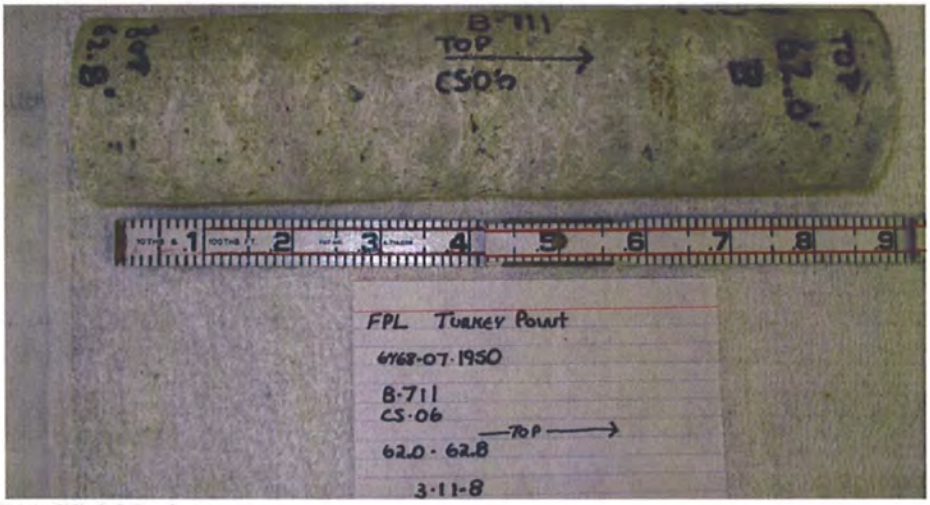
711 CS-05 Before



711 CS-05 After

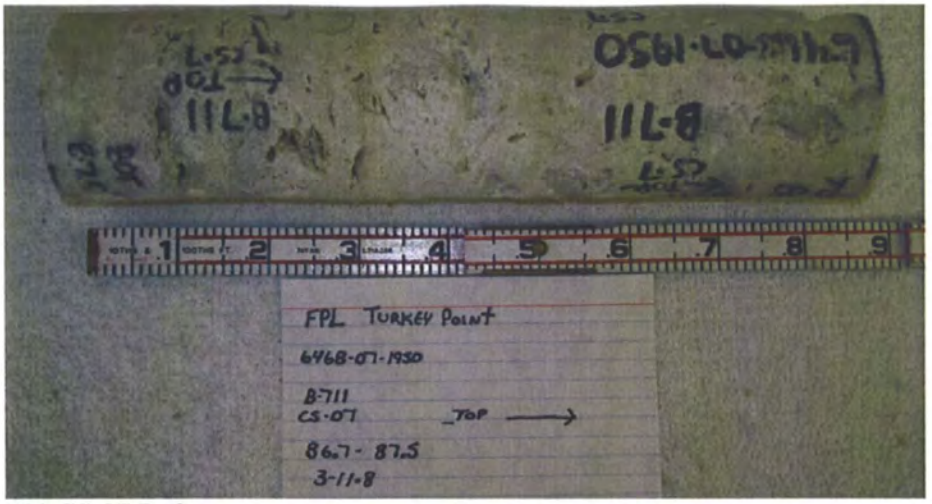


711 CS-06 Before

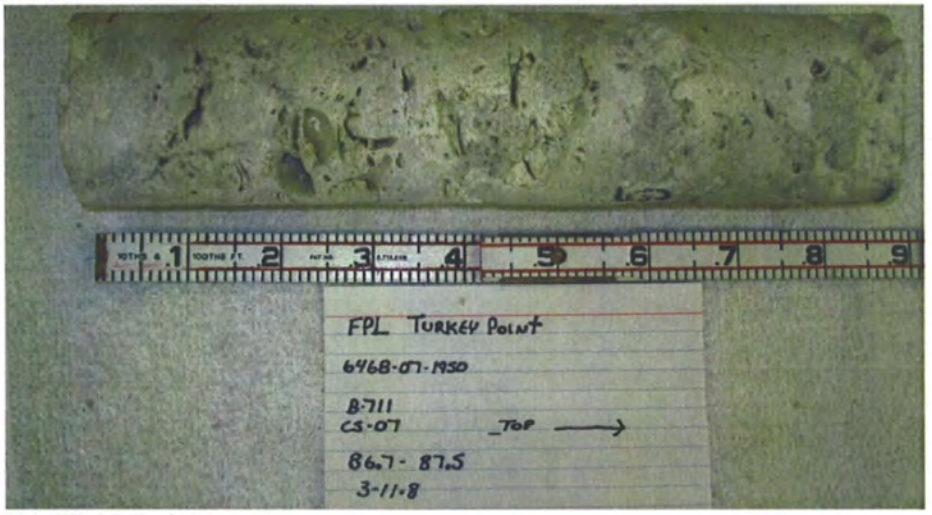


711 CS-06 Before

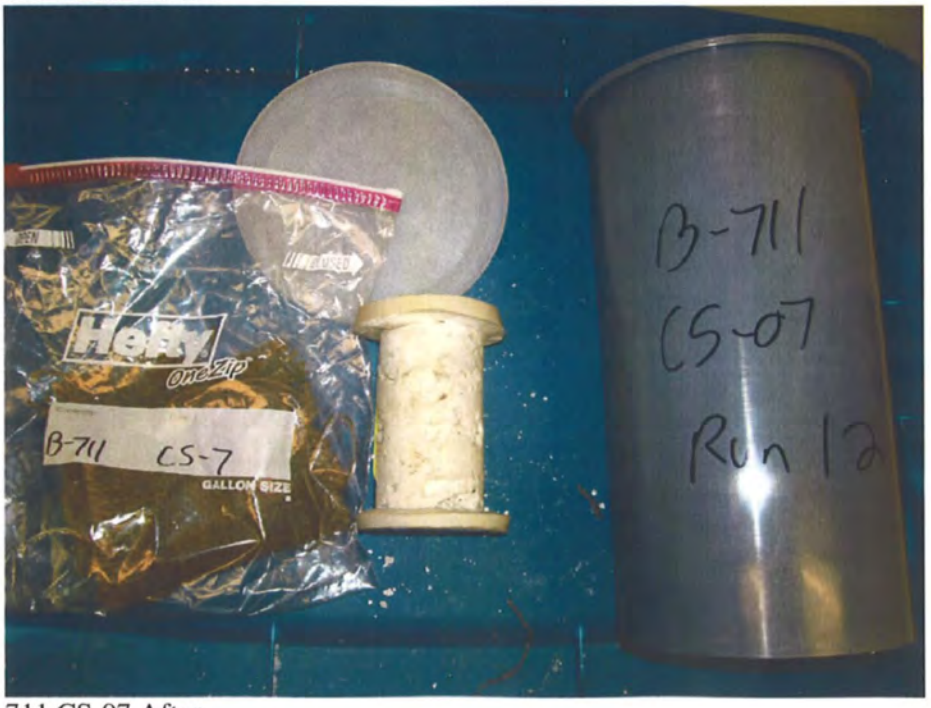
711 CS-06 After



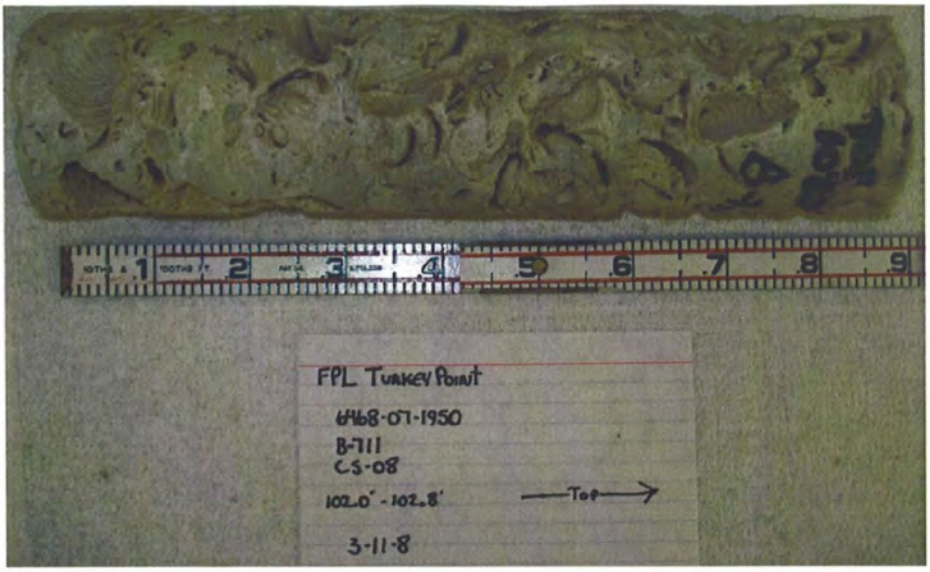
711 CS-07 Before



711 CS-07 Before



711 CS-07 After



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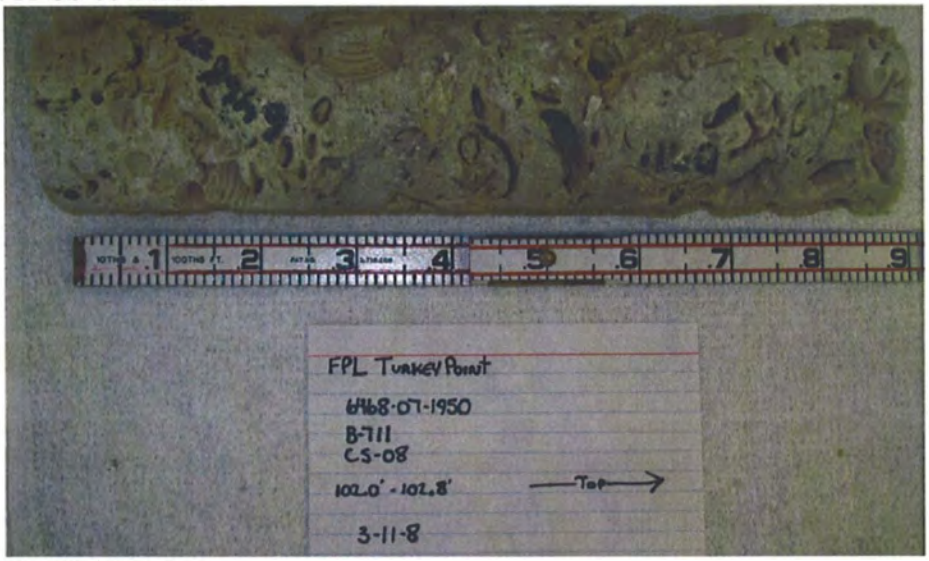

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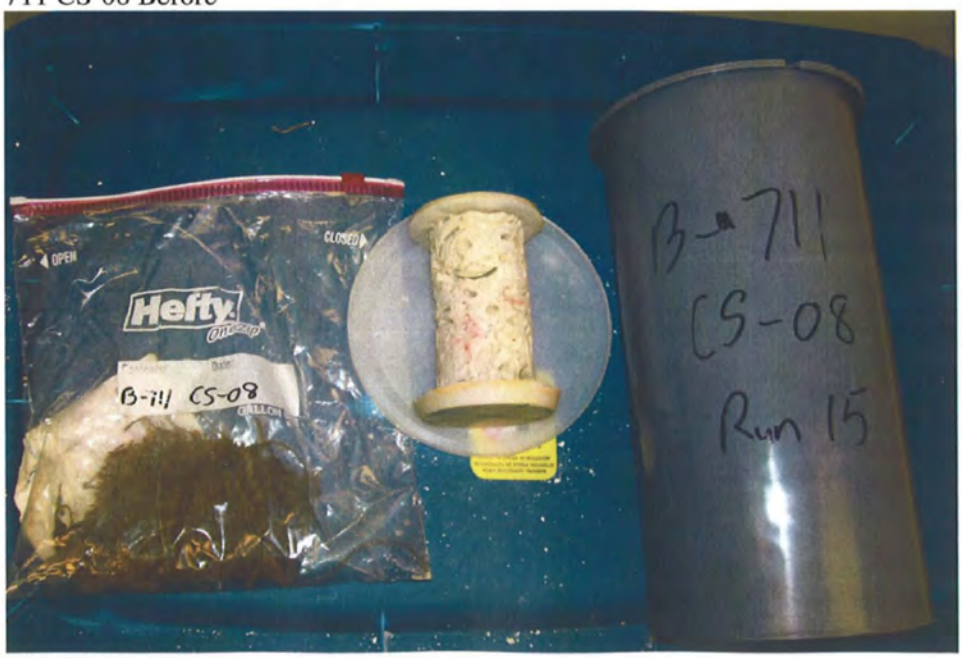

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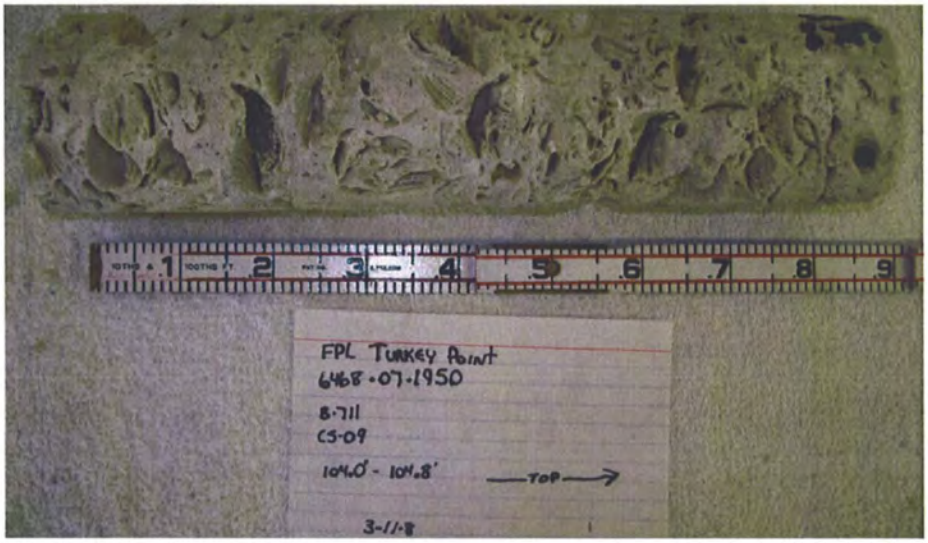

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711 CS-09 After

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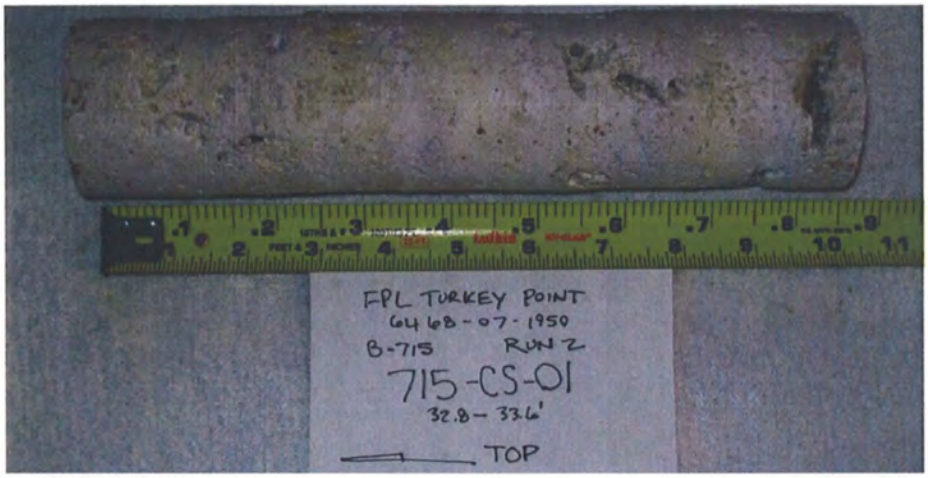

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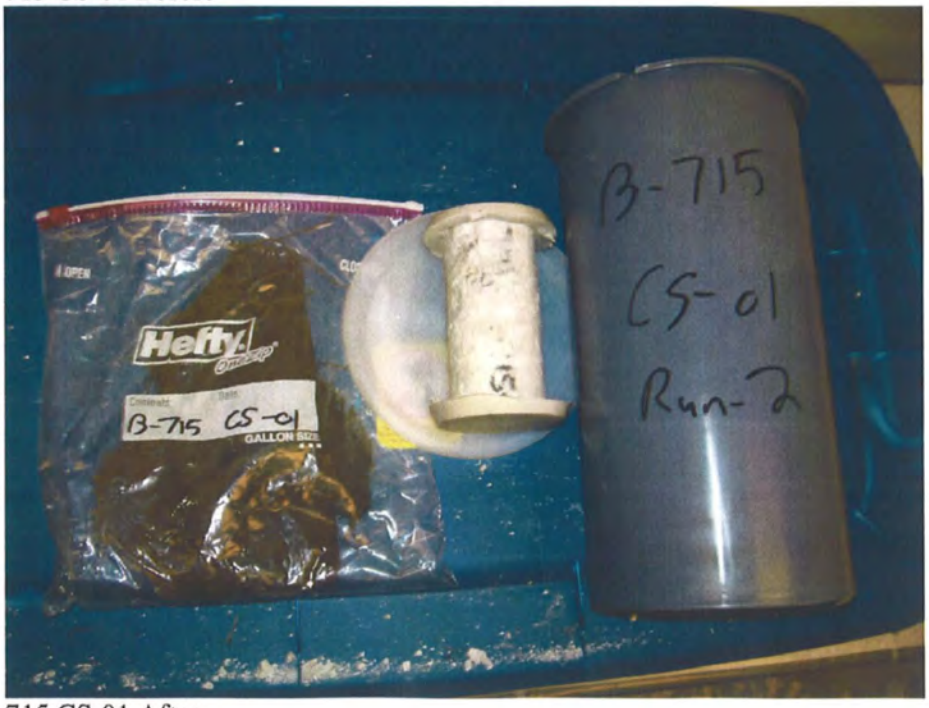

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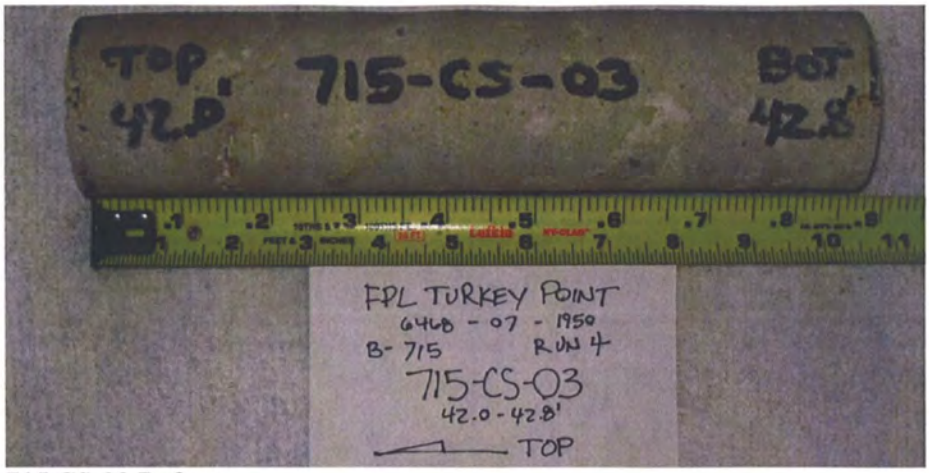

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715 CS-03 Before

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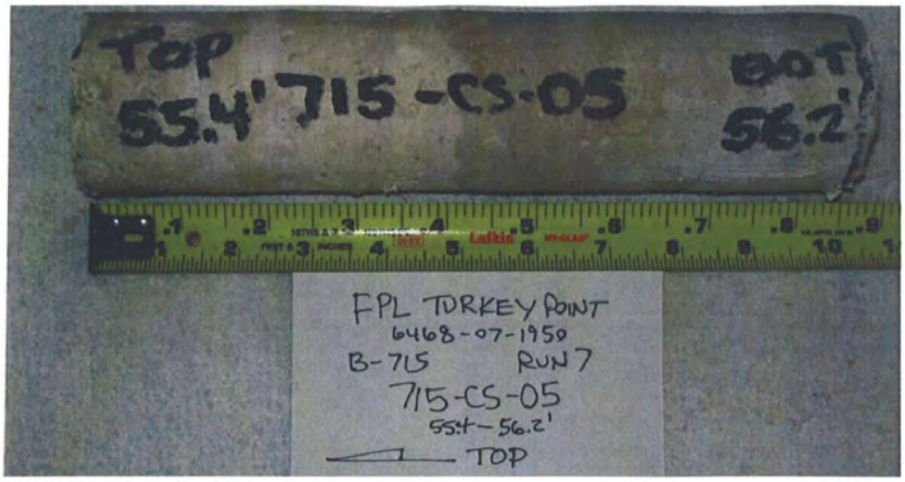

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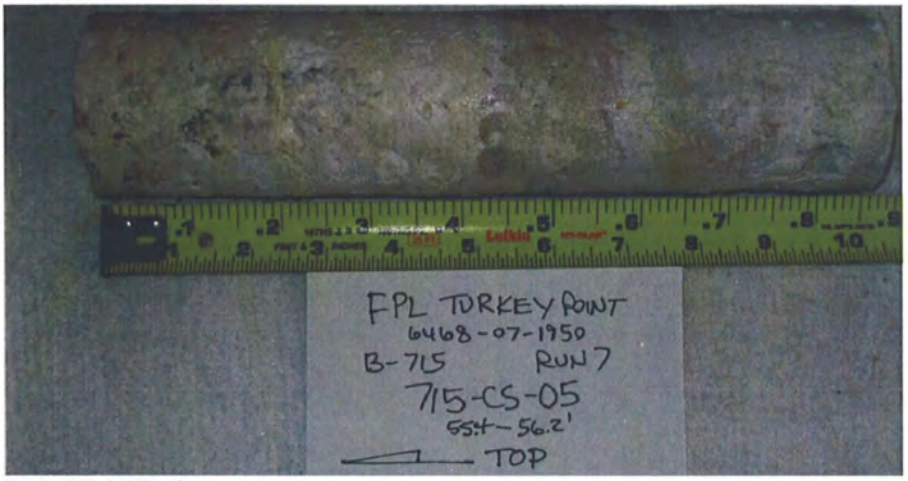

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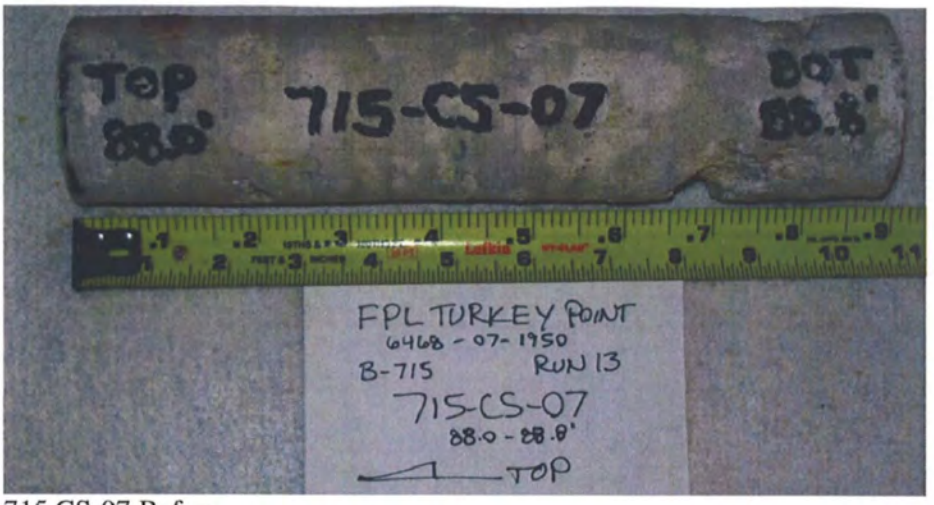

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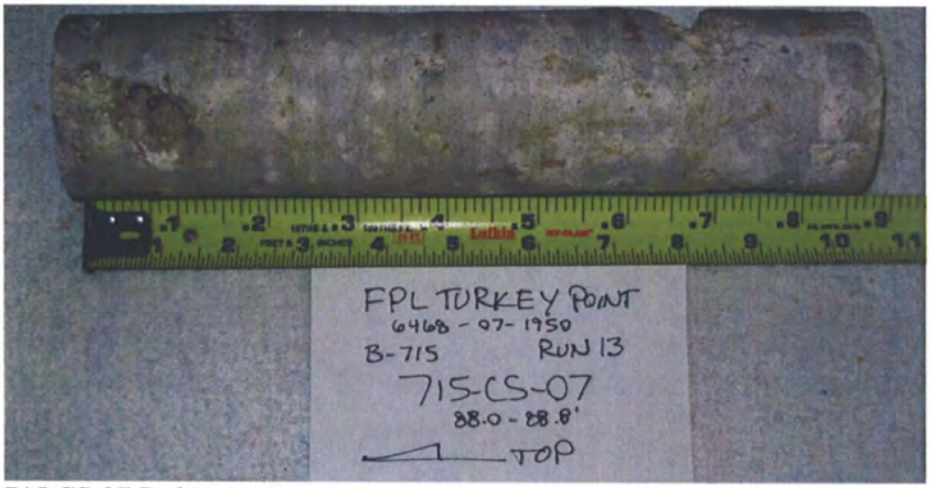

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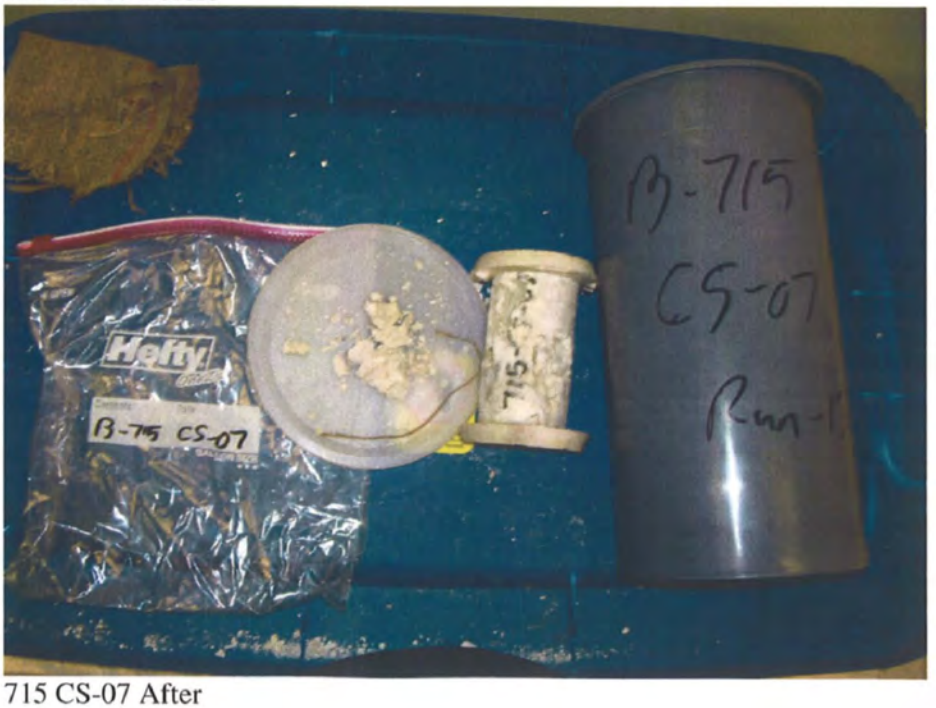

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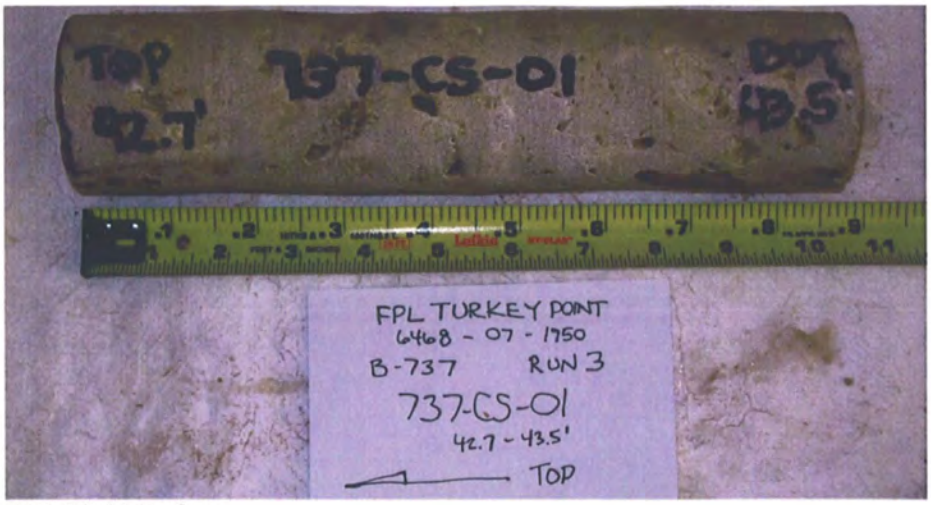

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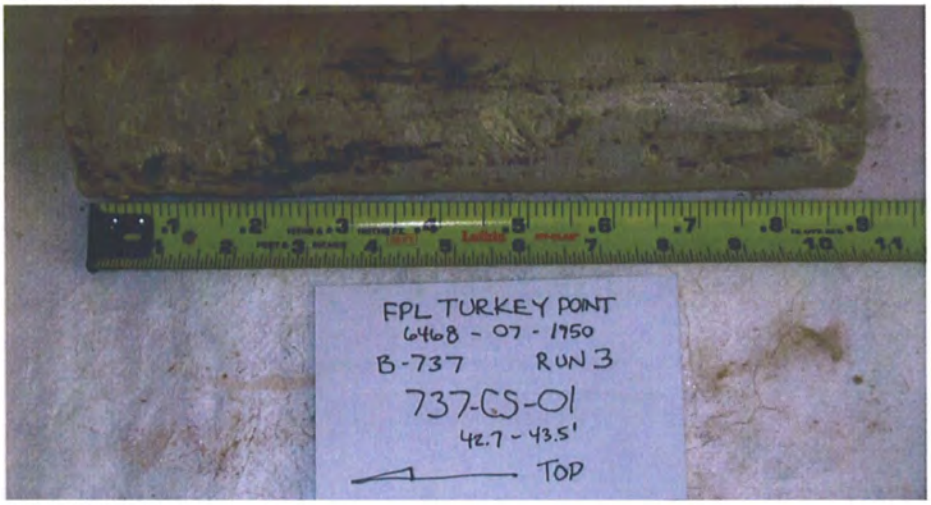

737 CS-01 Before

737 CS-01 After

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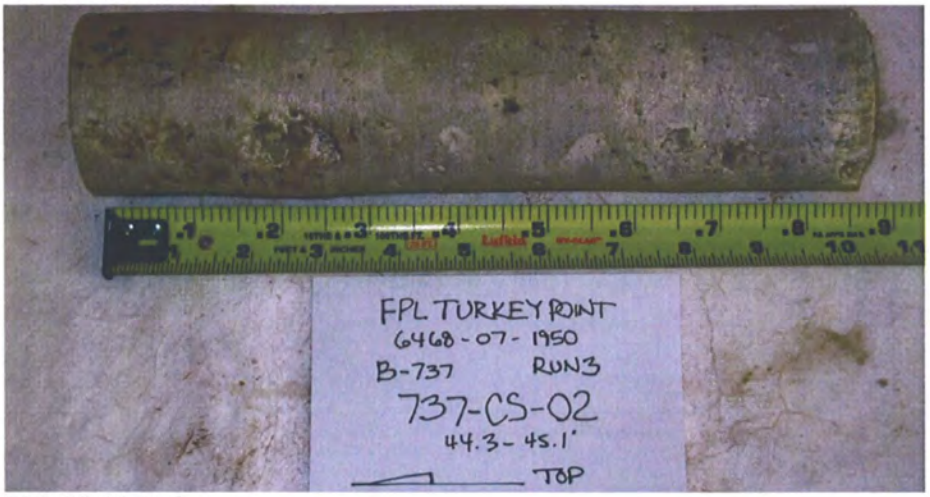

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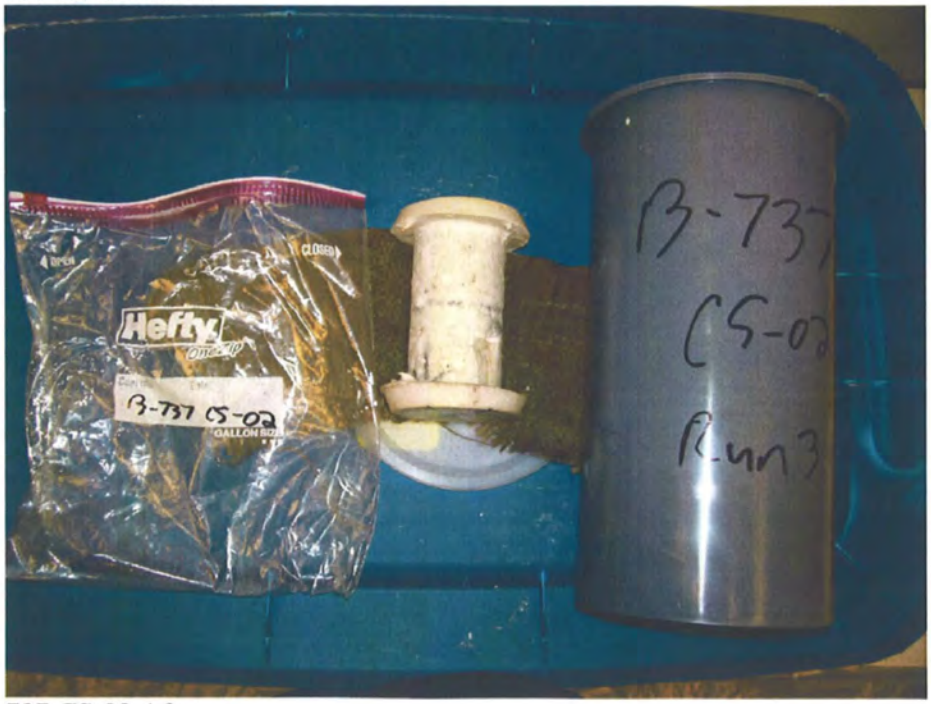

737 CS-02 After

FINAL DATA REPORT Rev. 2
GEOTECHNICAL EXPLORATION AND TESTING

TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA

October 6, 2008

VOLUME 4

Prepared By:

MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina

MACTEC Project No. 6468-07-1950

Prepared For:

Bechtel Power Corporation
Subcontract No. 25409-102-HC4-CY00-00001

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APPENDIX F CONTENTS

Fugro Appendix A – B630-UD8
Fugro Appendix B – B630-UD2
Fugro Appendix C – B630-UD13
Fugro Appendix D – B630-UD16
Fugro Appendix E – B630-UD19
Fugro Appendix F – B630-UD23
Fugro Appendix G – B630-UD27

FUGRO CONSULTANTS, INC.

6100 Hillcroft (77081)
P.O. Box 740010
Houston, Texas 77274
Tel: 713-369-5400
Fax: 713-369-5518

June 24, 2008

Ms. Siesta Williams
MACTEC
3301 Atlantic Avenue
Raleigh, NC 27604

RE: Two (2) Reports For The Turkey Point Project

Dear Ms. Williams:

Fugro has completed two (2) RCTS tests, which are B630-UD8 and B630-UD2 for the Turkey Point project. Fugro has incorporated, as needed, Dr. Kenneth Stokoe's comments into the final reports. The final reports and the associated RCTS Test Approvals by Dr. Kenneth Stokoe have been attached.

Please let us know if you have questions. Thanks.

Very truly yours,

Fugro Consultants, Inc.

Jiewu Meng, PhD, P.E.
Project Engineer

Bill DeGroff, P.E.
Laboratory Department Manager

Enclosures

RCTS TEST APROVAL

PROJECT SITE/NAME	Turkey Point

Test ID	Sample ID	Depth B.S. (Ft)	Approved By (Initials)	Date
RCTS#A	B630-UD8	163.1	KHS ⊕	18 June '08
RCTS#B	B630-UD2	131.9	KHS ⊕	18 June '08

Two RCTS tests for the site referenced above were tested, and two reports were prepared, by Fugro Consultants, Inc.

I have reviewed the data and associated results listed above and found them to be reasonable.

Approved By:

K. H. Stokoe

Dr. Kenneth Stokoe

⊕ Consider minor comments on a few figures.

APPENDIX A

Specimen B630-UD8

Borehole B630
Sample UD8
Depth = 163.1 ft (49.7 m)
Total Unit Weight = 118.7 lb/ft^3
Water Content = 33.0 %
Estimated In-Situ Ko = 0.5
Estimated In-Situ Mean Effective Stress = 47 psi

FUGRO JOB #: 0401-1701
Testing Station: RC9

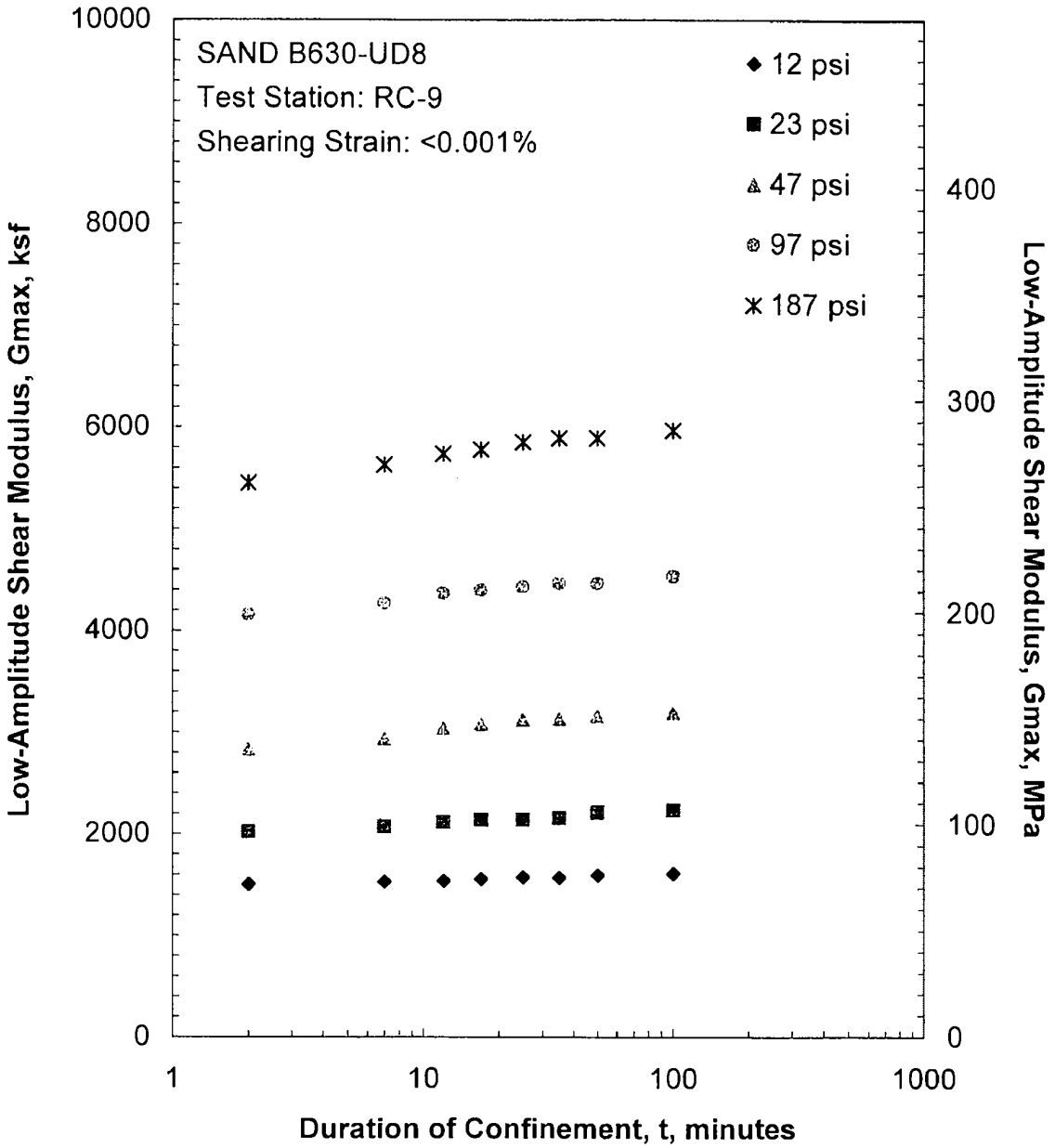

Figure A.1 Variation in Low-Amplitude Shear Modulus with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

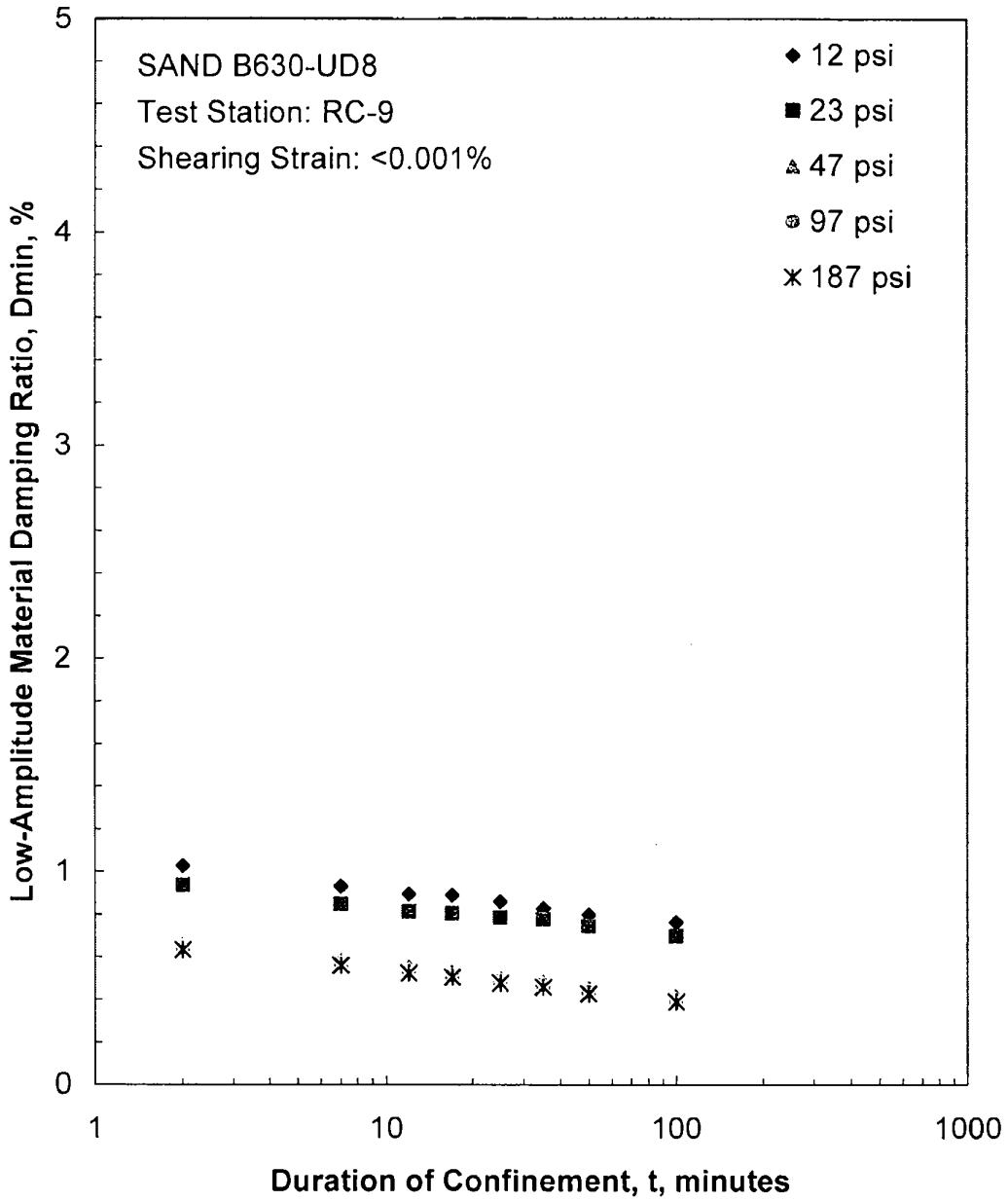

Figure A.2 Variation in Low-Amplitude Material Damping Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

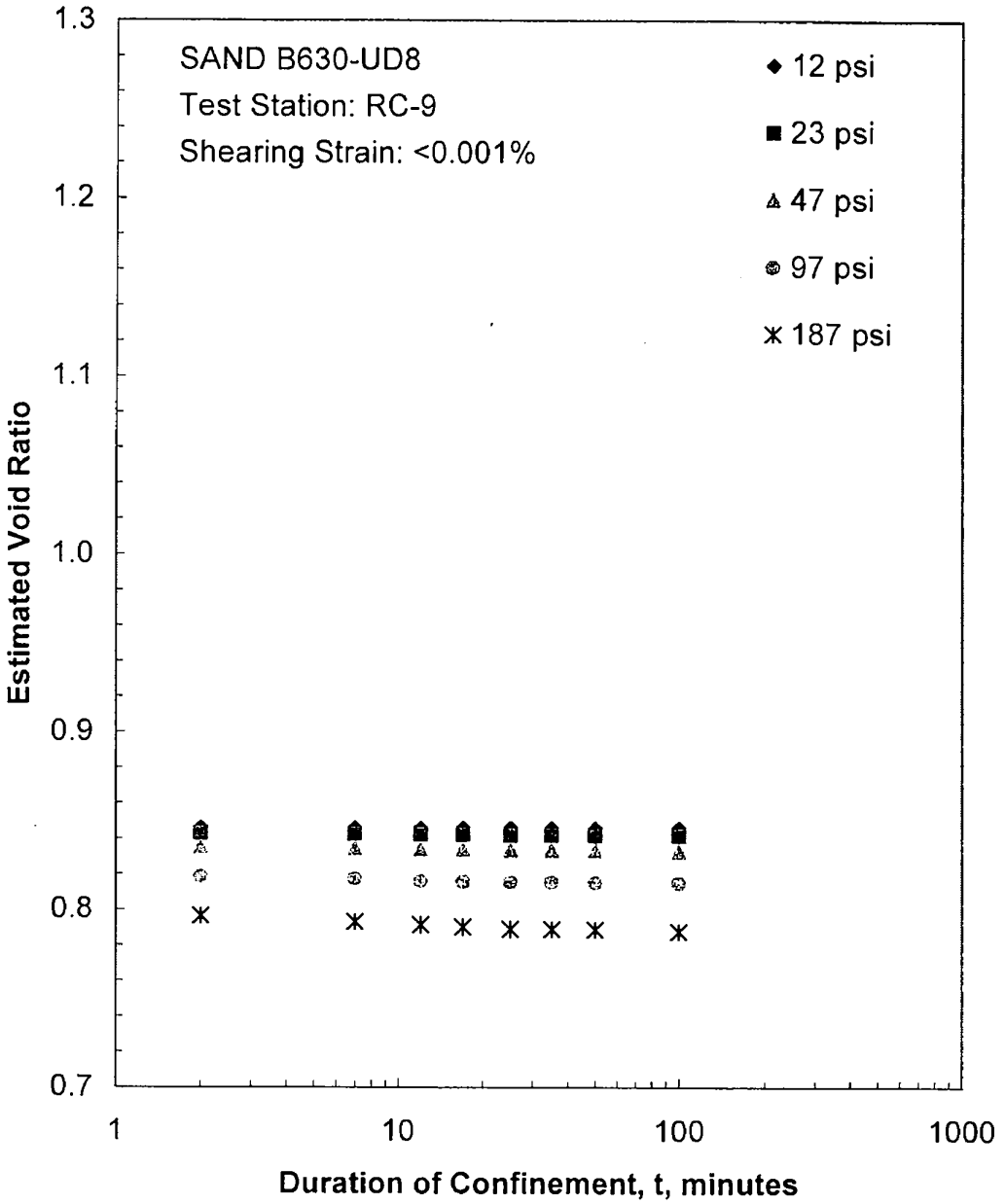

Figure A.3 Variation in Estimated Void Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

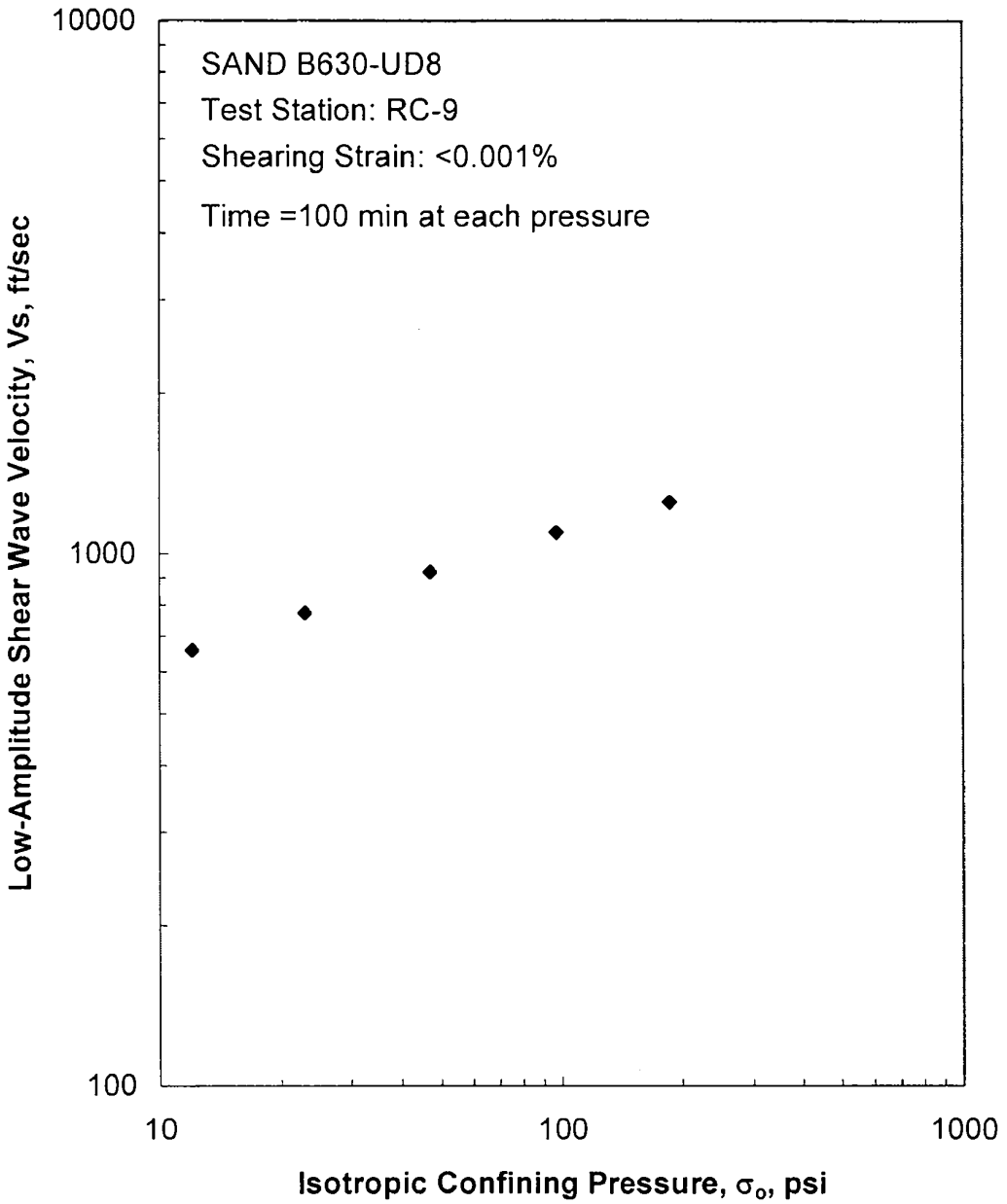

Figure A.4 Variation in Low-Amplitude Shear Wave Velocity with Isotropic Confining Pressure from Resonant Column Tests

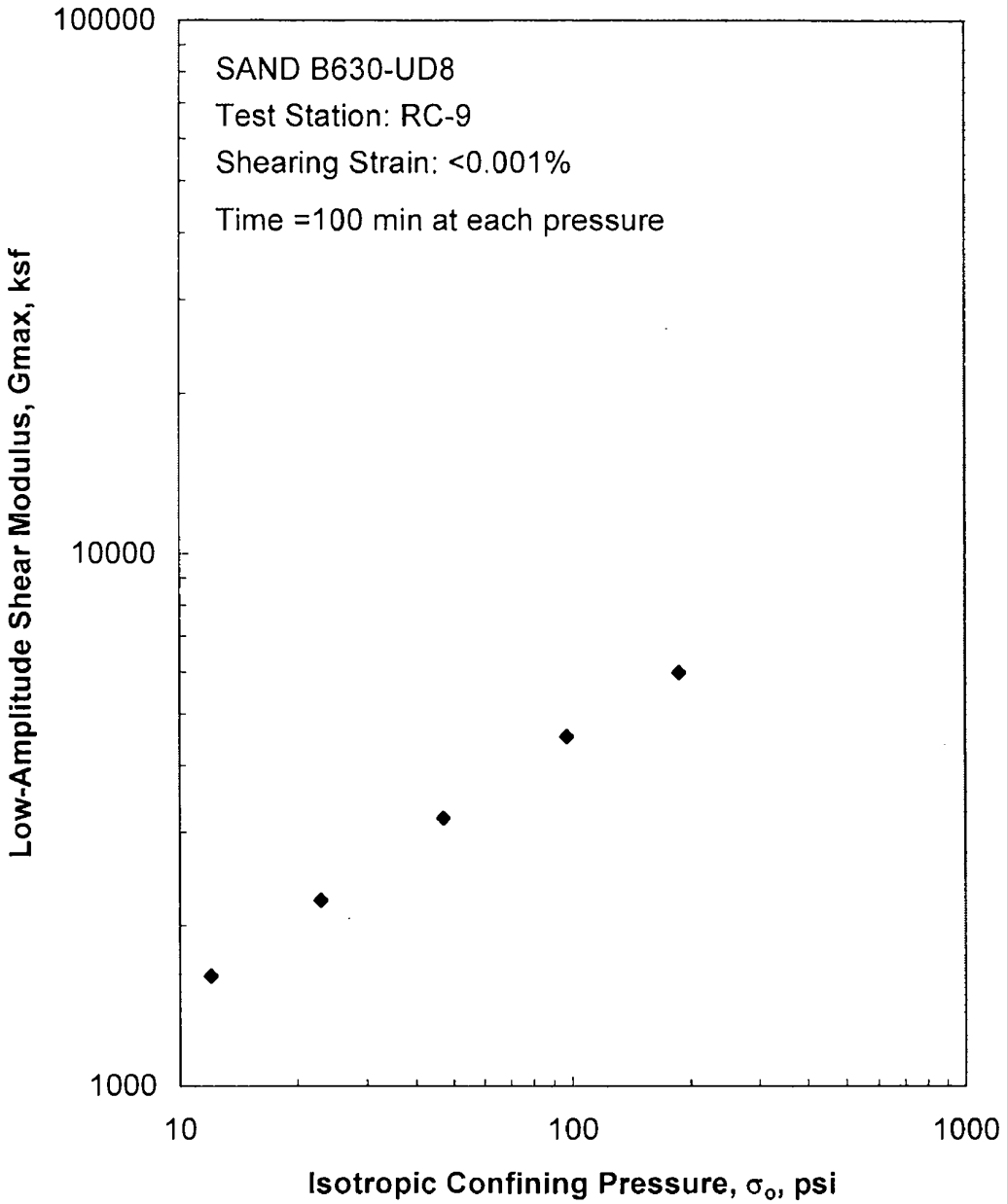

Figure A.5 Variation in Low-Amplitude Shear Modulus with Isotropic Confining Pressure from Resonant Column Tests

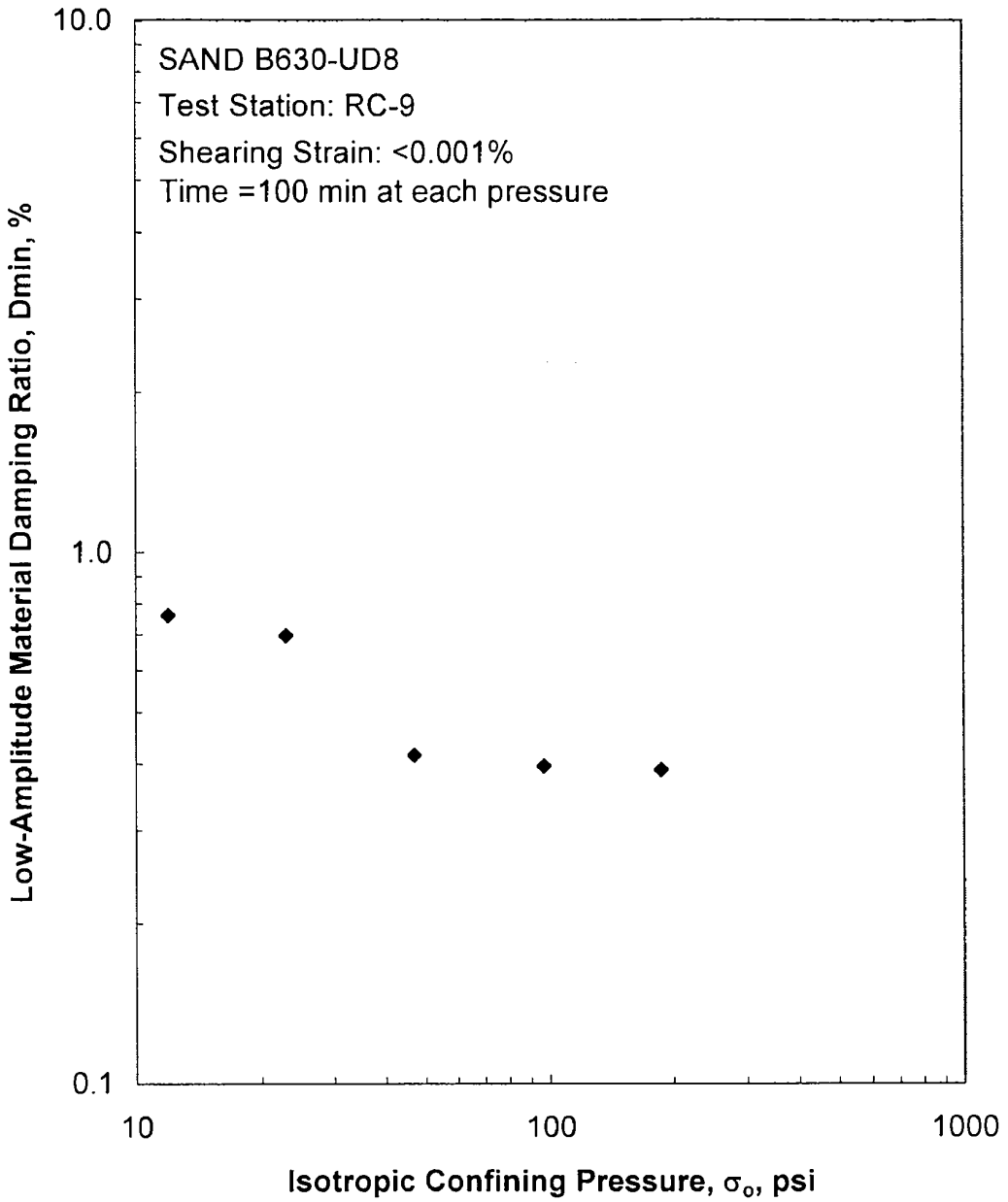

Figure A.6 Variation in Low-Amplitude Material Damping Ratio with Isotropic Confining Pressure from Resonant Column Tests

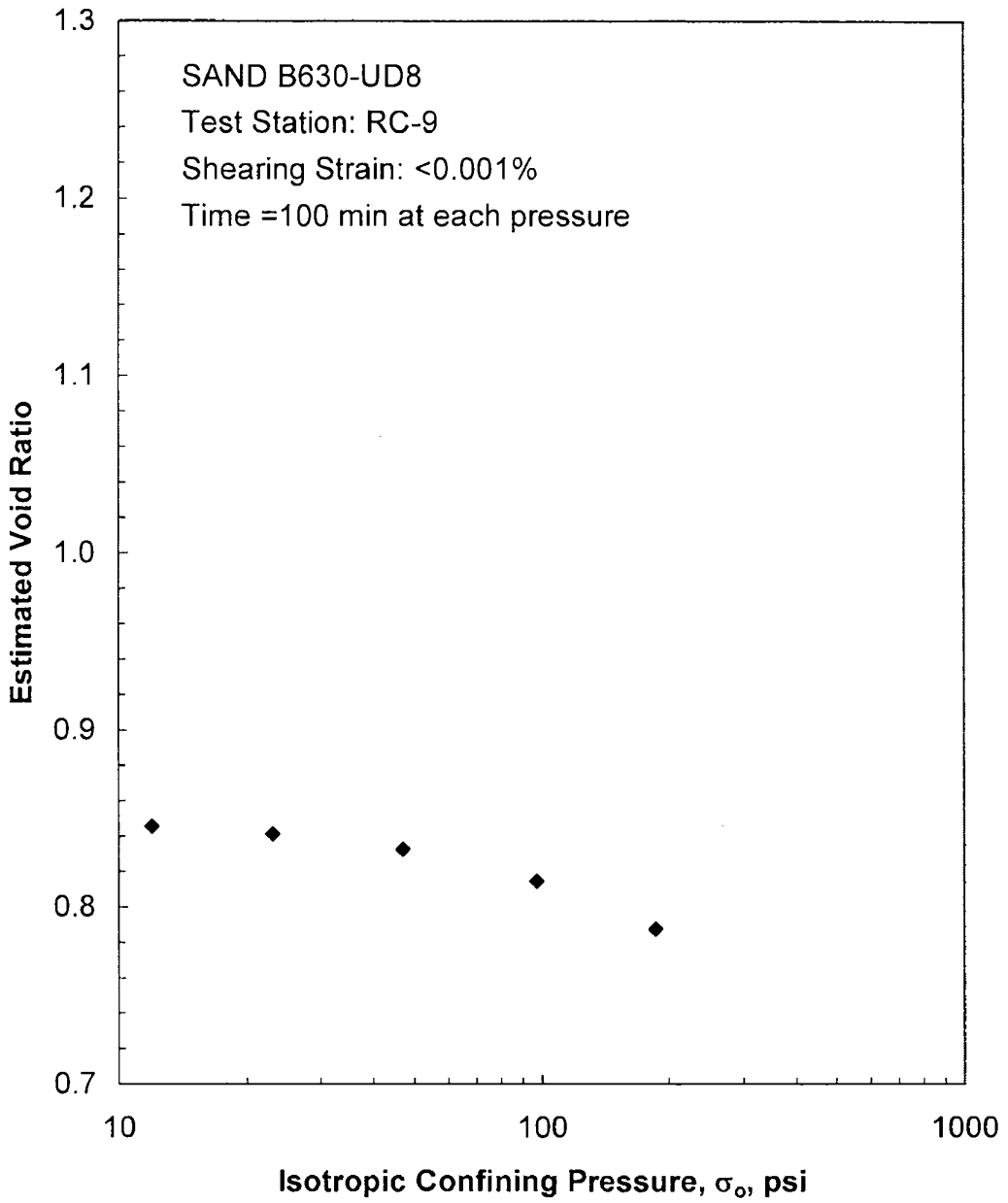

Figure A.7 Variation in Estimated Void Ratio with Isotropic Confining Pressure from Resonant Column Tests

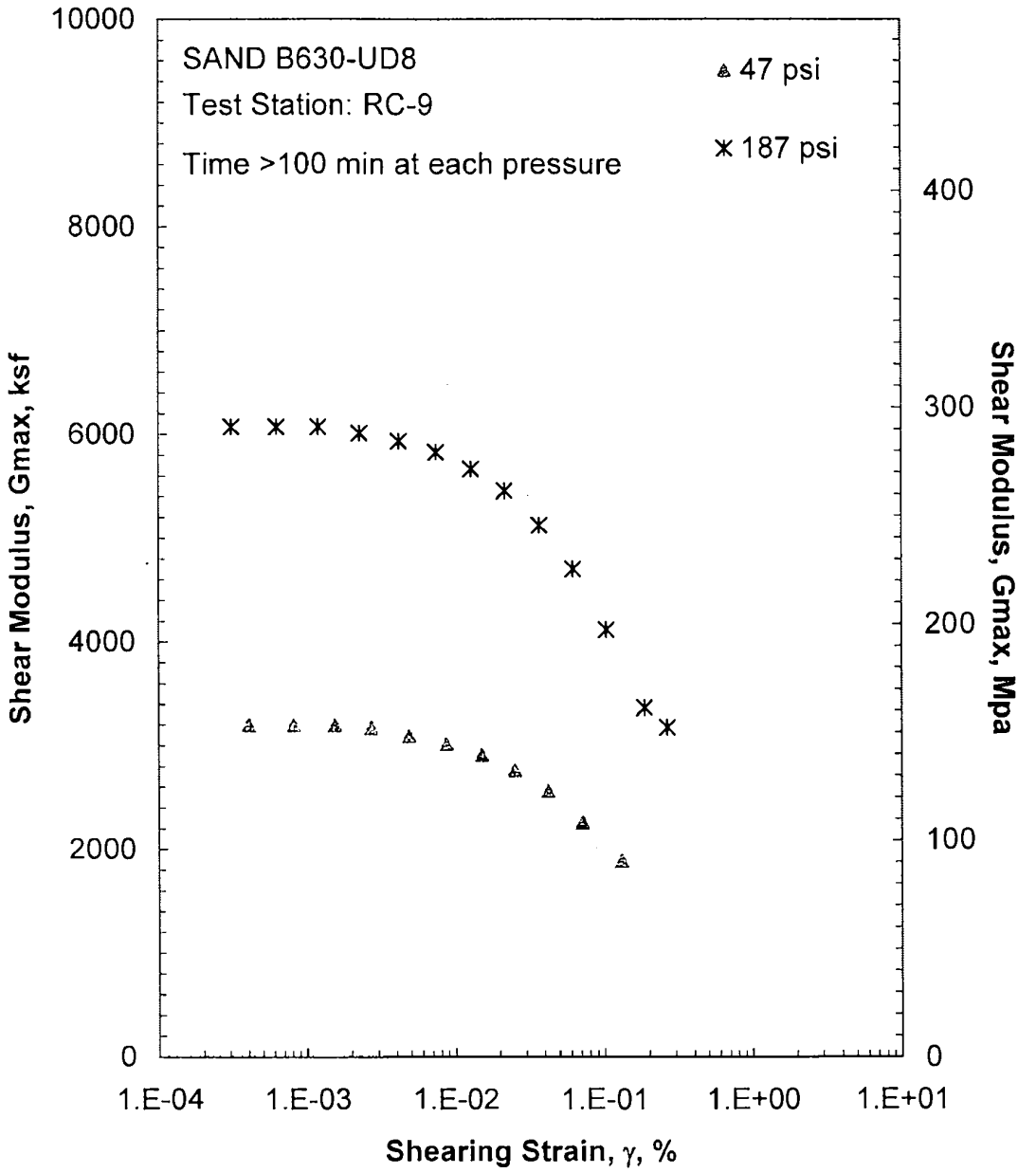

Figure A.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

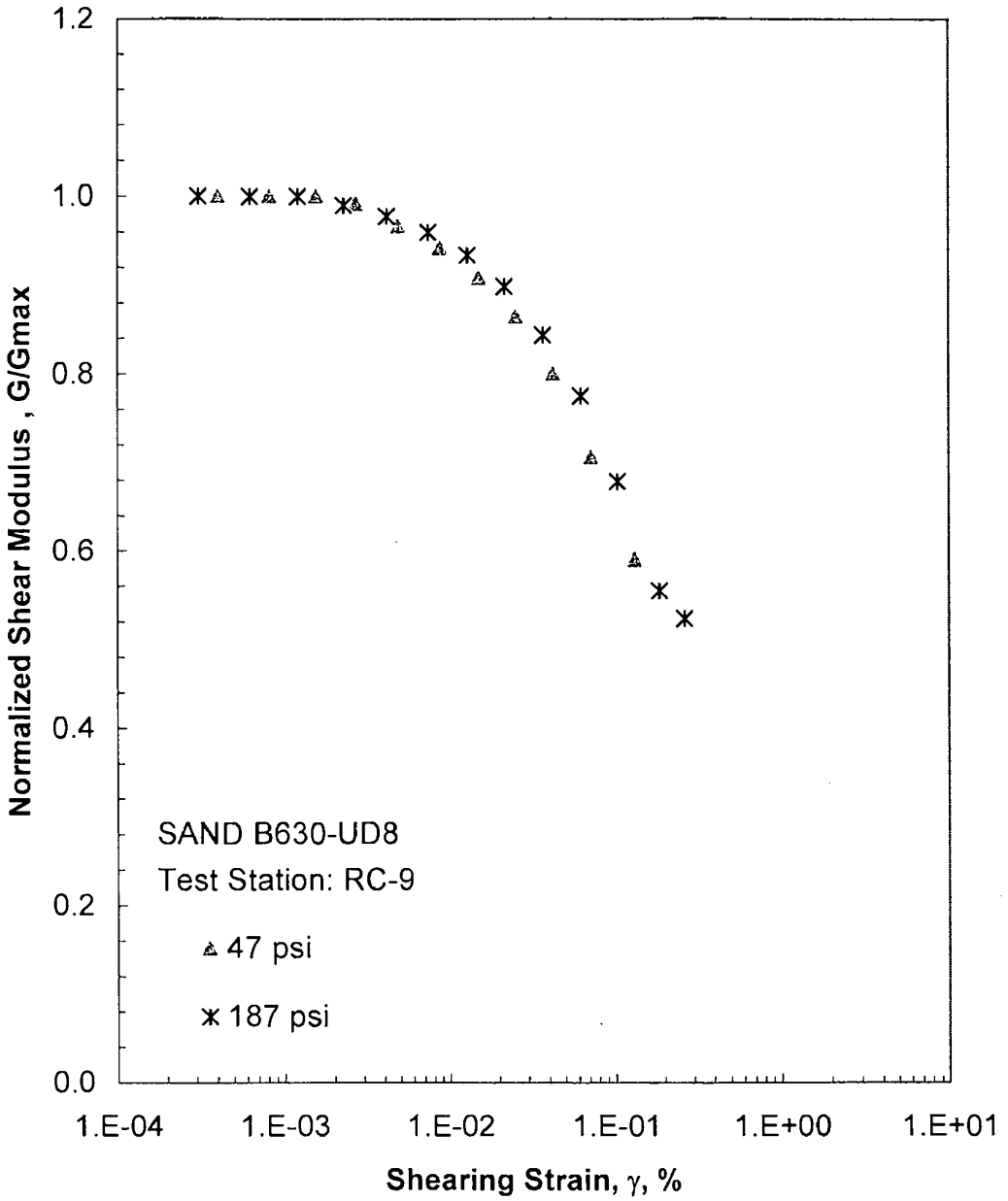

Figure A.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

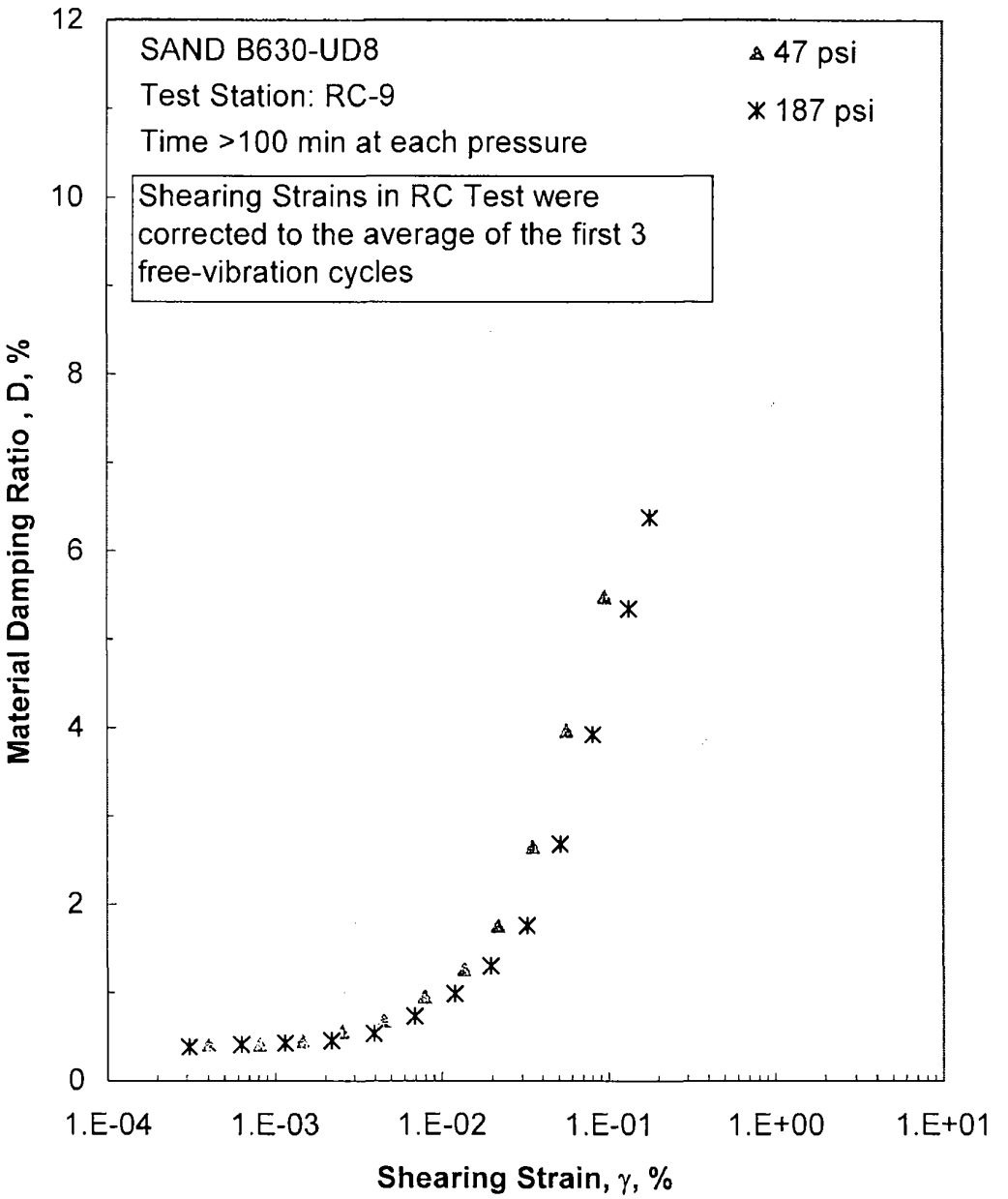

Figure A.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

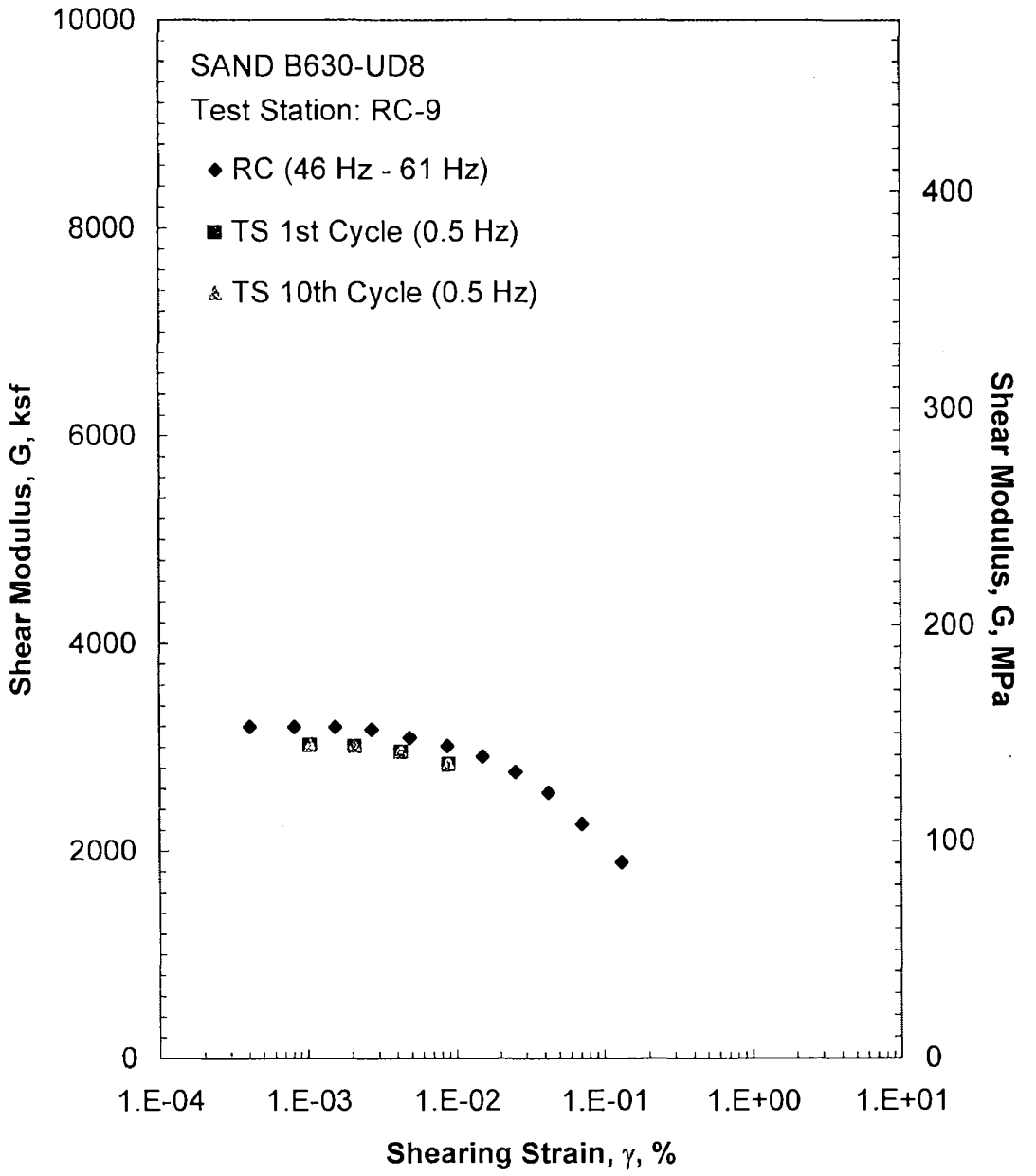

Figure A.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 47 psi from the Combined RCTS Tests

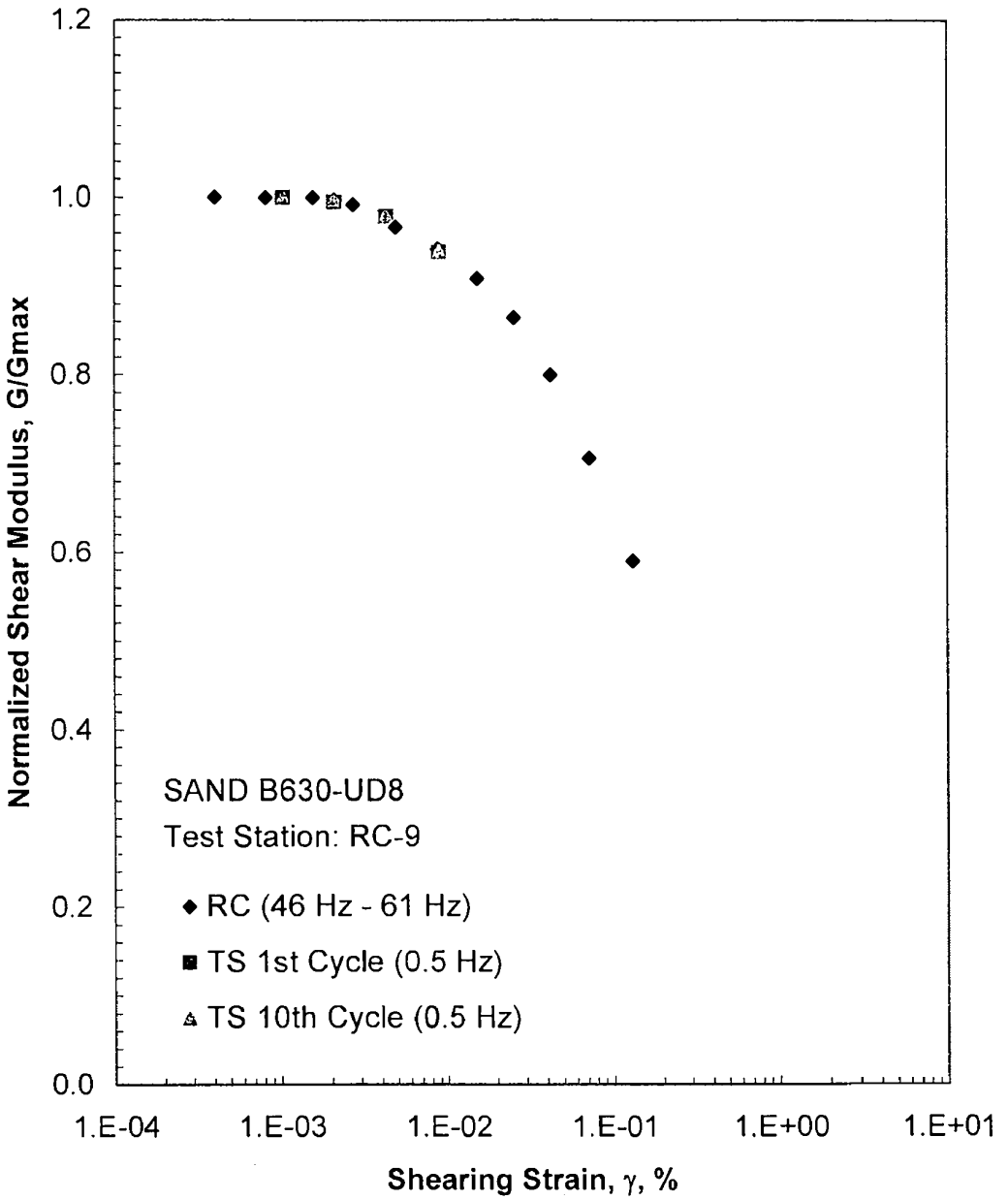

Figure A.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 47 psi from the Combined RCTS Tests

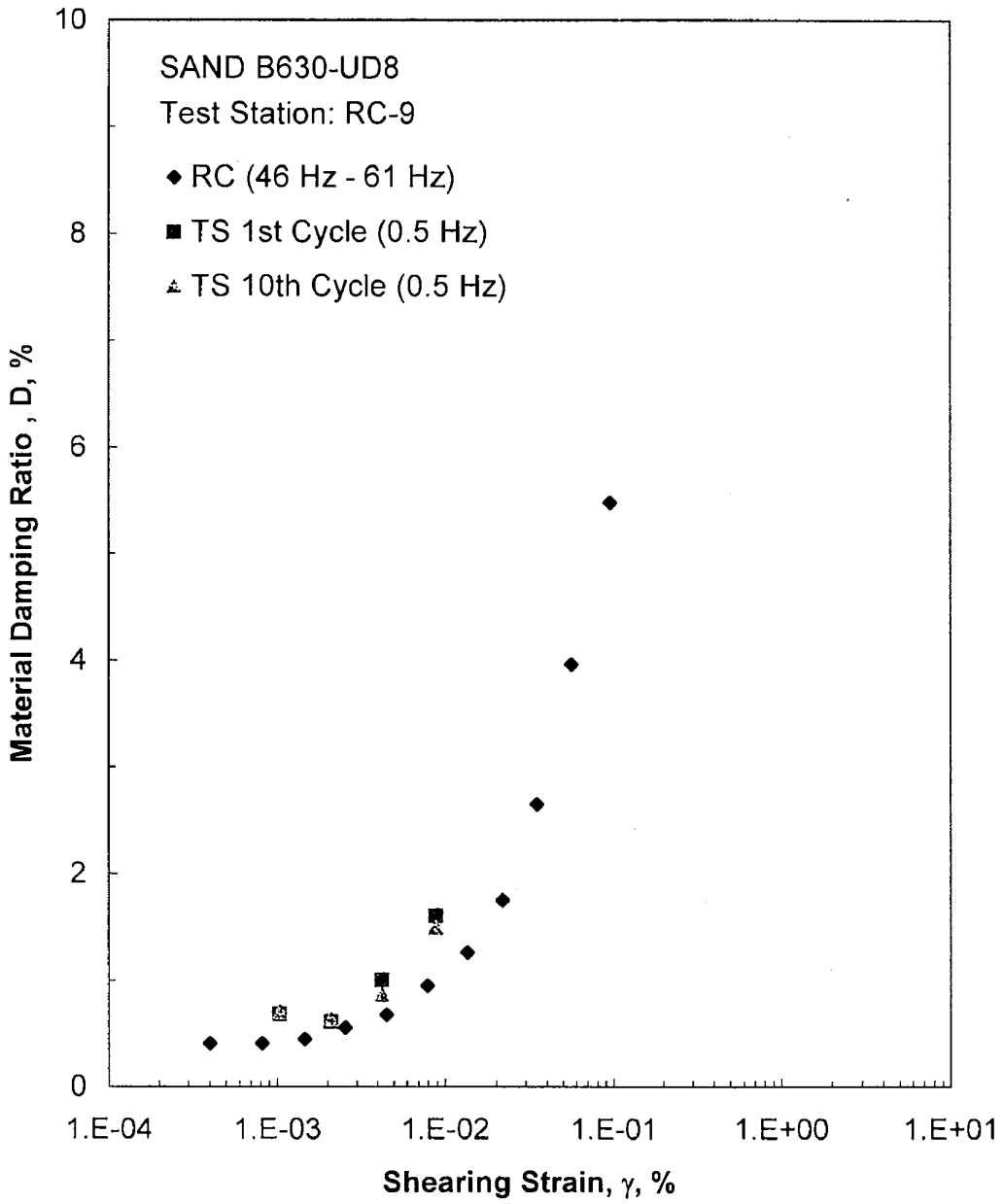

Figure A.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 47 psi from the Combined RCTS Tests

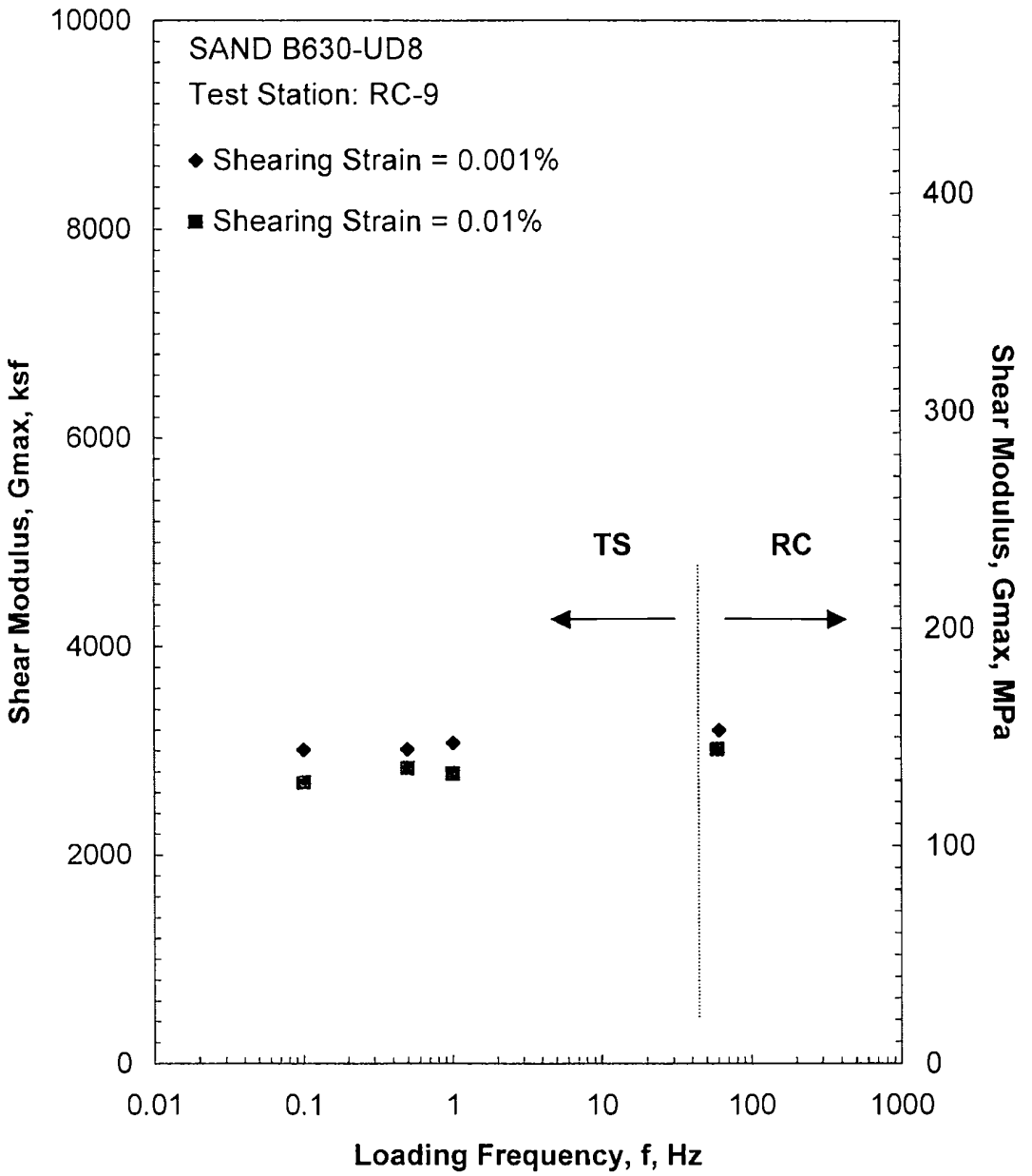

Figure A.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 47 psi from the Combined RCTS Tests

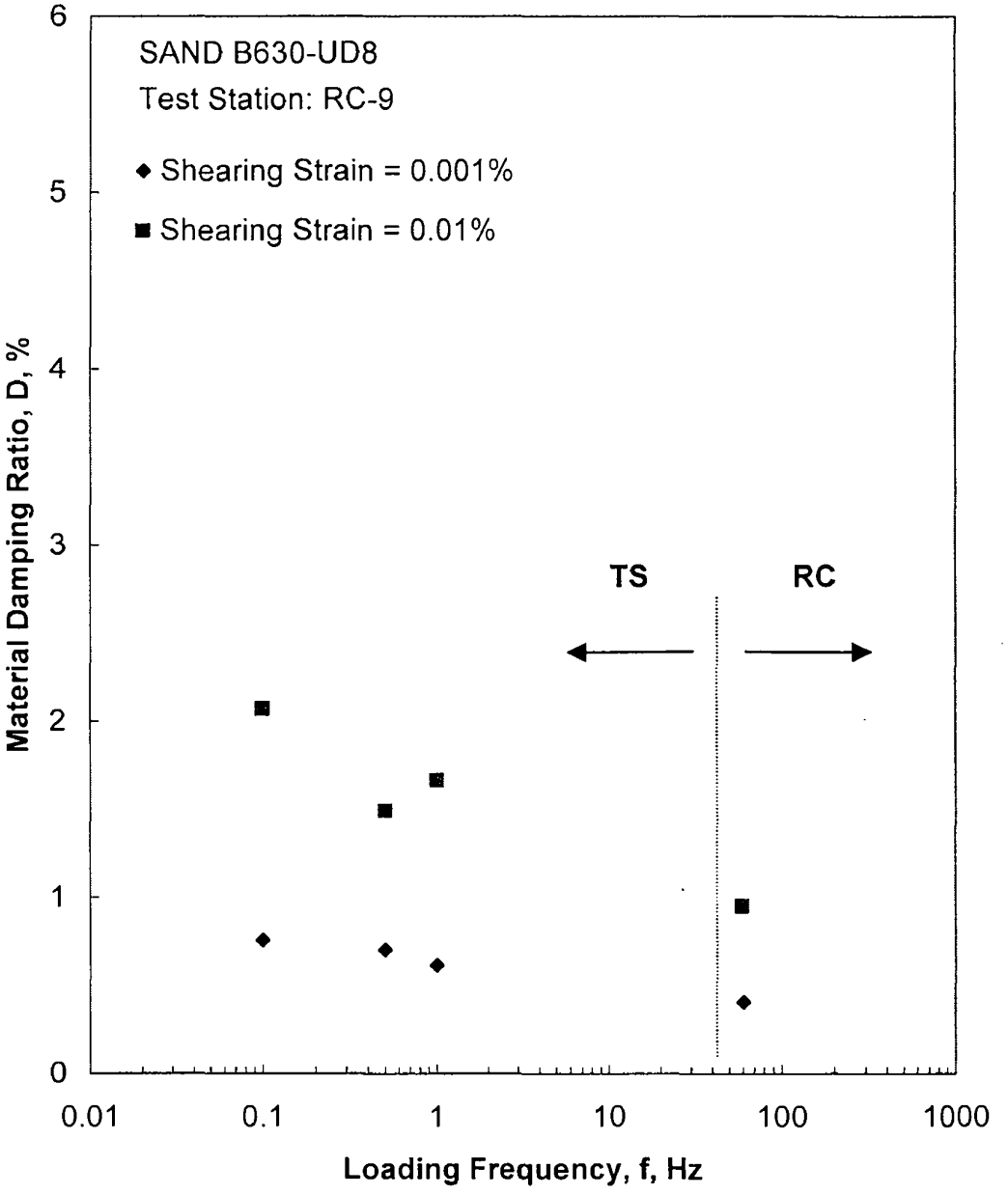

Figure A.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 47 psi from the Combined RCTS Tests

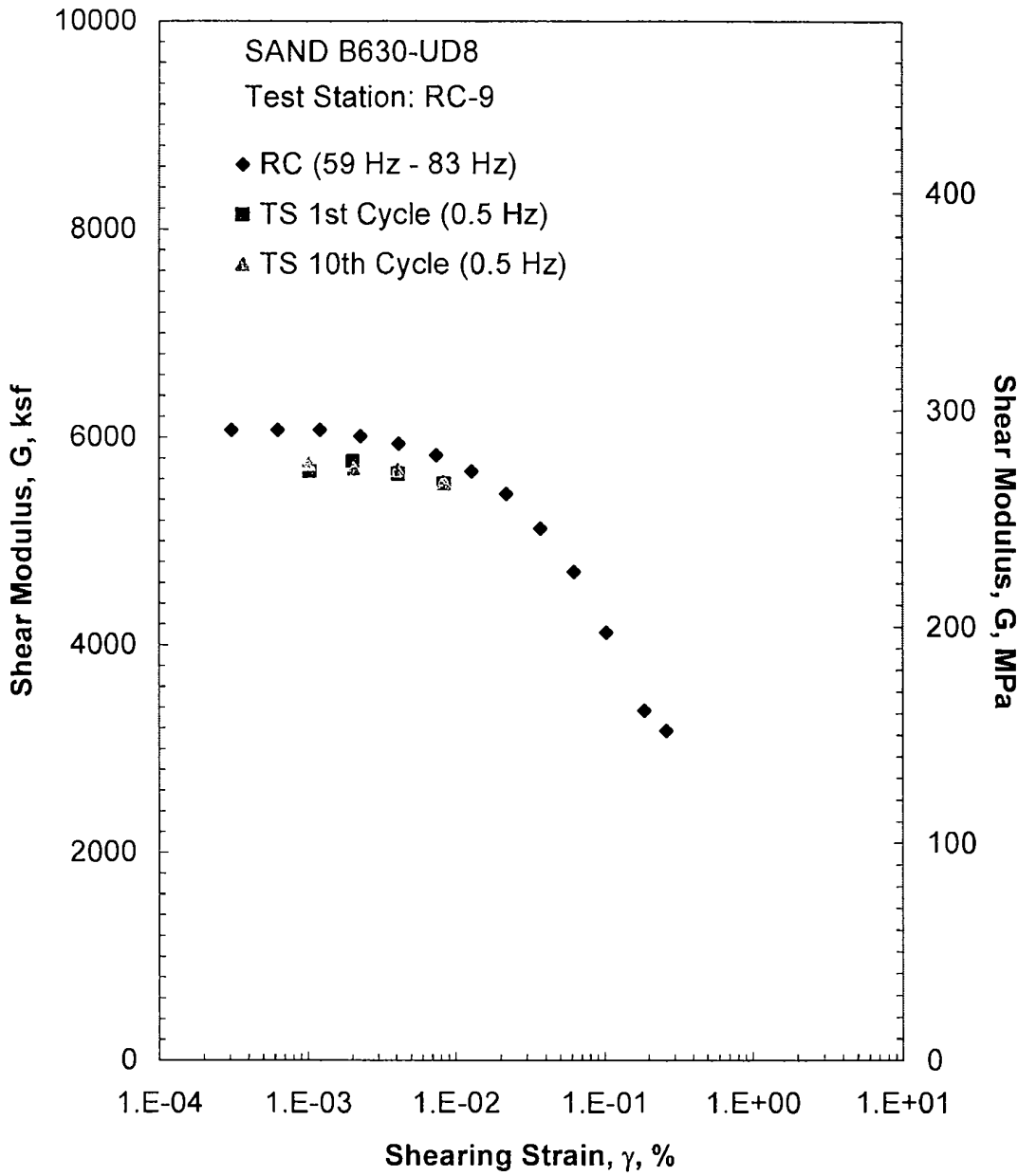

Figure A.16 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 187 psi from the Combined RCTS Tests

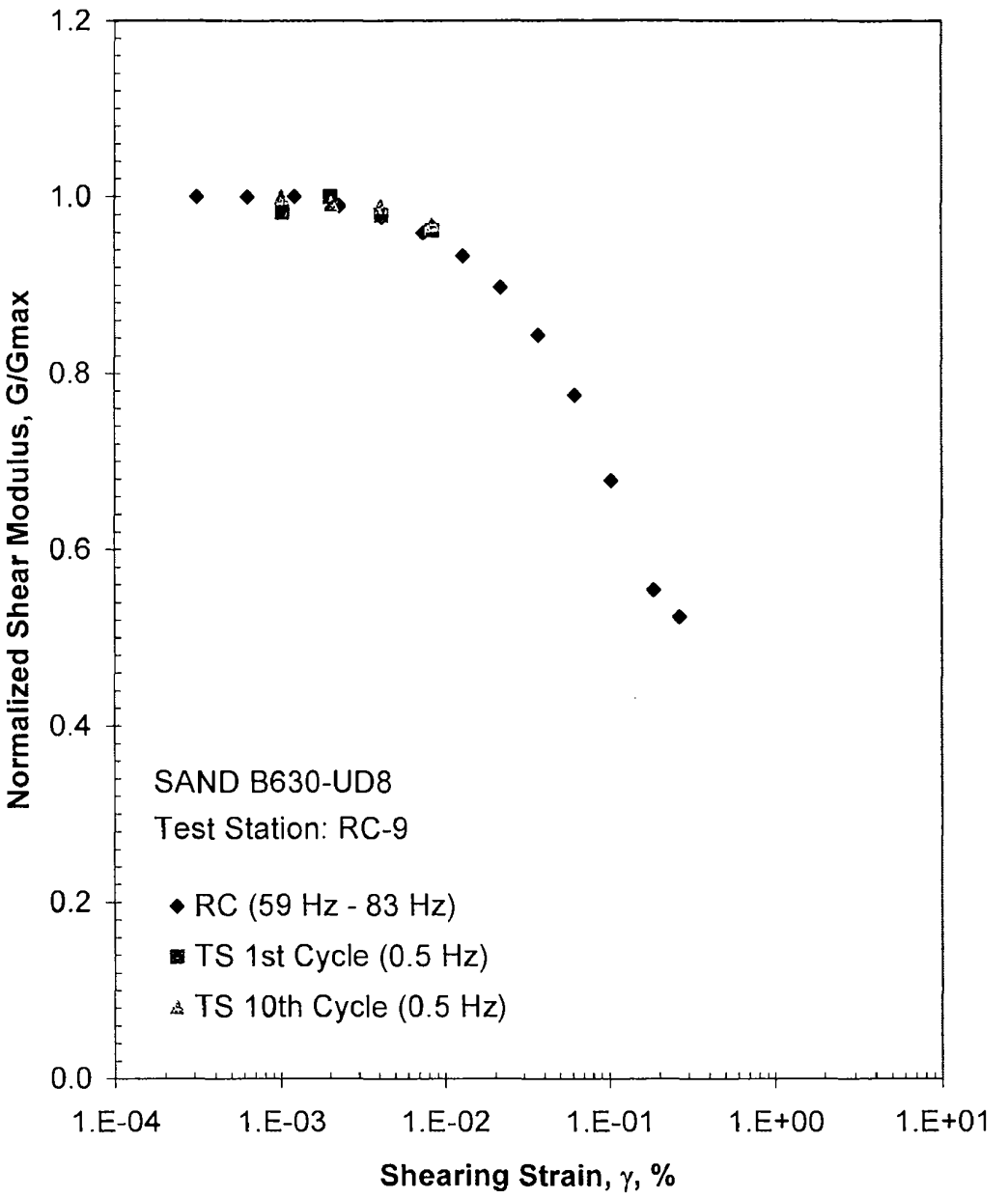

Figure A.17 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 187 psi from the Combined RCTS Tests

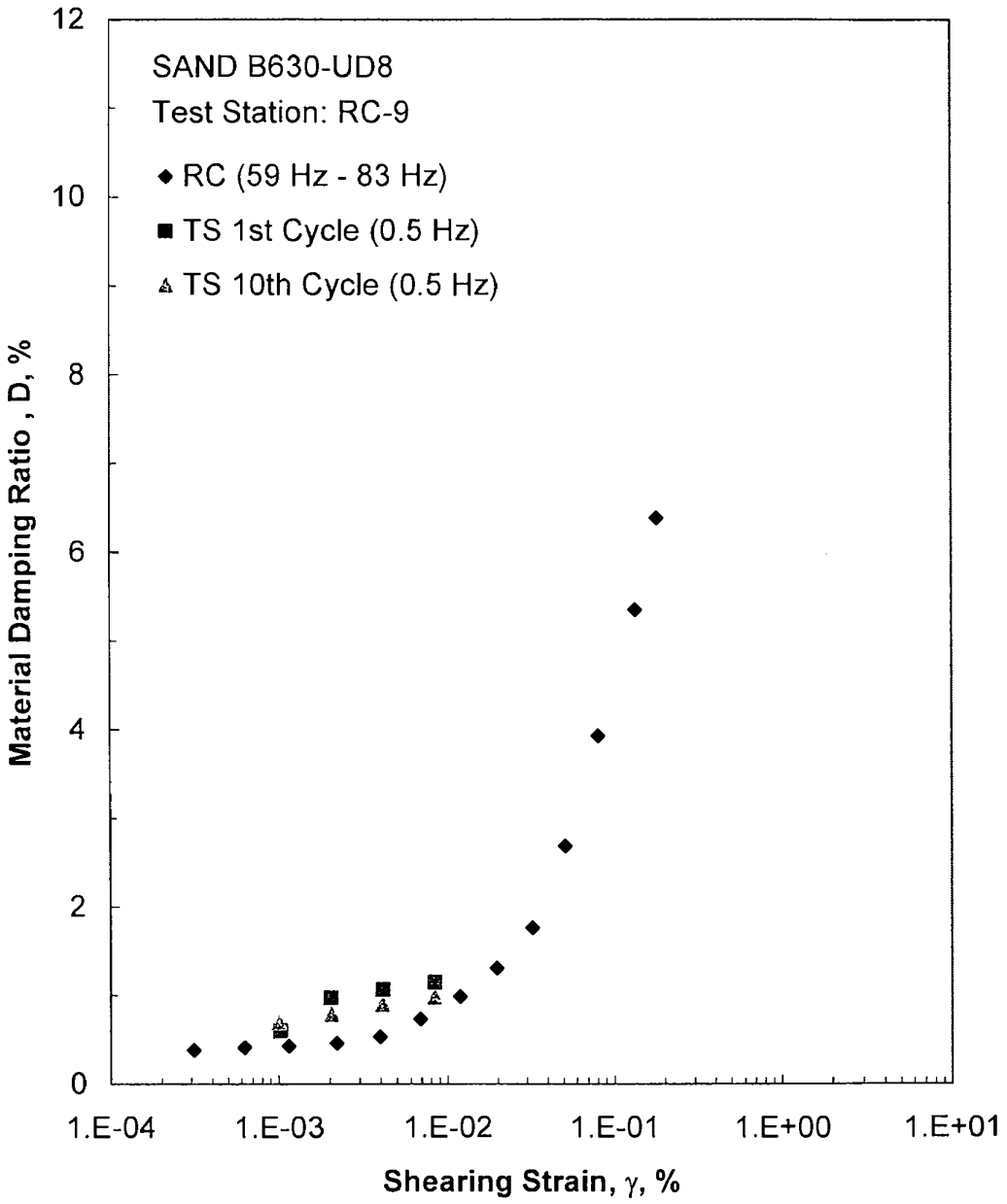

Figure A.18 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 187 psi from the Combined RCTS Tests

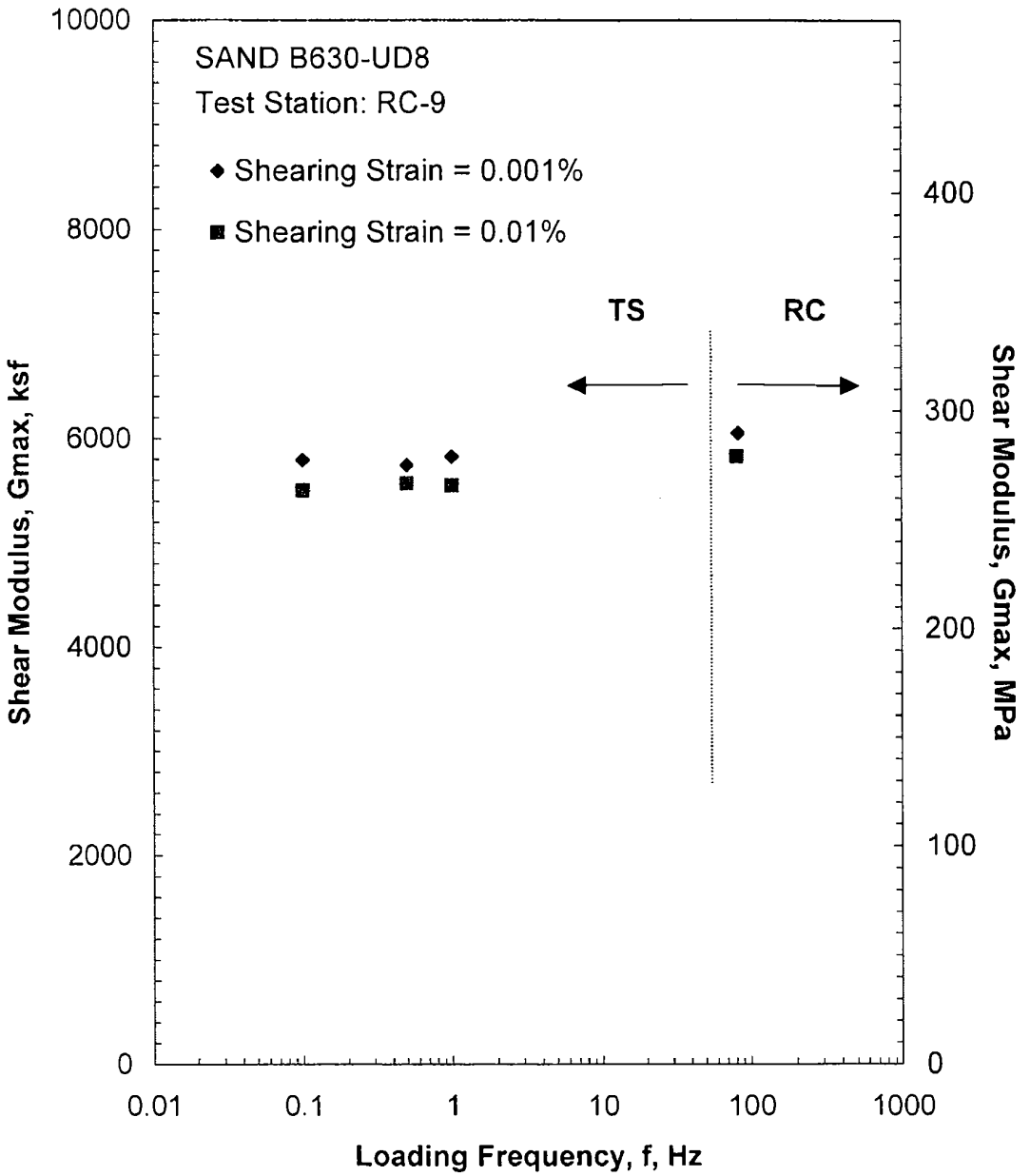

Figure A.19 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 187 psi from the Combined RCTS Tests

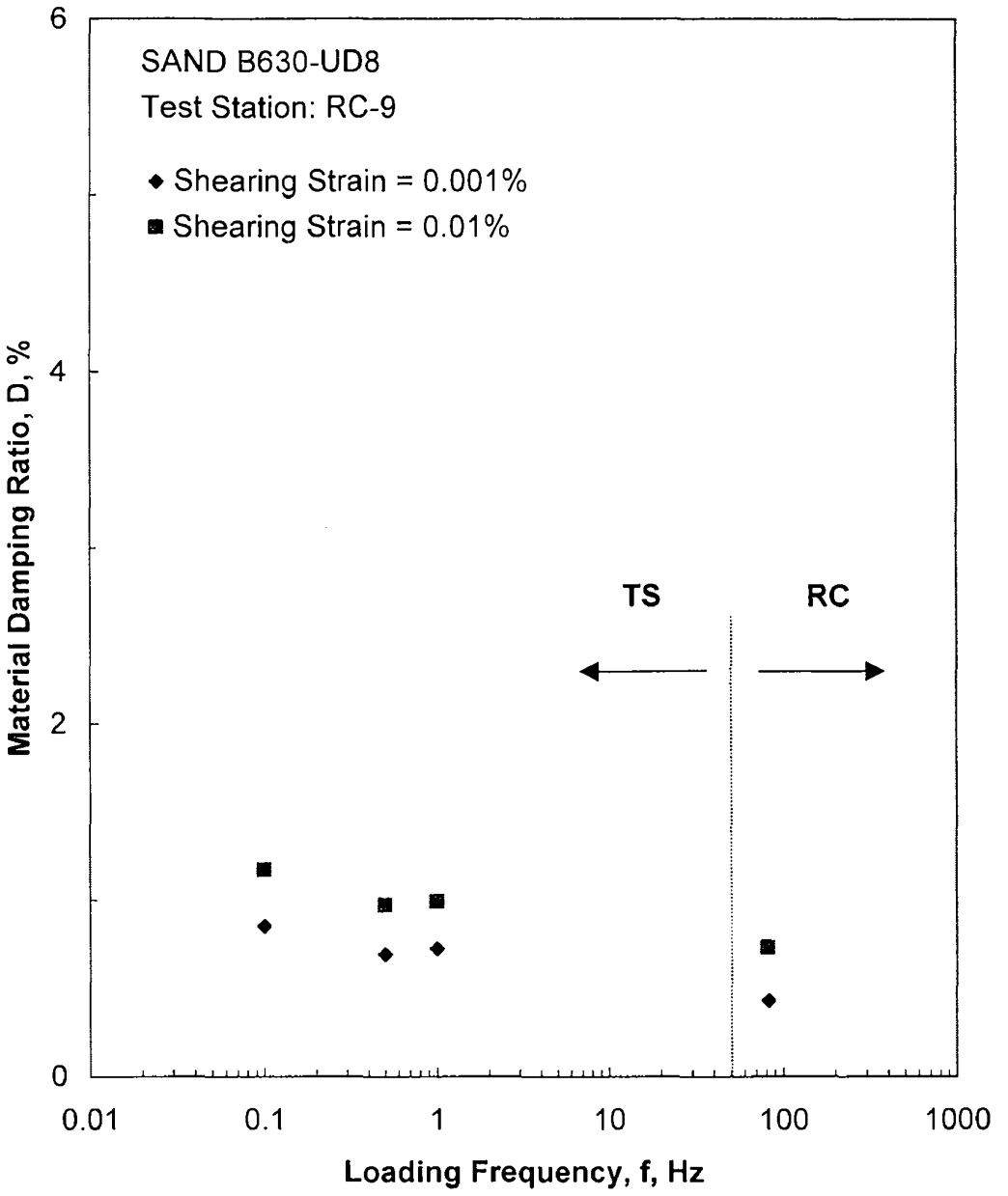

Figure A.20 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 187 psi from the Combined RCTS Tests

Table A.1 Variation in Low-Amplitude Shear Wave Velocity, Low-Amplitude Shear Modulus, Low-Amplitude Material Damping Ratio and Estimated Void Ratio with Isotropic Confining Pressure from RC Tests of Specimen B630-UD8

Isotropic Confining Pressure, σ_o			Low-Amplitude Shear Modulus, G_{max}		Low-Amplitude Shear Wave Velocity, Vs	Low-Amplitude Material Damping Ratio, Dmin	Estimated Void Ratio, e
(psi)	(psf)	(kPa)	(ksf)	(MPa)	(fps)	(%)	
12	1728	83	1609	77	659	0.76	0.85
23	3312	158	2230	107	775	0.70	0.84
47	6768	324	3183	153	924	0.42	0.83
97	13968	668	4530	217	1097	0.40	0.81
187	26928	1288	5967	286	1249	0.39	0.79

Table A.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD8; Isoptropic Confining Pressure, σ_o=47 psi (6.8 ksf = 324 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
4.04E-04	3196	1.00	4.04E-04	0.41
8.14E-04	3196	1.00	8.14E-04	0.41
1.55E-03	3196	1.00	1.46E-03	0.45
2.71E-03	3170	0.99	2.55E-03	0.55
4.86E-03	3090	0.97	4.52E-03	0.68
8.70E-03	3011	0.94	7.91E-03	0.95
1.51E-02	2903	0.91	1.36E-02	1.26
2.53E-02	2762	0.86	2.18E-02	1.75
4.22E-02	2556	0.80	3.50E-02	2.65
7.15E-02	2254	0.71	5.58E-02	3.96
1.31E-01	1886	0.59	9.54E-02	5.48

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table A.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD8; Isotropic Confining Pressure, σ_o= 47 psi (6.8 ksf = 324 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
1.03E-03	3020	1.00	0.68	1.04E-03	3016	1.00	0.70
2.09E-03	3005	0.99	0.61	2.09E-03	3010	1.00	0.63
4.25E-03	2956	0.98	1.00	4.25E-03	2954	0.98	0.86
8.86E-03	2834	0.94	1.60	8.87E-03	2832	0.94	1.49

Table A.4 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD8; Isoptropic Confining Pressure, σ_o= 187 psi (26.9 ksf = 1288 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
3.09E-04	6071	1.00	3.09E-04	0.38
6.26E-04	6071	1.00	6.26E-04	0.41
1.21E-03	6071	1.00	1.14E-03	0.43
2.28E-03	6009	0.99	2.19E-03	0.46
4.16E-03	5935	0.98	3.95E-03	0.54
7.40E-03	5825	0.96	6.88E-03	0.73
1.28E-02	5666	0.93	1.19E-02	0.99
2.17E-02	5453	0.90	1.97E-02	1.30
3.69E-02	5120	0.84	3.25E-02	1.76
6.19E-02	4703	0.77	5.14E-02	2.68
1.03E-01	4115	0.68	8.04E-02	3.92
1.86E-01	3365	0.55	1.34E-01	5.34
2.64E-01	3175	0.52	1.80E-01	6.37

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table A.5 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD8; Isotropic Confining Pressure, σ_o=187 psi (26.9 ksf = 1288 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
1.03E-03	5671	0.98	0.60	1.01E-03	5744	1.00	0.69
2.02E-03	5768	1.00	0.97	2.05E-03	5698	0.99	0.78
4.13E-03	5650	0.98	1.06	4.10E-03	5684	0.99	0.89
8.40E-03	5551	0.96	1.14	8.38E-03	5565	0.97	0.97

APPENDIX B

Specimen B630-UD2

Borehole B630
Sample UD2
Depth = 131.9 ft (40.2 m)
Total Unit Weight = 120.1 lb/ft^3
Water Content = 33.8 %
Estimated In-Situ Ko = 0.5
Estimated In-Situ Mean Effective Stress = 38 psi

FUGRO JOB #: 0411-08-1701
Testing Station: RC5

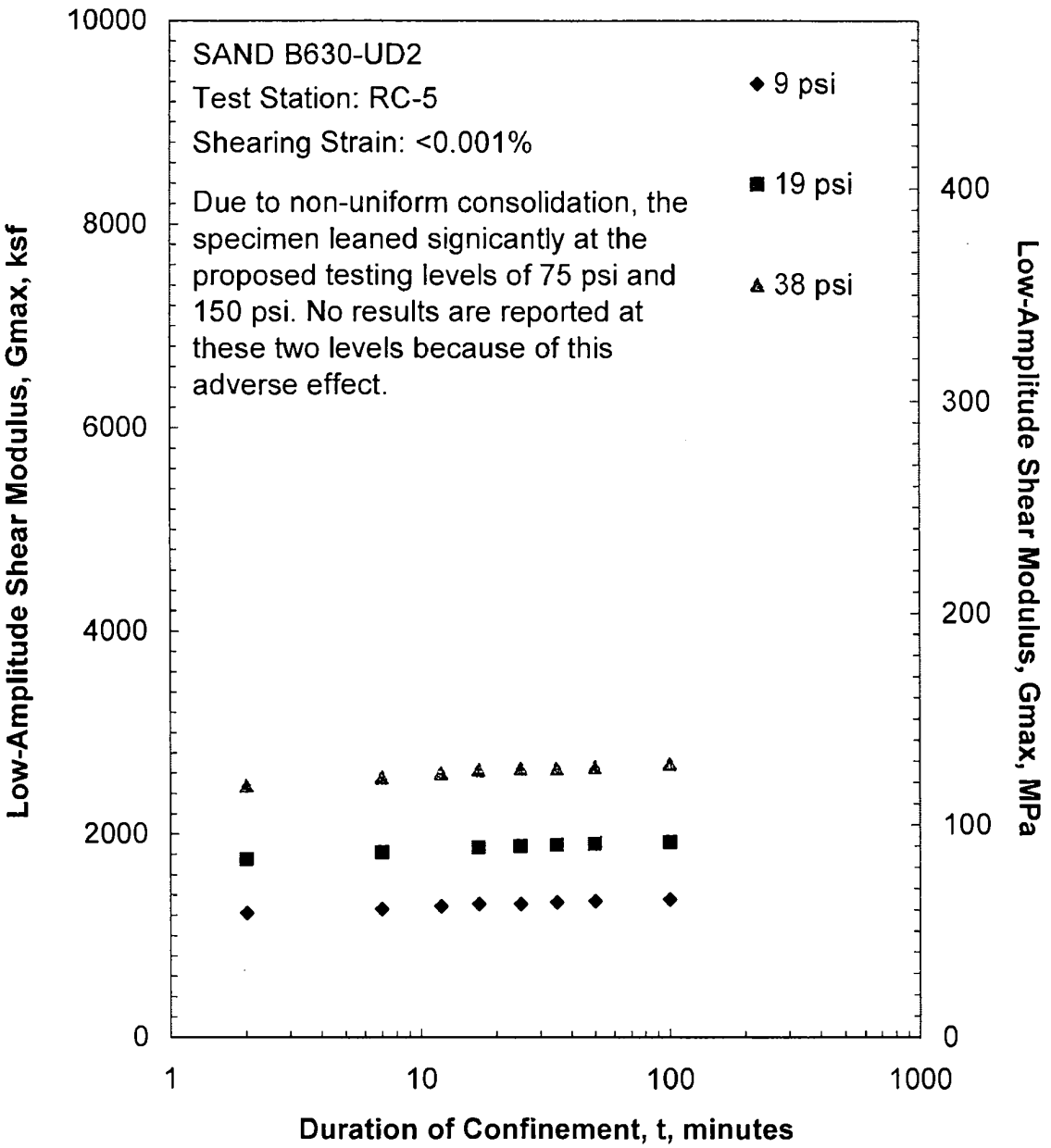

Figure B.1 Variation in Low-Amplitude Shear Modulus with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

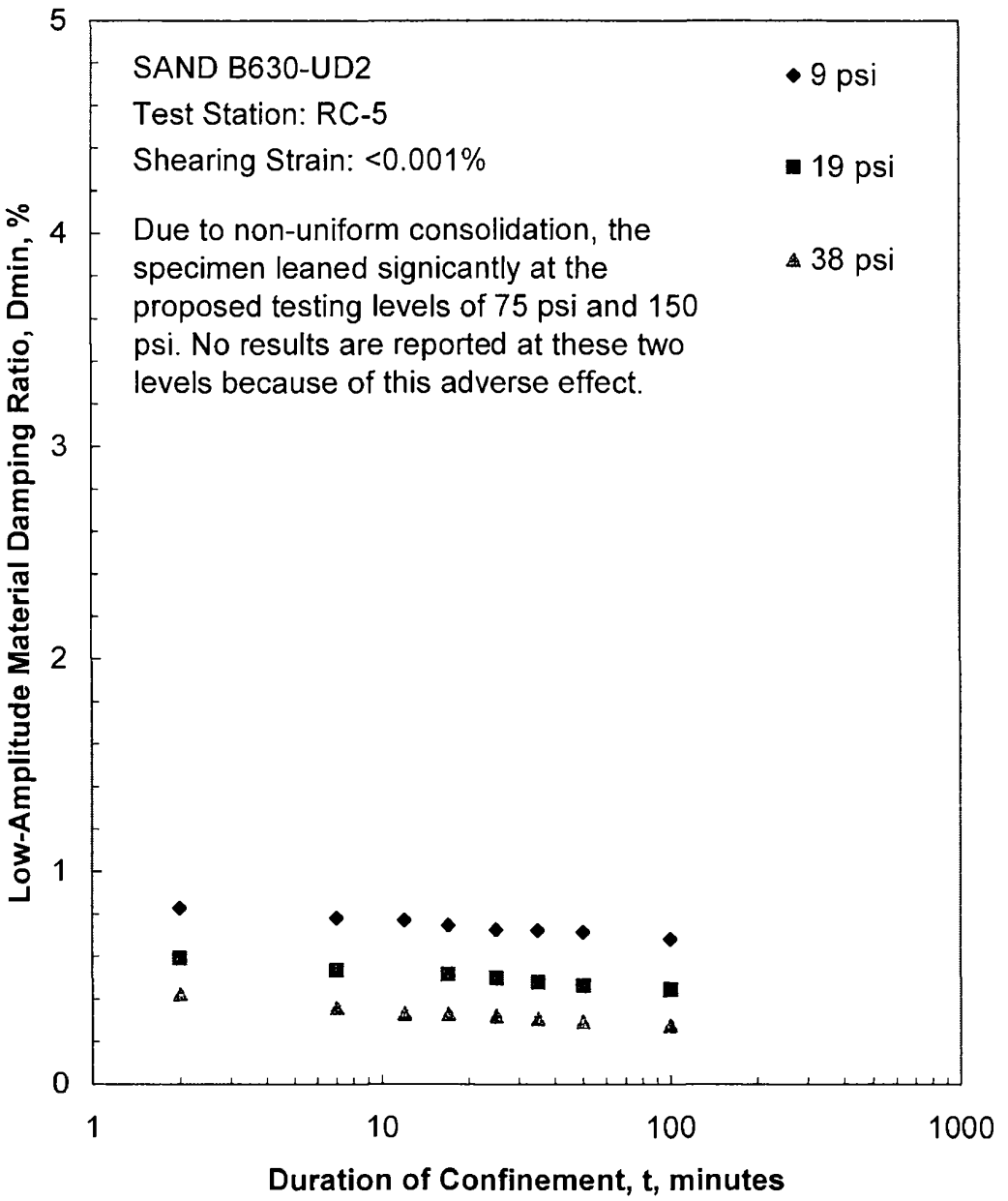

Figure B.2 Variation in Low-Amplitude Material Damping Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

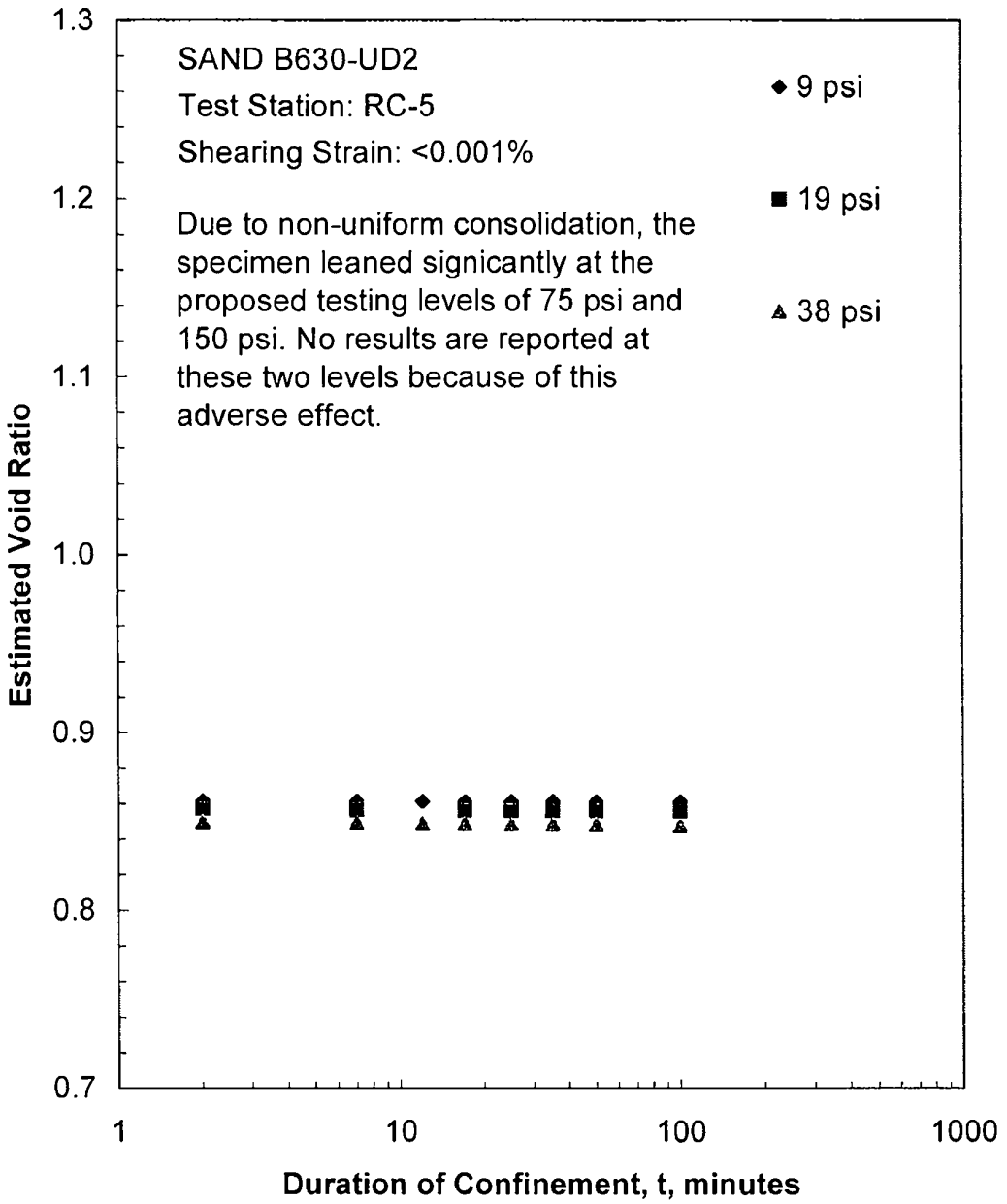

Figure B.3 Variation in Estimated Void Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

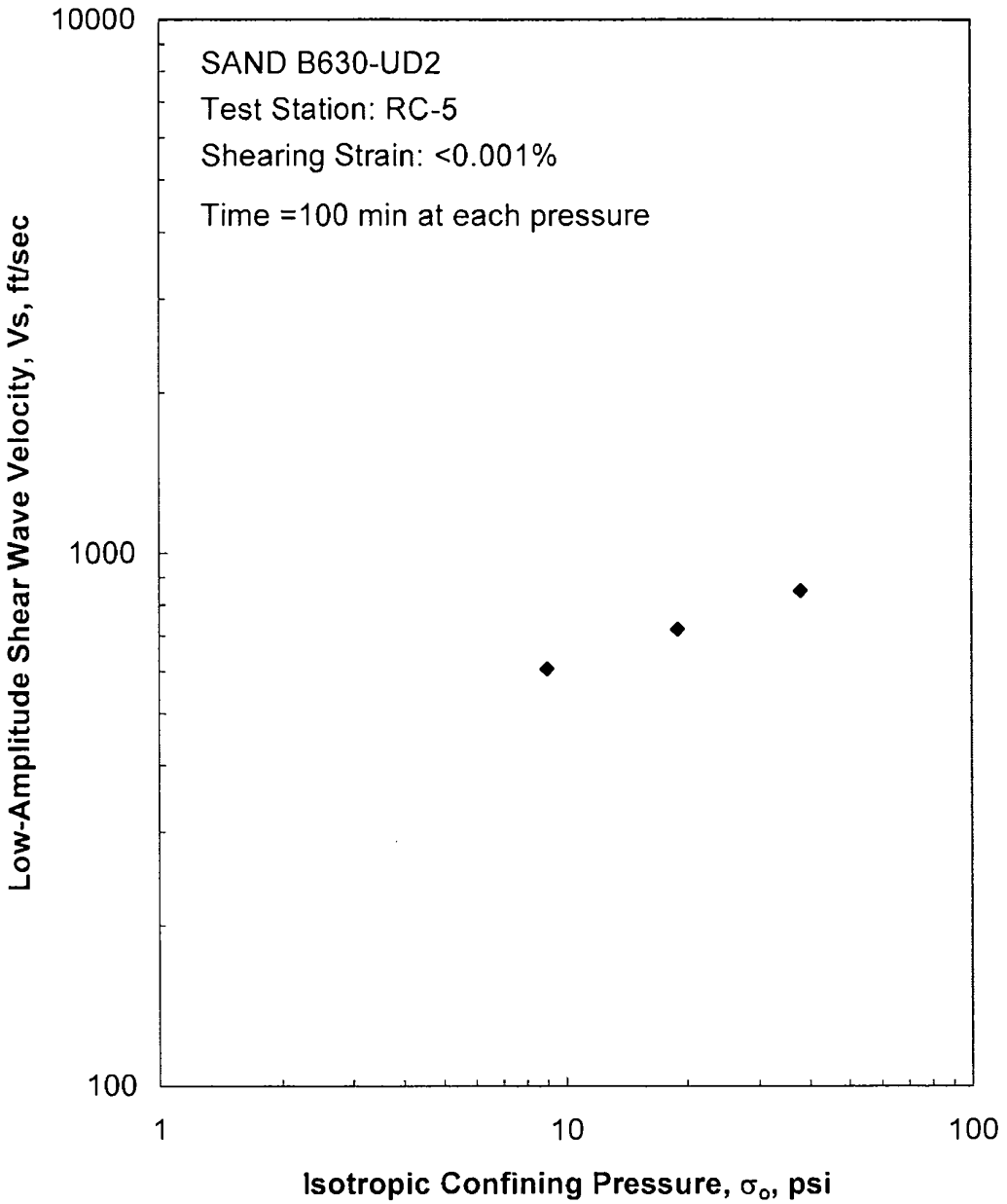

Figure B.4 Variation in Low-Amplitude Shear Wave Velocity with Isotropic Confining Pressure from Resonant Column Tests

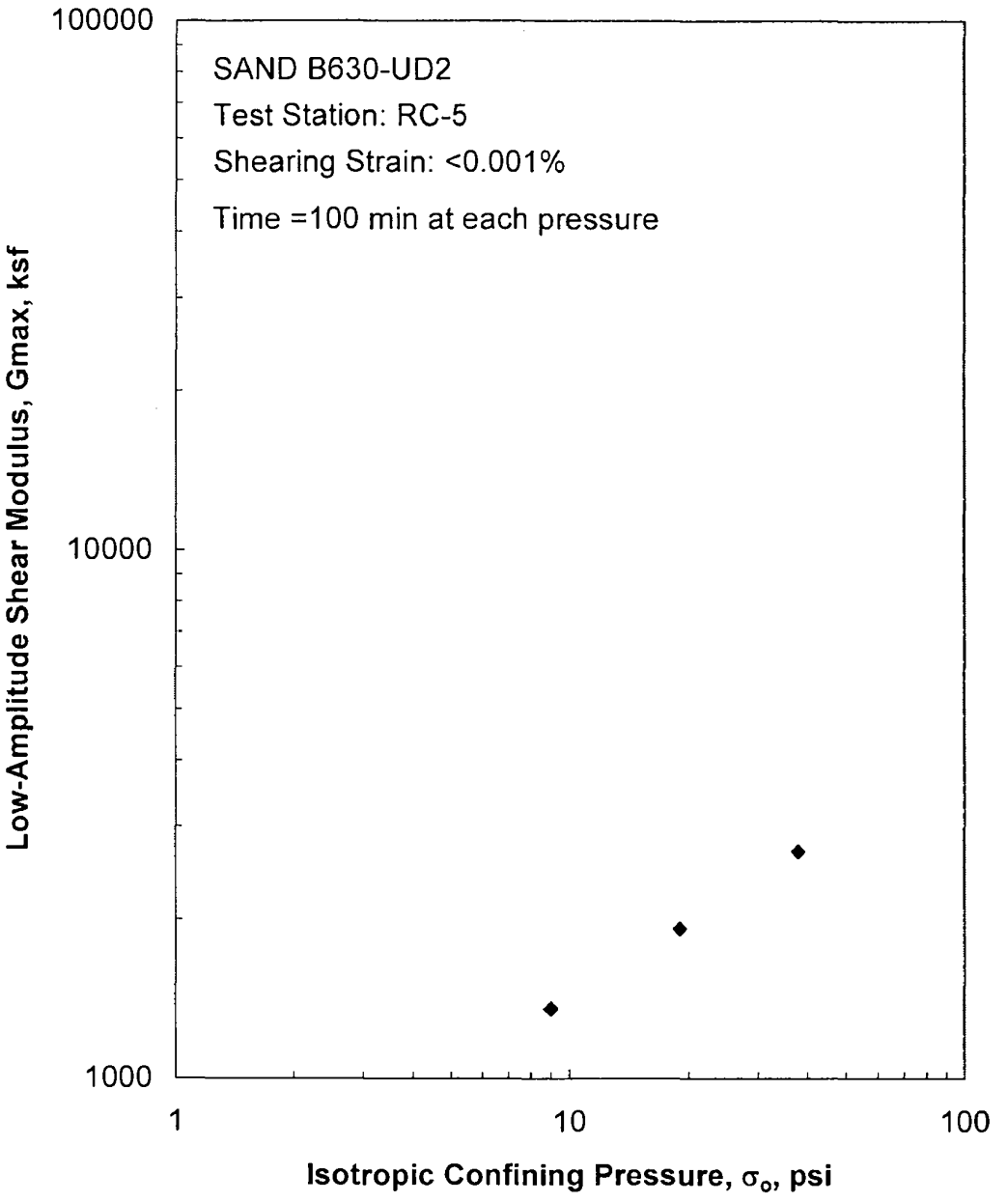

Figure B.5 Variation in Low-Amplitude Shear Modulus with Isotropic Confining Pressure from Resonant Column Tests

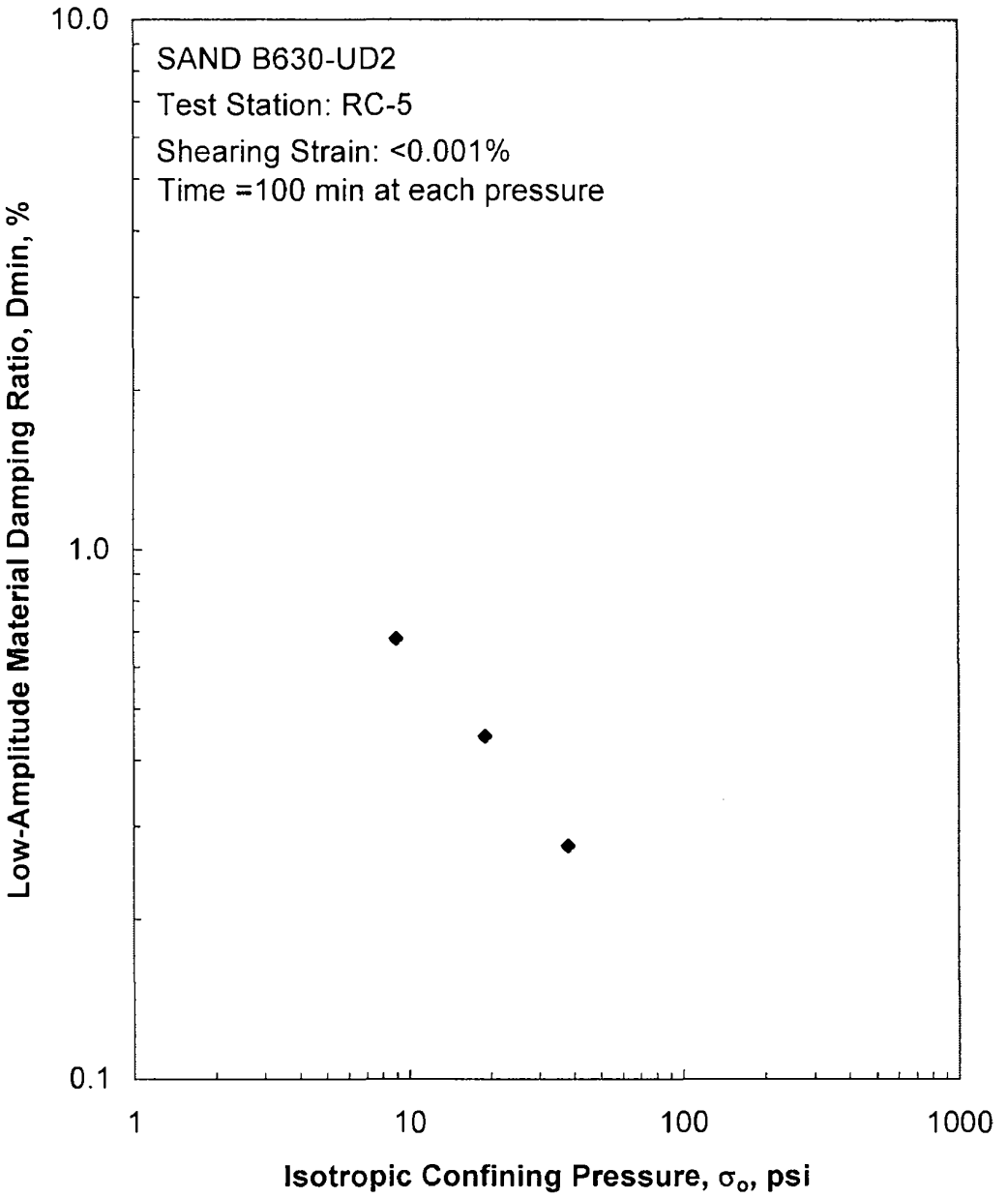

Figure B.6 Variation in Low-Amplitude Material Damping Ratio with Isotropic Confining Pressure from Resonant Column Tests

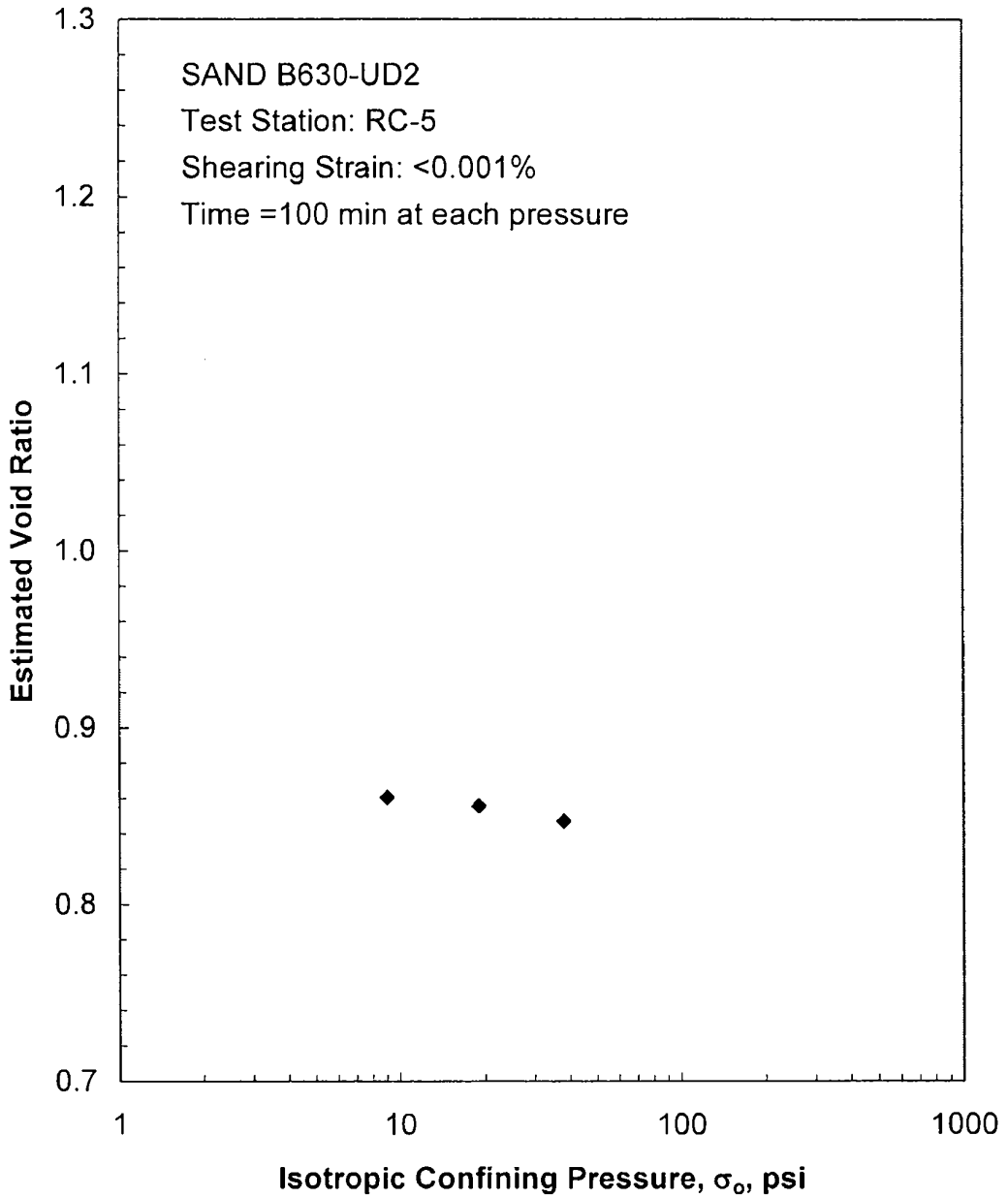

Figure B.7 Variation in Estimated Void Ratio with Isotropic Confining Pressure from Resonant Column Tests

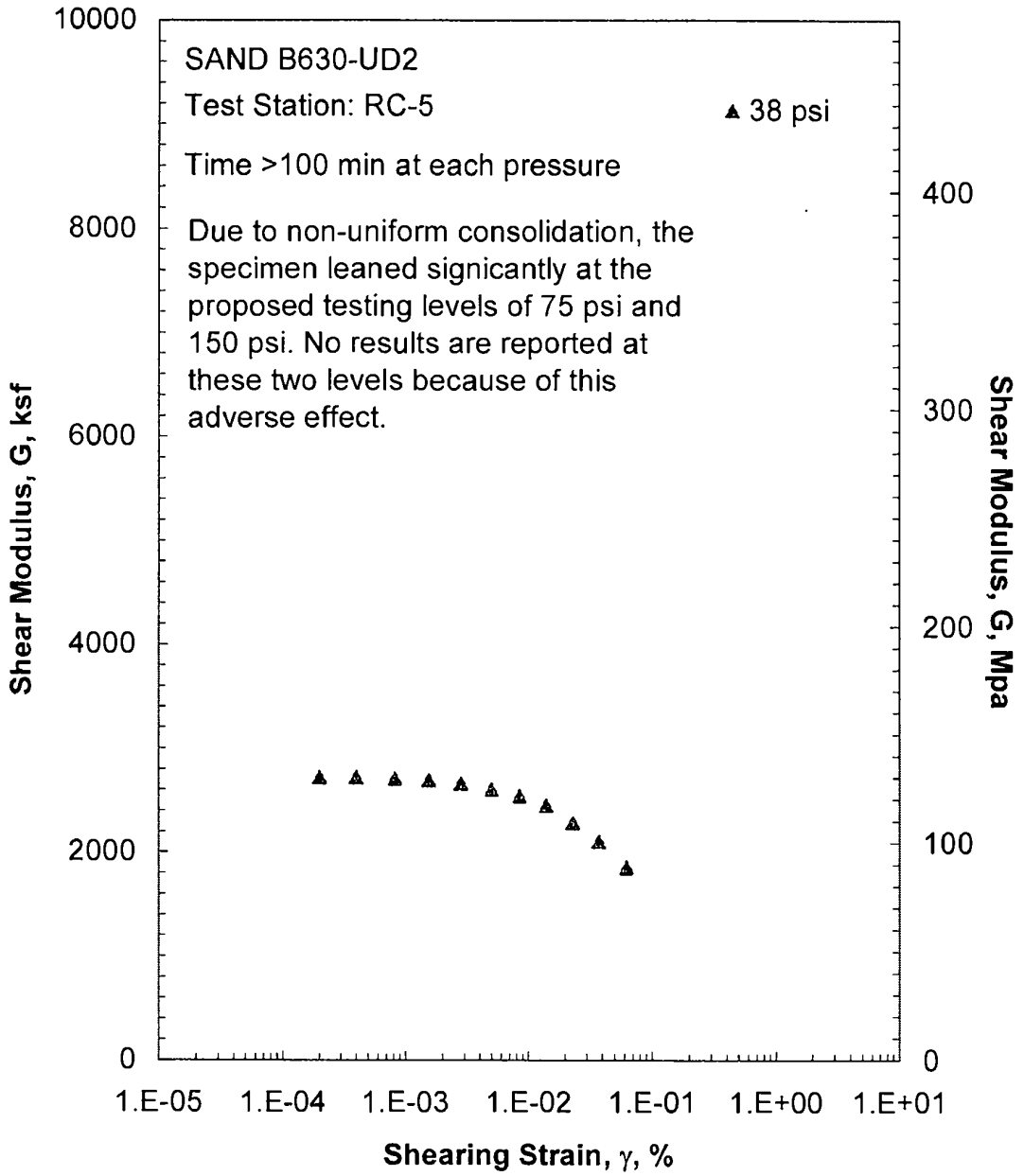

Figure B.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

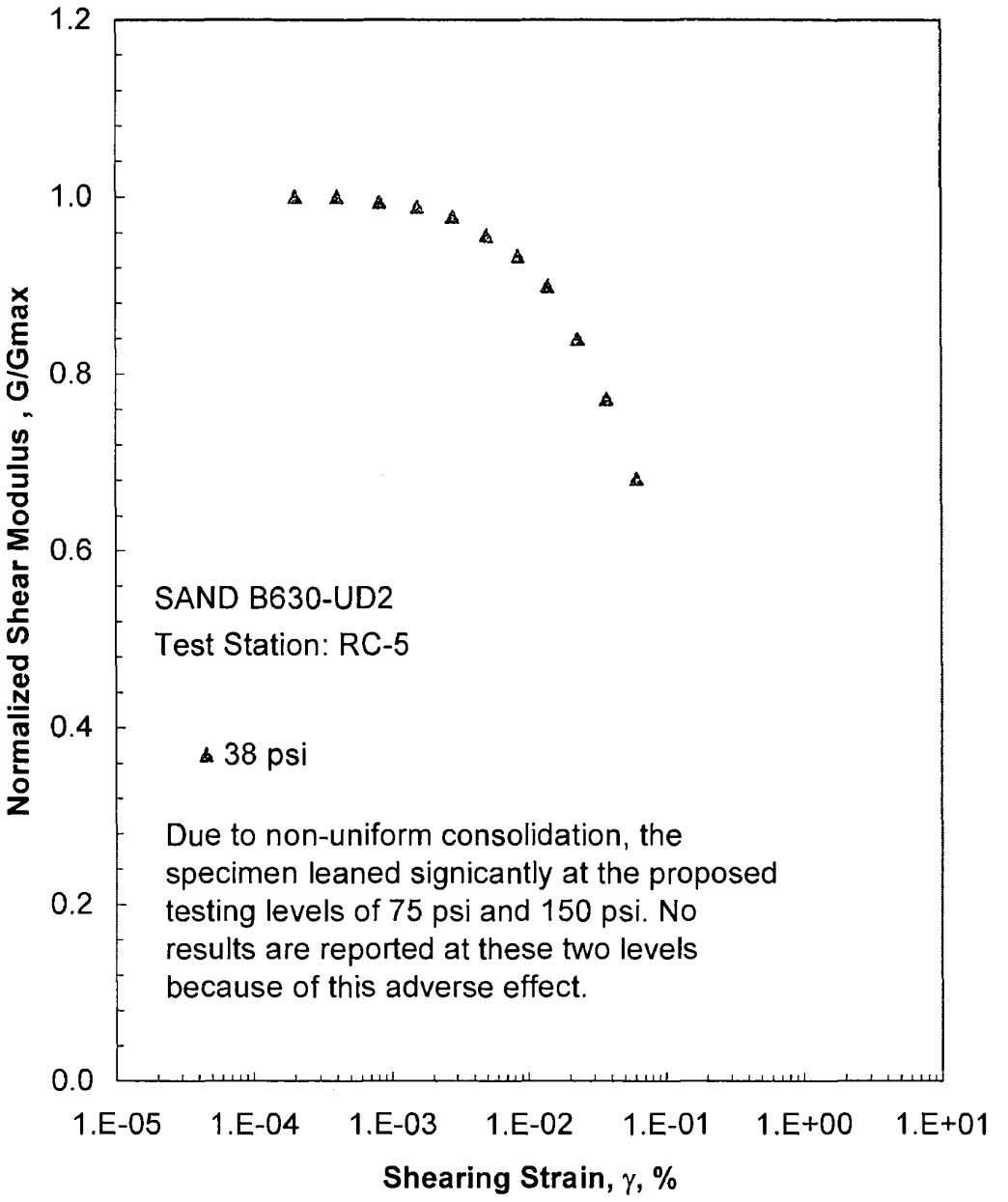

Figure B.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

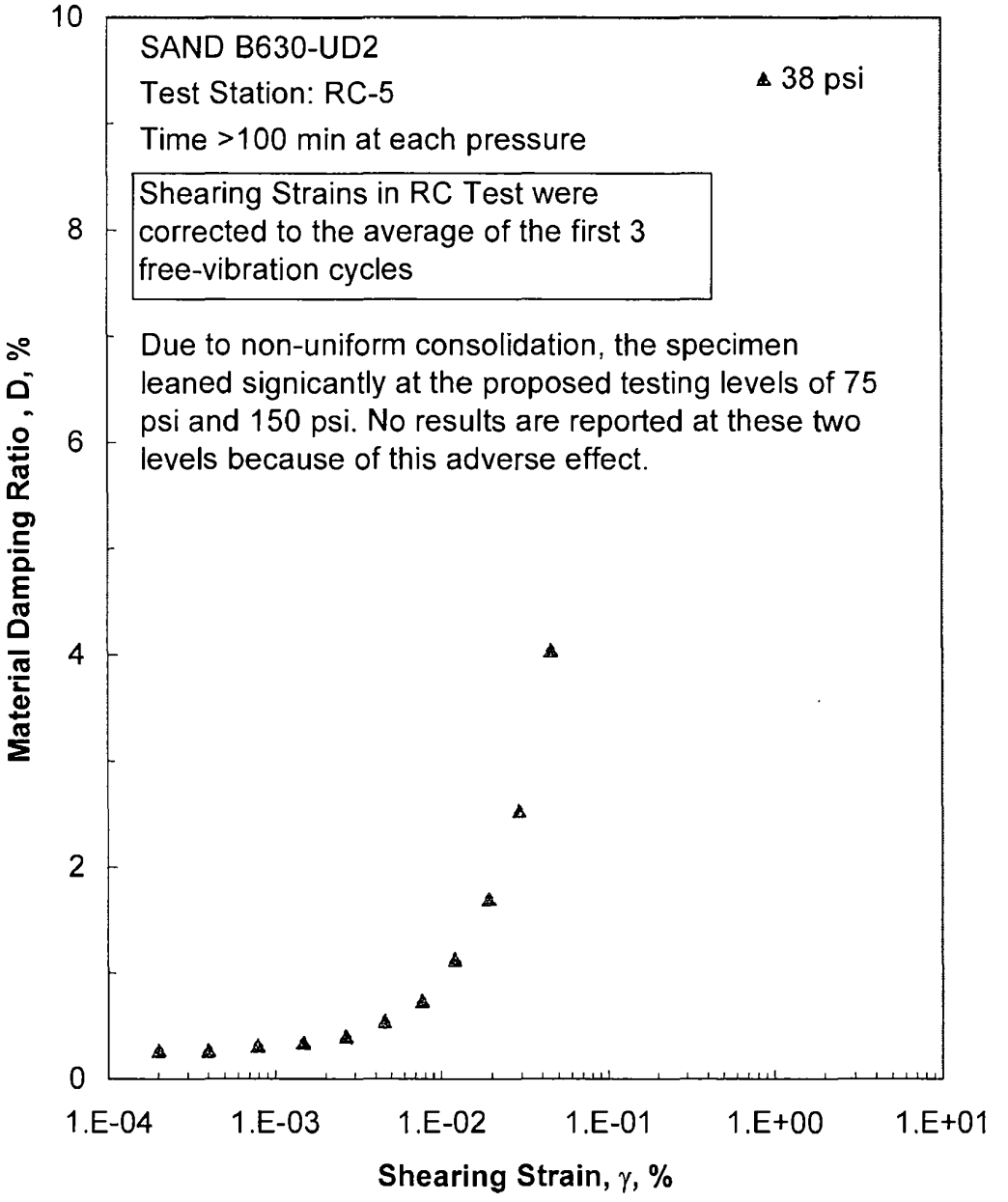

Figure B.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

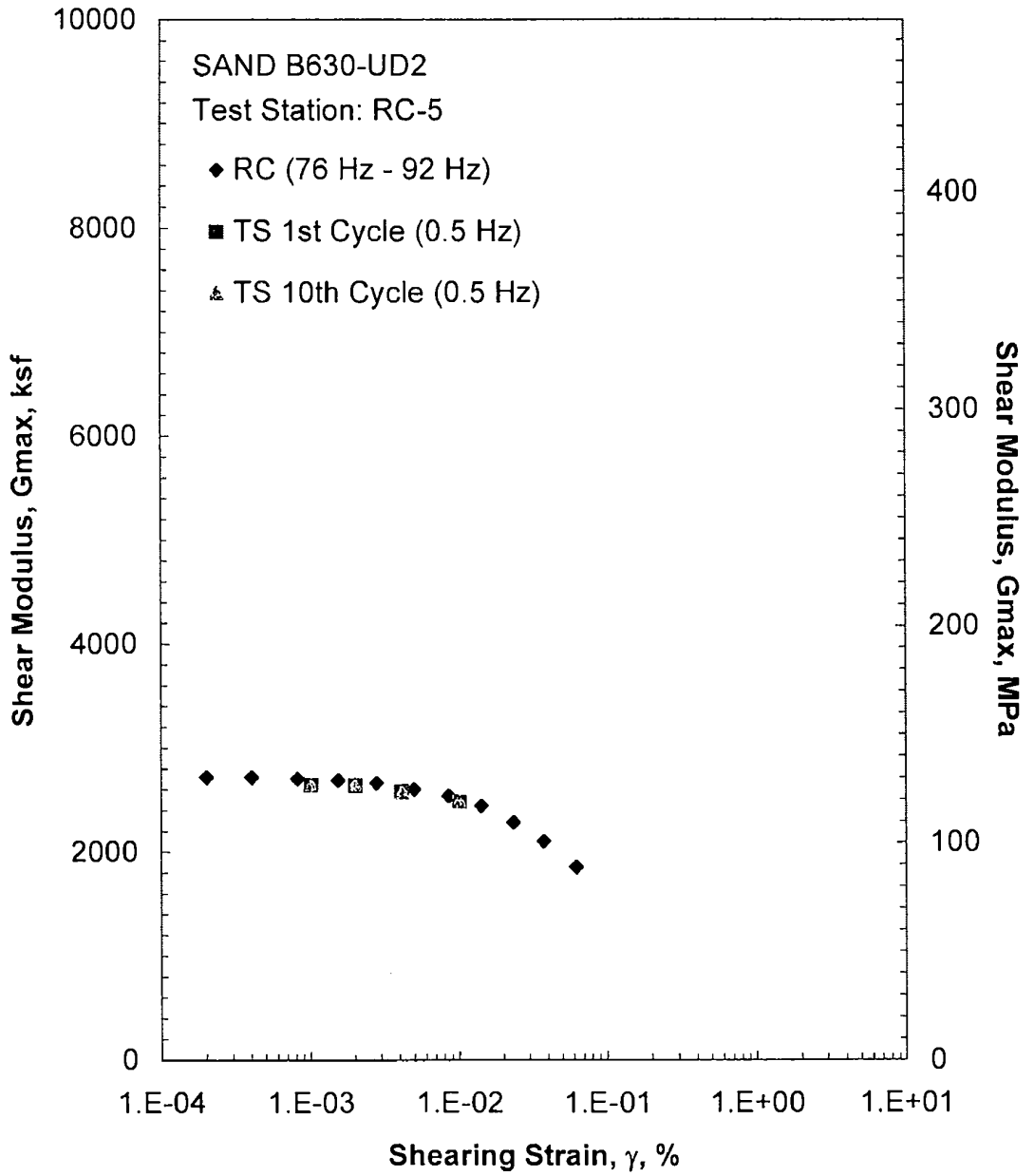

Figure B.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 38 psi from the Combined RCTS Tests

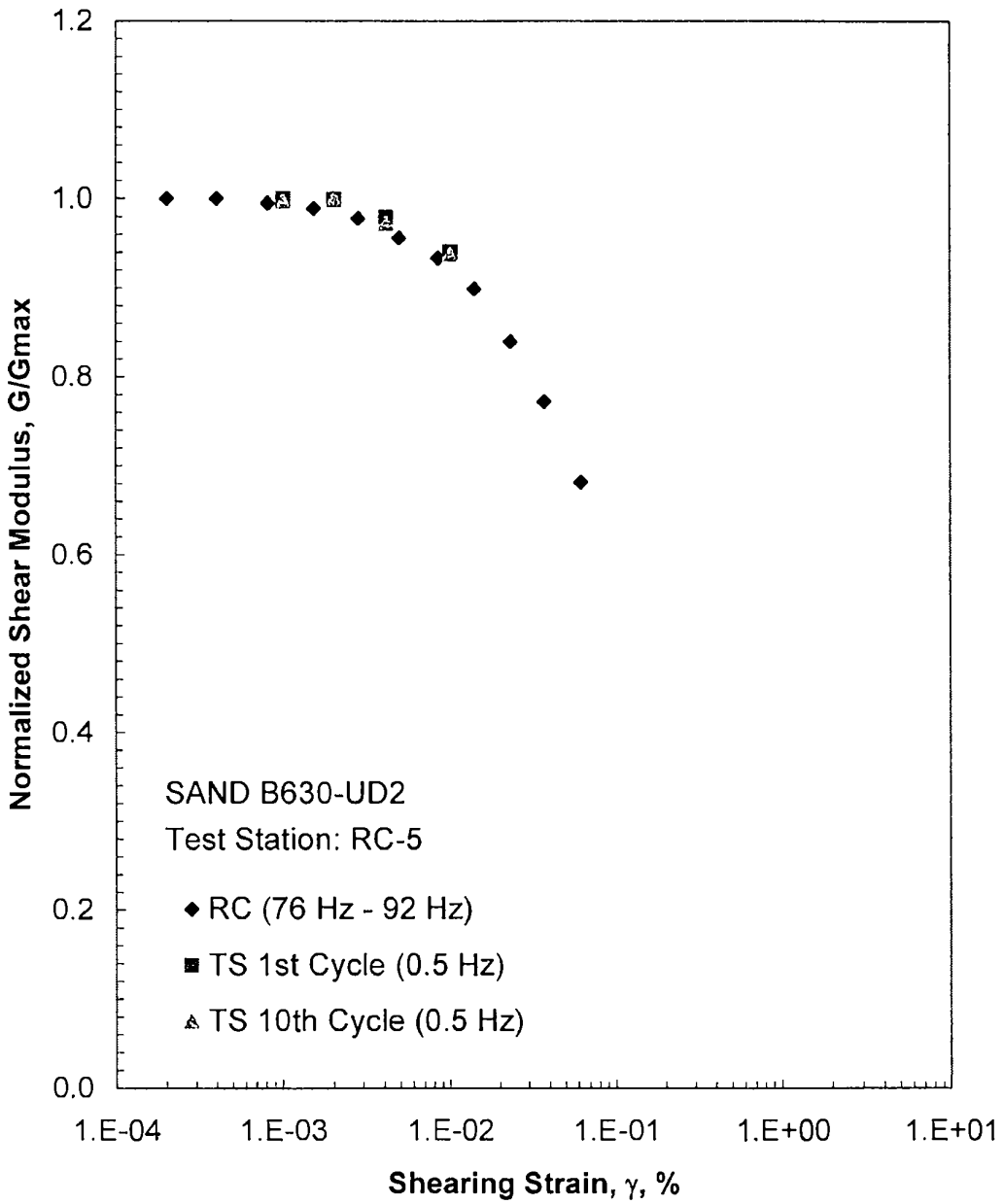

Figure B.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 38 psi from the Combined RCTS Tests

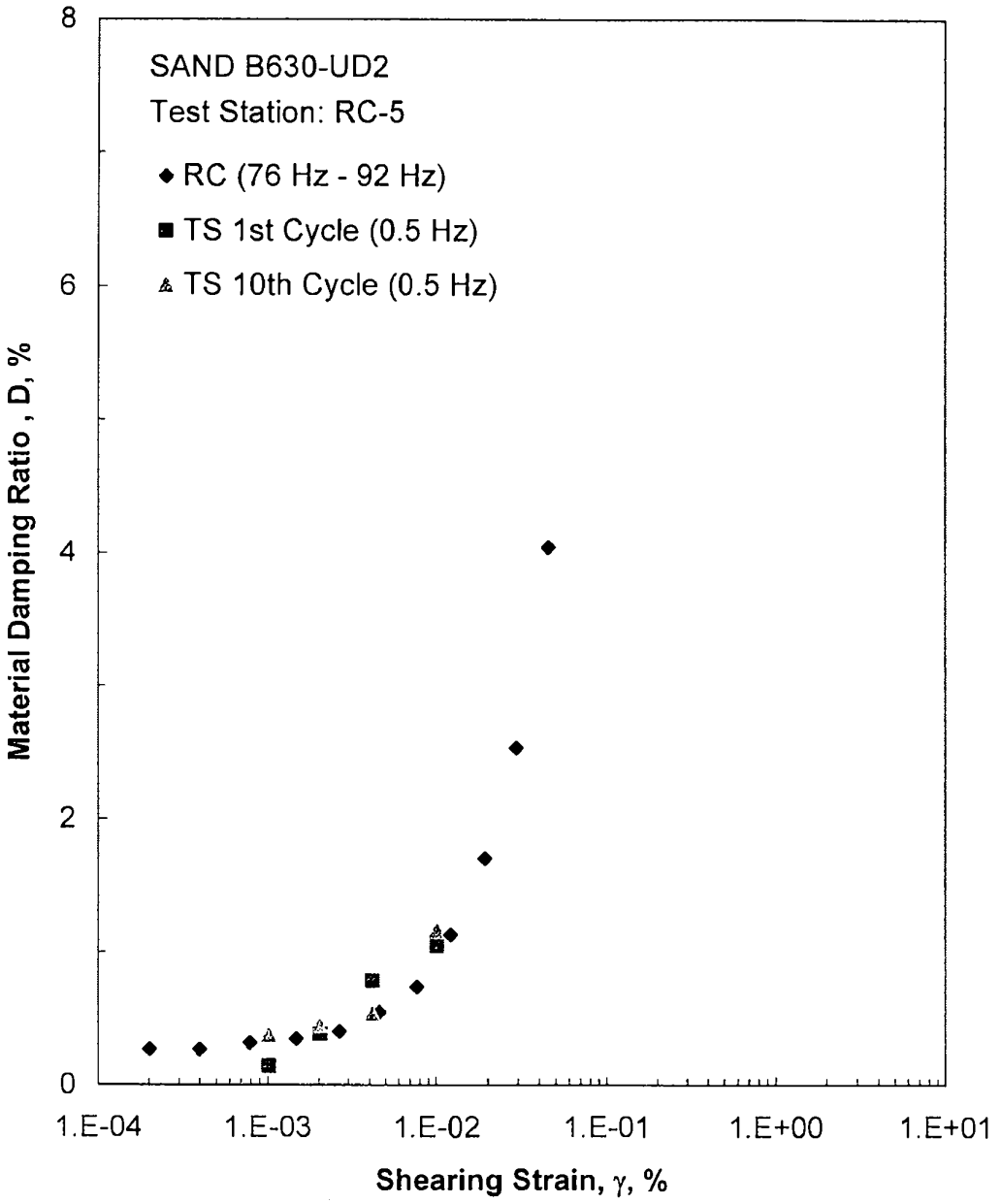

Figure B.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 38 psi from the Combined RCTS Tests

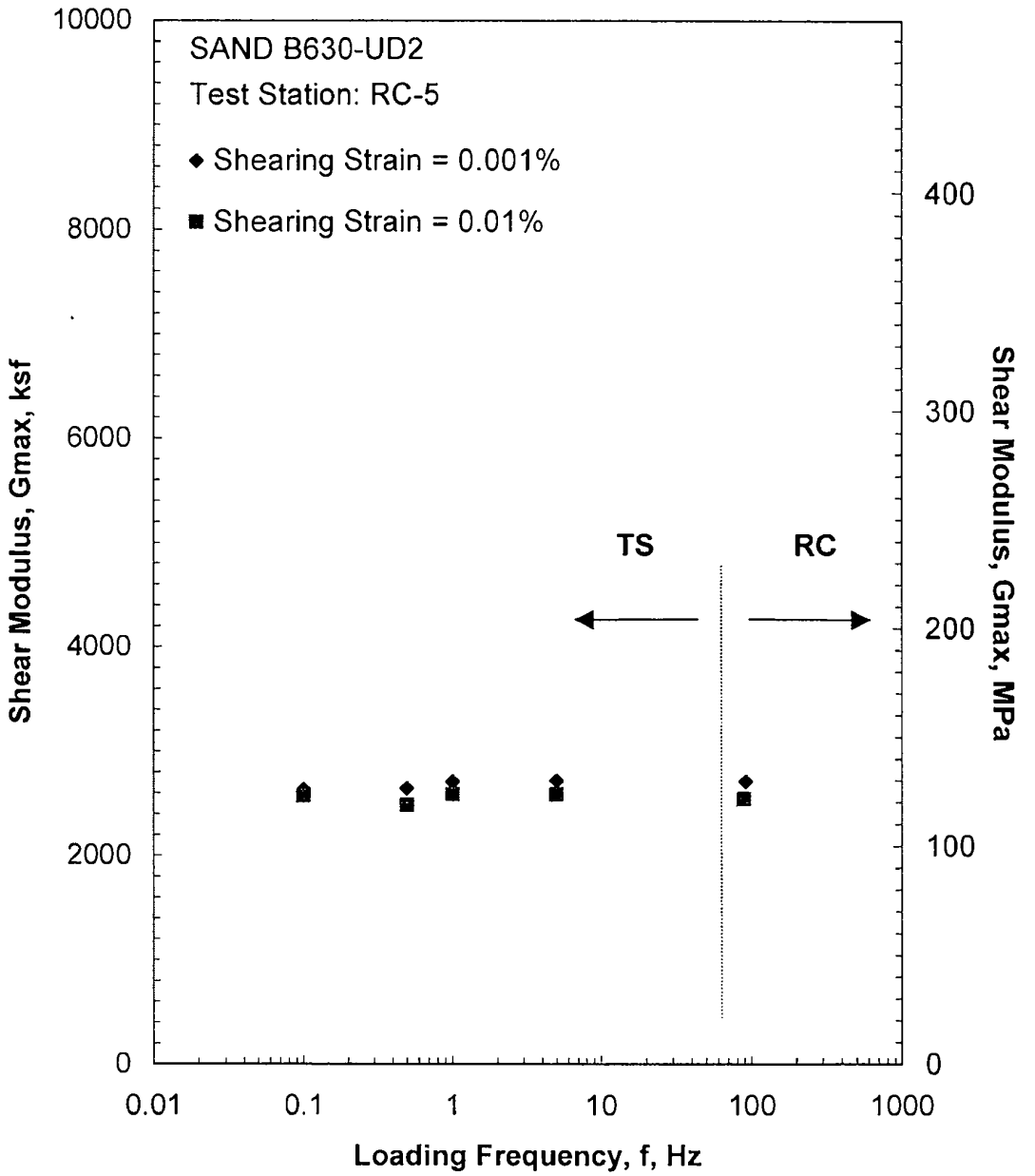

Figure B.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 38 psi from the Combined RCTS Tests

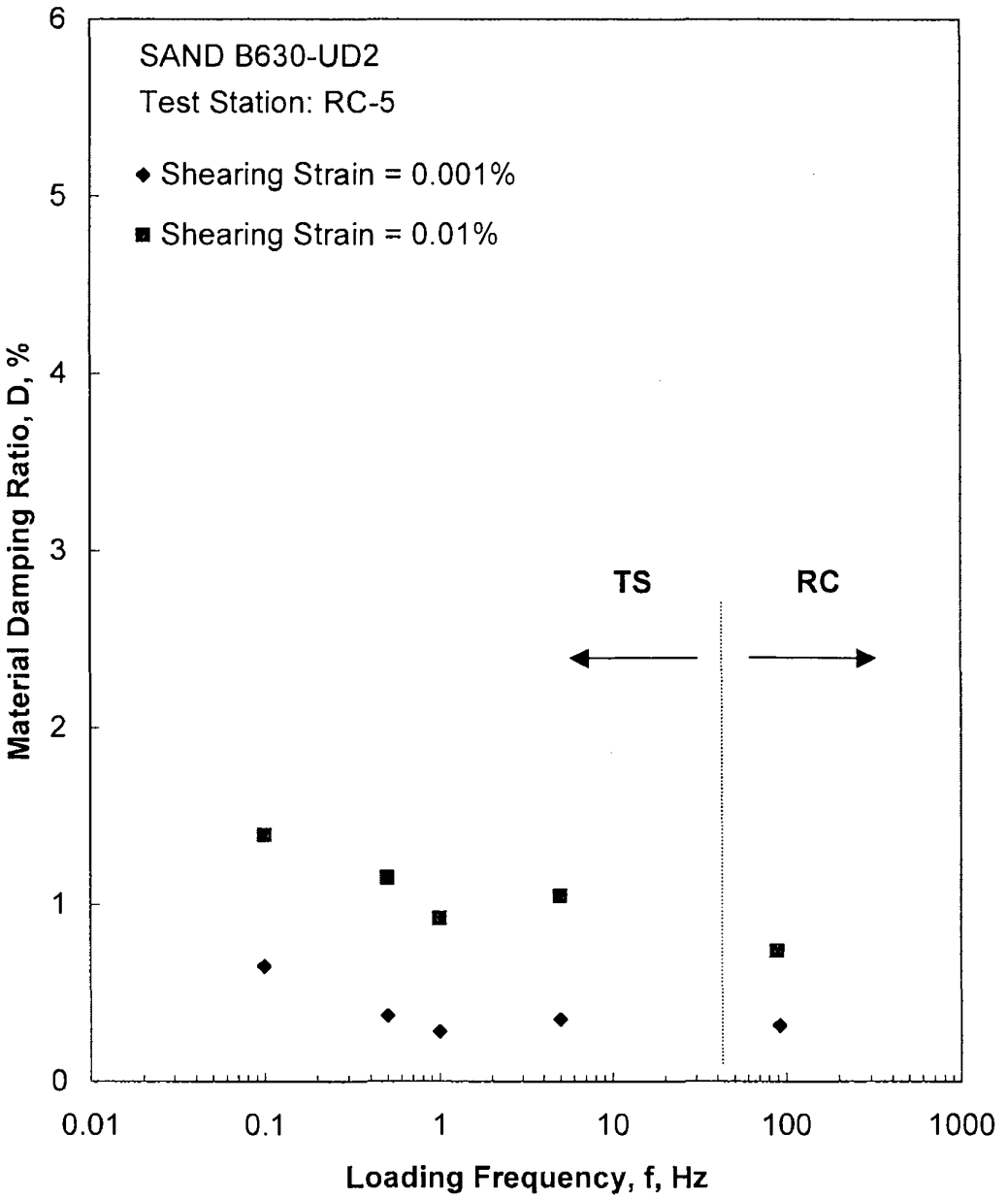

Figure B.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 38 psi from the Combined RCTS Tests

Table B.1 Variation in Low-Amplitude Shear Wave Velocity, Low-Amplitude Shear Modulus, Low-Amplitude Material Damping Ratio and Estimated Void Ratio with Isotropic Confining Pressure from RC Tests of Specimen B630-UD2

Isotropic Confining Pressure, σ_o			Low-Amplitude Shear Modulus, G_{max}		Low-Amplitude Shear Wave Velocity, Vs	Low-Amplitude Material Damping Ratio, Dmin	Estimated Void Ratio, e
(psi)	(psf)	(kPa)	(ksf)	(MPa)	(fps)	(%)	
9	1296	62	1354	65	605	0.68	0.86
19	2736	131	1918	92	719	0.44	0.86
38	5472	262	2688	129	850	0.28	0.85

Table B.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD2; Isoptropic Confining Pressure, σ_o= 38 psi (5.5 ksf = 262 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
2.01E-04	2719	1.00	2.01E-04	0.27
4.01E-04	2719	1.00	4.01E-04	0.27
8.20E-04	2704	0.99	7.87E-04	0.32
1.55E-03	2689	0.99	1.47E-03	0.34
2.82E-03	2659	0.98	2.65E-03	0.40
5.00E-03	2600	0.96	4.55E-03	0.54
8.52E-03	2538	0.93	7.67E-03	0.74
1.41E-02	2445	0.90	1.21E-02	1.13
2.32E-02	2283	0.84	1.93E-02	1.70
3.74E-02	2099	0.77	2.92E-02	2.53
6.20E-02	1853	0.68	4.53E-02	4.04

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table B.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD2; Isotropic Confining Pressure, σ_o= 38 psi (5.5 ksf =262 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
1.02E-03	2638	1.00	0.14	1.02E-03	2640	1.00	0.37
2.04E-03	2635	1.00	0.38	2.03E-03	2648	1.00	0.44
4.15E-03	2584	0.98	0.78	4.17E-03	2576	0.97	0.53
1.01E-02	2482	0.94	1.04	1.01E-02	2484	0.94	1.15

6100 Hillcroft (77081)
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Houston, Texas 77274
Tel: 713-369-5400
Fax: 713-369-5518

July 10, 2008

Ms. Siesta Williams
MACTEC
3301 Atlantic Avenue
Raleigh, NC 27604

RE: Two (2) Reports For The Turkey Point Project

Dear Ms. Williams:

Fugro has completed two (2) RCTS tests, which are B630-UD13 and B630-UD16 for the Turkey Point project. Fugro has incorporated, as needed, Dr. Kenneth Stokoe's comments into the final reports. The final reports and the associated RCTS Test Approvals by Dr. Kenneth Stokoe have been attached.

Please let us know if you have questions. Thanks.

Very truly yours,

Fugro Consultants, Inc.

Jiewu Meng, PhD, P.E.
Project Engineer

Bill DeGroff, P.E.
Laboratory Department Manager

Enclosures

RCTS TEST APROVAL

PROJECT SITE/NAME	Turkey Point

Test ID	Sample ID	Depth B.S. (Ft)	Approved By (Initials)	Date
RCTS#C	B630-UD13	190	KHS (1)	3 July 08
RCTS#D	B630-UD16	211	KHS (2)	3 July 08

Two RCTS tests for the site referenced above were tested, and two reports were prepared, by Fugro Consultants, Inc.

I have reviewed the data and associated results listed above and found them to be reasonable.

Approved By:

K. H. Stokoe

Dr. Kenneth Stokoe

(1) Carefully consider some of the suggested changes and/or deletions and some comments that could be added to a few figures.

(2) See minor comments on a few figures

APPENDIX C

Specimen B630-UD13

Borehole 630
Sample UD13
Depth = 189.7 ft (57.8 m)
Total Unit Weight = 117.1 lb/ft^3
Water Content = 32.5 %
Estimated In-Situ Ko = 0.5
Estimated In-Situ Mean Effective
Stress = 55 psi

FUGRO JOB #: 0411-08-1701
Testing Station: RC5

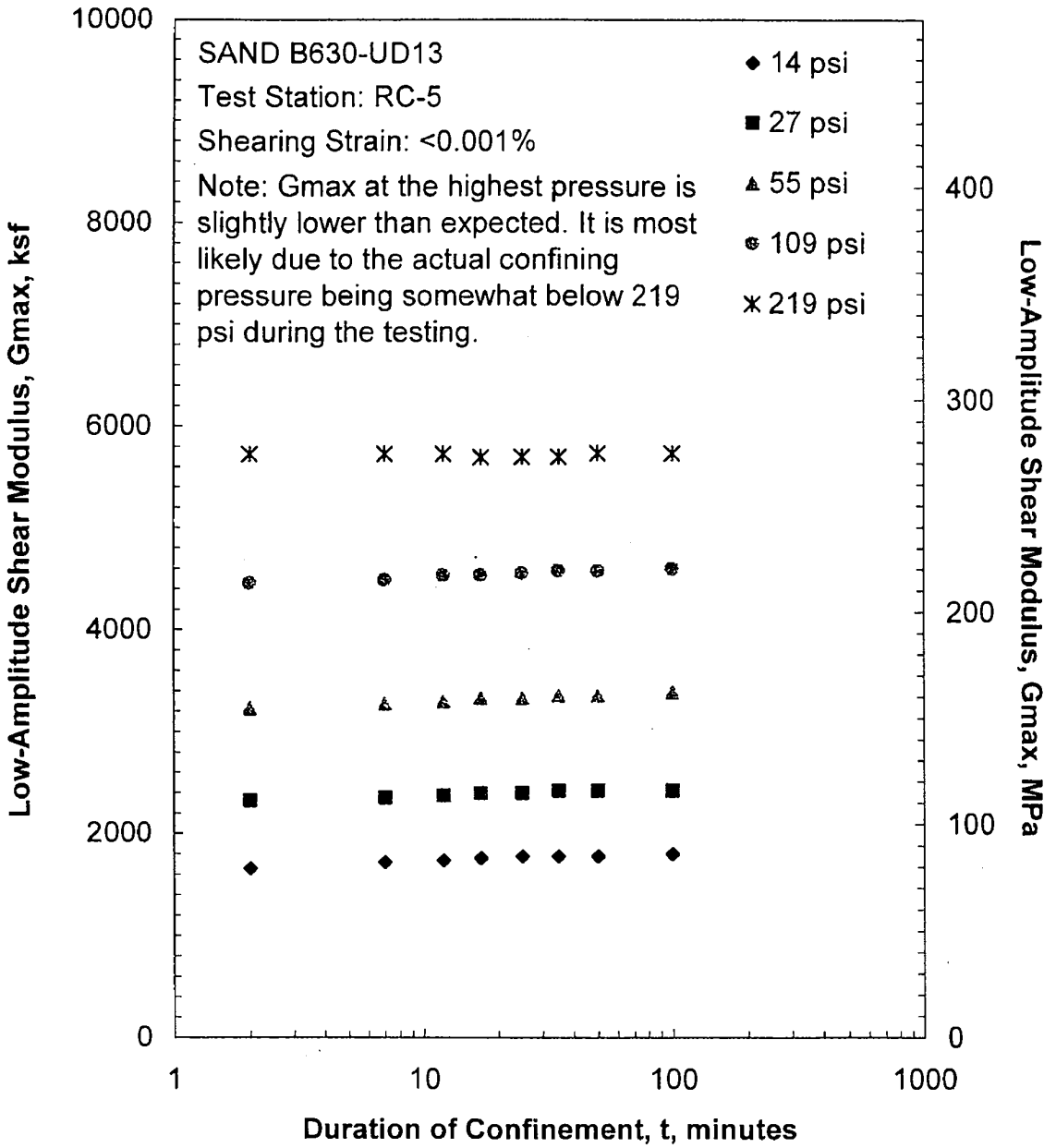


Figure C.1 Variation in Low-Amplitude Shear Modulus with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

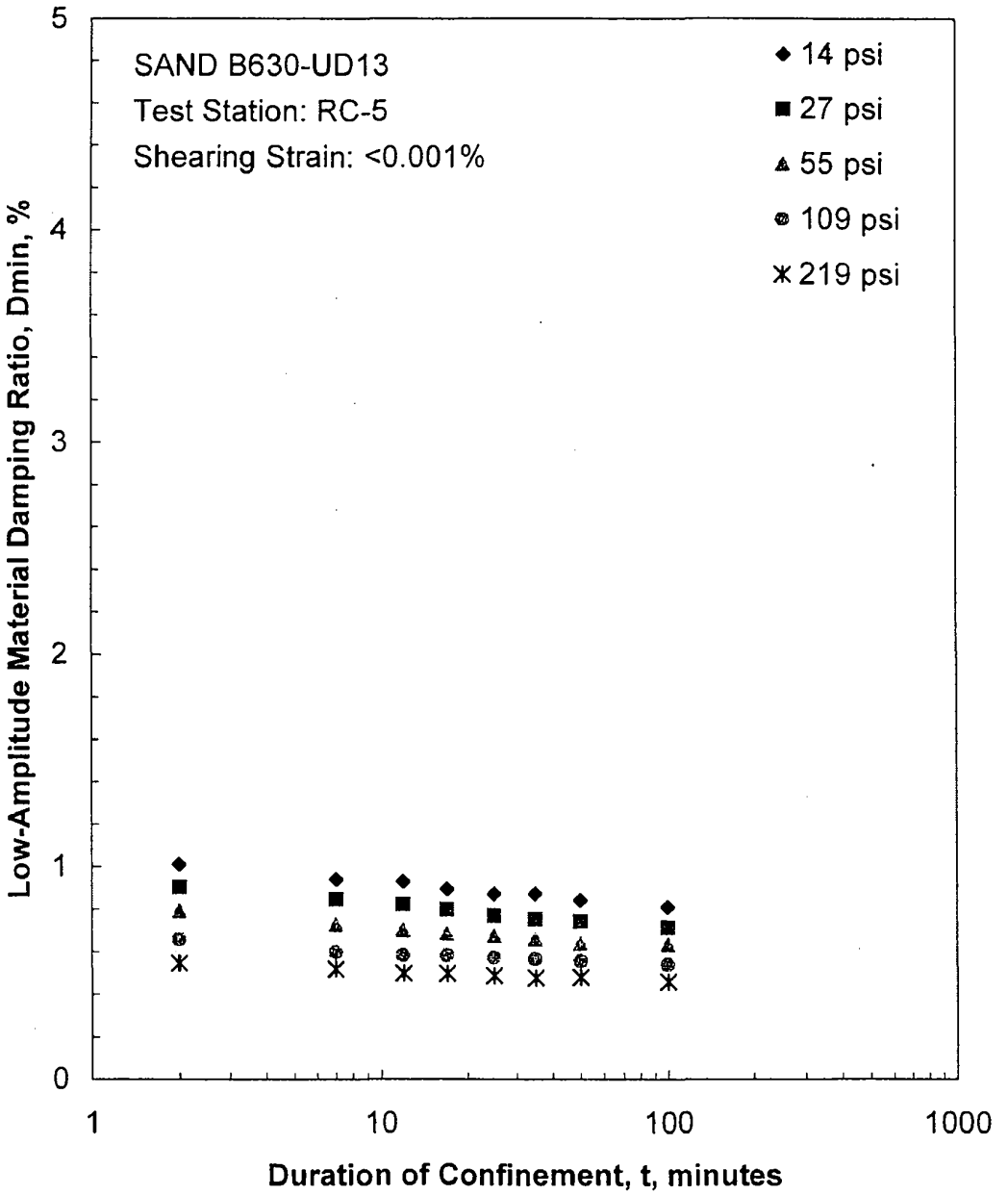


Figure C.2 Variation in Low-Amplitude Material Damping Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

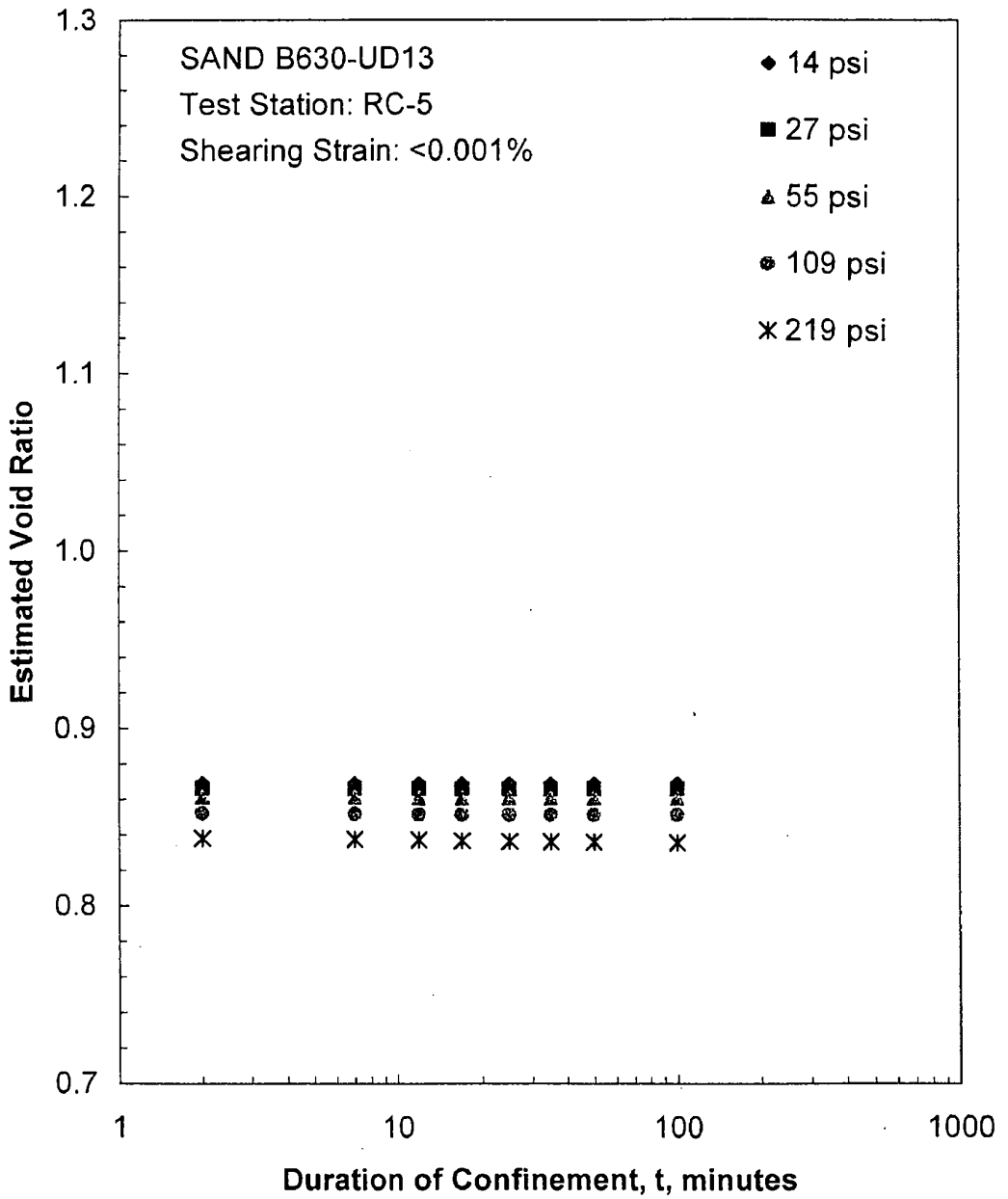


Figure C.3 Variation in Estimated Void Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

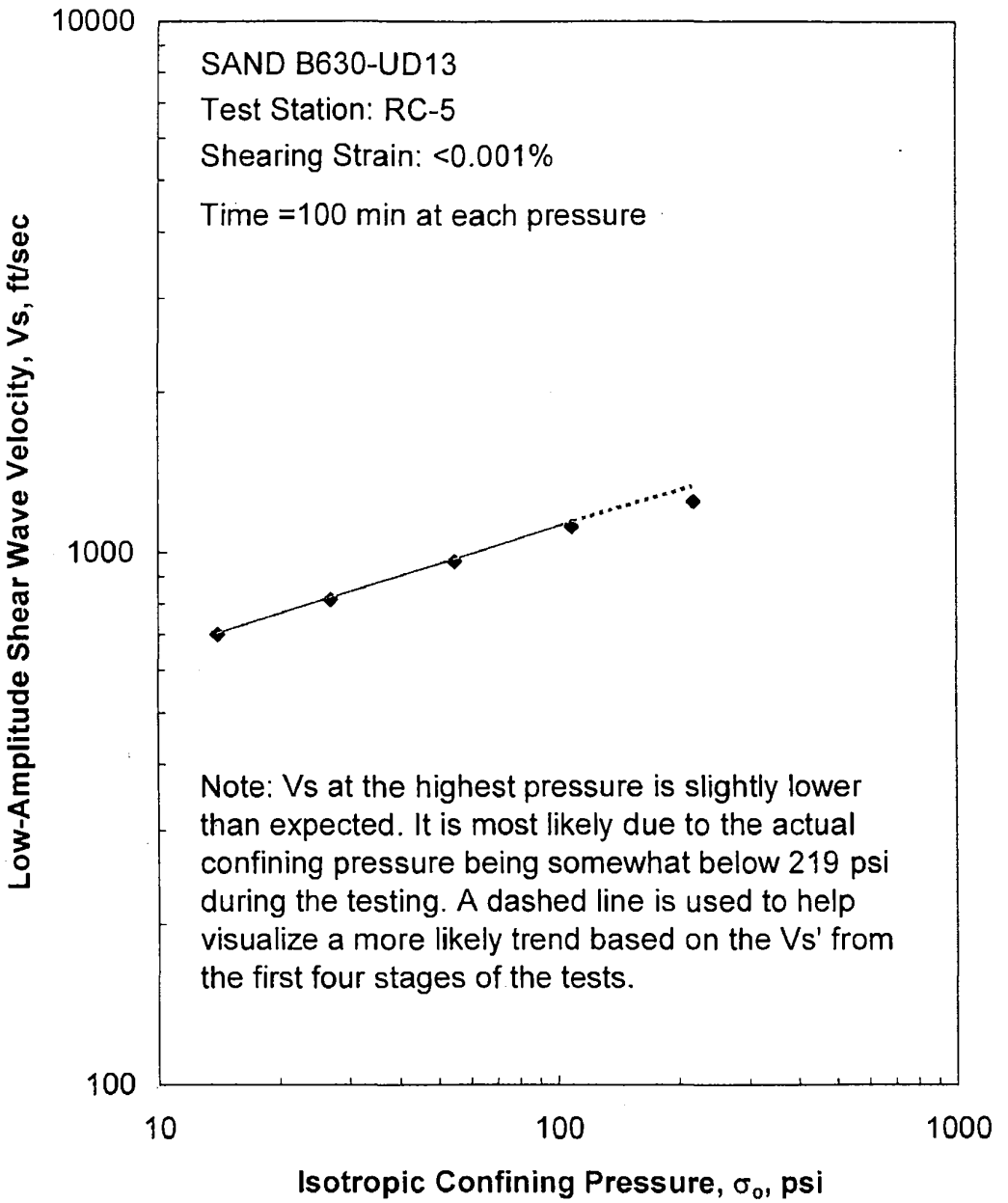


Figure C.4 Variation in Low-Amplitude Shear Wave Velocity with Isotropic Confining Pressure from Resonant Column Tests

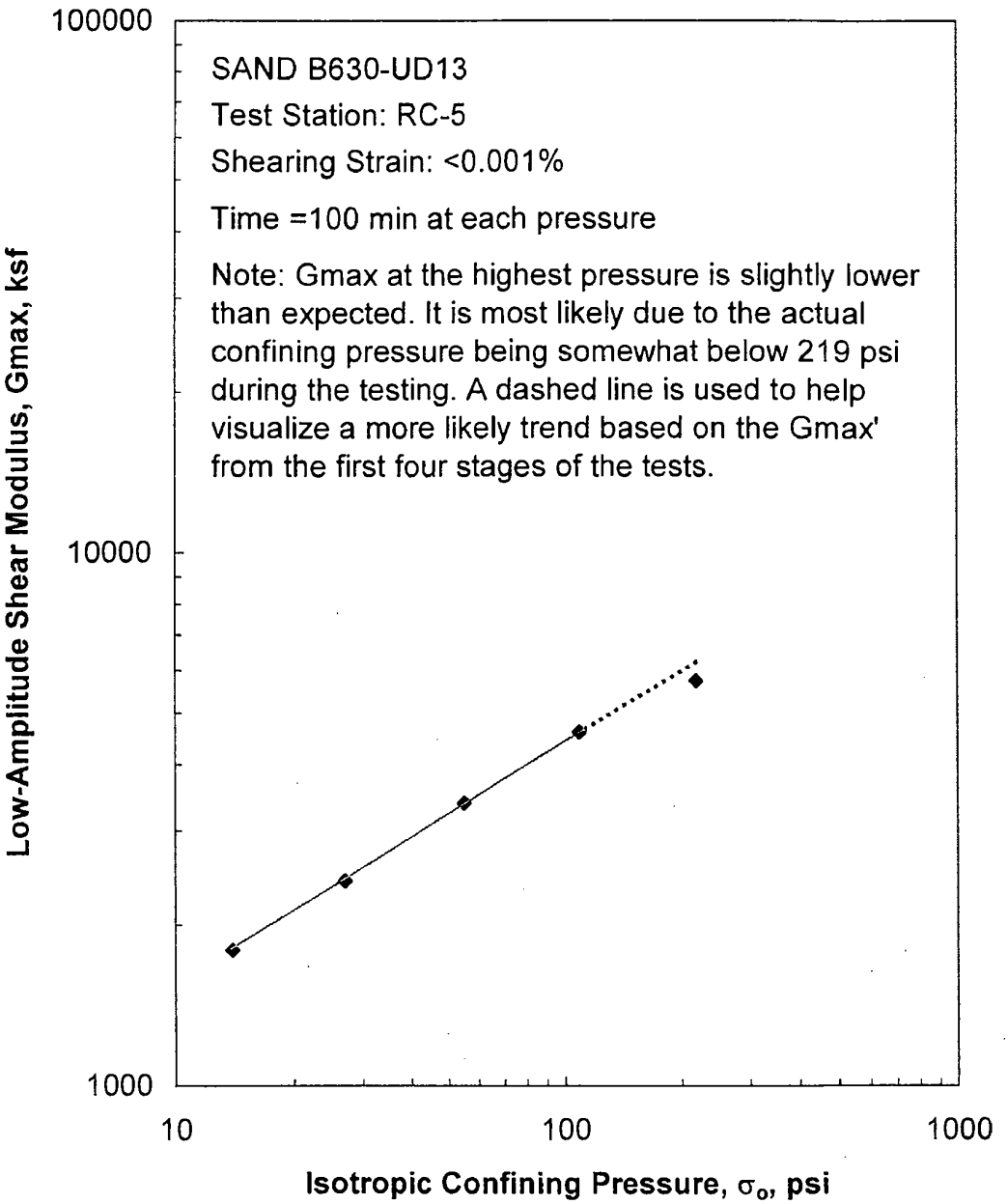


Figure C.5 Variation in Low-Amplitude Shear Modulus with Isotropic Confining Pressure from Resonant Column Tests

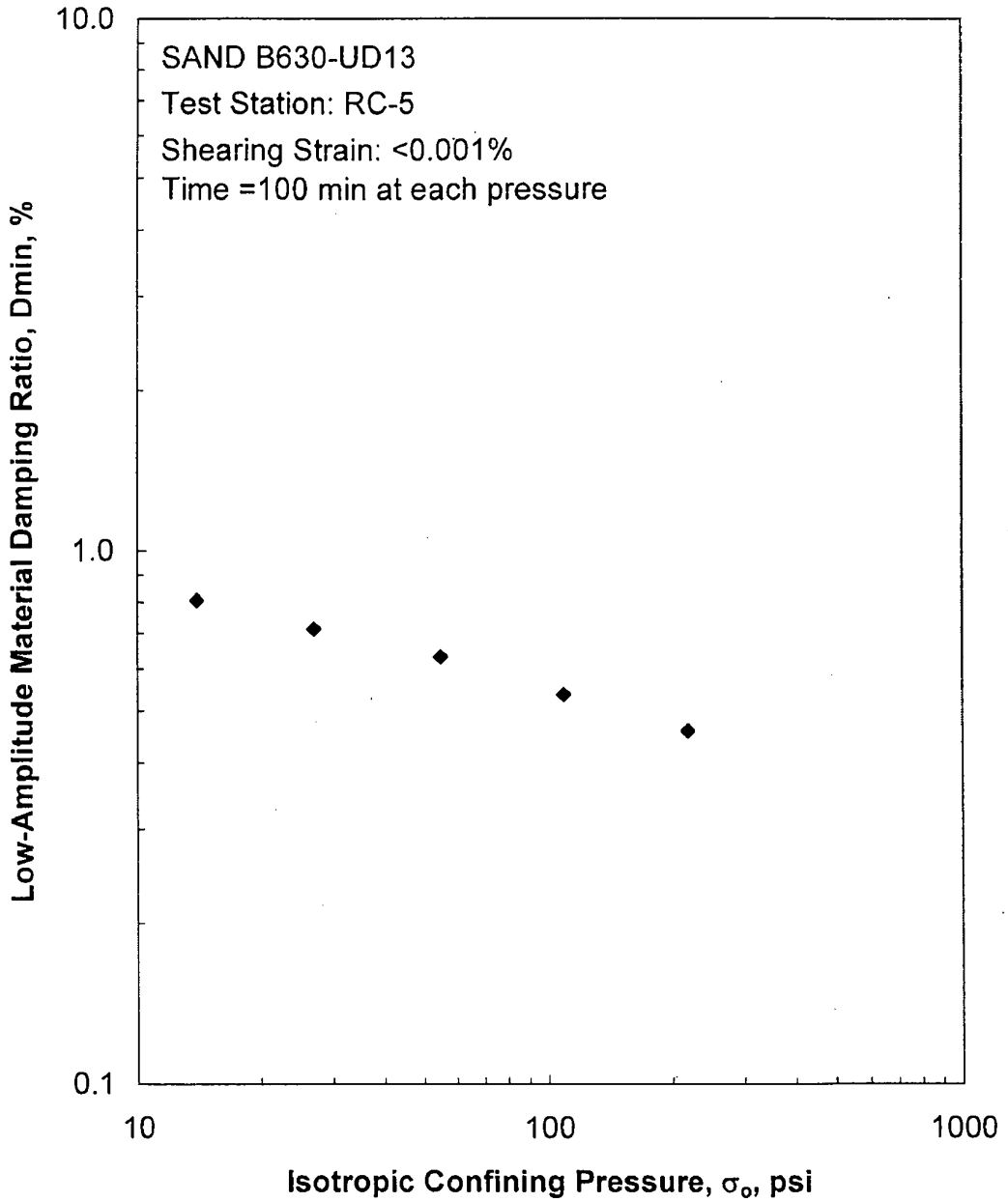


Figure C.6 Variation in Low-Amplitude Material Damping Ratio with Isotropic Confining Pressure from Resonant Column Tests

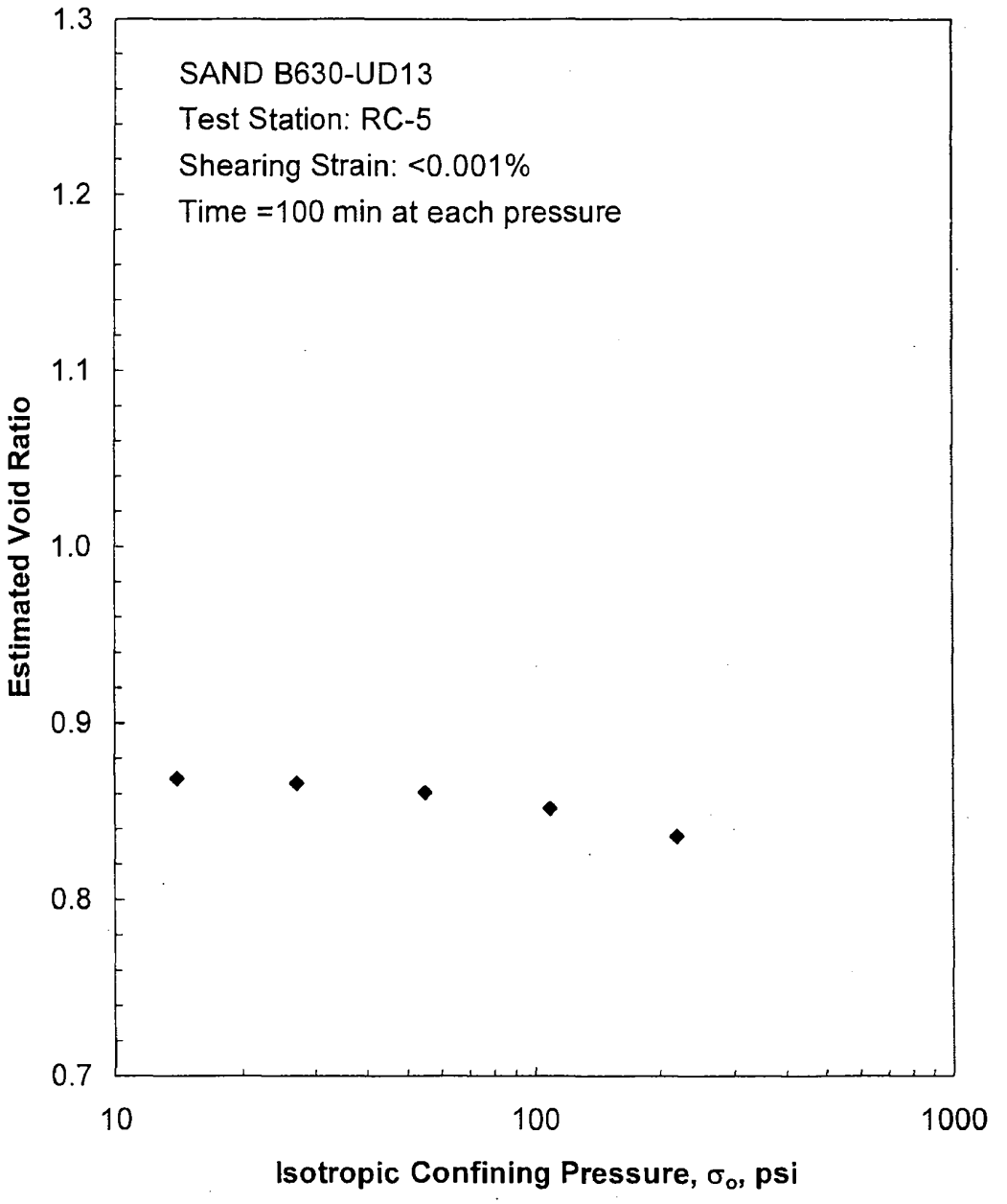


Figure C.7 Variation in Estimated Void Ratio with Isotropic Confining Pressure from Resonant Column Tests

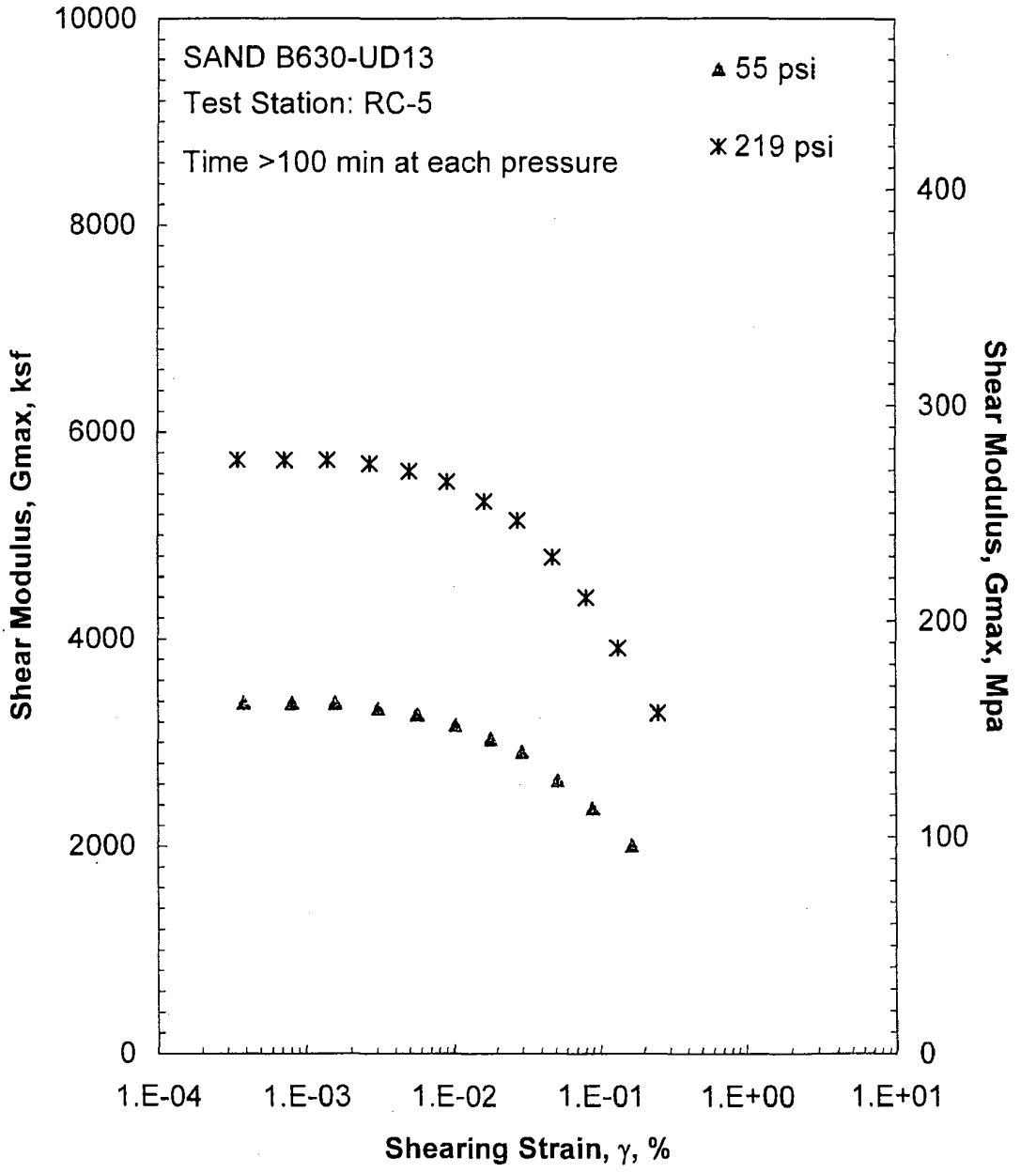


Figure C.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

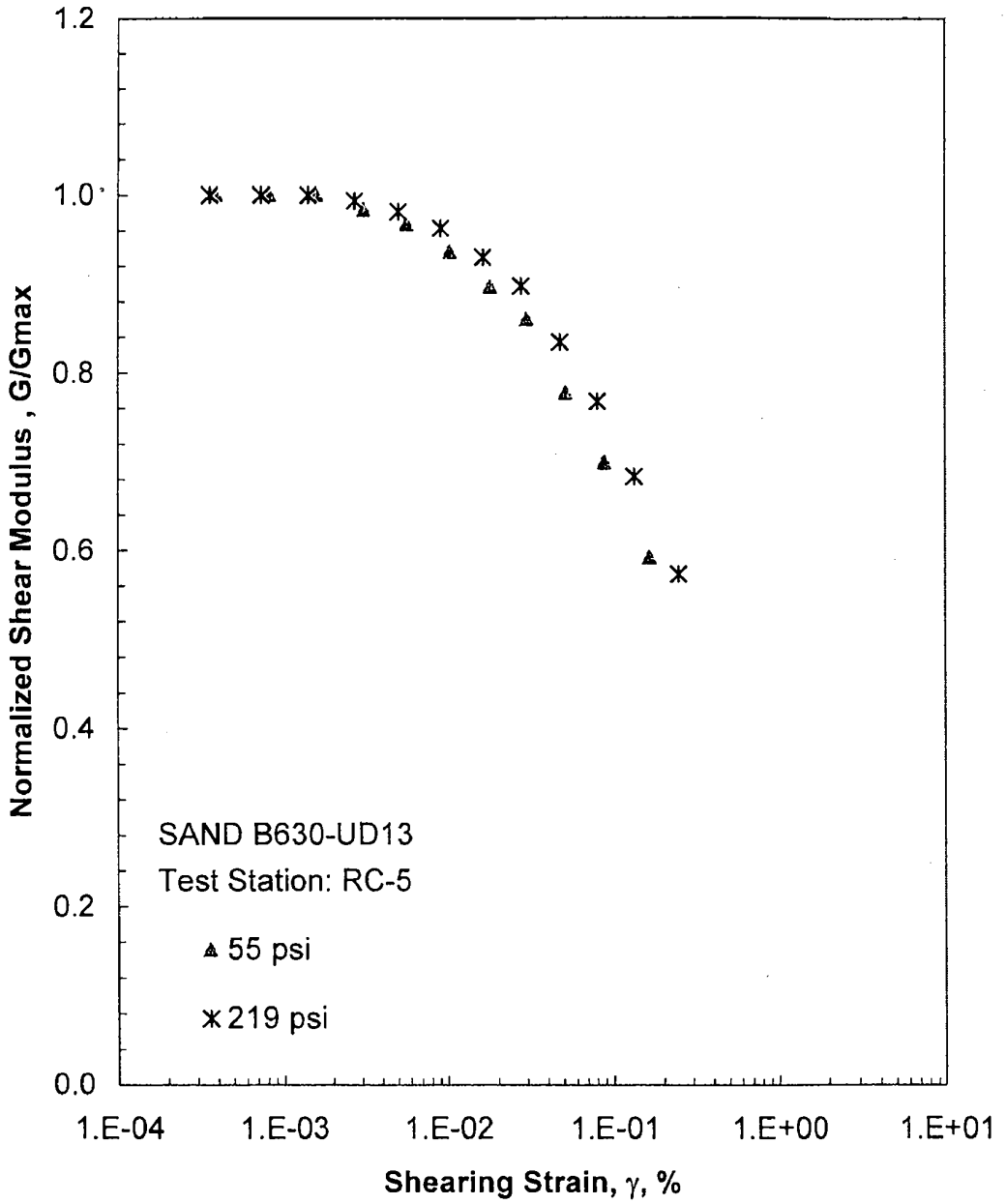


Figure C.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

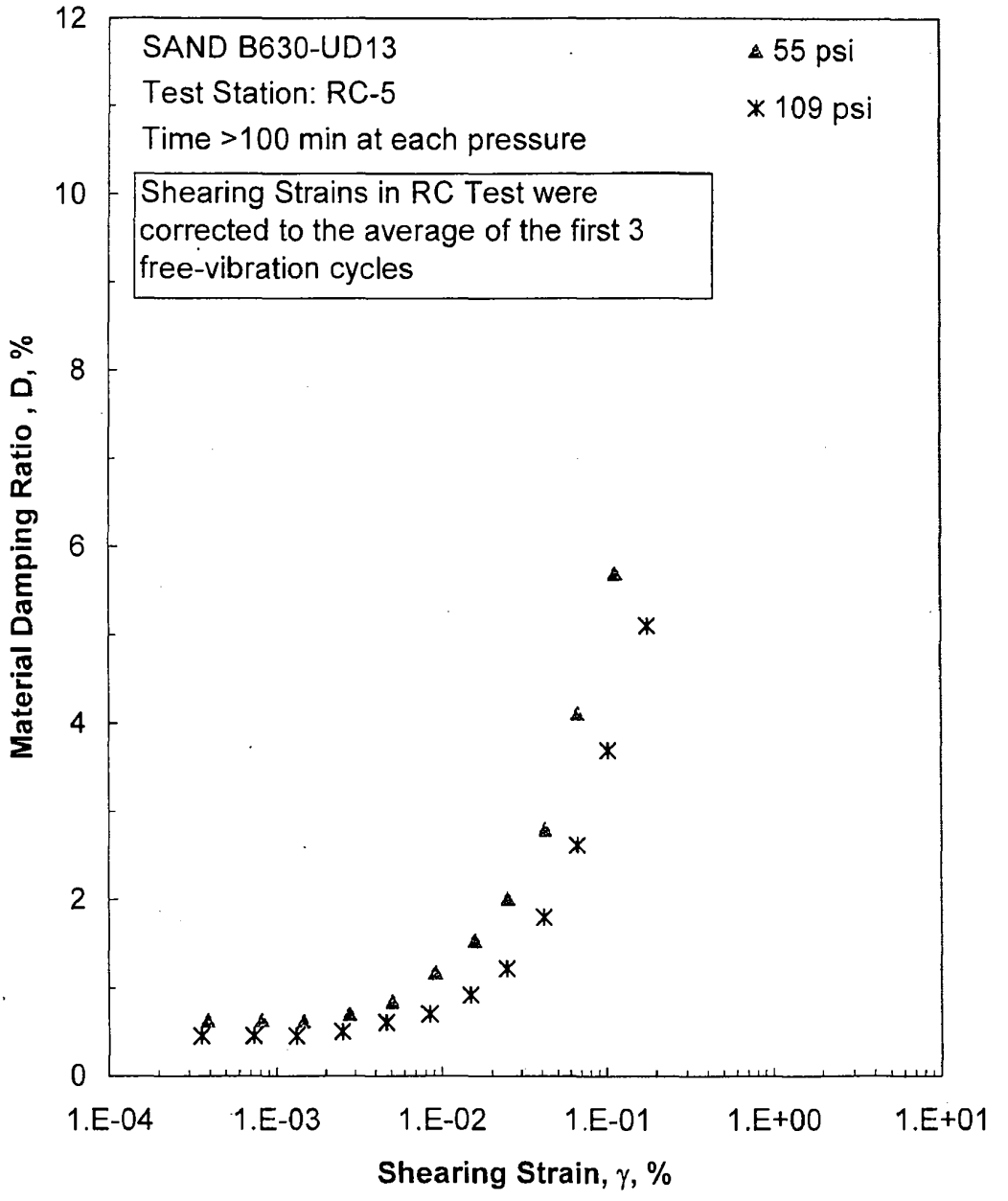


Figure C.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

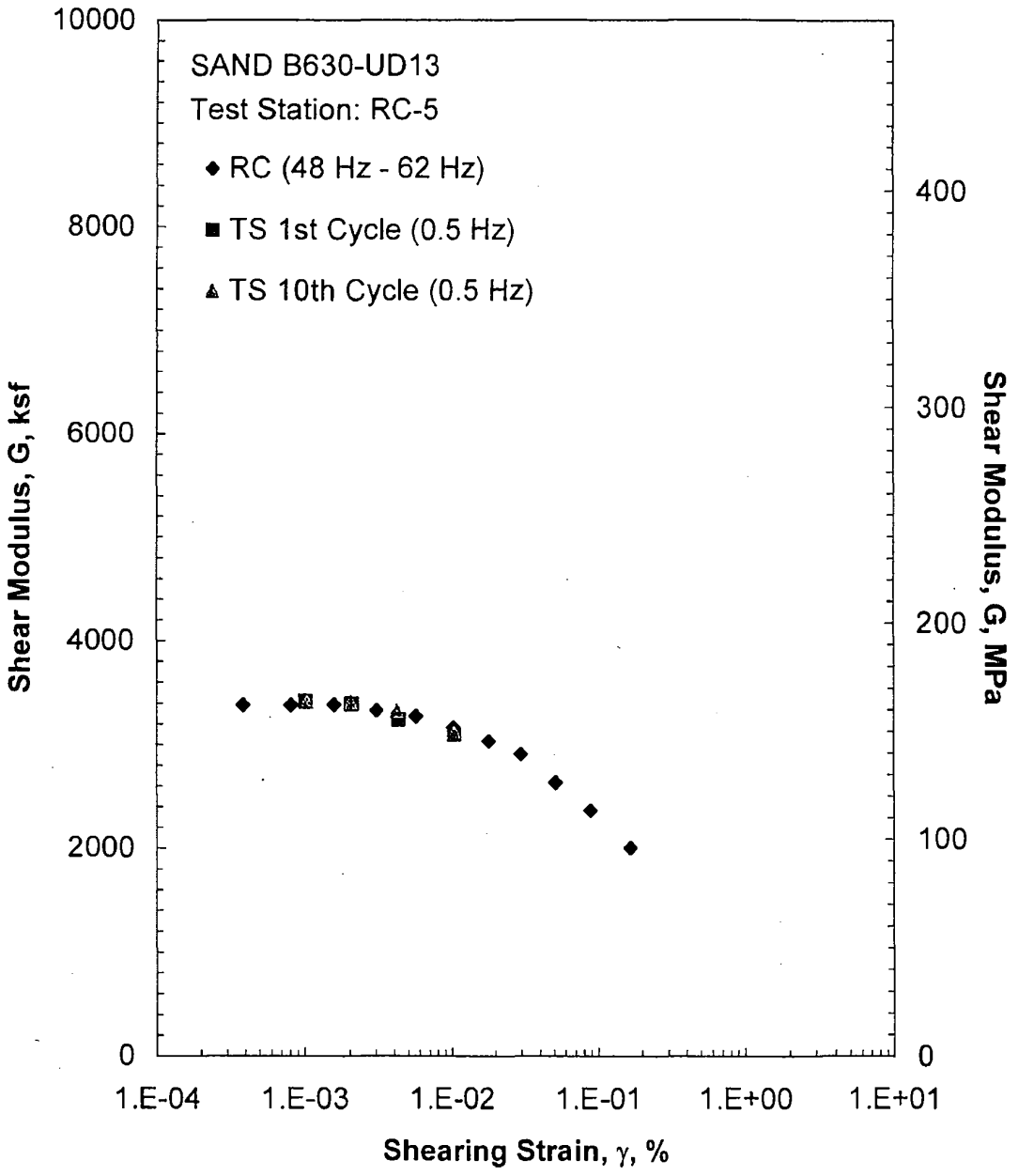


Figure C.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 55 psi from the Combined RCTS Tests

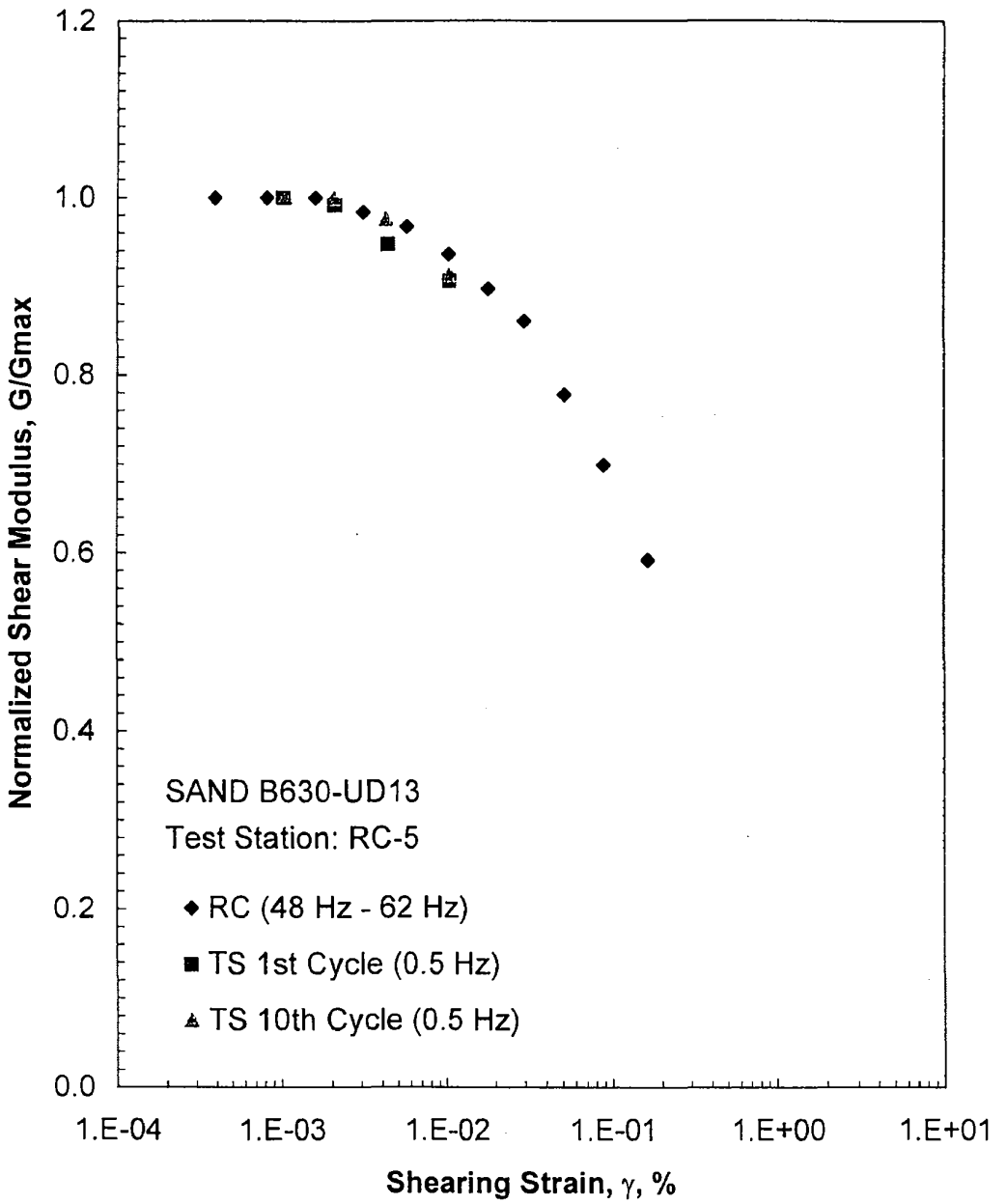


Figure C.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 55 psi from the Combined RCTS Tests

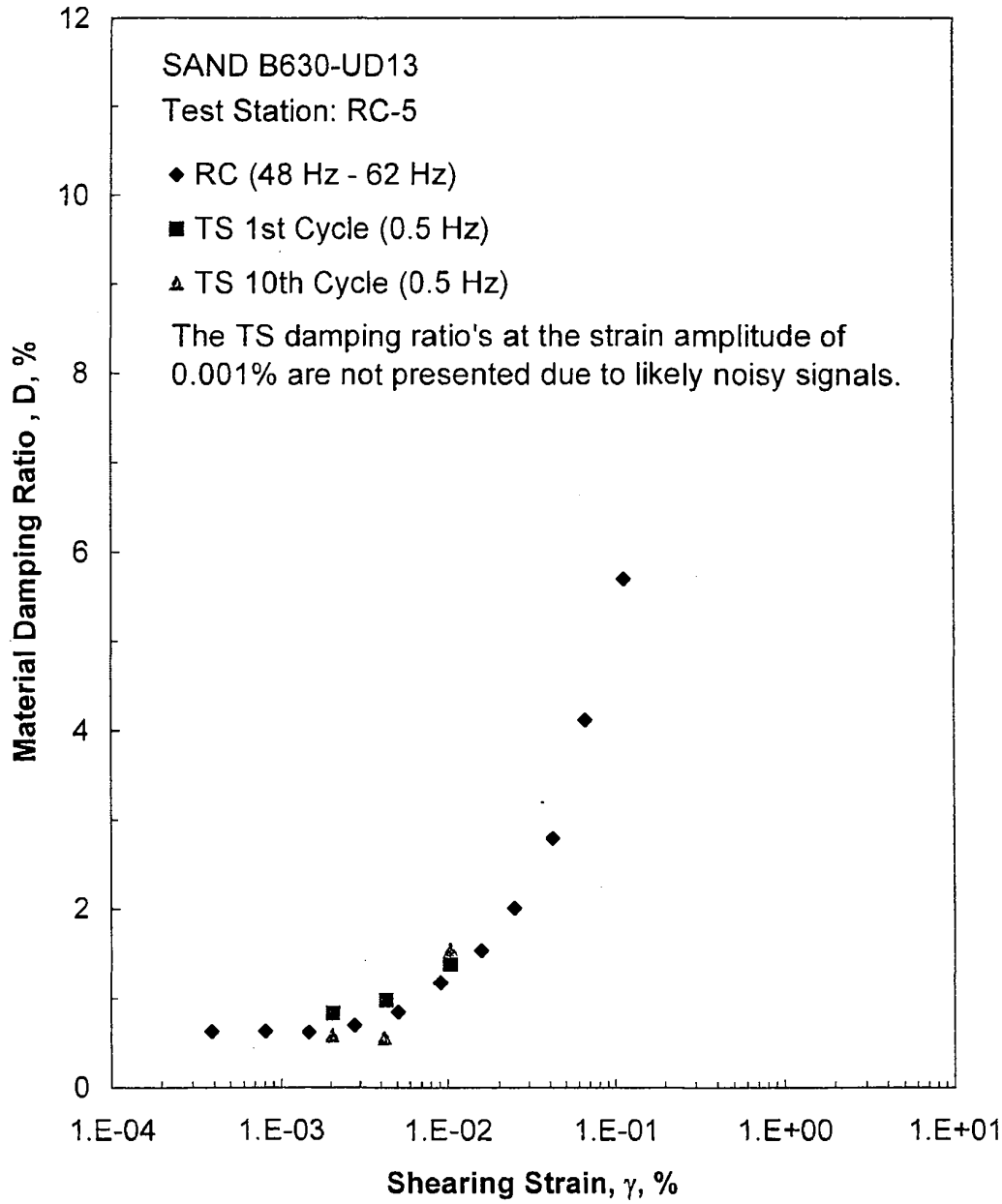


Figure C.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 55 psi from the Combined RCTS Tests

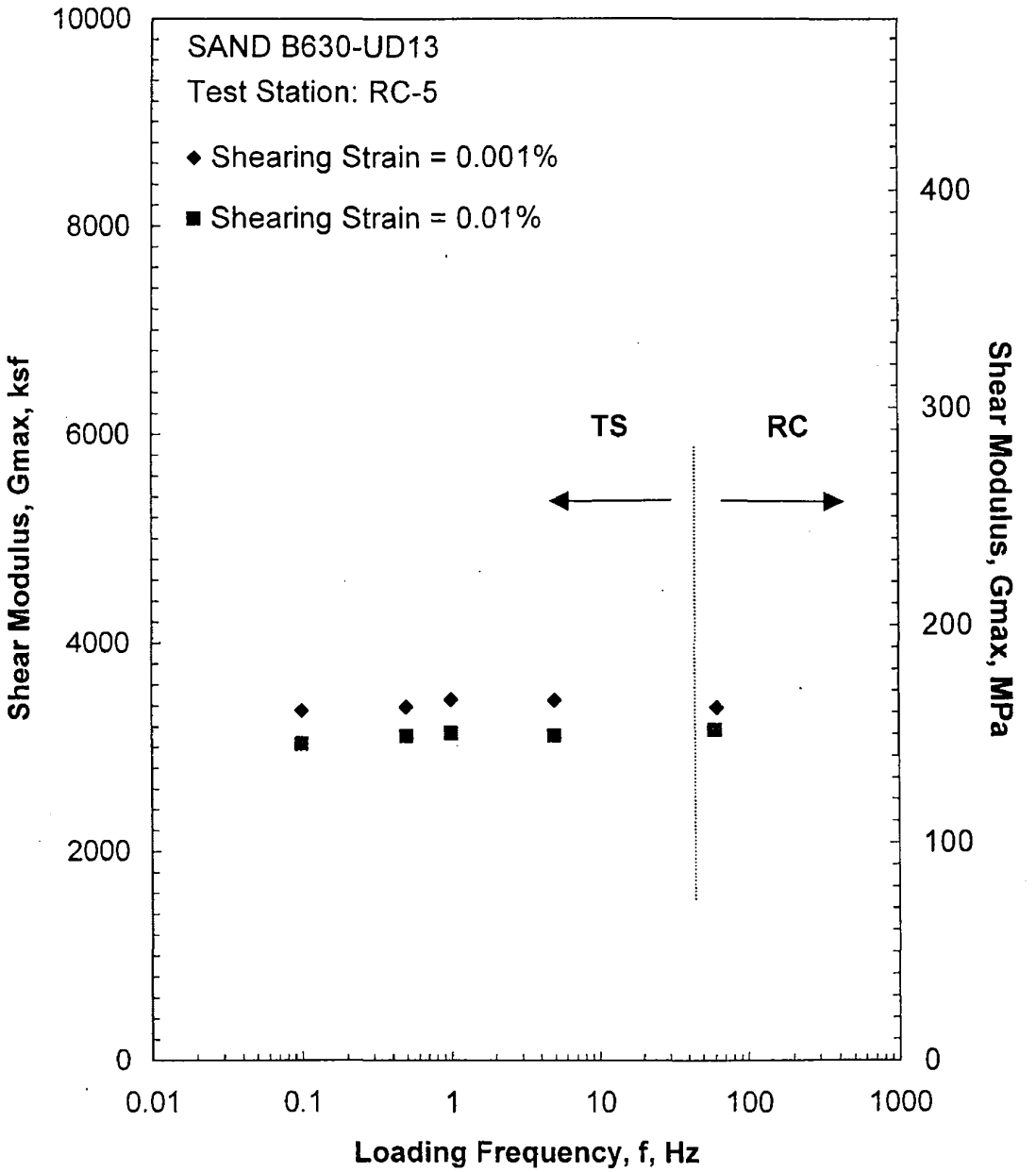


Figure C.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 55 psi from the Combined RCTS Tests

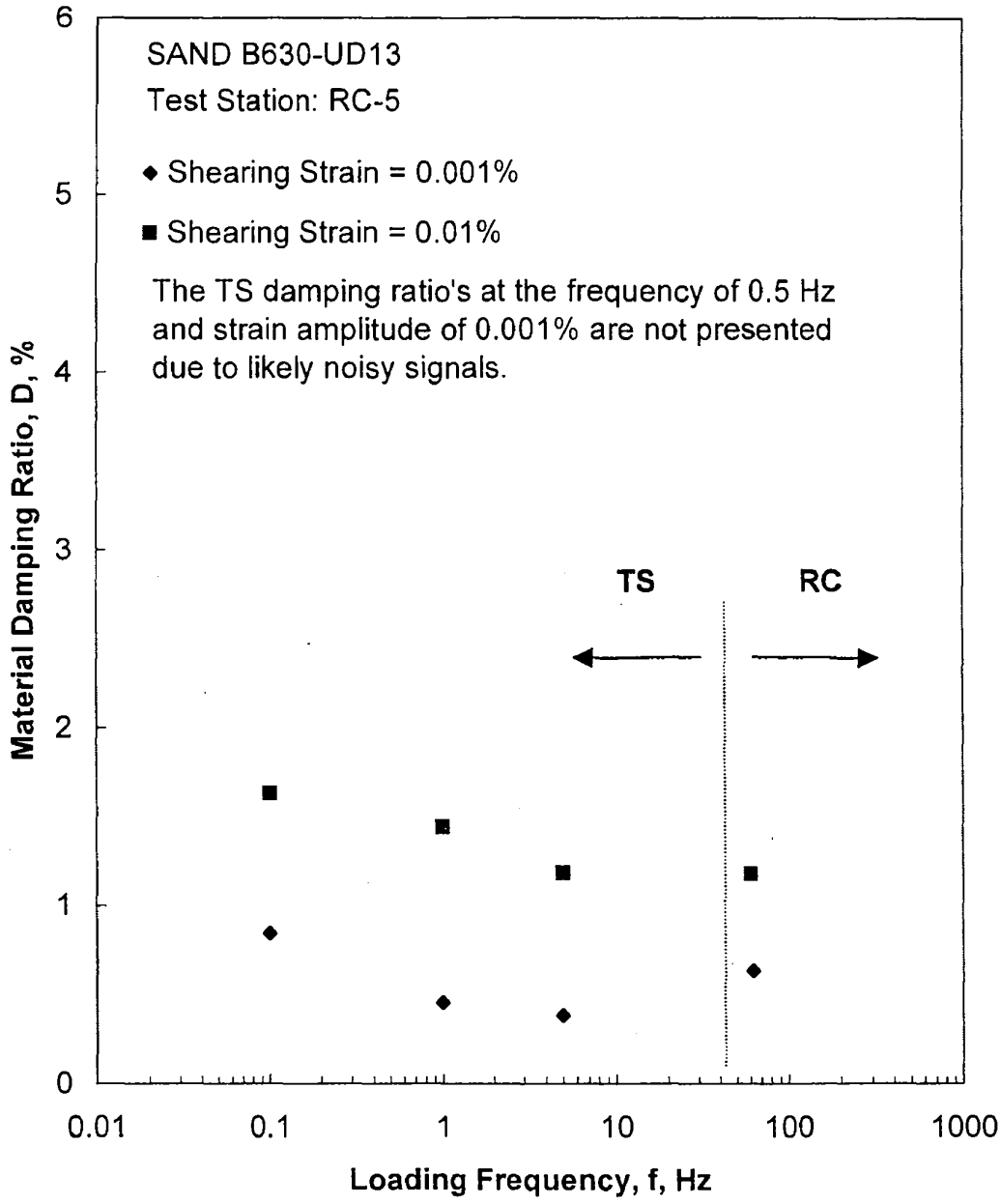


Figure C.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 55 psi from the Combined RCTS Tests

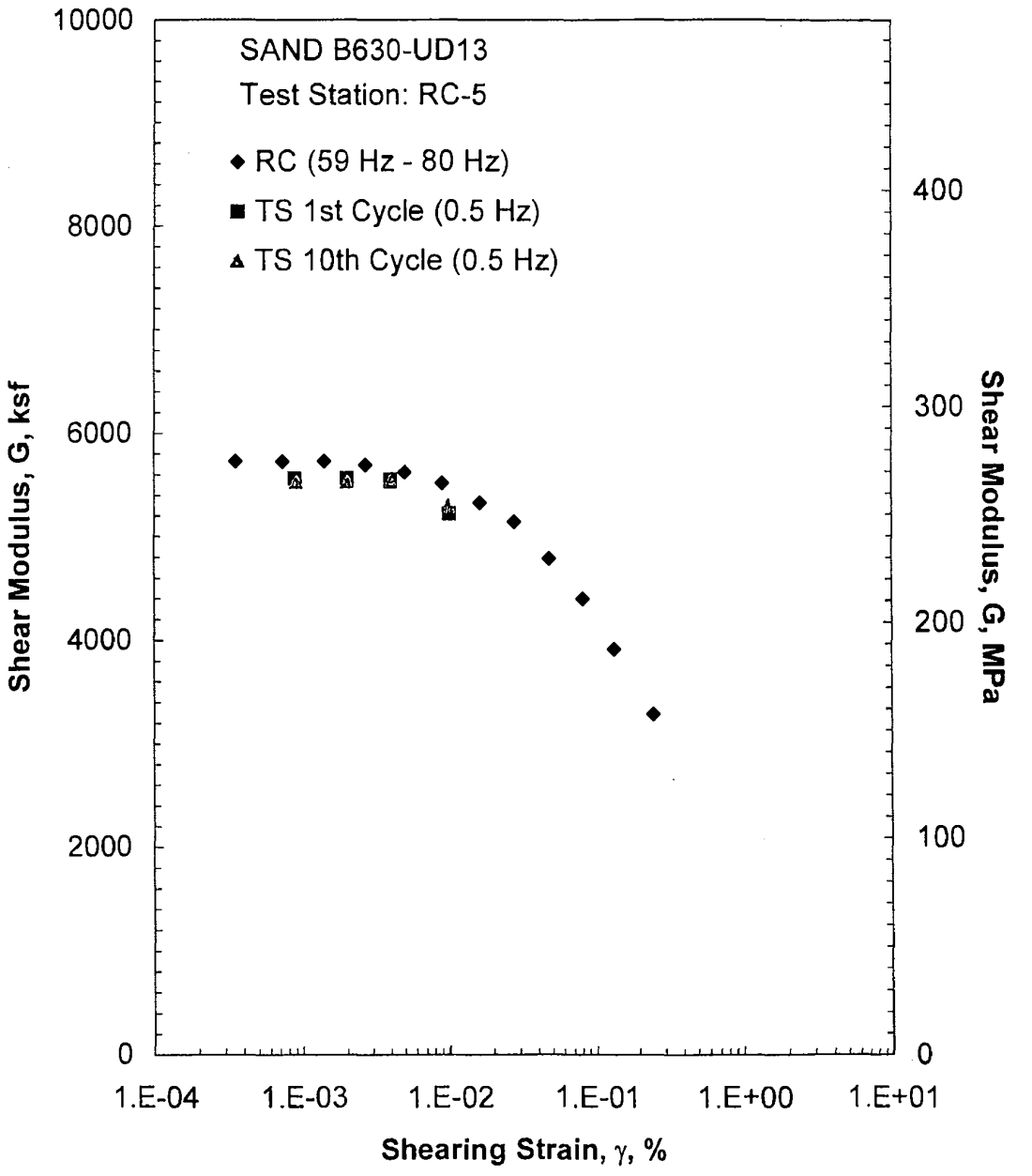


Figure C.16 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 219 psi from the Combined RCTS Tests

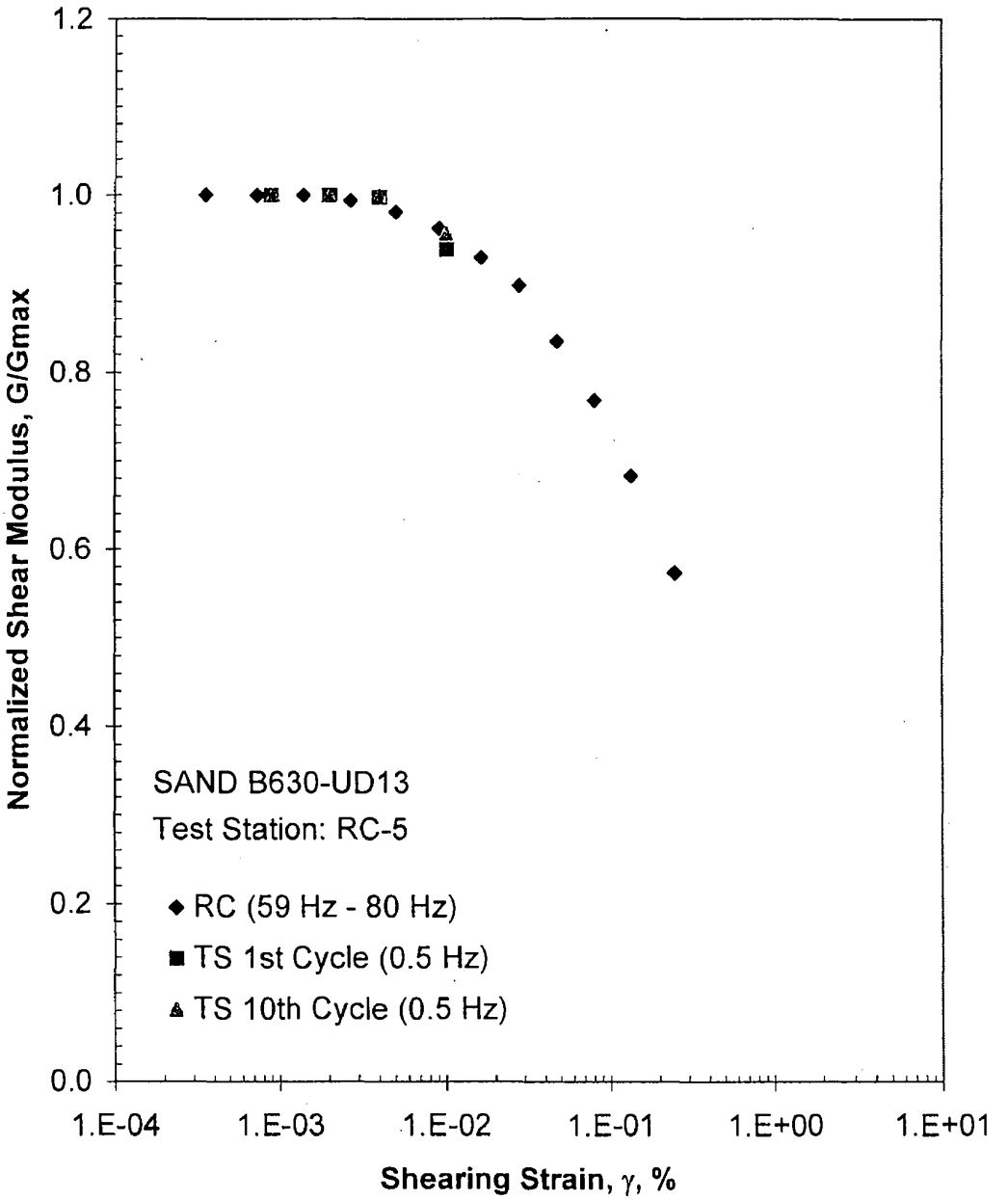


Figure C.17 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 219 psi from the Combined RCTS Tests

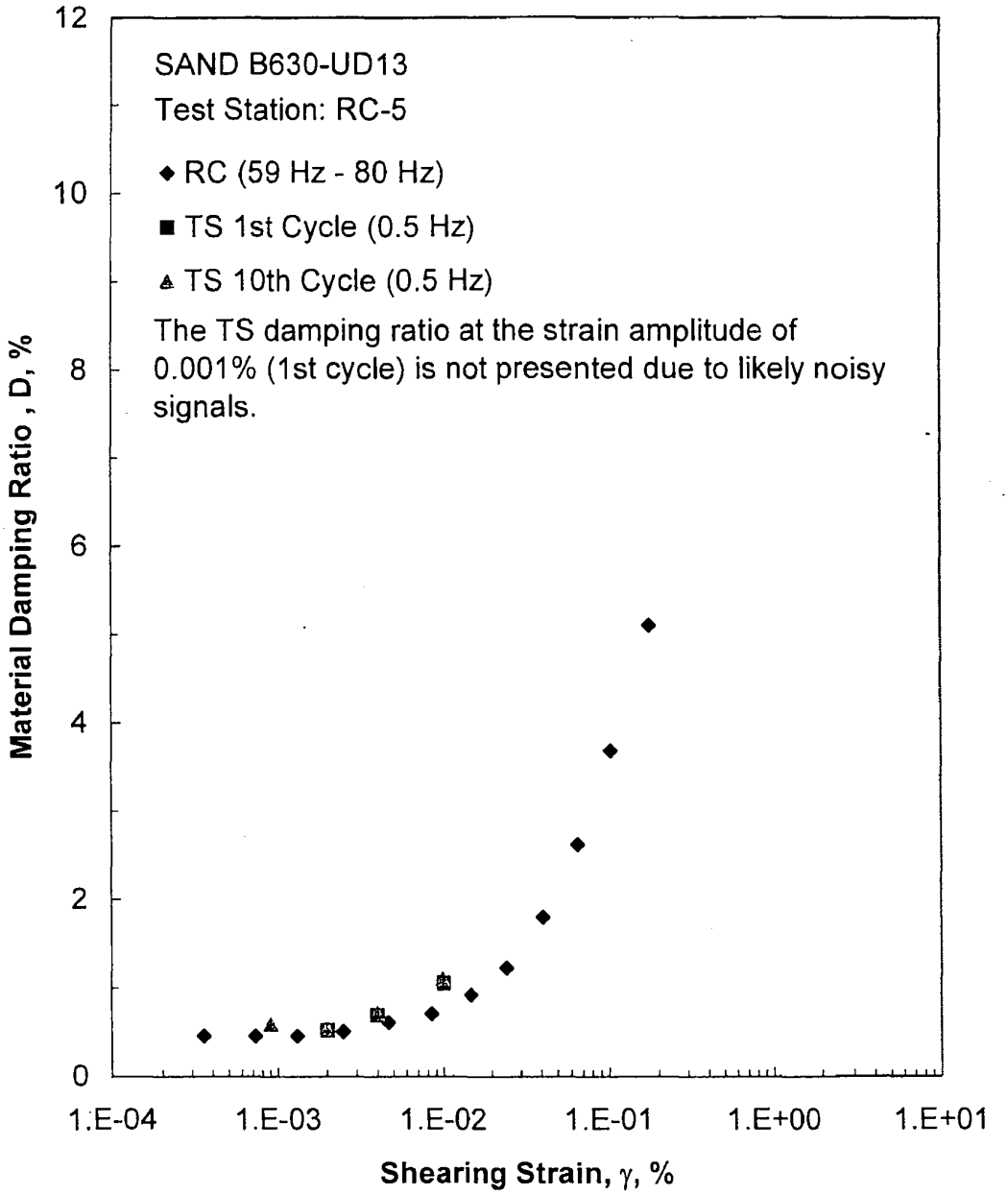


Figure C.18 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 219 psi from the Combined RCTS Tests

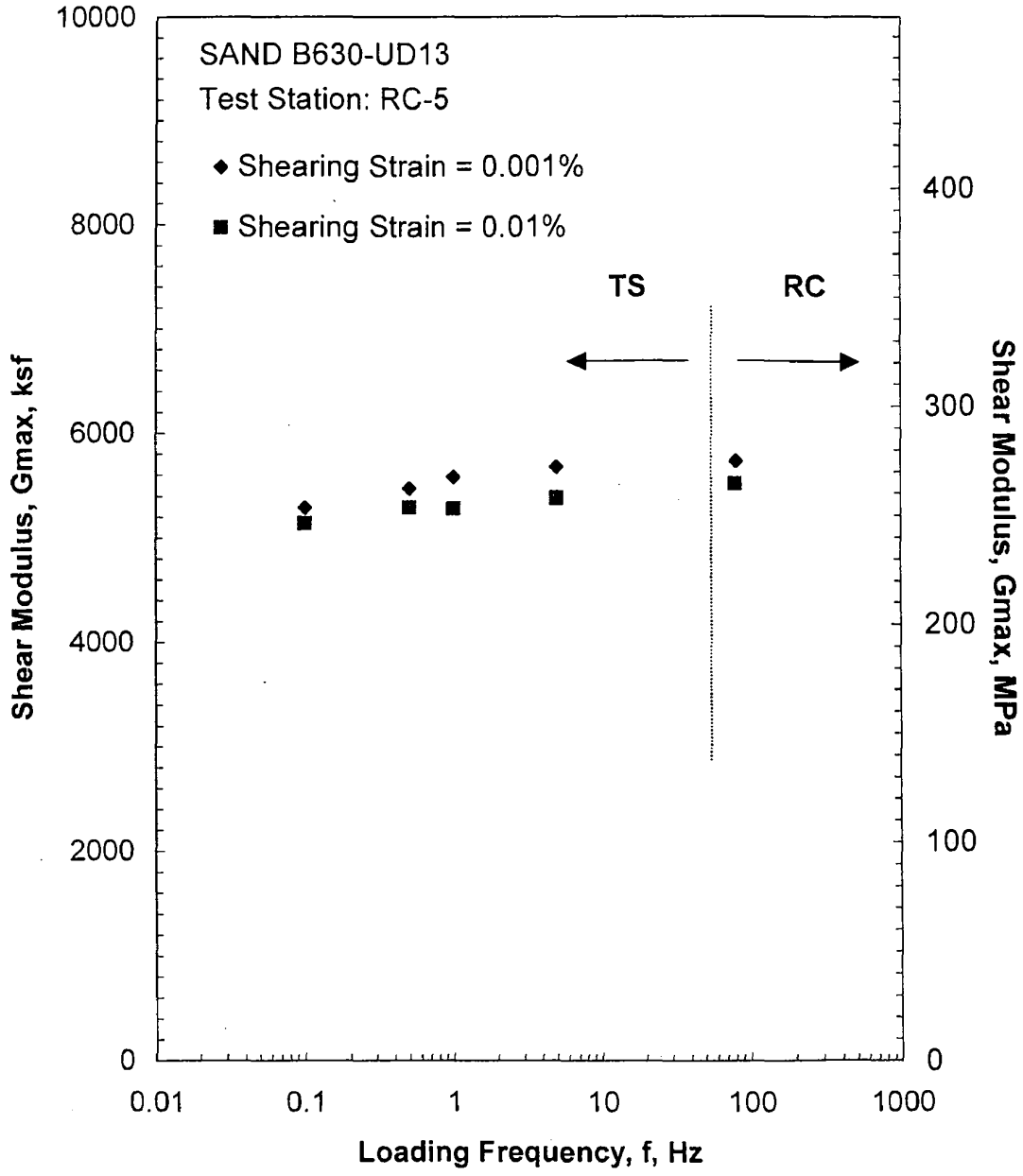


Figure C.19 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 219 psi from the Combined RCTS Tests

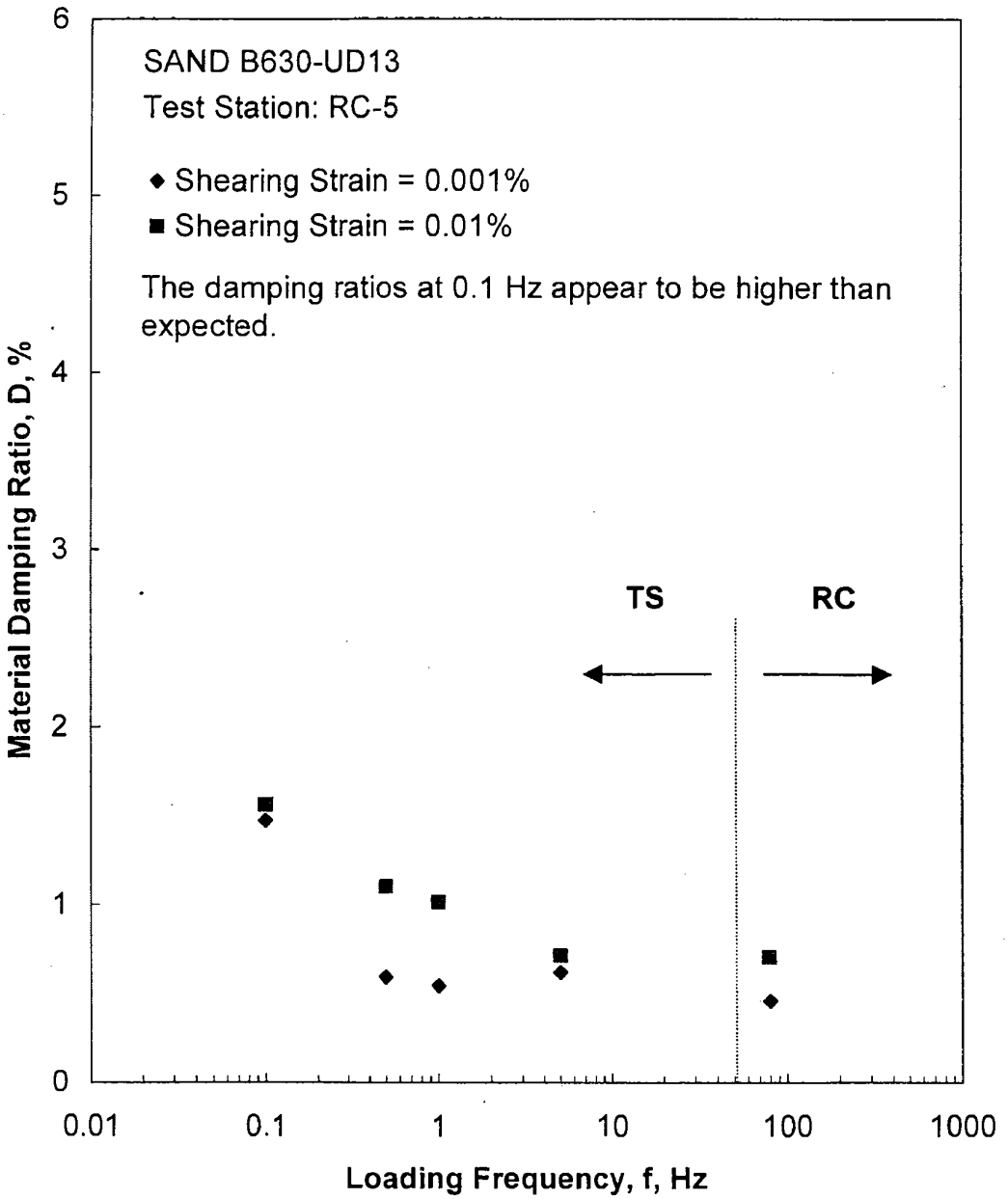


Figure C.20 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 219 psi from the Combined RCTS Tests

Table C.1 Variation in Low-Amplitude Shear Wave Velocity, Low-Amplitude Shear Modulus, Low-Amplitude Material Damping Ratio and Estimated Void Ratio with Isotropic Confining Pressure from RC Tests of Specimen B630-UD13

Isotropic Confining Pressure, σ_o			Low-Amplitude Shear Modulus, G_{max}		Low-Amplitude Shear Wave Velocity, Vs	Low-Amplitude Material Damping Ratio, Dmin	Estimated Void Ratio, e
(psi)	(psf)	(kPa)	(ksf)	(MPa)	(fps)	(%)	
14	2016	96	1794	86	701	0.81	0.87
27	3888	186	2417	116	814	0.71	0.87
55	7920	379	3381	162	961	0.63	0.86
109	15696	751	4596	221	1118	0.54	0.85
219	31536	1509	5732	275	1243	0.46	0.84

Table C.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD13; Isoptropic Confining Pressure, σ_o= 55 psi (7.9 ksf = 379 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
3.88E-04	3381	1.00	3.88E-04	0.63
8.14E-04	3381	1.00	8.14E-04	0.63
1.58E-03	3381	1.00	1.47E-03	0.62
3.06E-03	3326	0.98	2.79E-03	0.70
5.66E-03	3272	0.97	5.09E-03	0.85
1.03E-02	3164	0.94	9.17E-03	1.17
1.81E-02	3033	0.90	1.57E-02	1.54
2.98E-02	2908	0.86	2.50E-02	2.01
5.17E-02	2629	0.78	4.19E-02	2.79
8.86E-02	2362	0.70	6.65E-02	4.11
1.65E-01	2002	0.59	1.14E-01	5.69

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table C.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD13; Isotropic Confining Pressure, σ_o= 55 psi (7.9 ksf = 379 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
1.02E-03	3420	1.00	---	1.04E-03	3407	1.00	---
2.07E-03	3390	0.99	0.83	2.05E-03	3407	1.00	0.58
4.33E-03	3239	0.95	0.98	4.22E-03	3325	0.98	0.56
1.04E-02	3097	0.91	1.38	1.04E-02	3108	0.91	1.54

Table C.4 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD13; Isoptropic Confining Pressure, σ_o= 219 psi (31.5 ksf = 1509 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
3.55E-04	5727	1.00	3.55E-04	0.46
7.29E-04	5727	1.00	7.29E-04	0.46
1.41E-03	5727	1.00	1.32E-03	0.46
2.69E-03	5691	0.99	2.50E-03	0.51
5.02E-03	5619	0.98	4.67E-03	0.61
9.09E-03	5513	0.96	8.45E-03	0.70
1.63E-02	5325	0.93	1.49E-02	0.92
2.77E-02	5141	0.90	2.47E-02	1.22
4.79E-02	4782	0.83	4.12E-02	1.80
8.05E-02	4398	0.77	6.60E-02	2.62
1.33E-01	3910	0.68	1.03E-01	3.68
2.49E-01	3283	0.57	1.76E-01	5.10

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table C.5 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD13; Isotropic Confining Pressure, σ_o= 219 psi (31.5 ksf = 1509 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
8.84E-04	5560	1.00	---	9.05E-04	5528	1.00	0.59
2.02E-03	5560	1.00	0.52	2.01E-03	5528	1.00	0.53
4.01E-03	5550	1.00	0.69	4.00E-03	5528	1.00	0.71
1.01E-02	5218	0.94	1.05	9.93E-03	5293	0.96	1.10

APPENDIX D

Specimen B630-UD16

Borehole 630
Sample UD16
Depth = 211.0 ft (64.3 m)
Total Unit Weight = 116.3 lb/ft^3
Water Content = 31.1 %
Estimated In-Situ Ko = 0.5
Estimated In-Situ Mean Effective
Stress = 60 psi

FUGRO JOB #: 0411-08-1701
Testing Station: RC9

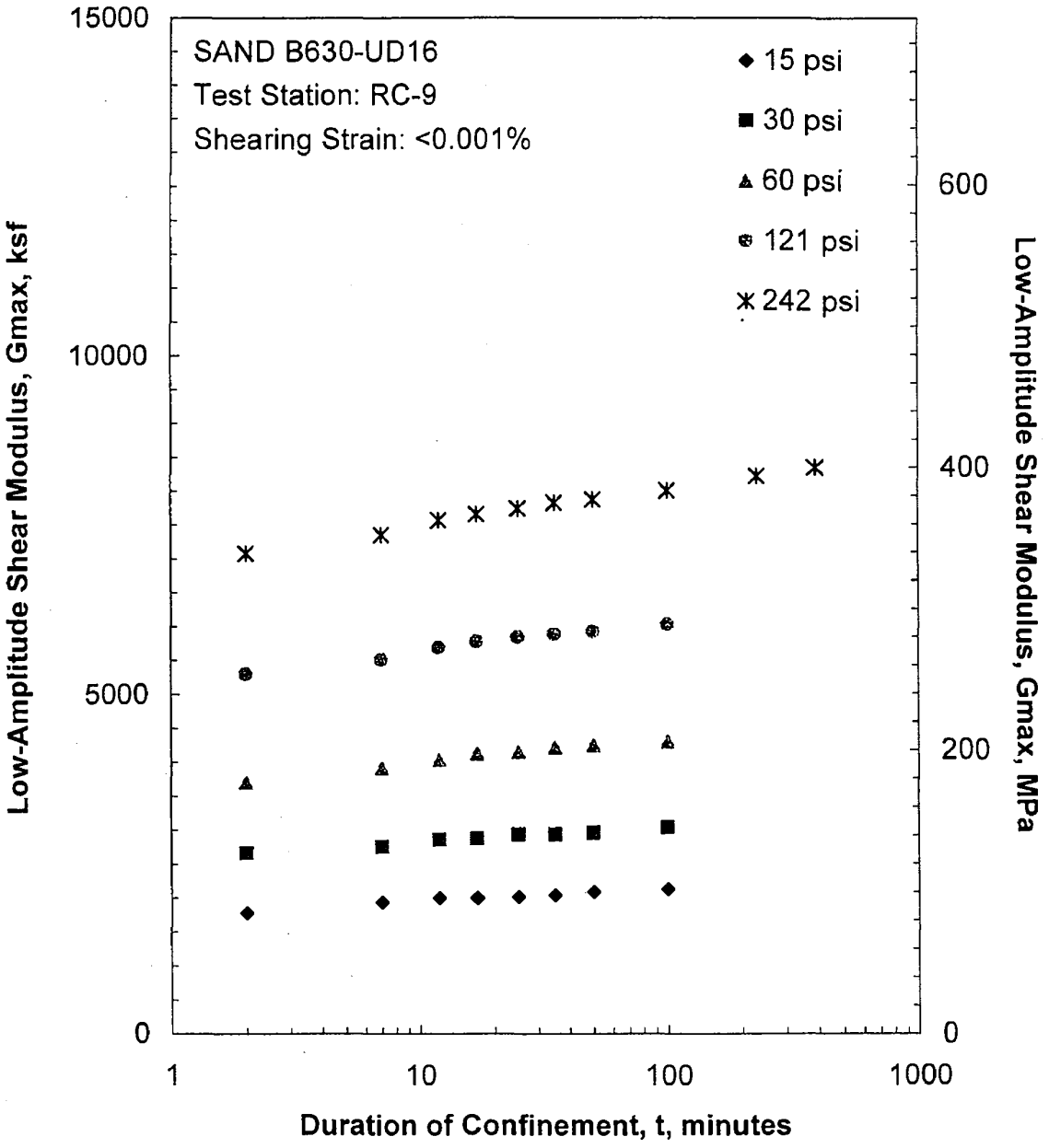


Figure D.1 Variation in Low-Amplitude Shear Modulus with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

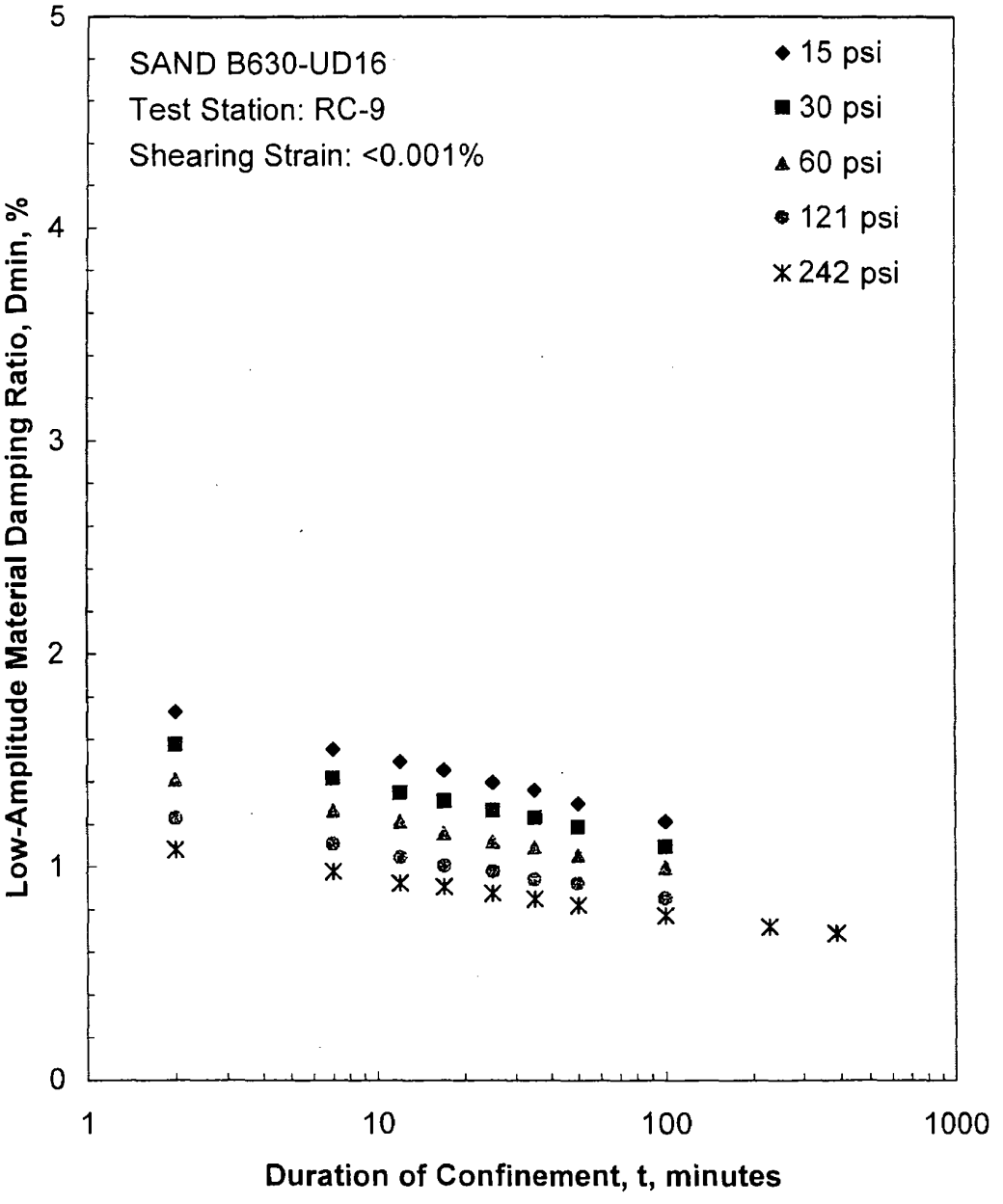


Figure D.2 Variation in Low-Amplitude Material Damping Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

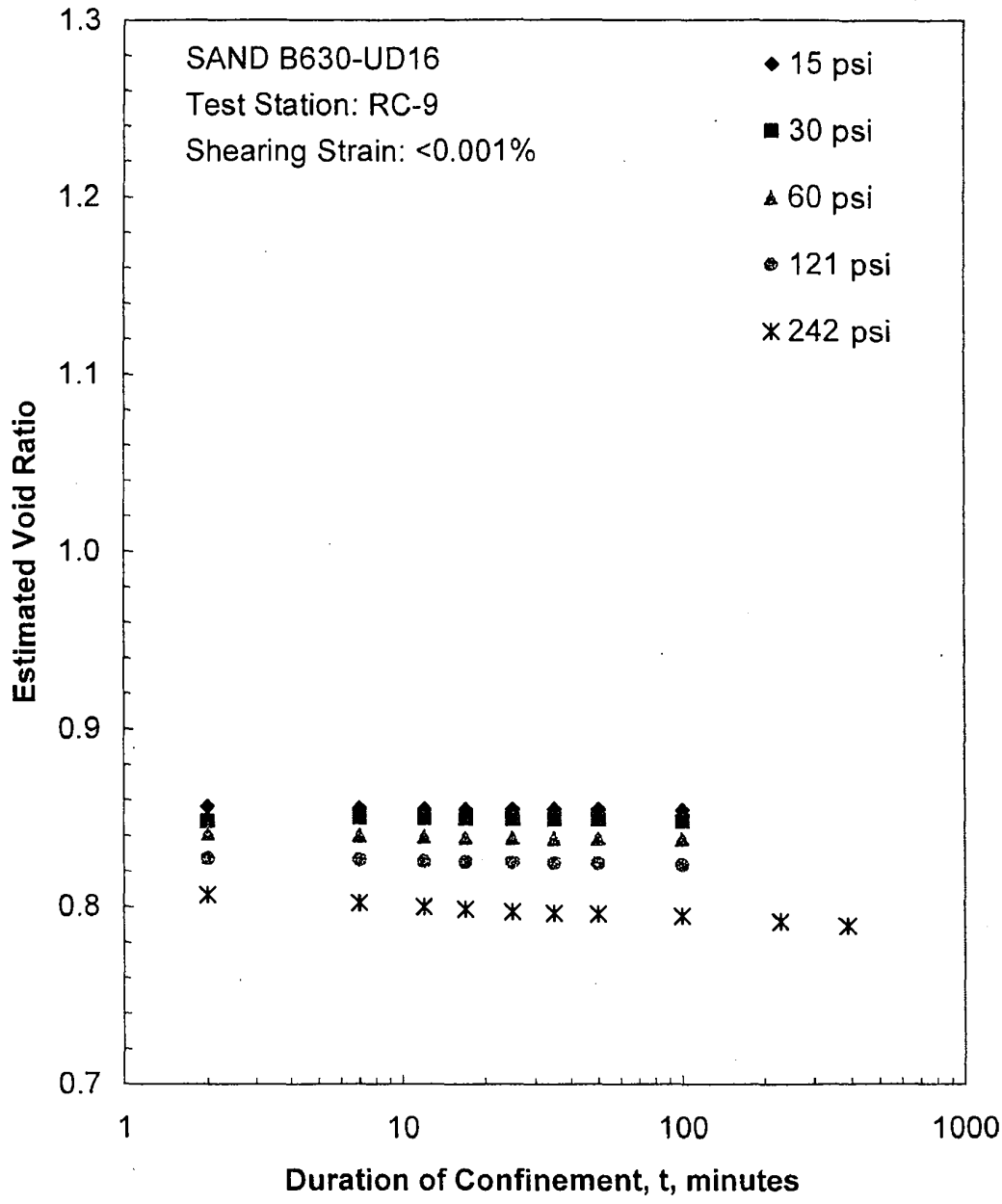


Figure D.3 Variation in Estimated Void Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

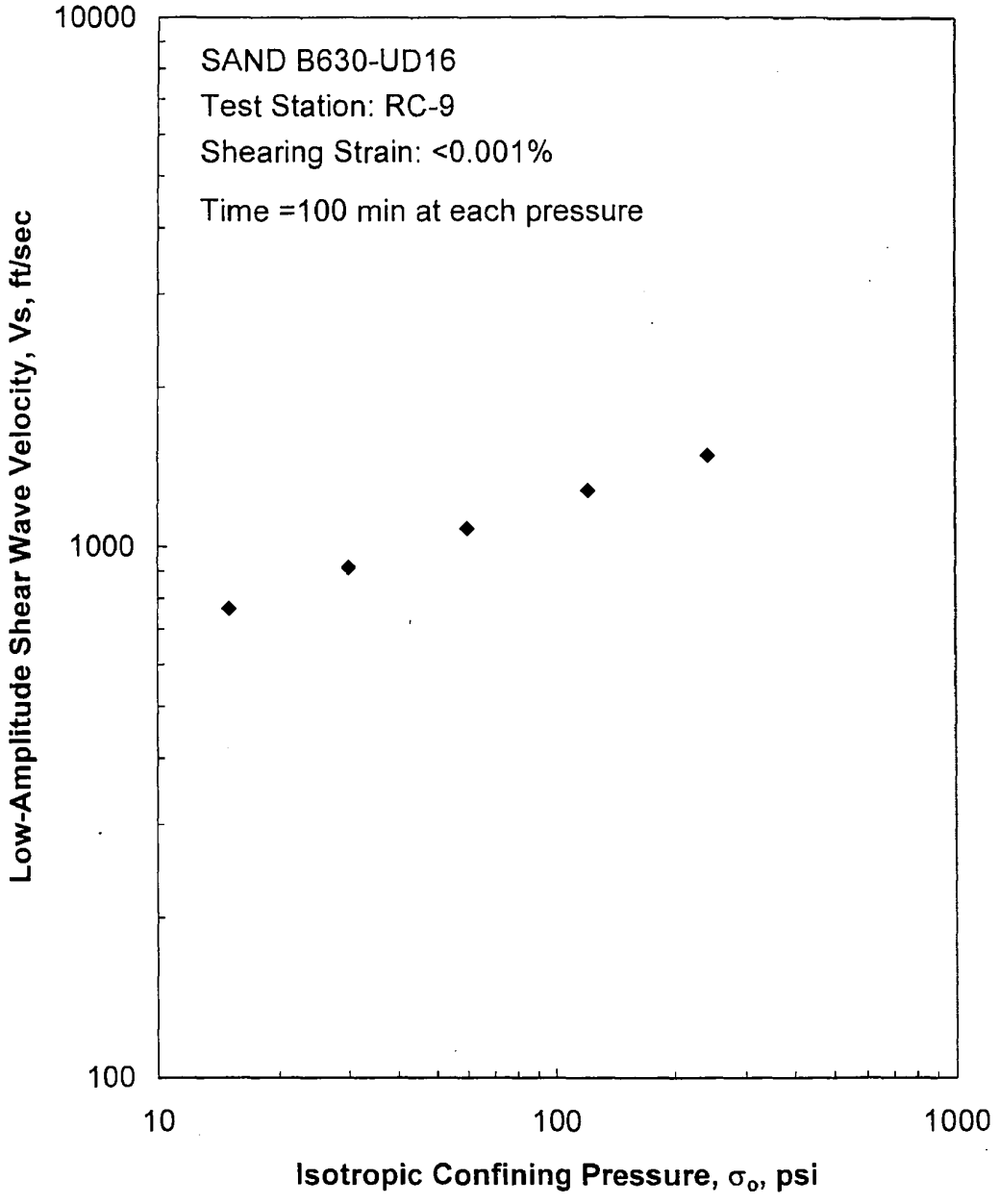


Figure D.4 Variation in Low-Amplitude Shear Wave Velocity with Isotropic Confining Pressure from Resonant Column Tests

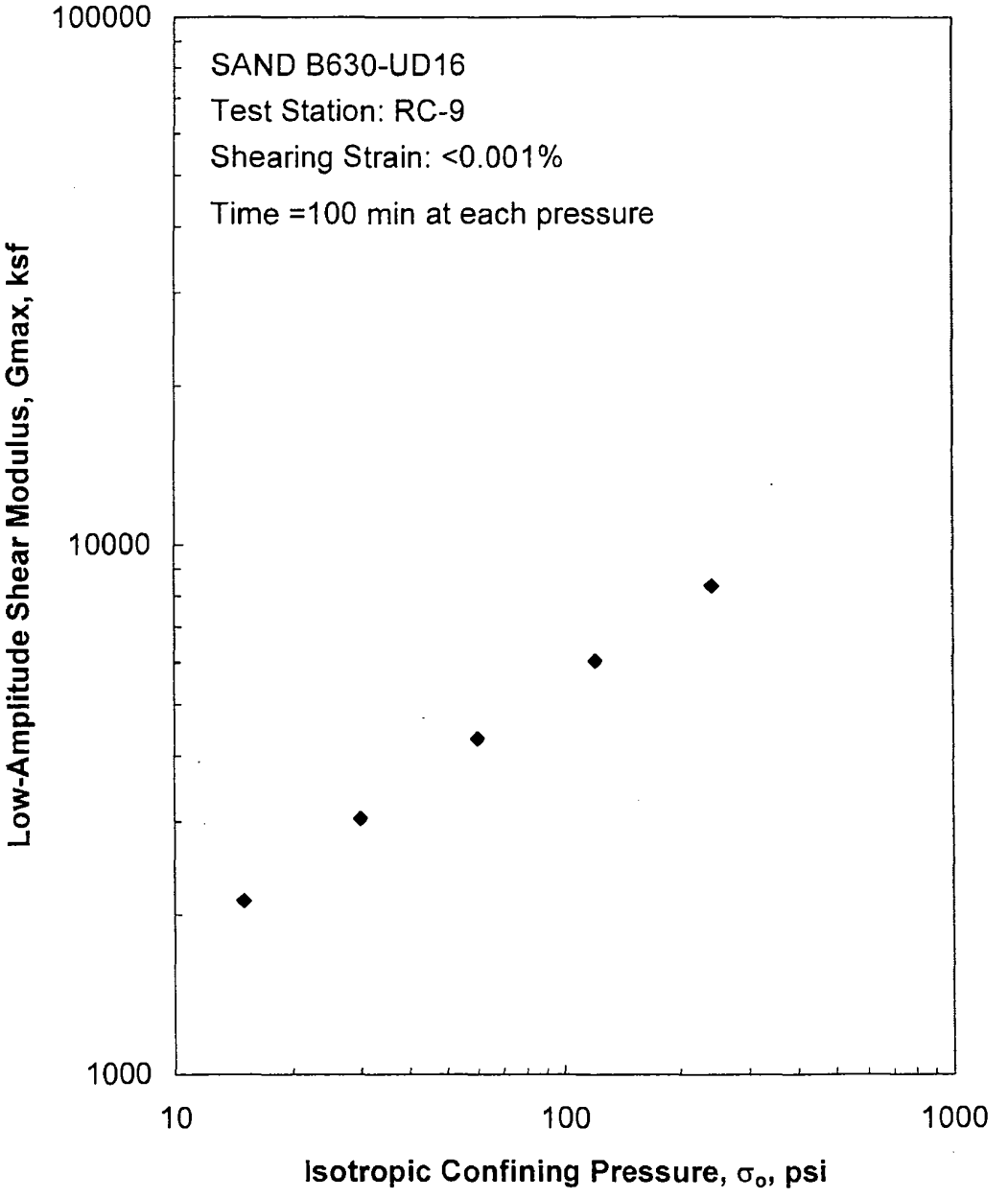


Figure D.5 Variation in Low-Amplitude Shear Modulus with Isotropic Confining Pressure from Resonant Column Tests

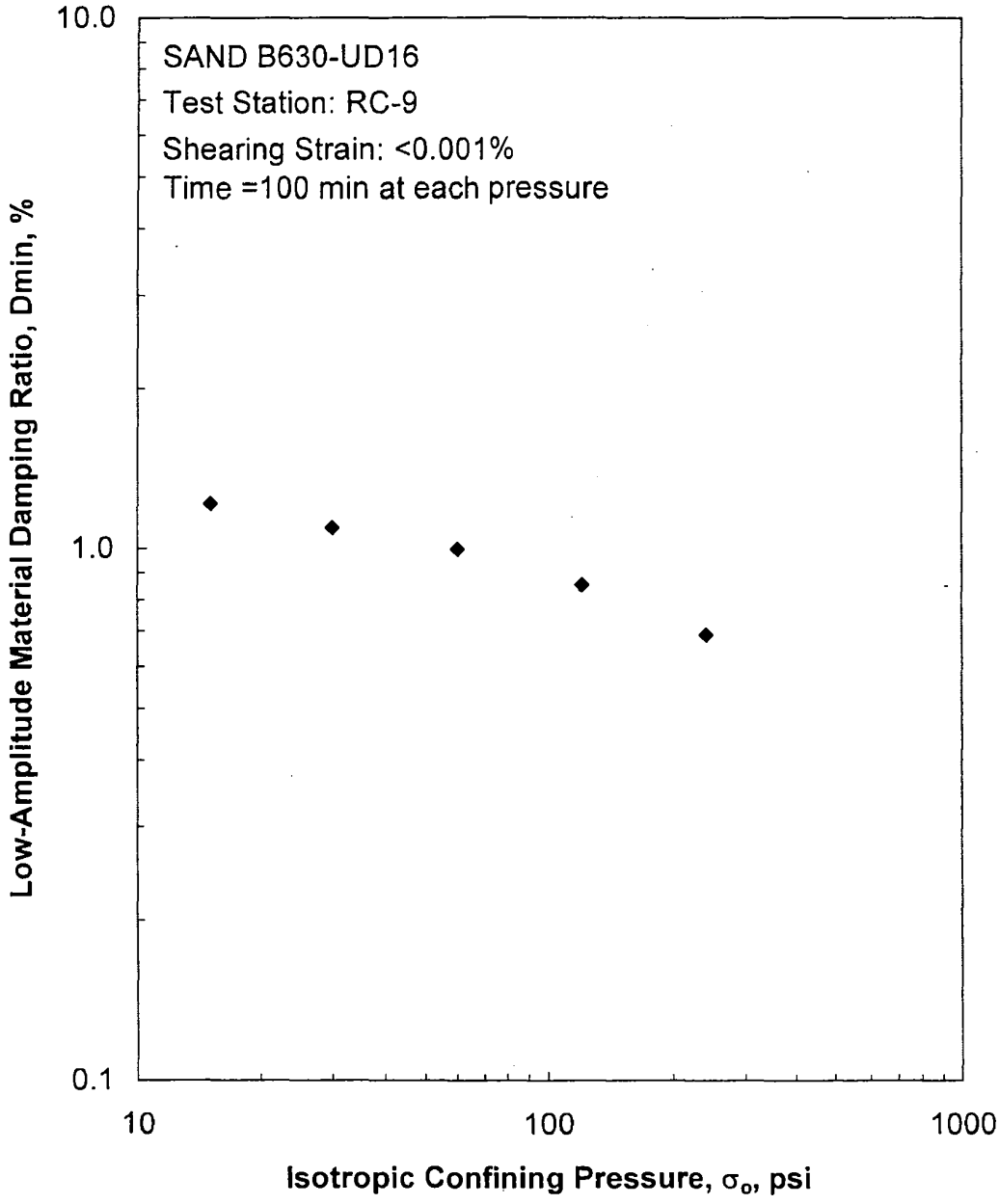


Figure D.6 Variation in Low-Amplitude Material Damping Ratio with Isotropic Confining Pressure from Resonant Column Tests

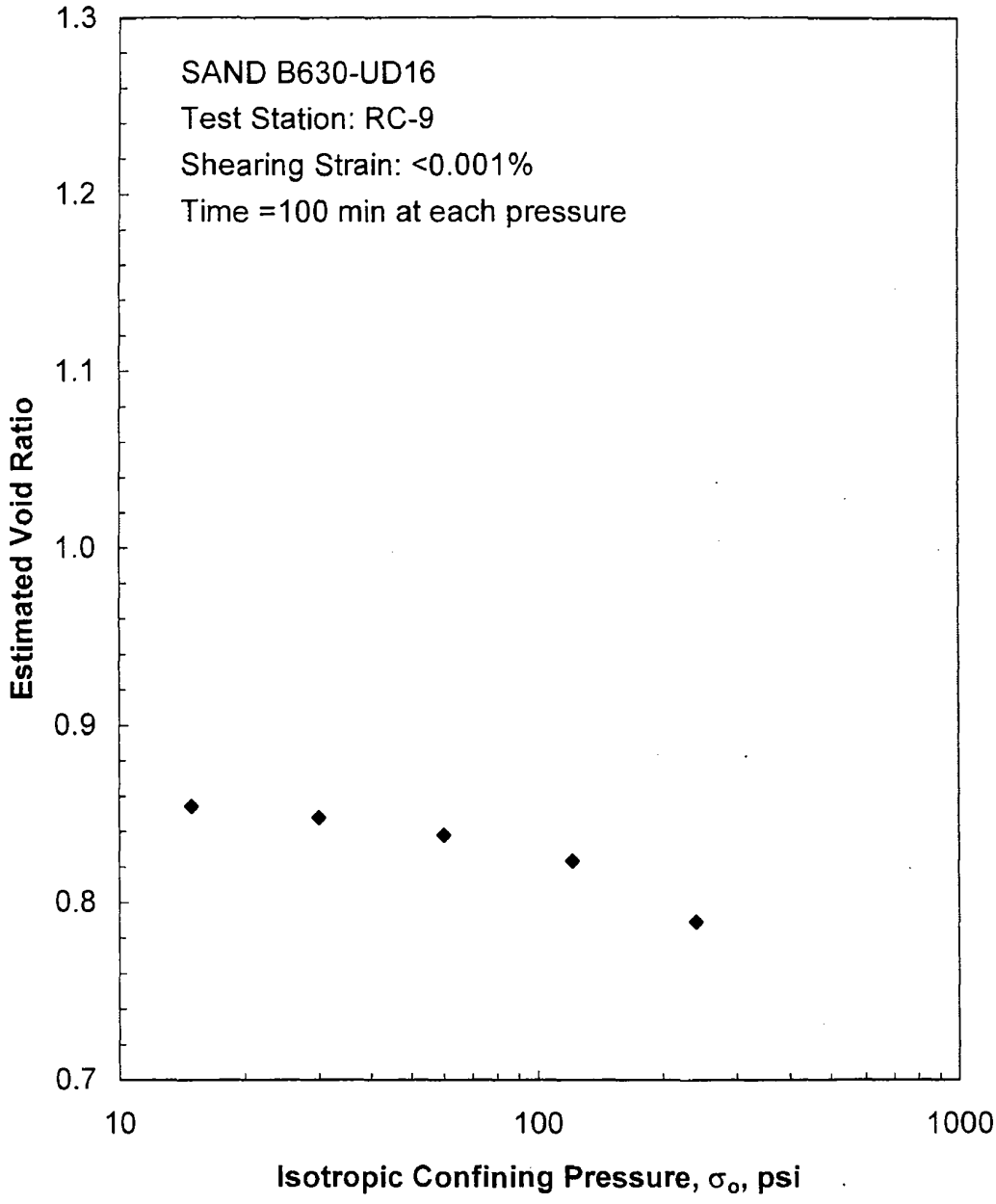


Figure D.7 Variation in Estimated Void Ratio with Isotropic Confining Pressure from Resonant Column Tests

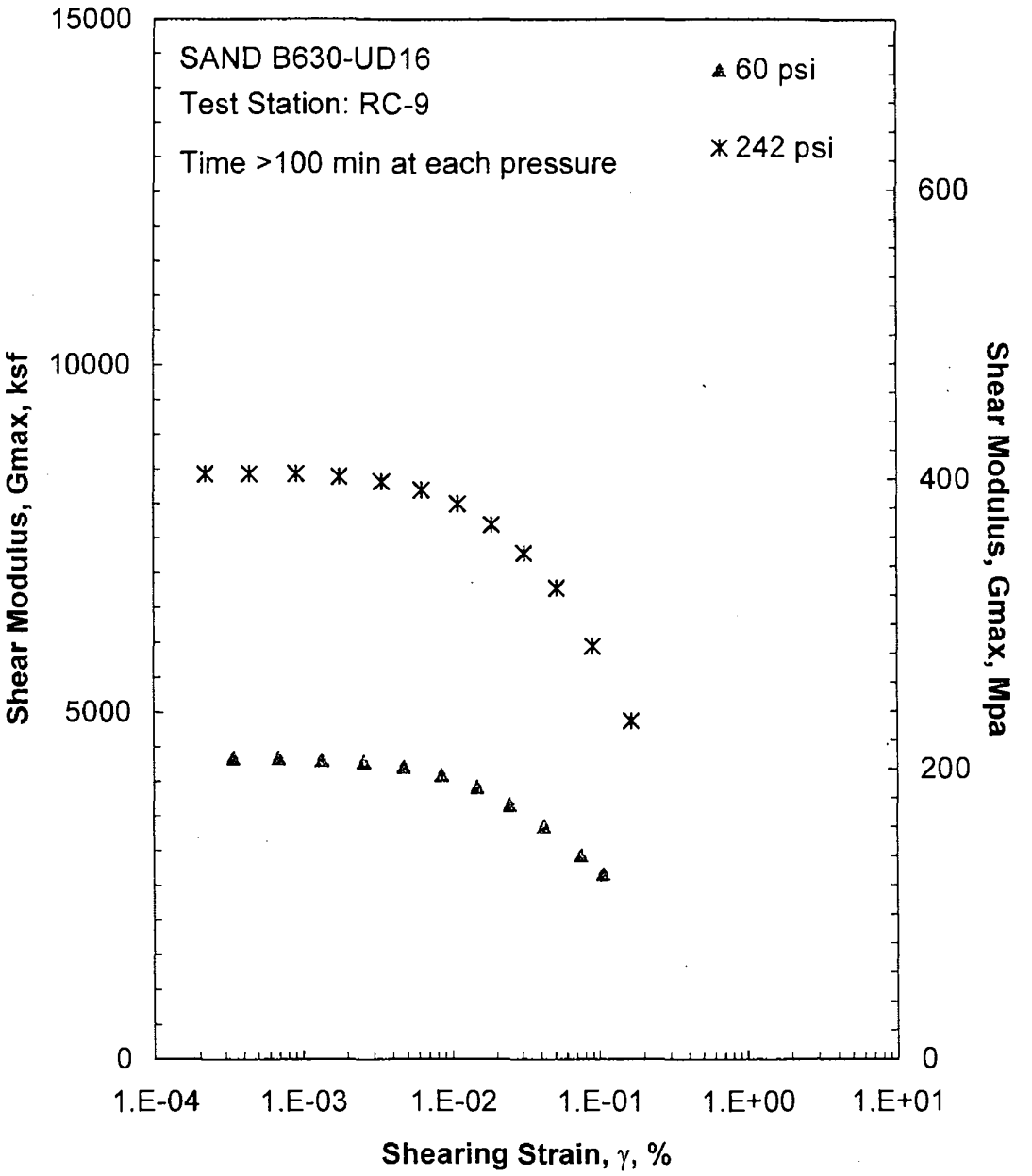


Figure D.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

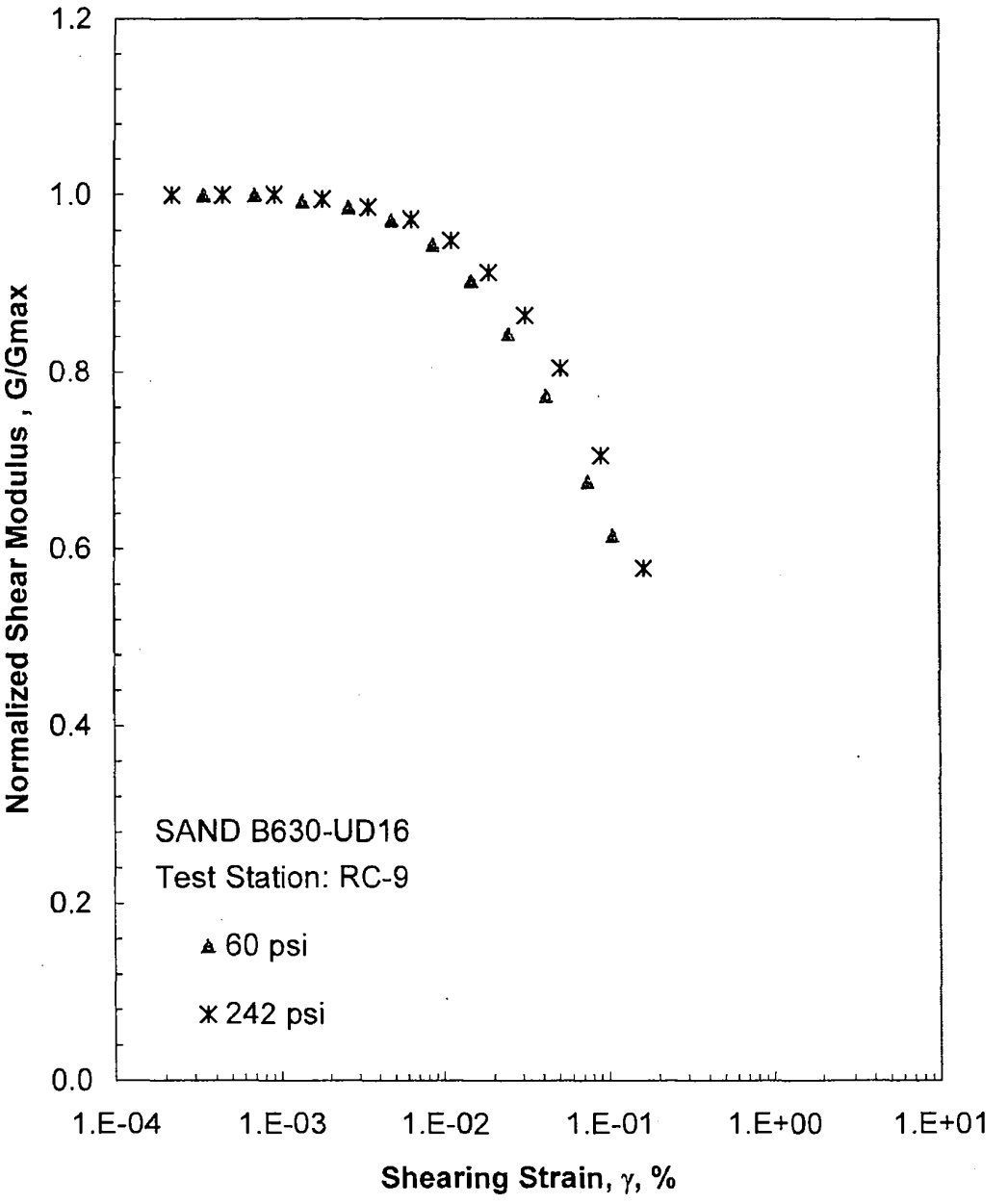


Figure D.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

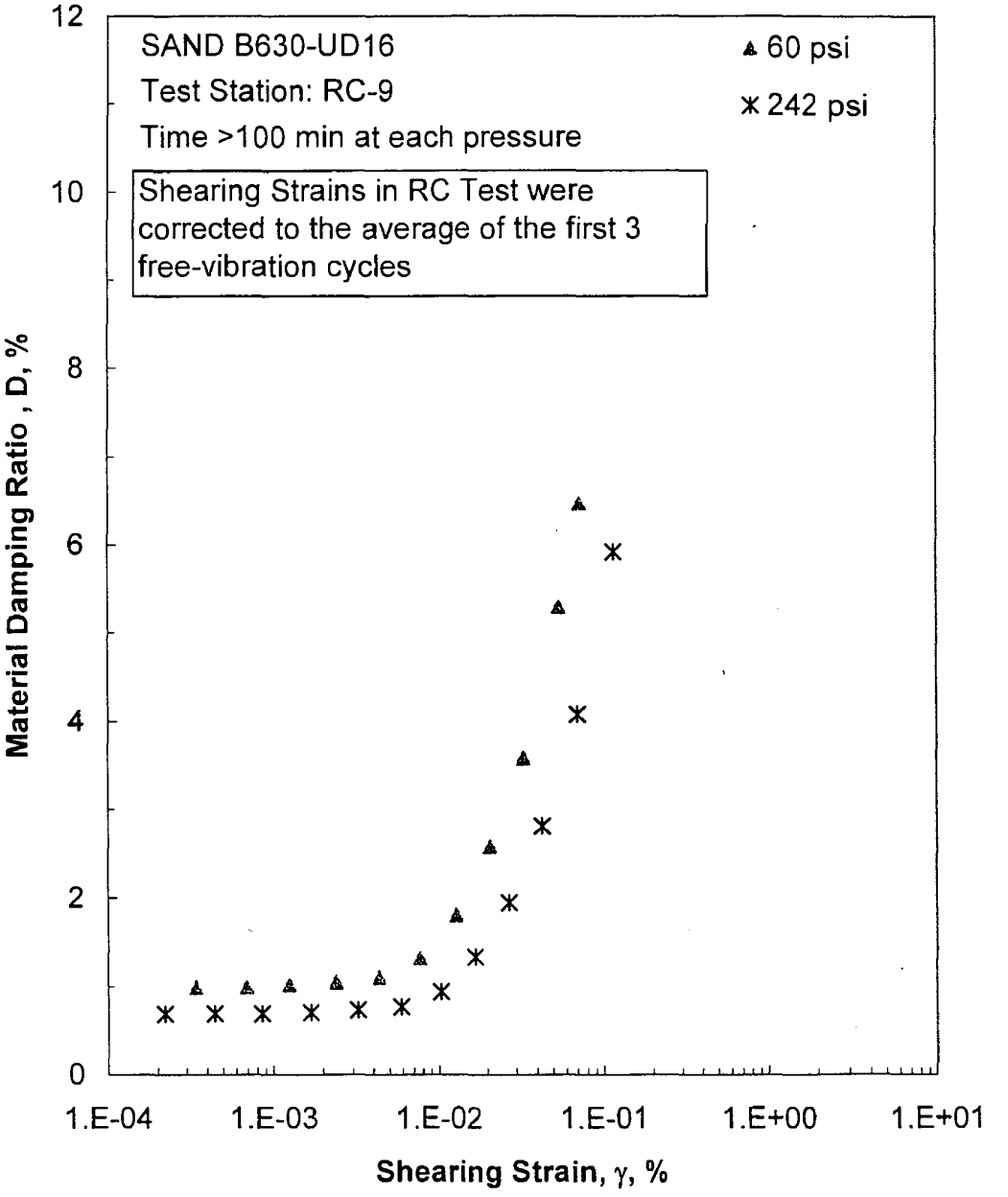


Figure D.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

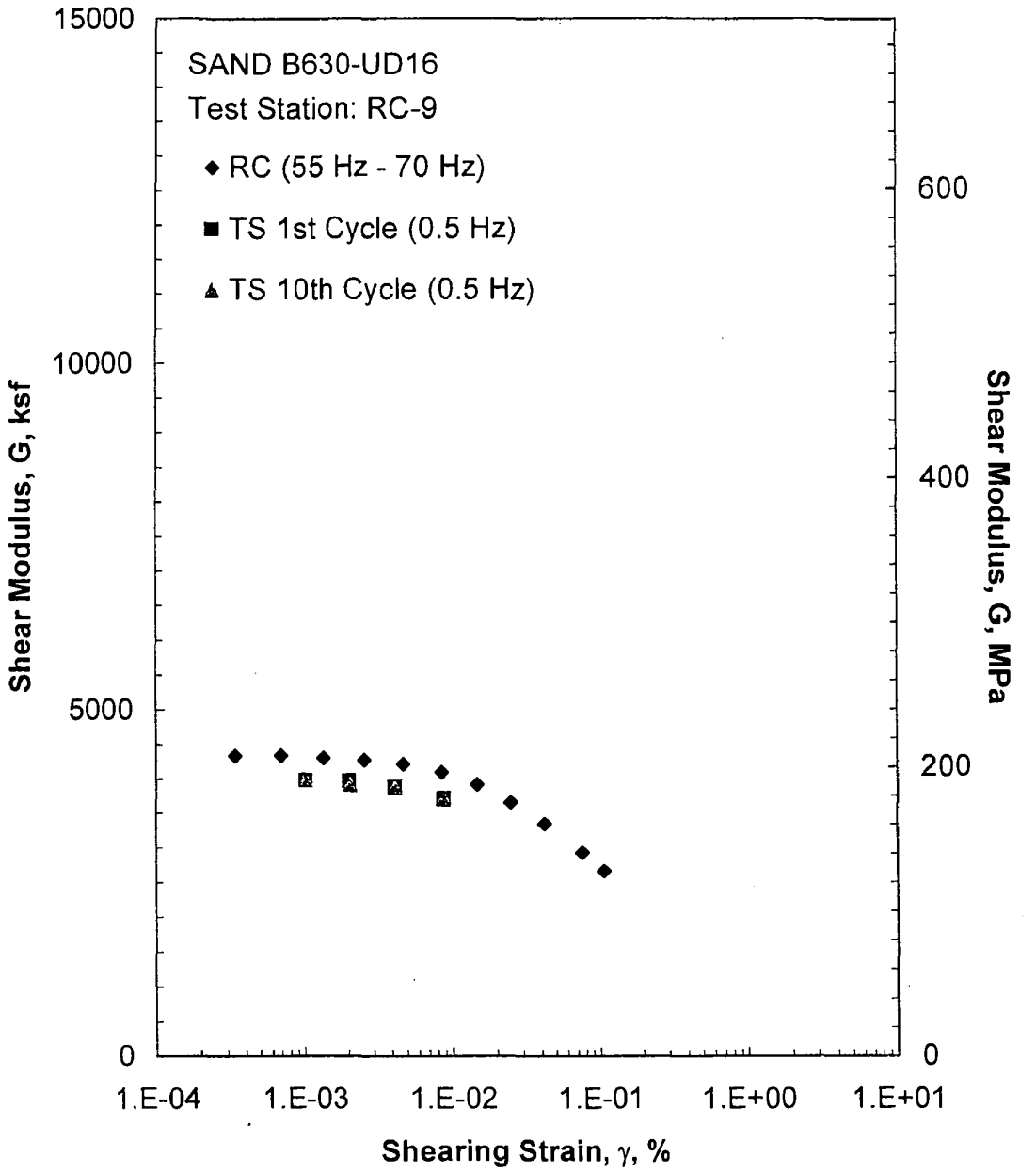


Figure D.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 60 psi from the Combined RCTS Tests

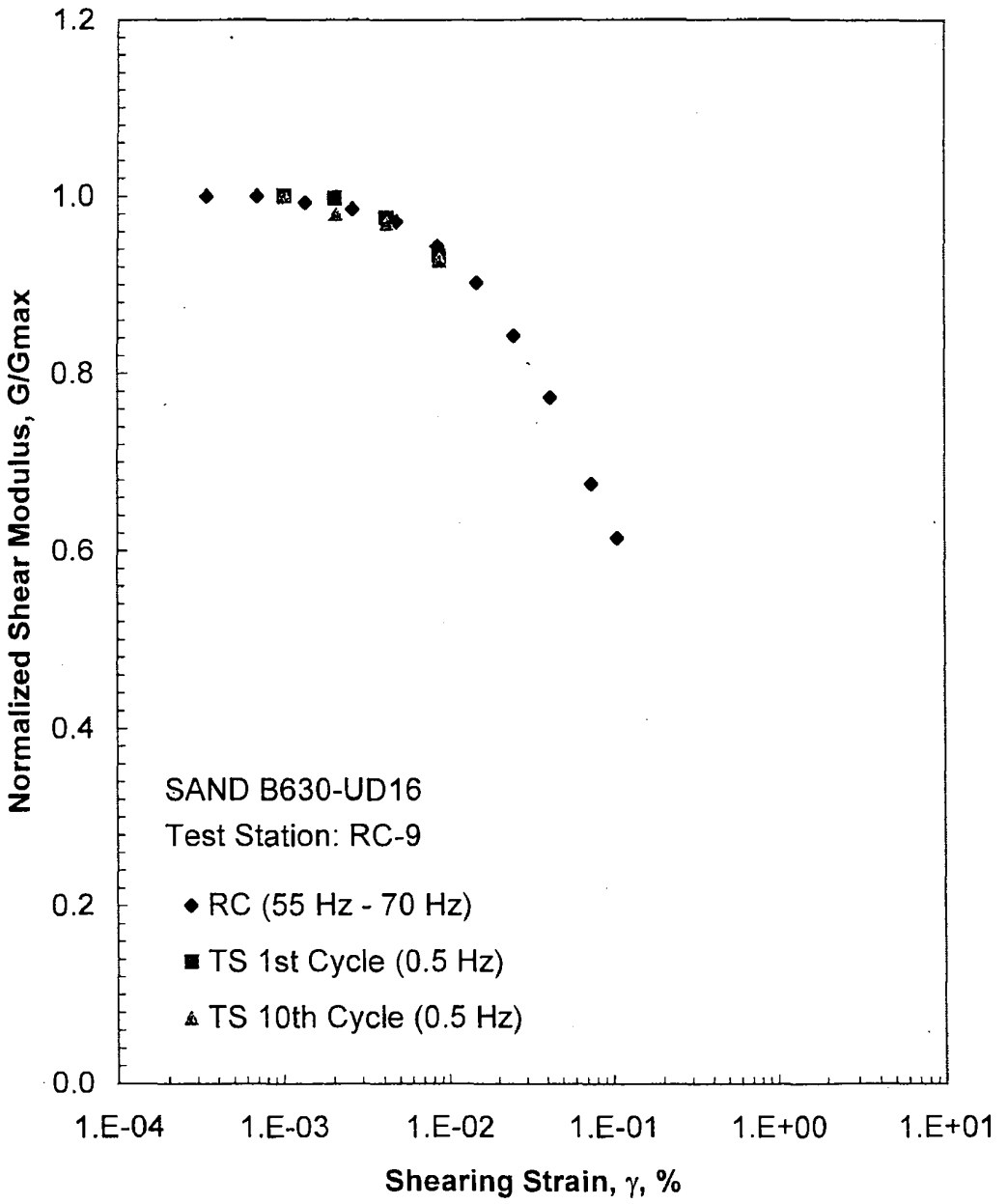


Figure D.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 60 psi from the Combined RCTS Tests

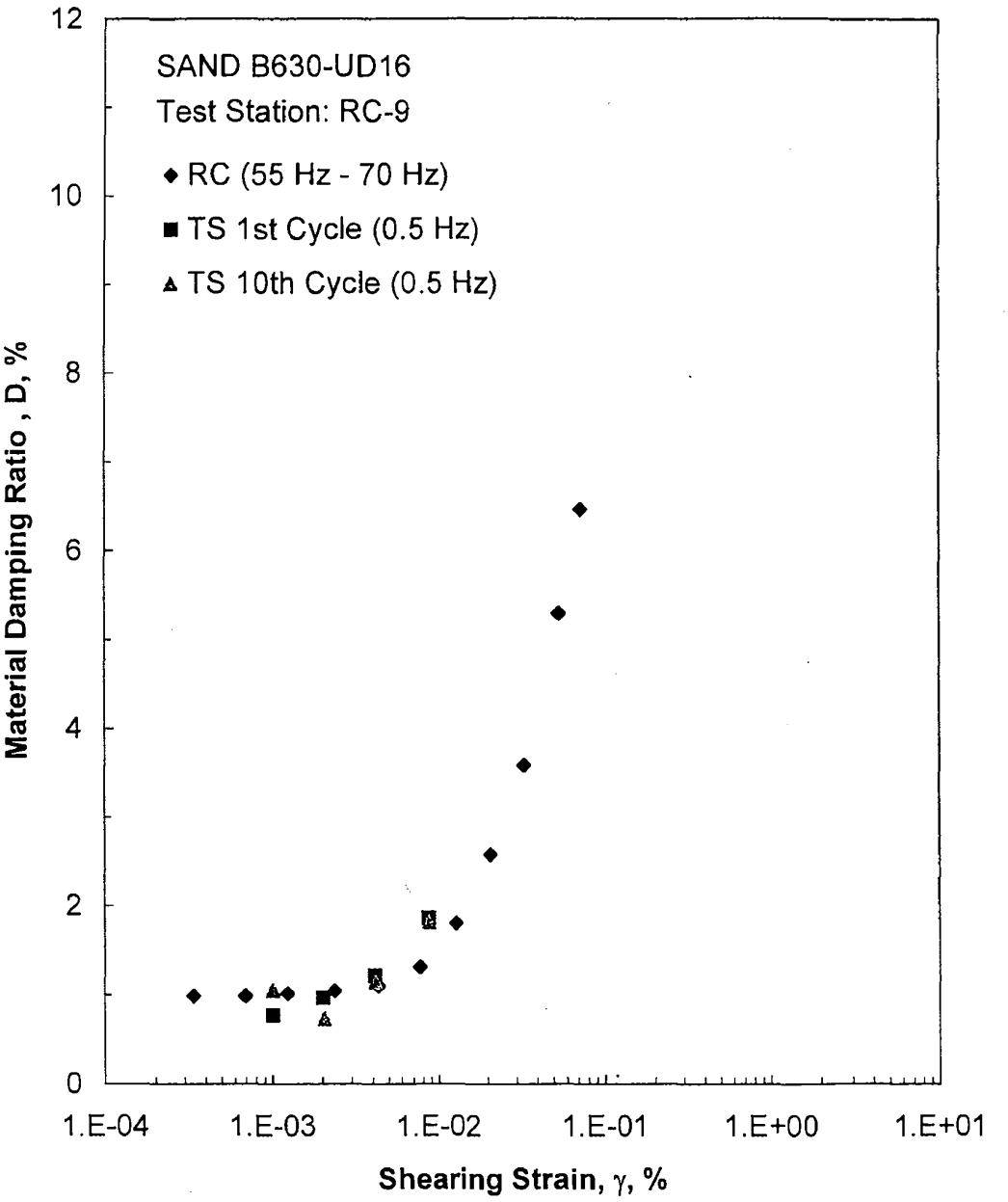


Figure D.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 60 psi from the Combined RCTS Tests

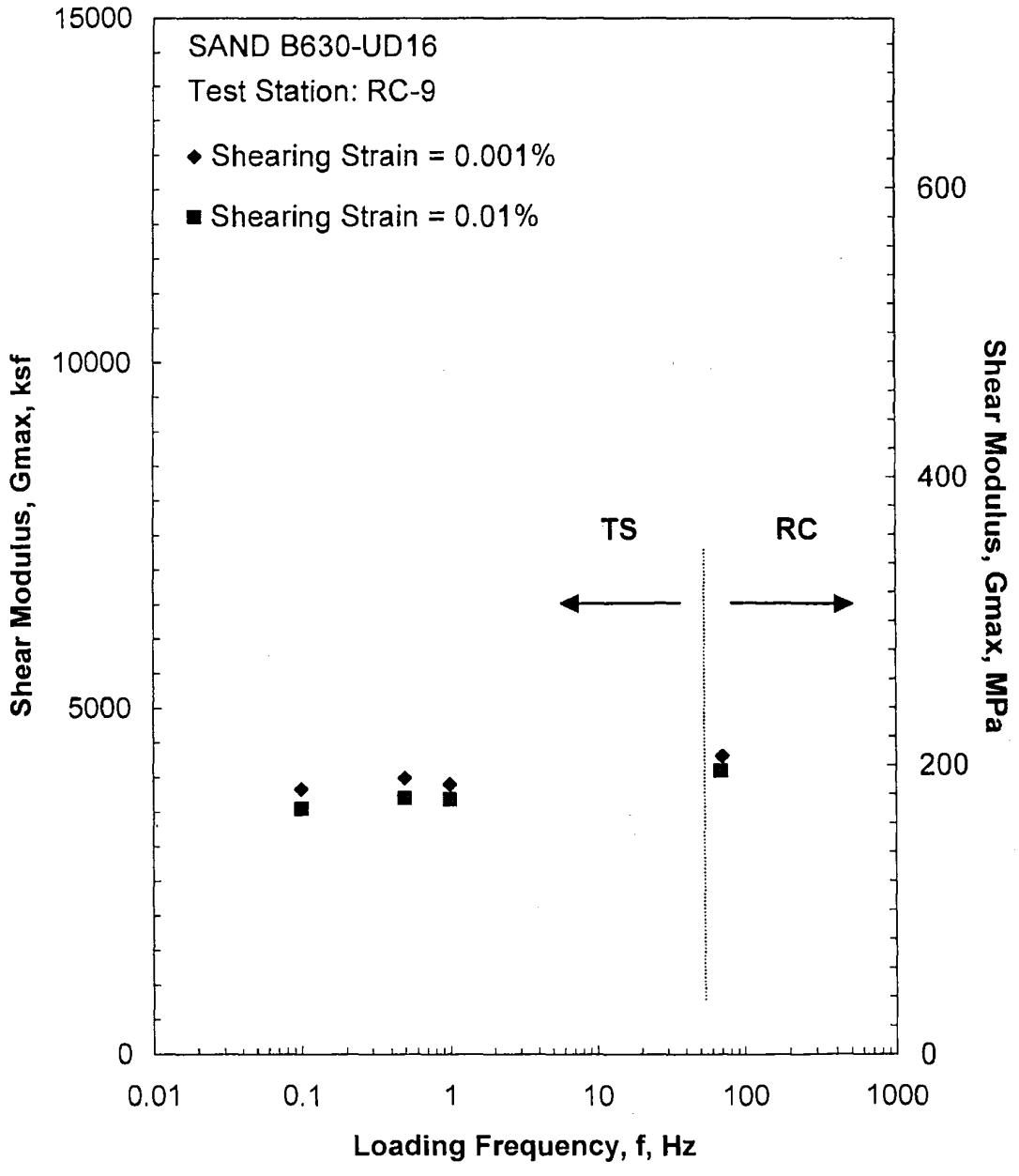


Figure D.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 60 psi from the Combined RCTS Tests

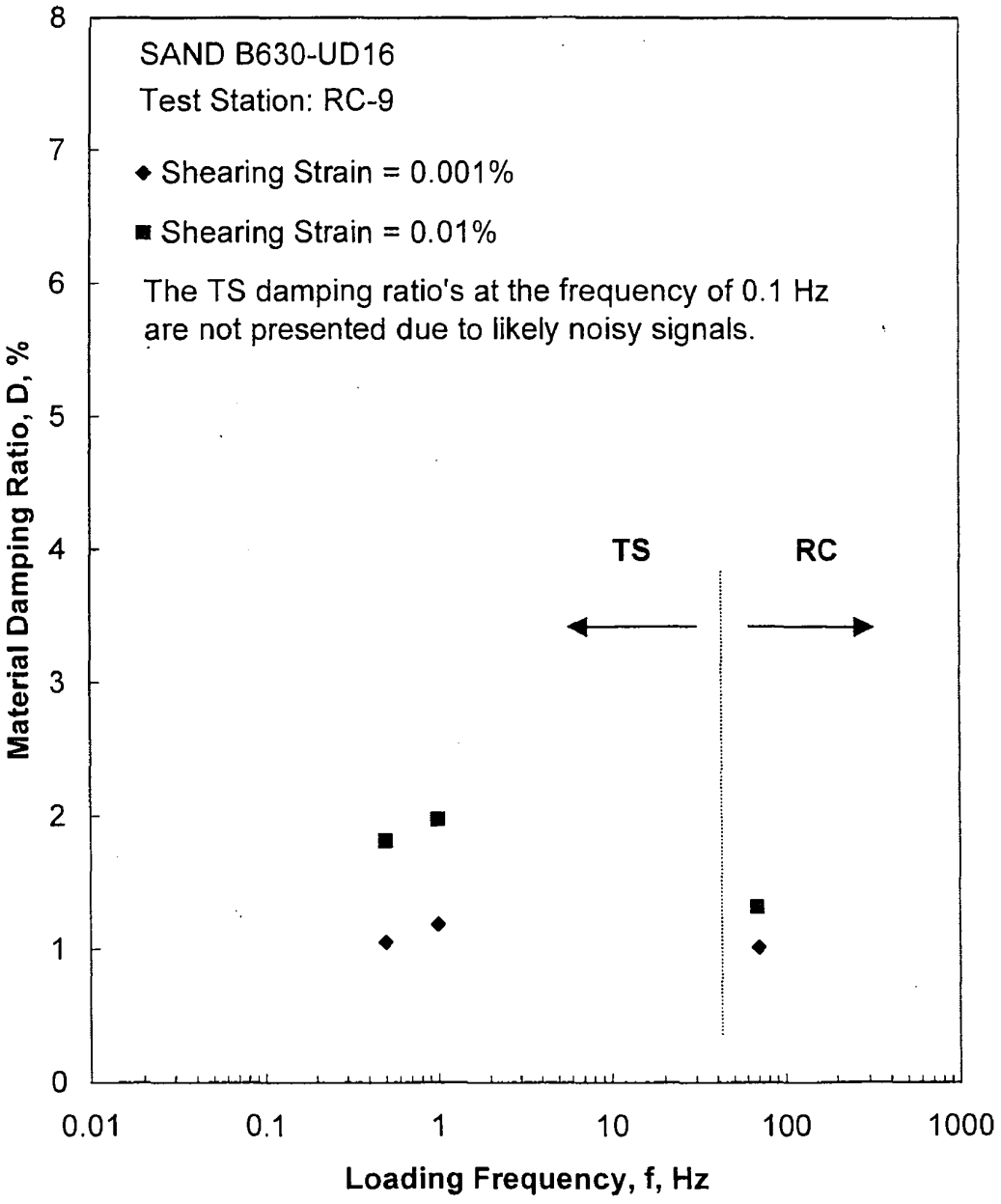


Figure D.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 60 psi from the Combined RCTS Tests

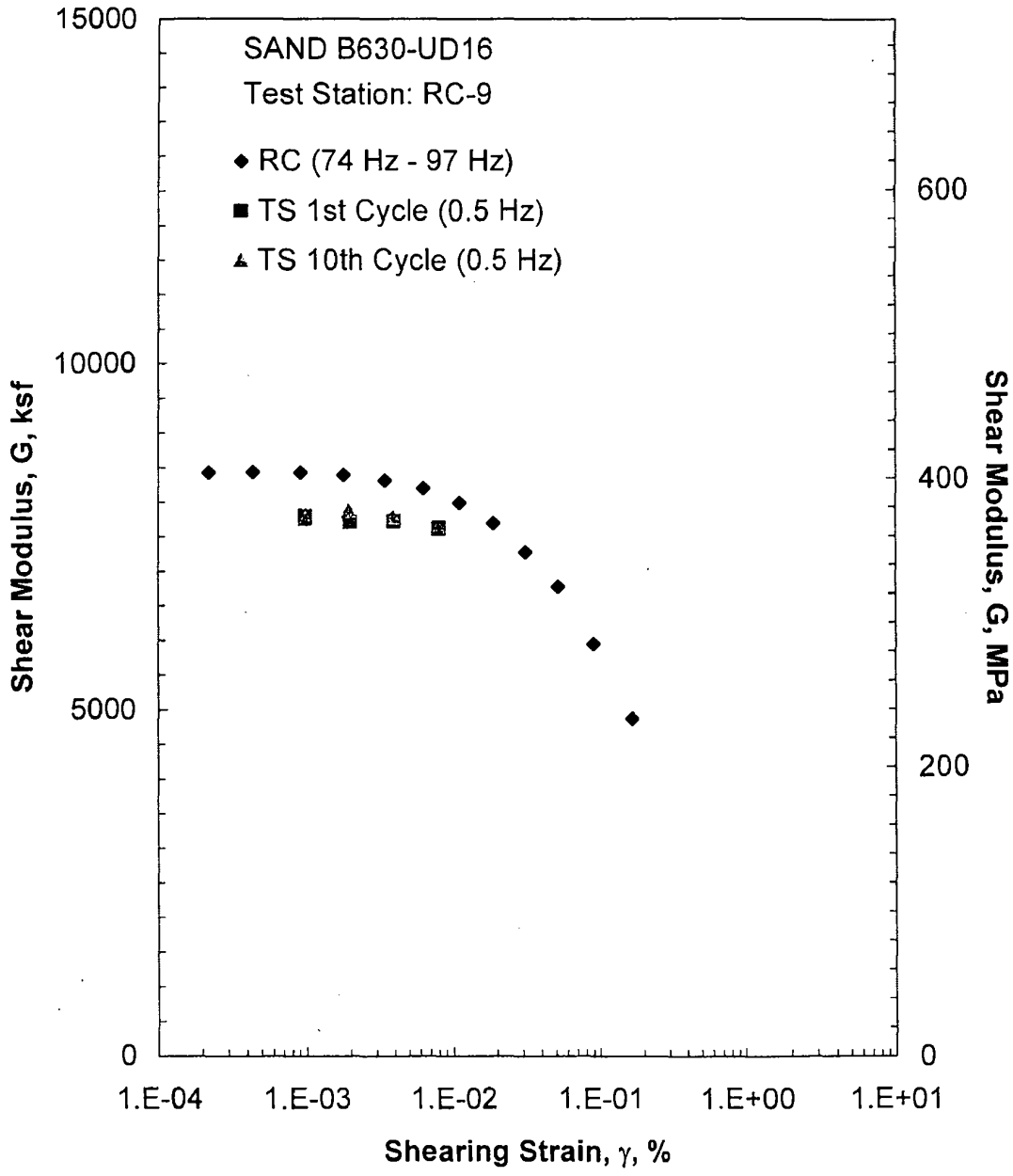


Figure D.16 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 242 psi from the Combined RCTS Tests

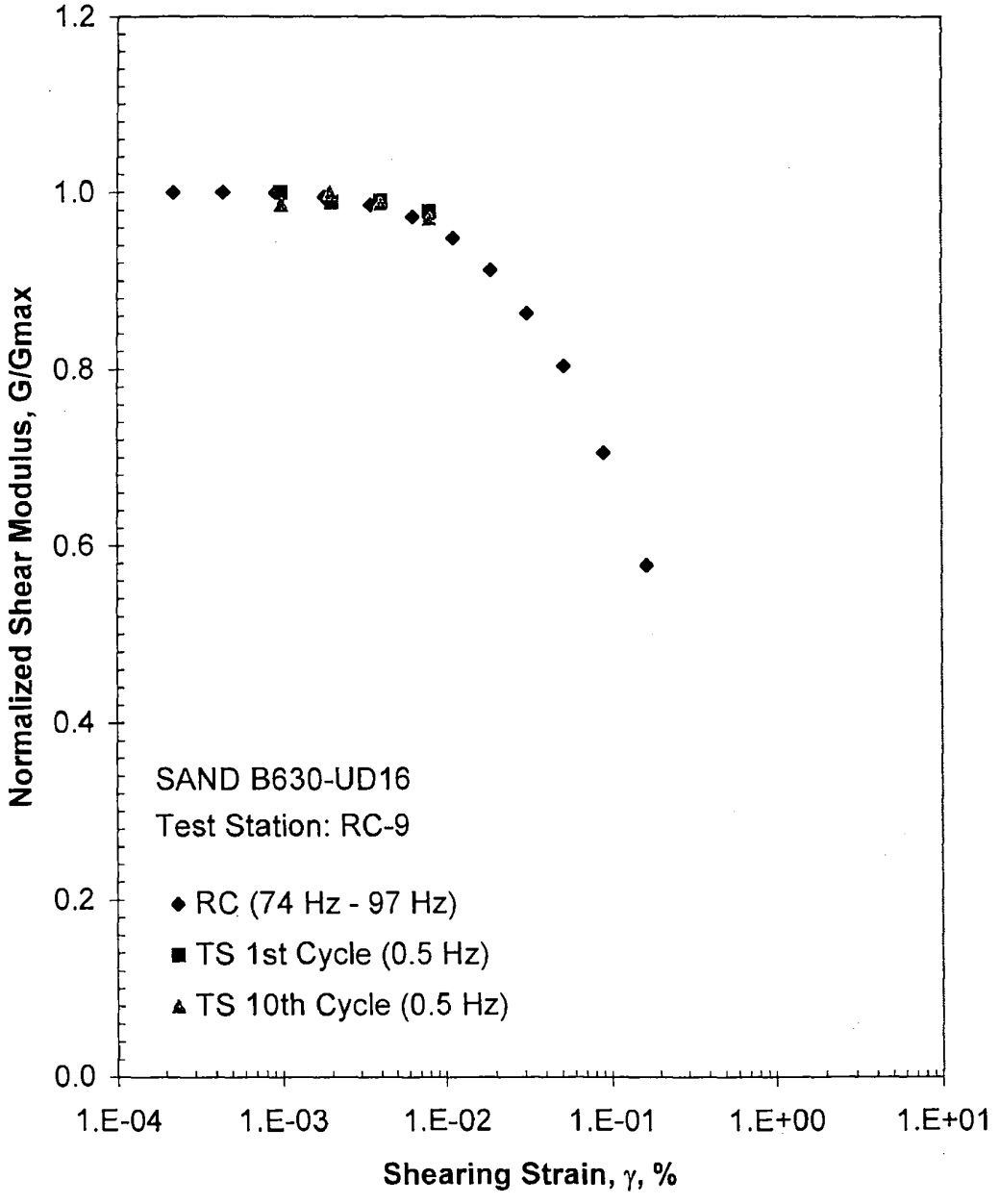


Figure D.17 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 242 psi from the Combined RCTS Tests

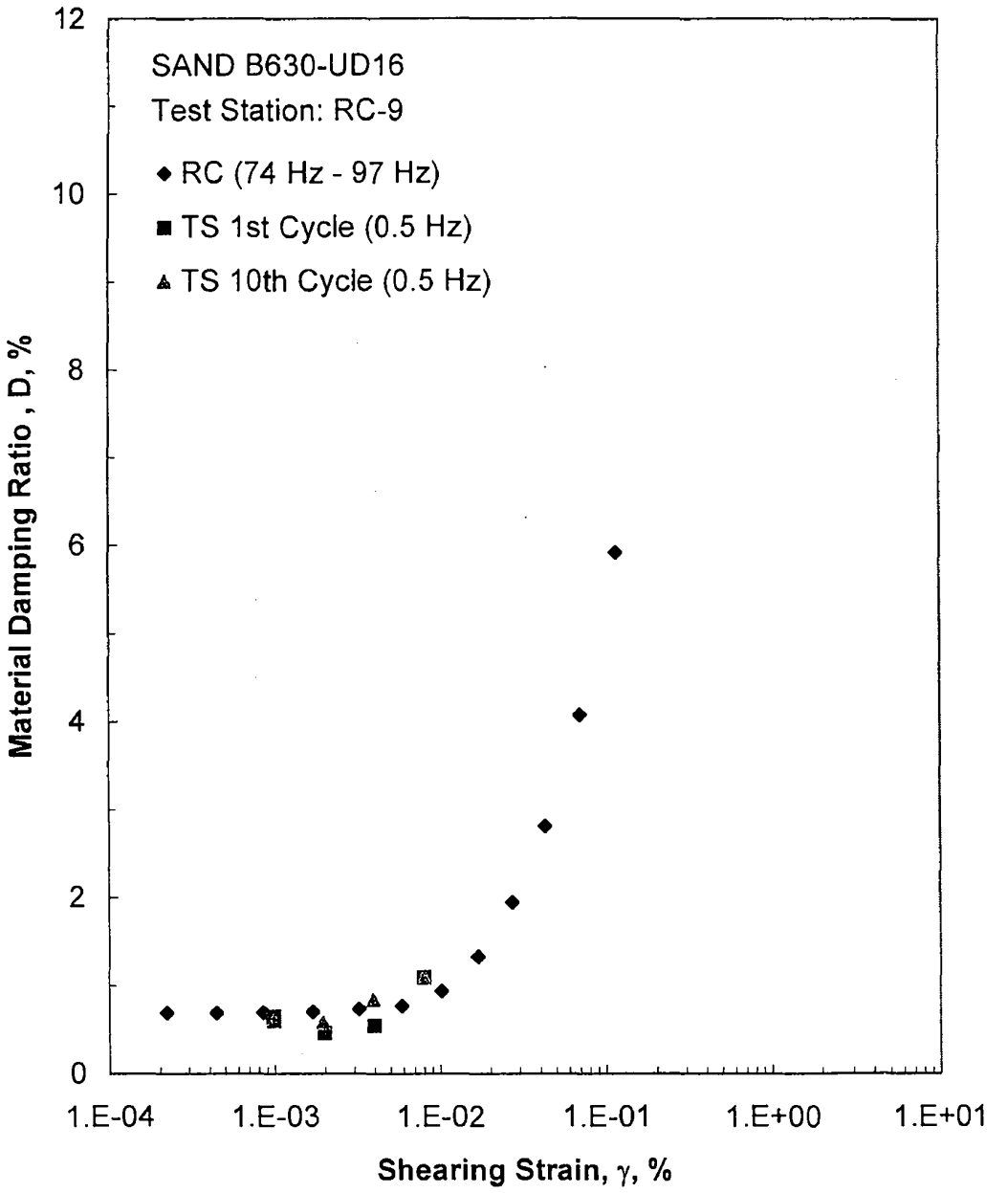


Figure D.18 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 242 psi from the Combined RCTS Tests

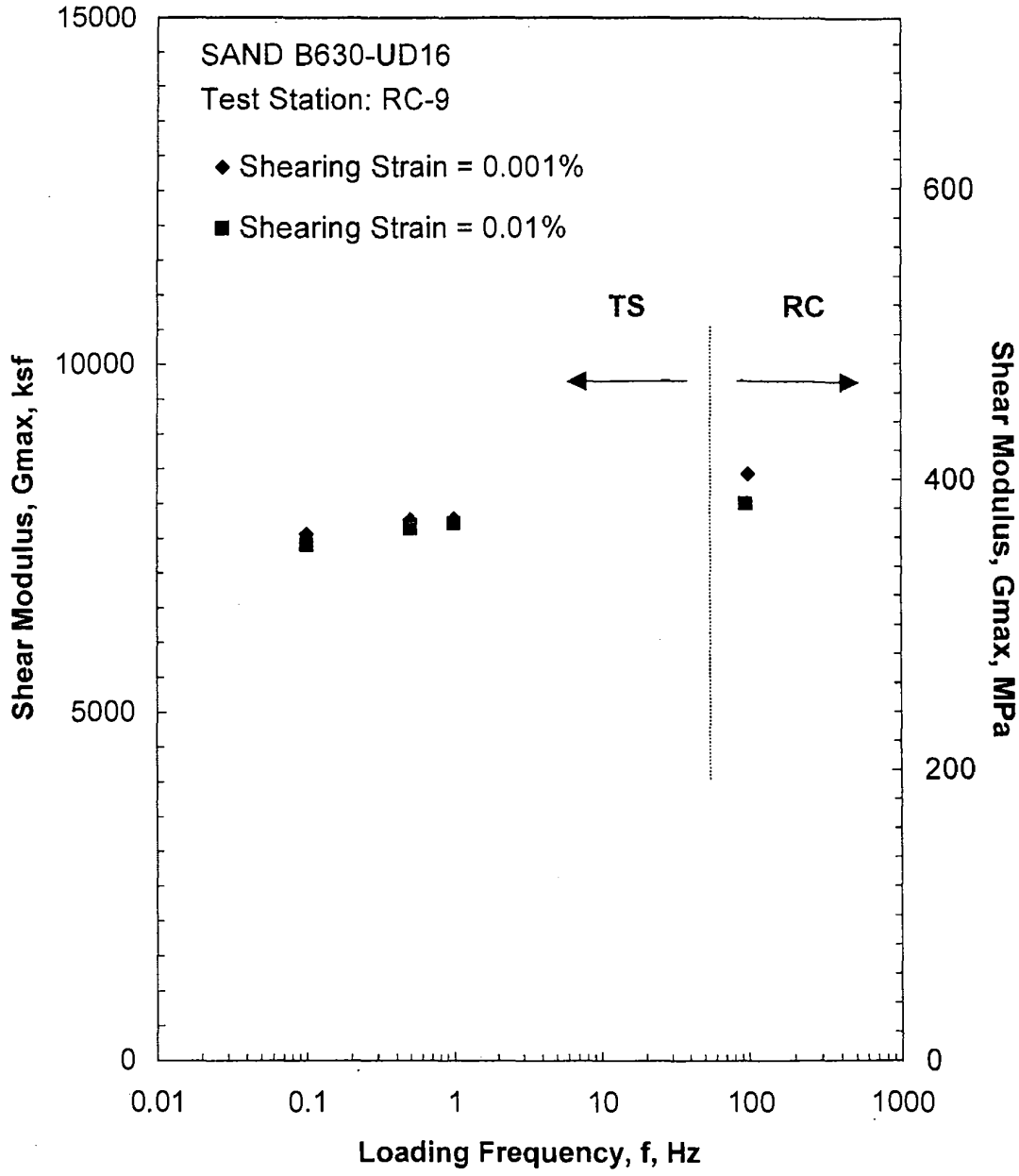


Figure D.19 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 242 psi from the Combined RCTS Tests

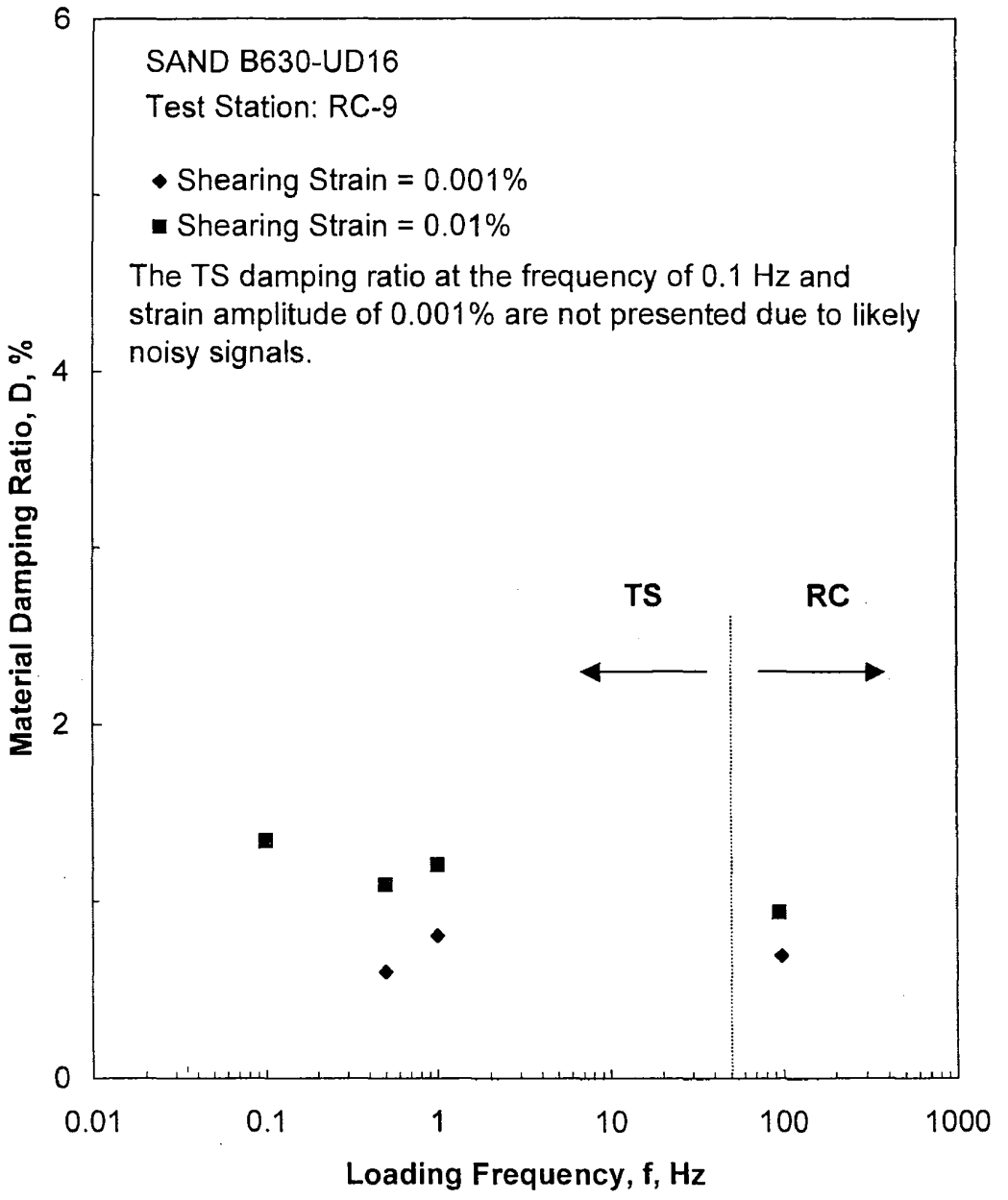


Figure D.20 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 242 psi from the Combined RCTS Tests

Table D.1 Variation in Low-Amplitude Shear Wave Velocity, Low-Amplitude Shear Modulus, Low-Amplitude Material Damping Ratio and Estimated Void Ratio with Isotropic Confining Pressure from RC Tests of Specimen B630-UD16

Isotropic Confining Pressure, σ_o			Low-Amplitude Shear Modulus, G_{max}		Low-Amplitude Shear Wave Velocity, Vs	Low-Amplitude Material Damping Ratio, Dmin	Estimated Void Ratio, e
(psi)	(psf)	(kPa)	(ksf)	(MPa)	(fps)	(%)	
15	2160	103	2127	102	765	1.21	0.85
30	4320	207	3042	146	913	1.09	0.85
60	8640	413	4303	207	1083	1.00	0.84
121	17424	834	6033	290	1277	0.85	0.82
242	34848	1667	8347	401	1488	0.69	0.79

Table D.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD16; Isoptropic Confining Pressure, σ_o= 60 psi (8.6 ksf = 413 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
3.41E-04	4335	1.00	3.41E-04	0.99
6.93E-04	4335	1.00	6.93E-04	0.99
1.36E-03	4304	0.99	1.25E-03	1.01
2.60E-03	4273	0.99	2.39E-03	1.04
4.78E-03	4212	0.97	4.35E-03	1.10
8.53E-03	4091	0.94	7.68E-03	1.31
1.47E-02	3912	0.90	1.28E-02	1.80
2.48E-02	3652	0.84	2.08E-02	2.58
4.23E-02	3347	0.77	3.34E-02	3.58
7.52E-02	2929	0.68	5.42E-02	5.29
1.06E-01	2662	0.61	7.23E-02	6.47

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table D.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD16; Isotropic Confining Pressure, σ_o= 60 psi (8.6 ksf = 413 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
1.01E-03	3981	1.00	0.77	1.01E-03	3988	1.00	1.05
2.04E-03	3972	1.00	0.96	2.07E-03	3910	0.98	0.73
4.17E-03	3885	0.98	1.21	4.19E-03	3868	0.97	1.14
8.72E-03	3713	0.93	1.86	8.75E-03	3701	0.93	1.81

Table D.4 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD16; Isoptropic Confining Pressure, σ_o= 242 psi (34.8 ksf = 1667 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
2.21E-04	8430	1.00	2.21E-04	0.69
4.43E-04	8430	1.00	4.43E-04	0.69
9.09E-04	8430	1.00	8.54E-04	0.69
1.79E-03	8390	1.00	1.68E-03	0.70
3.42E-03	8312	0.99	3.21E-03	0.73
6.28E-03	8195	0.97	5.90E-03	0.77
1.11E-02	7993	0.95	1.03E-02	0.94
1.88E-02	7689	0.91	1.69E-02	1.33
3.12E-02	7279	0.86	2.72E-02	1.94
5.17E-02	6777	0.80	4.29E-02	2.81
9.00E-02	5945	0.71	7.02E-02	4.07
1.65E-01	4867	0.58	1.16E-01	5.91

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table D.5 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD16; Isotropic Confining Pressure, σ_o= 242 psi (34.8 ksf = 1667 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
9.81E-04	7797	1.00	0.64	9.85E-04	7764	0.99	0.60
1.98E-03	7713	0.99	0.46	1.94E-03	7872	1.00	0.58
3.96E-03	7720	0.99	0.54	3.94E-03	7779	0.99	0.83
8.03E-03	7625	0.98	1.09	8.02E-03	7638	0.97	1.09

FUGRO CONSULTANTS, INC.

6100 Hillcroft (77081)
P.O. Box 740010
Houston, Texas 77274
Tel: 713-369-5400
Fax: 713-369-5518

July 12, 2008

Ms. Siesta Williams
MACTEC
3301 Atlantic Avenue
Raleigh, NC 27604

RE: Three (3) Reports For The Turkey Point Project

Dear Ms. Williams:

Fugro has completed three (3) RCTS tests, which are B630-UD19, B630-UD23, and B630-UD27 for the Turkey Point project. Fugro has incorporated, as needed, Dr. Kenneth Stokoe's comments into the final reports. The final reports and the associated RCTS Test Approvals by Dr. Kenneth Stokoe have been attached.

Please let us know if you have questions. Thanks.

Very truly yours,

Fugro Consultants, Inc.

Jiewu Meng, PhD, P.E.
Project Engineer

Bill DeGroff, P.E.
Laboratory Department Manager

Enclosures

RCTS TEST APROVAL

PROJECT SITE/NAME	Turkey Point

Test ID	Sample ID	Depth B.S. (Ft)	Approved By (Initials)	Date
RCTS#E	B630-UD19	231.0	KHS (+)	5 July '08
RCTS#F	B630-UD23	260.5	KHS (+) (A)	5 July '08
RCTS#G	B630-UD27	294.0	KHS (+)	5 July '08

Three RCTS tests for the site referenced above were tested, and three reports were prepared, by Fugro Consultants, Inc.

I have reviewed the data and associated results listed above and found them to be reasonable.

Approved By:

K. H. Stokoe

Dr. Kenneth Stokoe

(+) See minor comments and suggestions on a few figures

(A) In Appendix F the reported γ_t of 150.1 lb/ft^3 on the cover page can not be correct. Please correct to ~ 121 lb/ft^3.

APPENDIX E

Specimen B630-UD19

Borehole 630
Sample UD19
Depth = 231.0 ft (70.6 m)
Total Unit Weight = 121.9 lb/ft^3
Water Content = 26.6 %
Estimated In-Situ Ko = 0.5
Estimated In-Situ Mean Effective Stress = 66 psi

FUGRO JOB #: 0411-08-1701
Testing Station: RC9

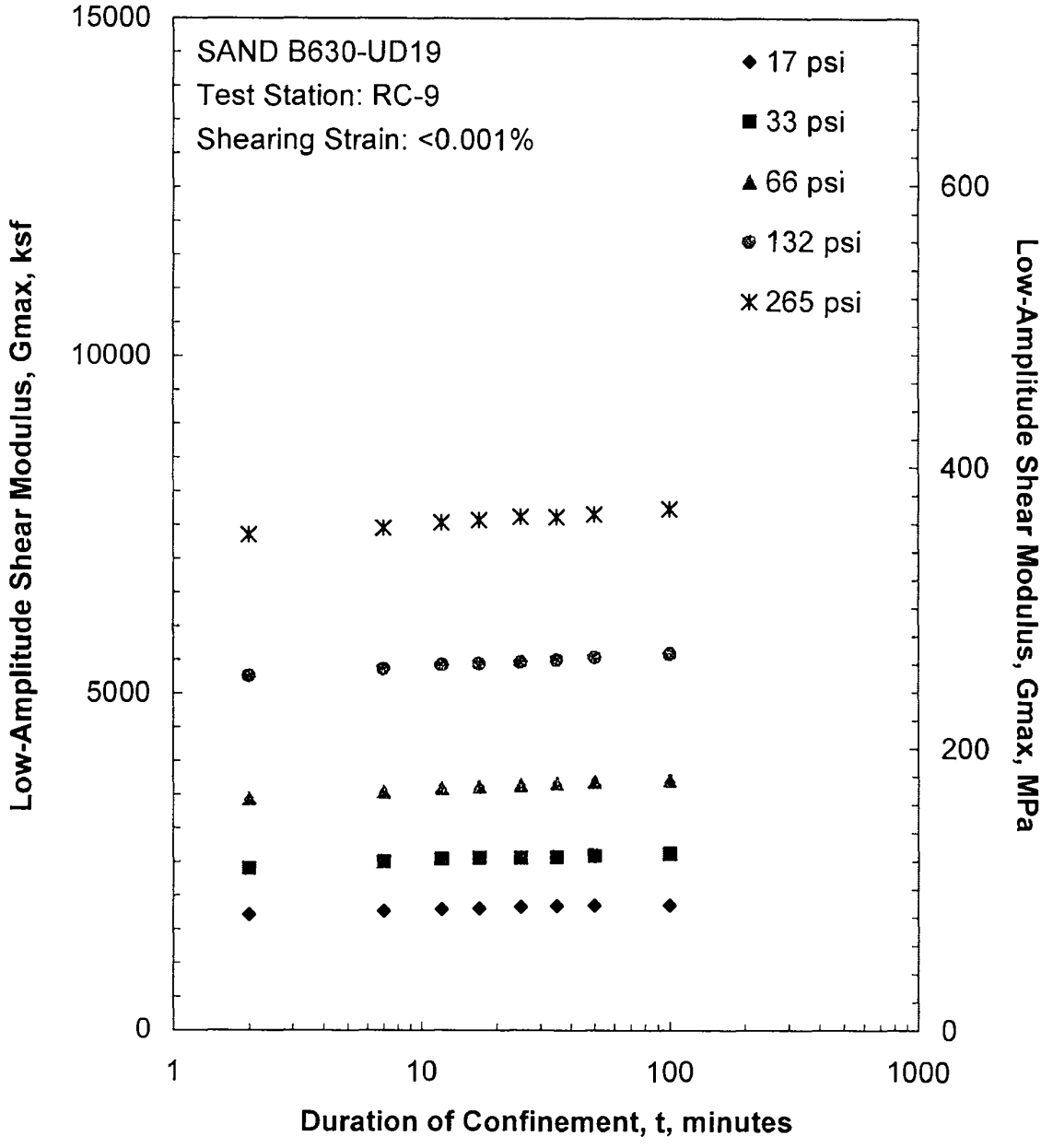


Figure E.1 Variation in Low-Amplitude Shear Modulus with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

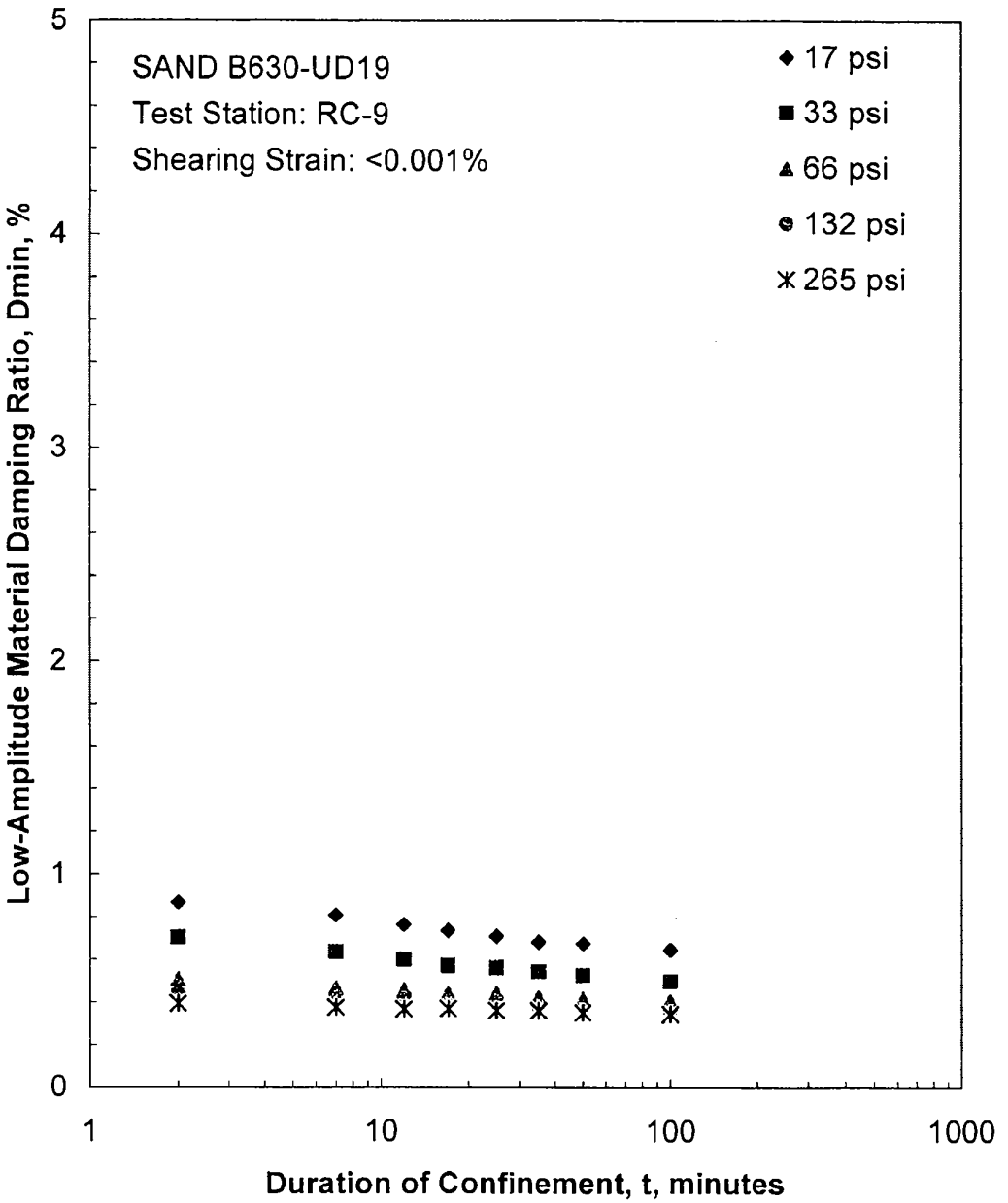


Figure E.2 Variation in Low-Amplitude Material Damping Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

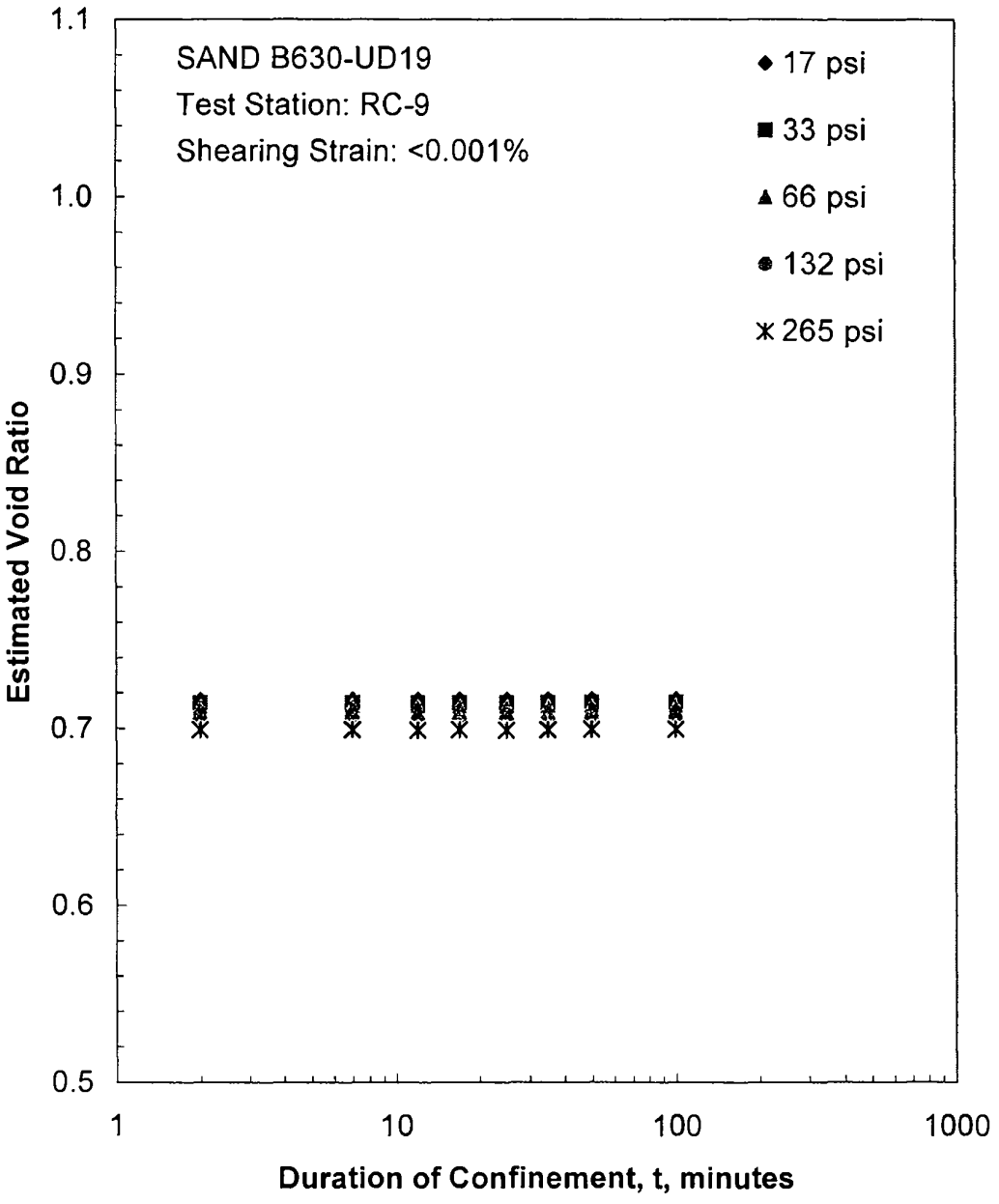


Figure E.3 Variation in Estimated Void Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

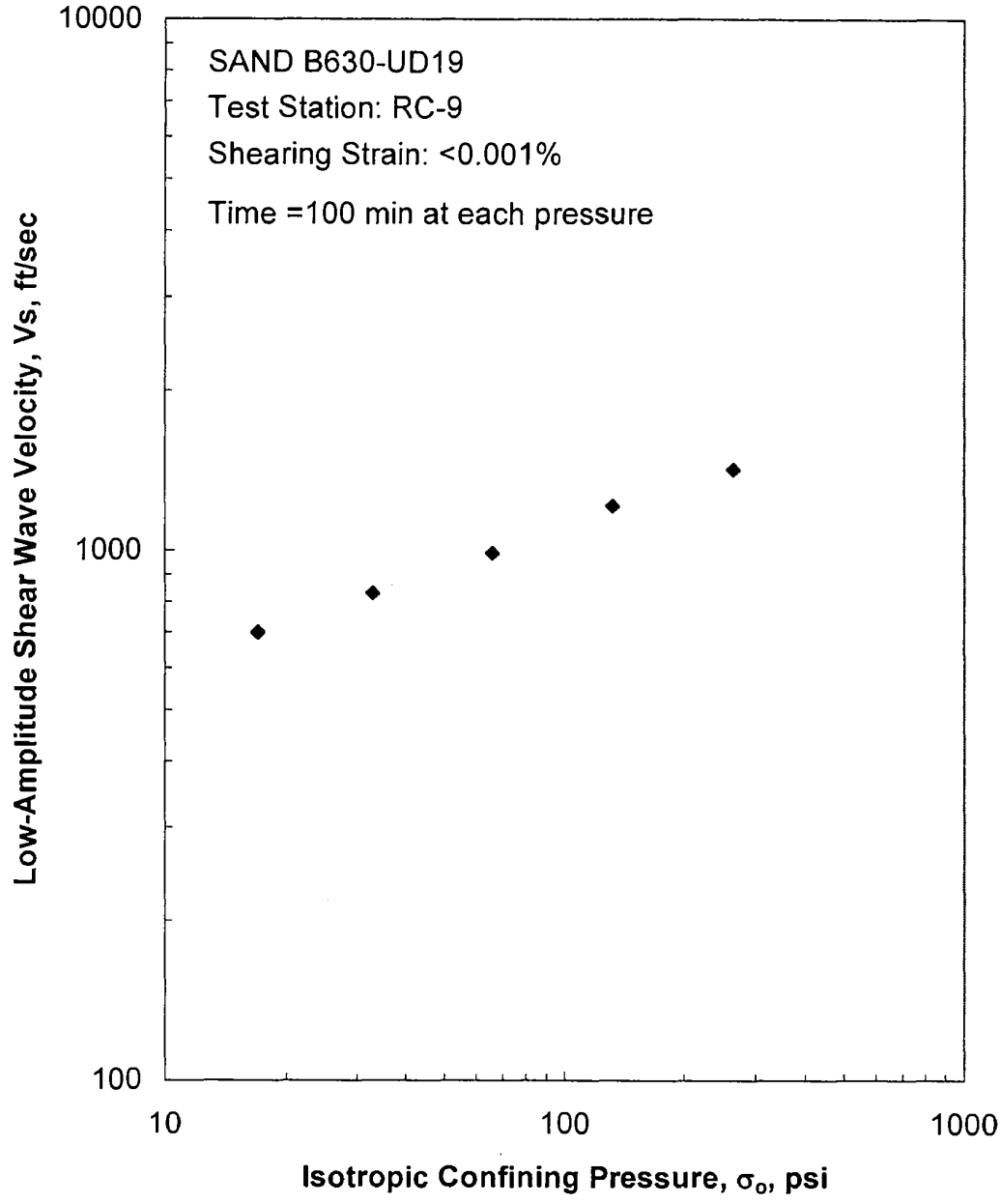


Figure E.4 Variation in Low-Amplitude Shear Wave Velocity with Isotropic Confining Pressure from Resonant Column Tests

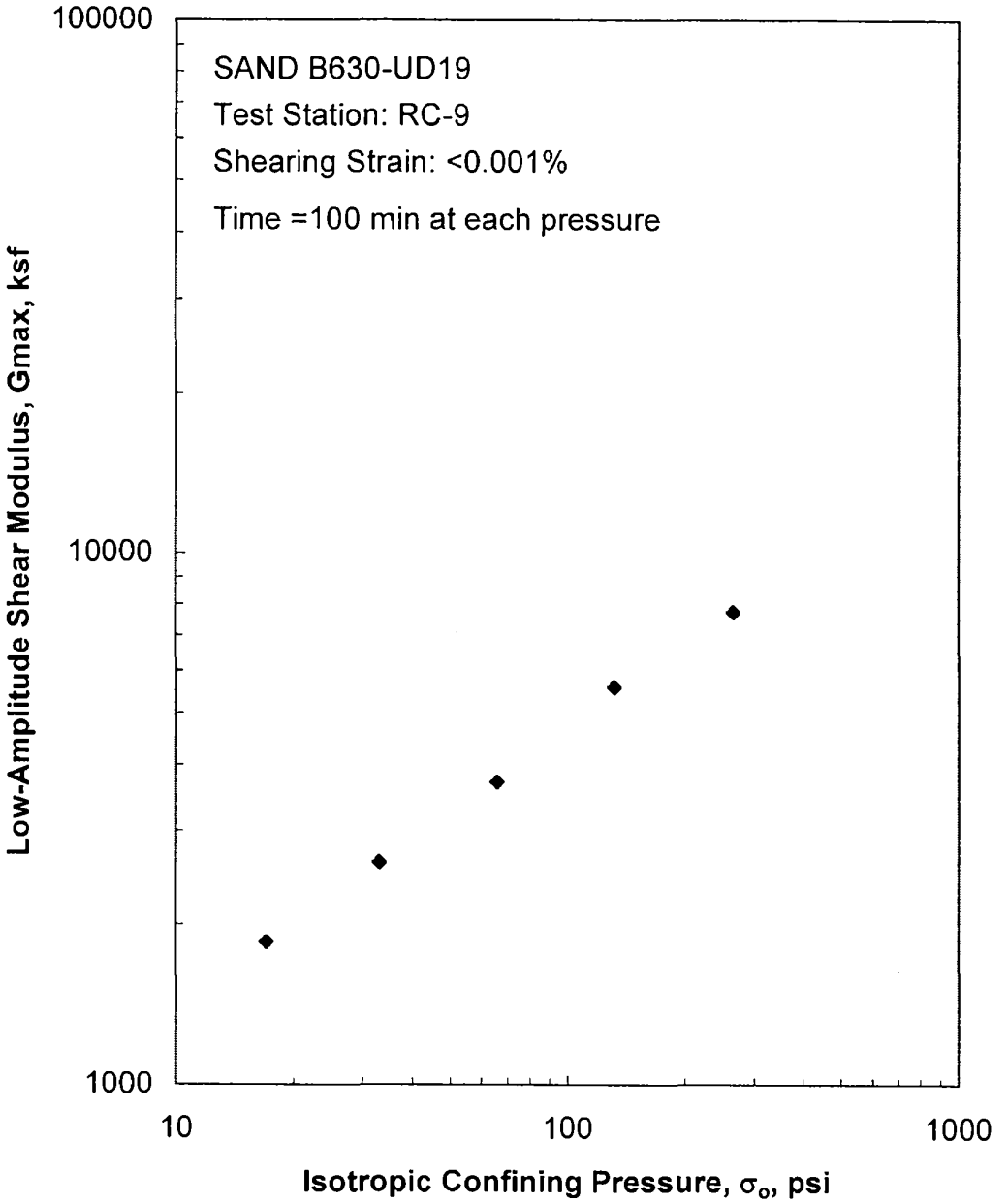


Figure E.5 Variation in Low-Amplitude Shear Modulus with Isotropic Confining Pressure from Resonant Column Tests

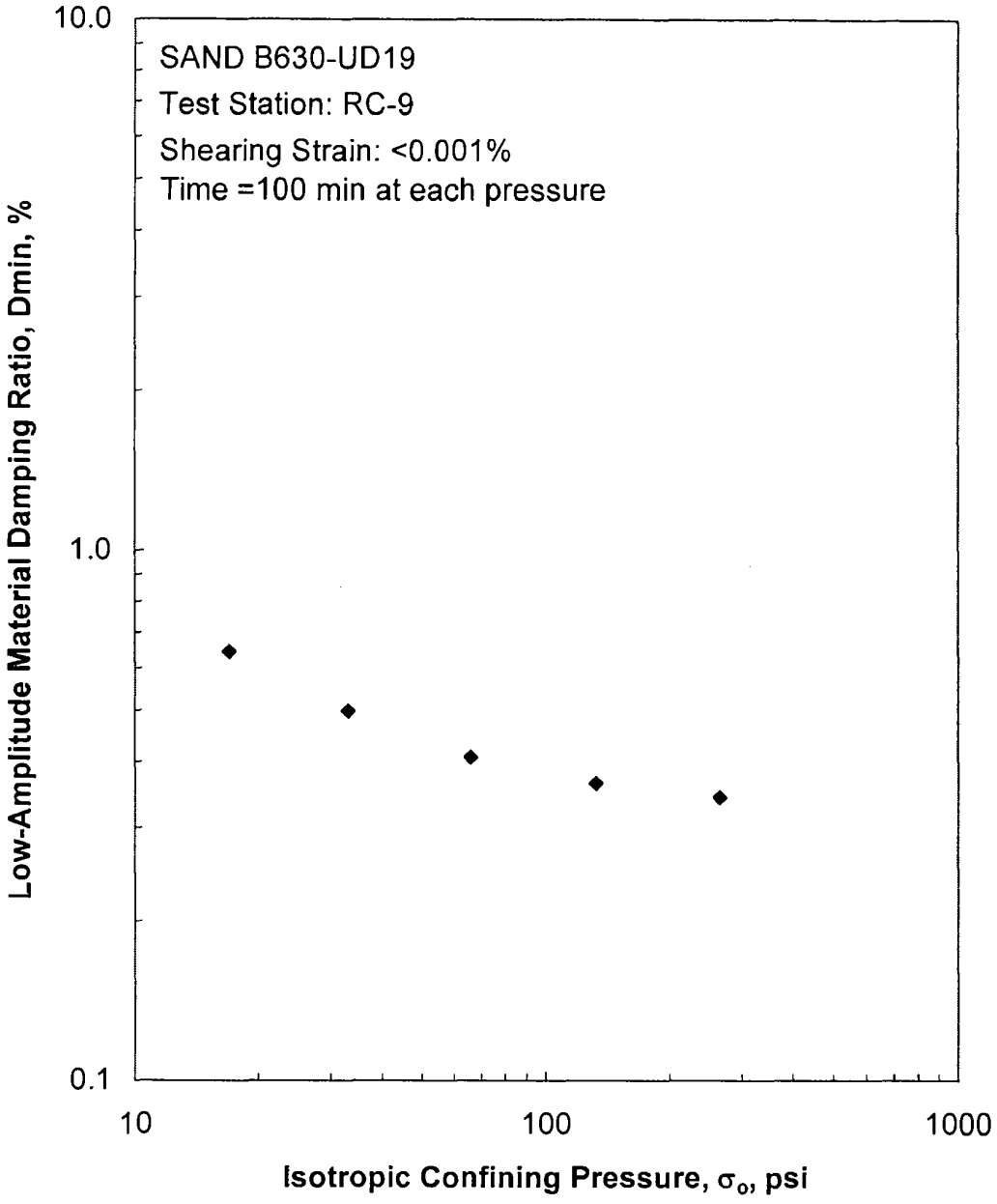


Figure E.6 Variation in Low-Amplitude Material Damping Ratio with Isotropic Confining Pressure from Resonant Column Tests

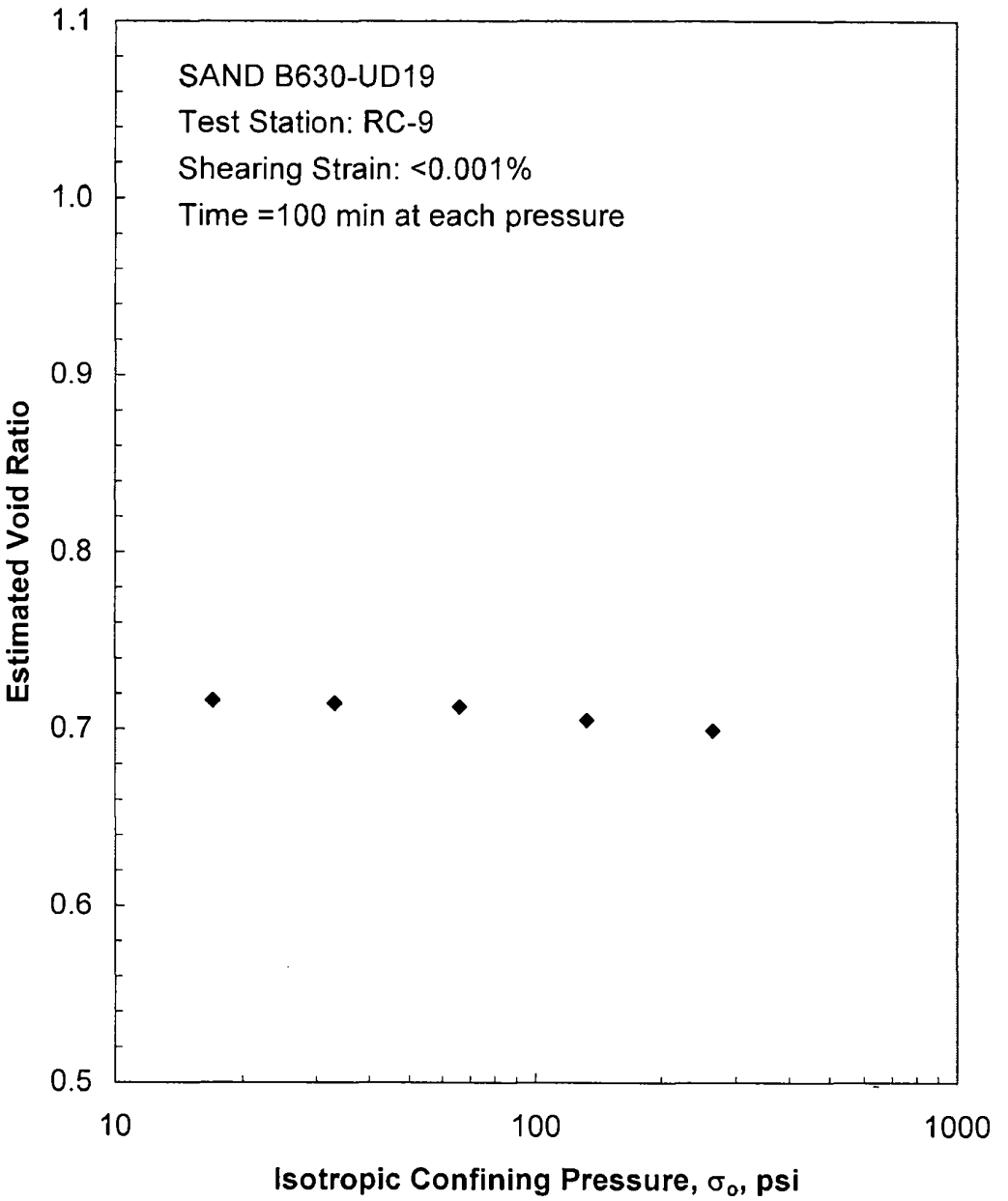


Figure E.7 Variation in Estimated Void Ratio with Isotropic Confining Pressure from Resonant Column Tests

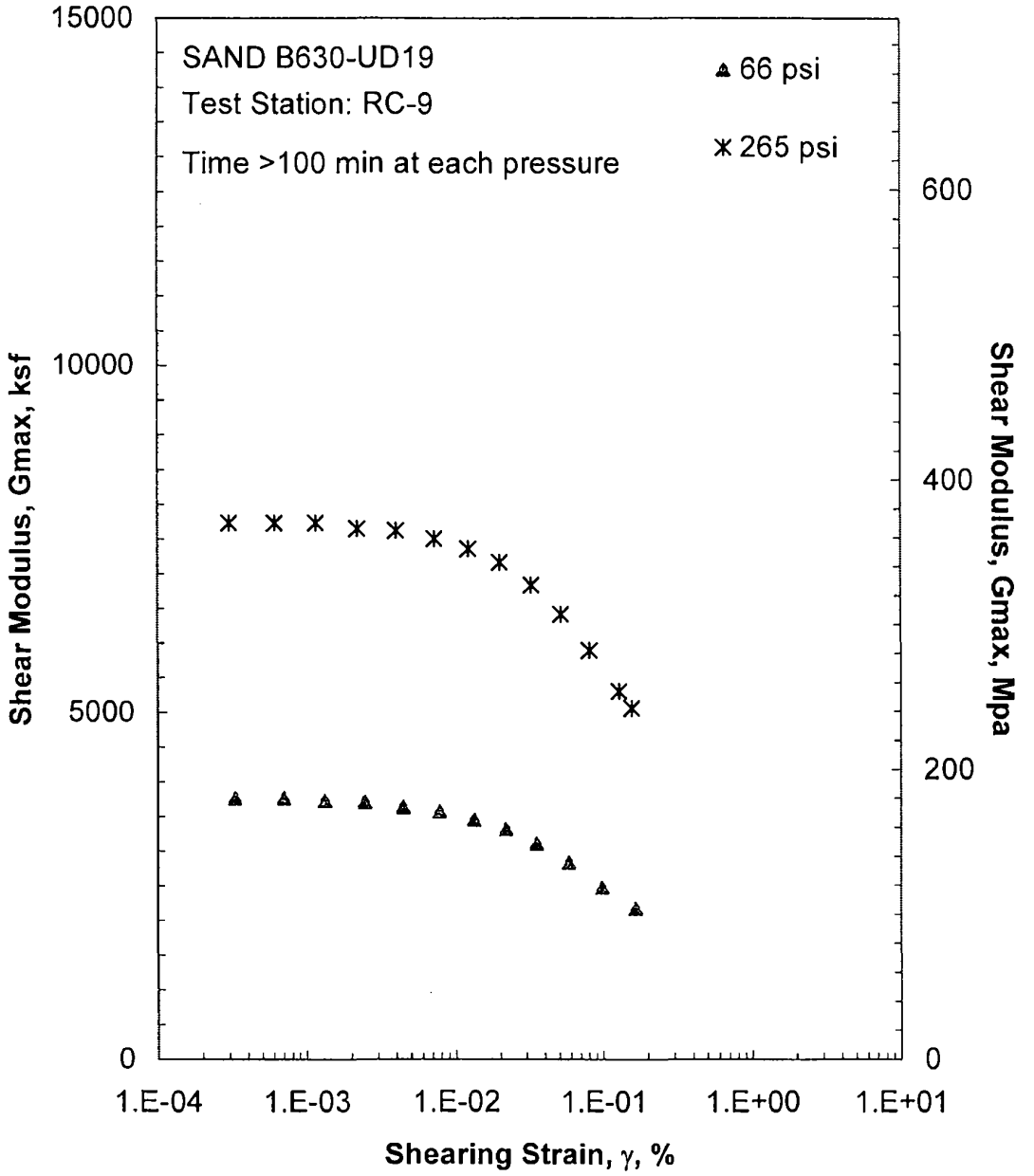


Figure E.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

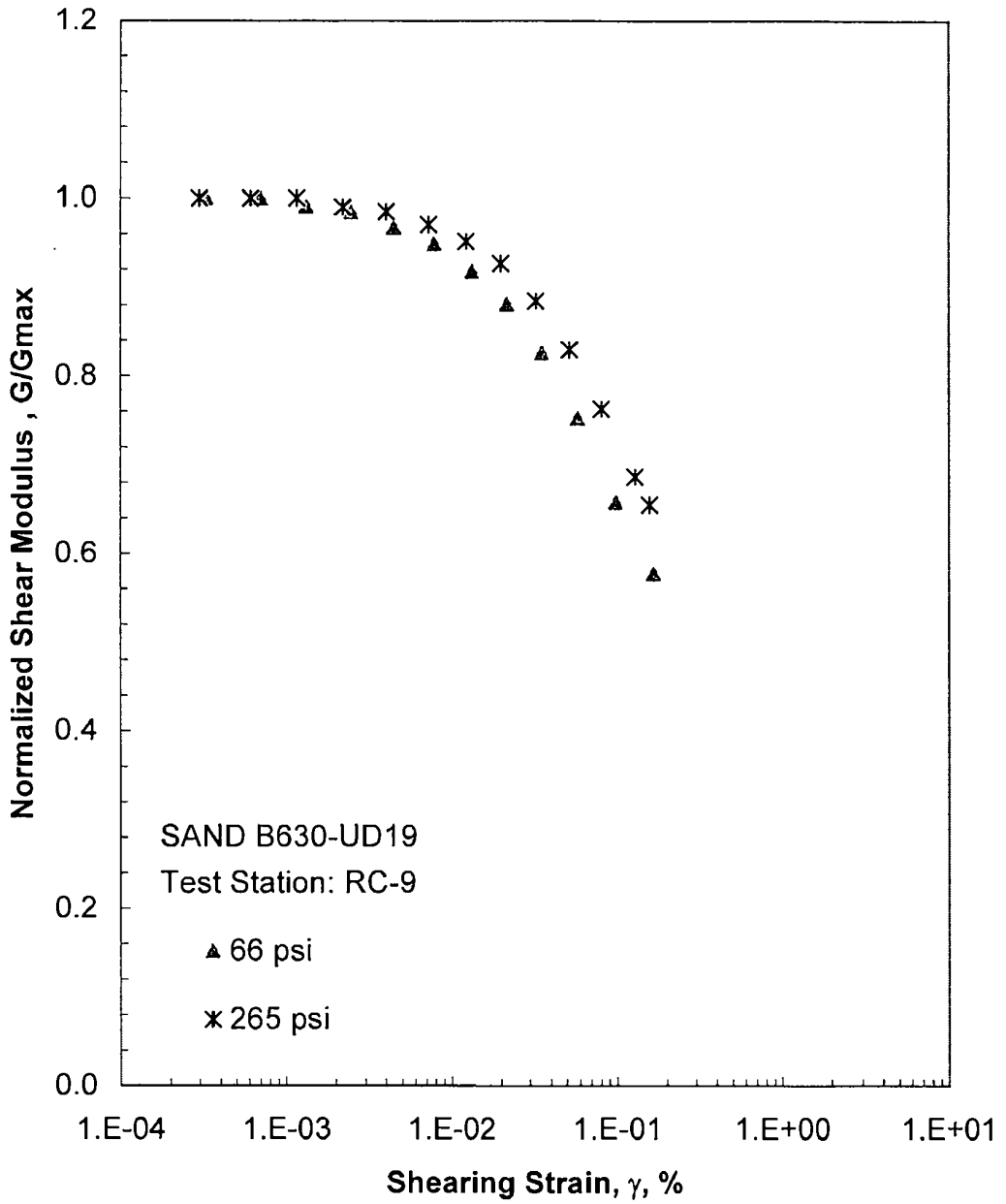


Figure E.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

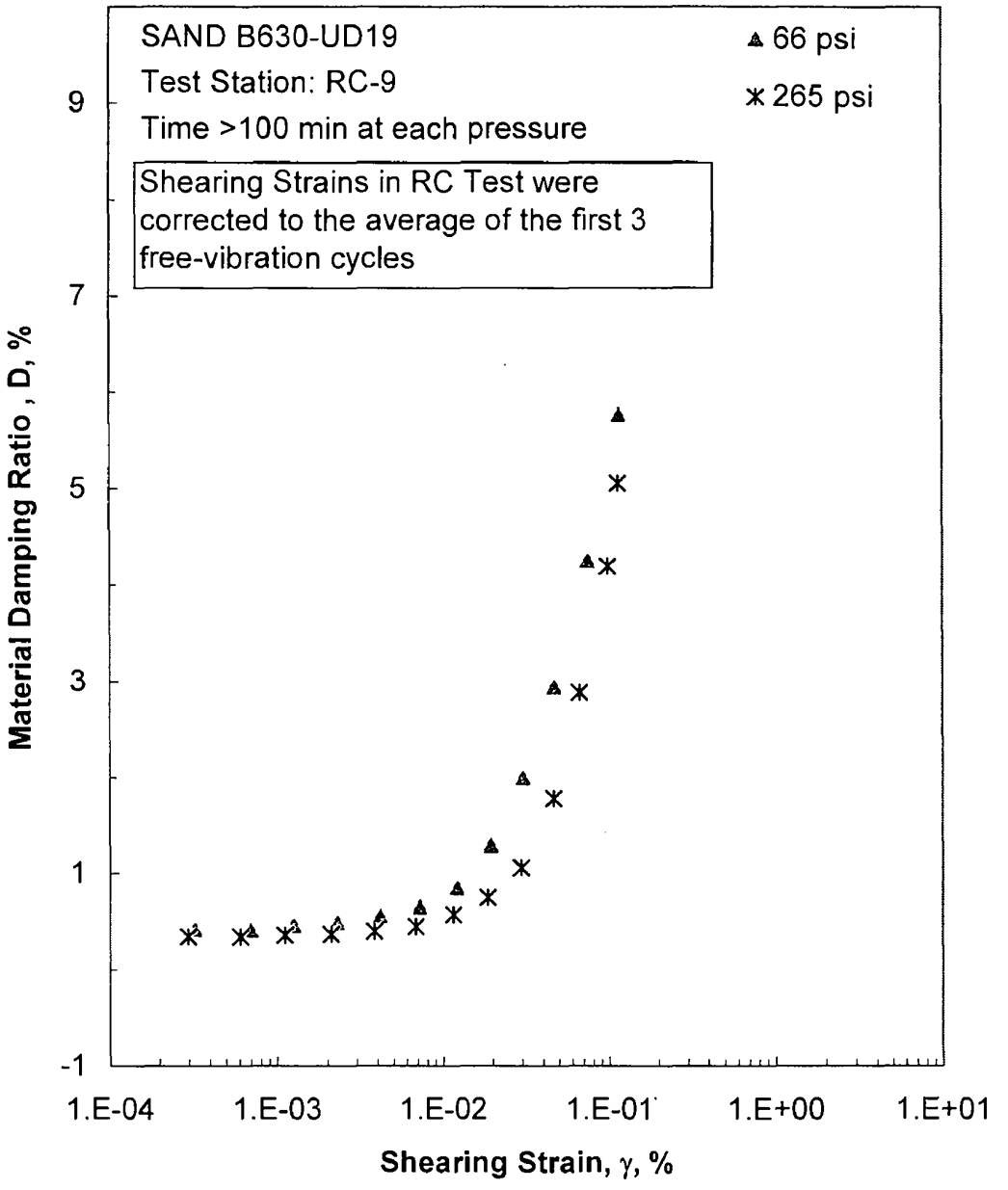


Figure E.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

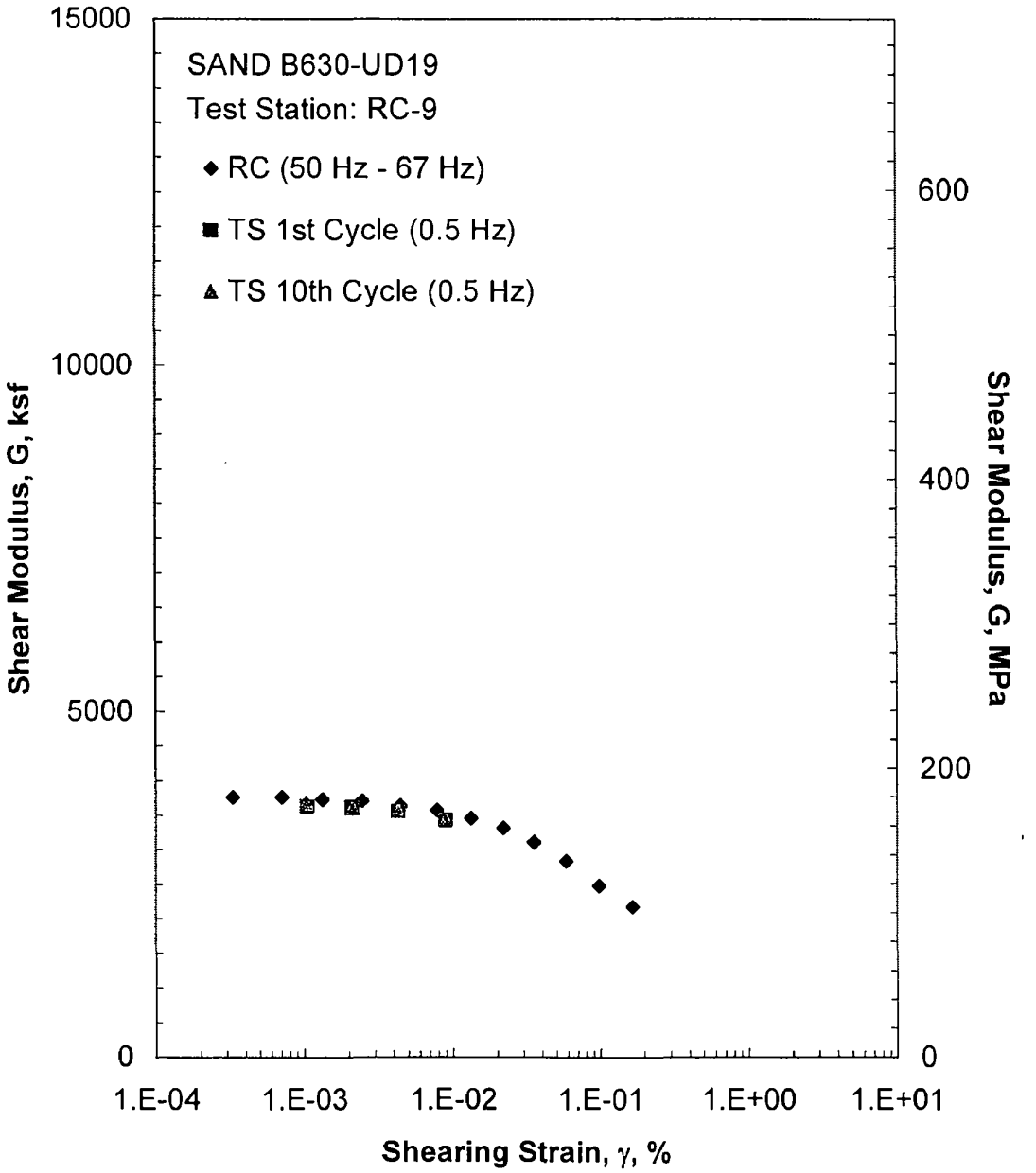


Figure E.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 66 psi from the Combined RCTS Tests

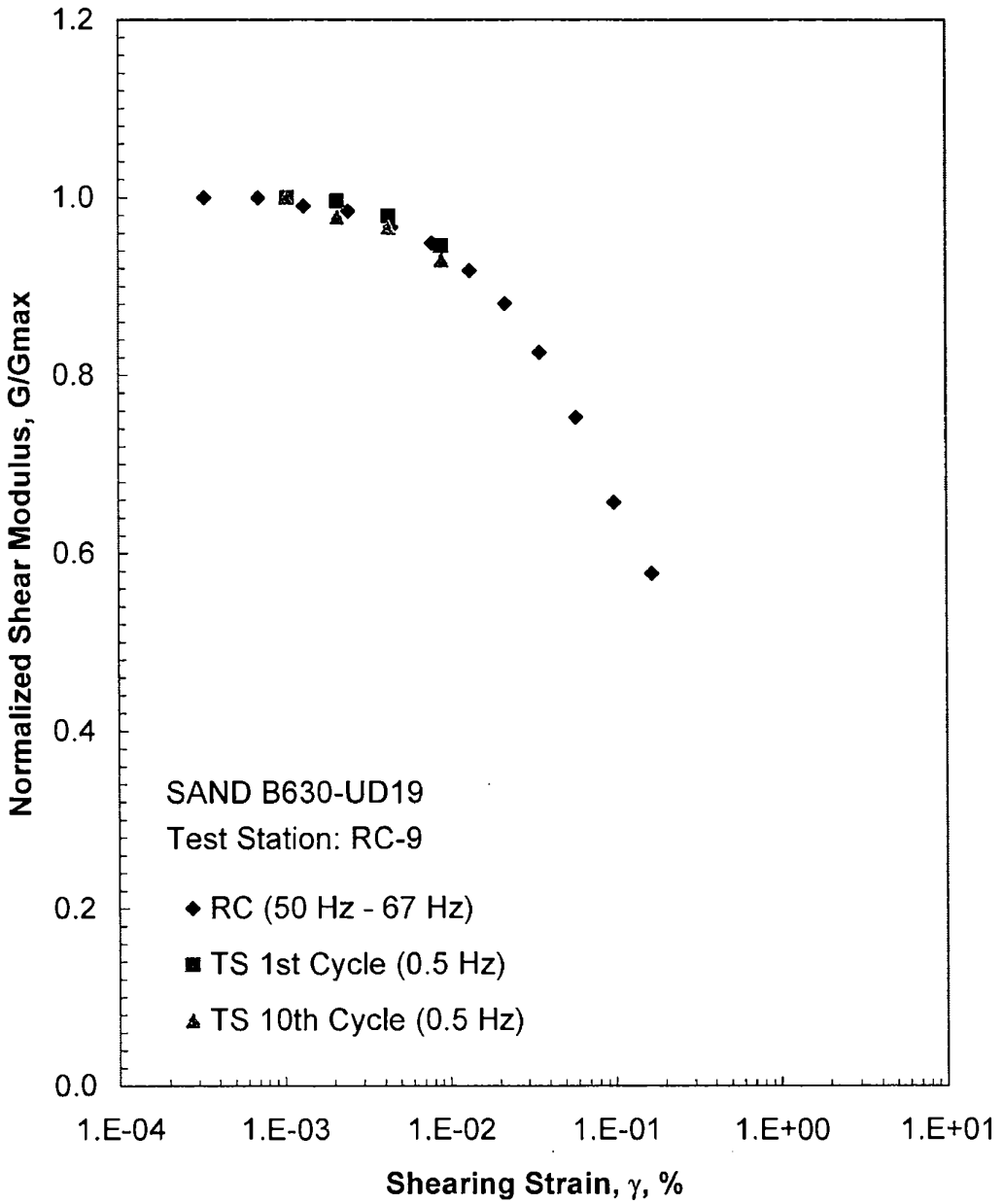


Figure E.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 66 psi from the Combined RCTS Tests

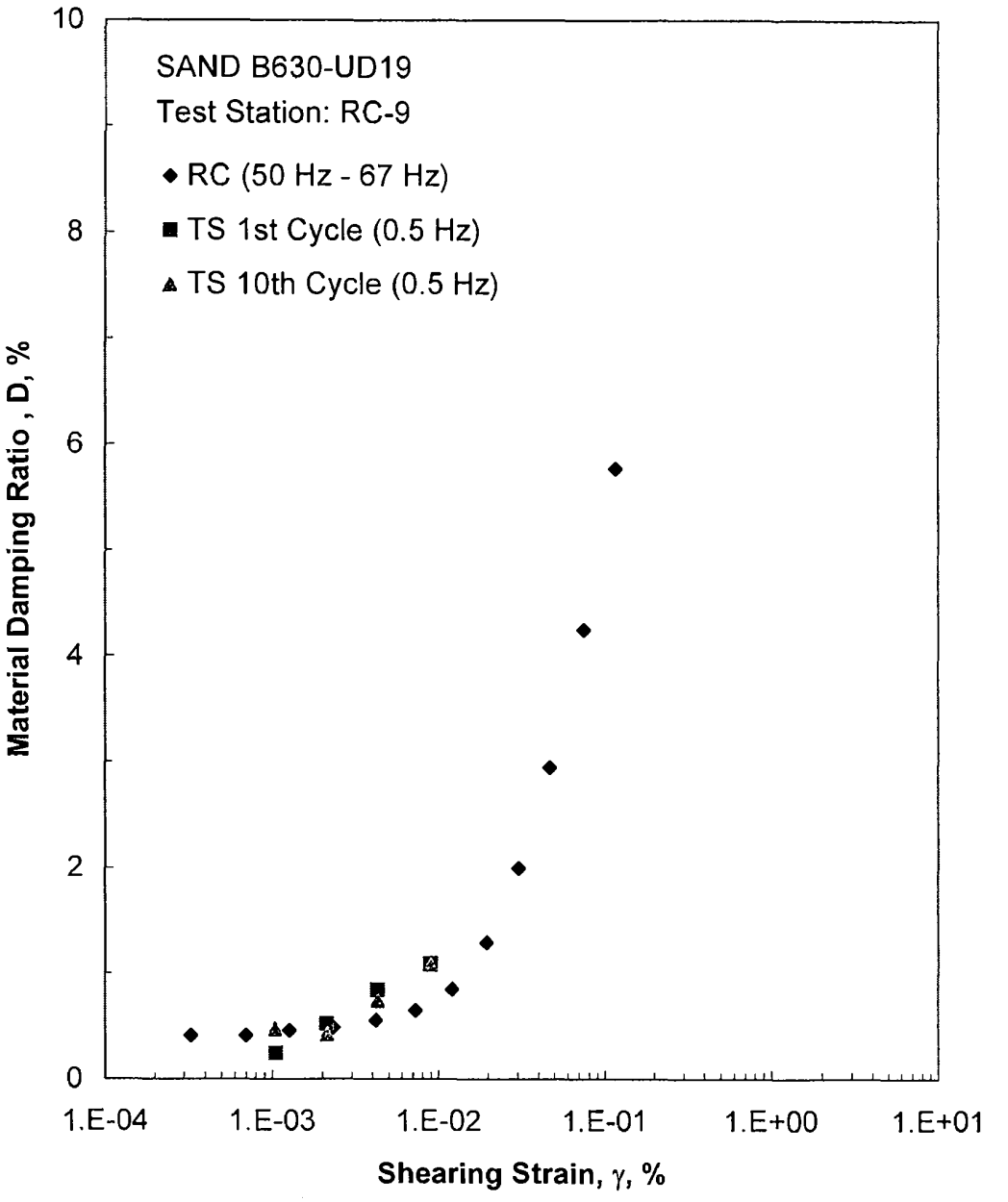


Figure E.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 66 psi from the Combined RCTS Tests

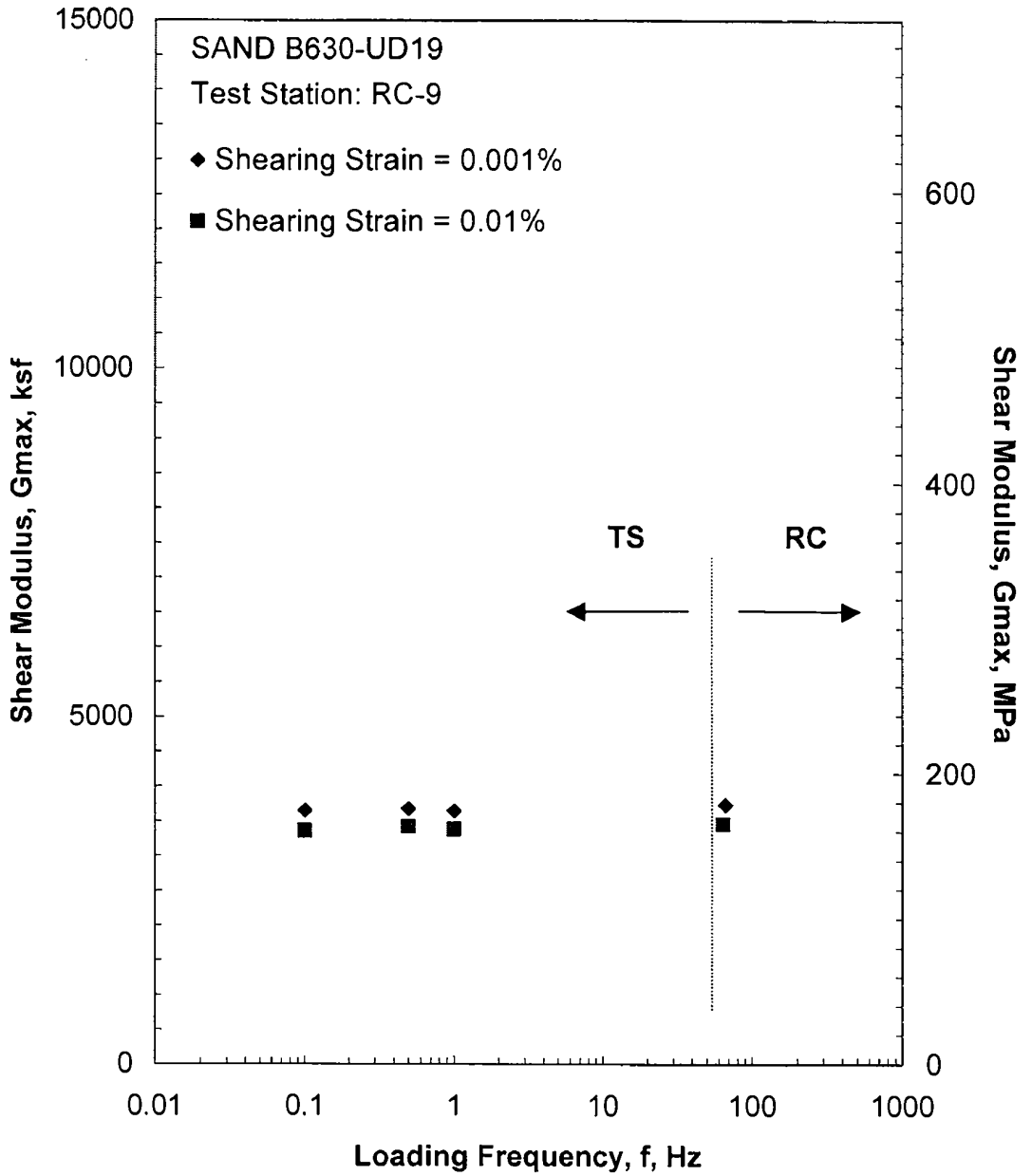


Figure E.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 66 psi from the Combined RCTS Tests

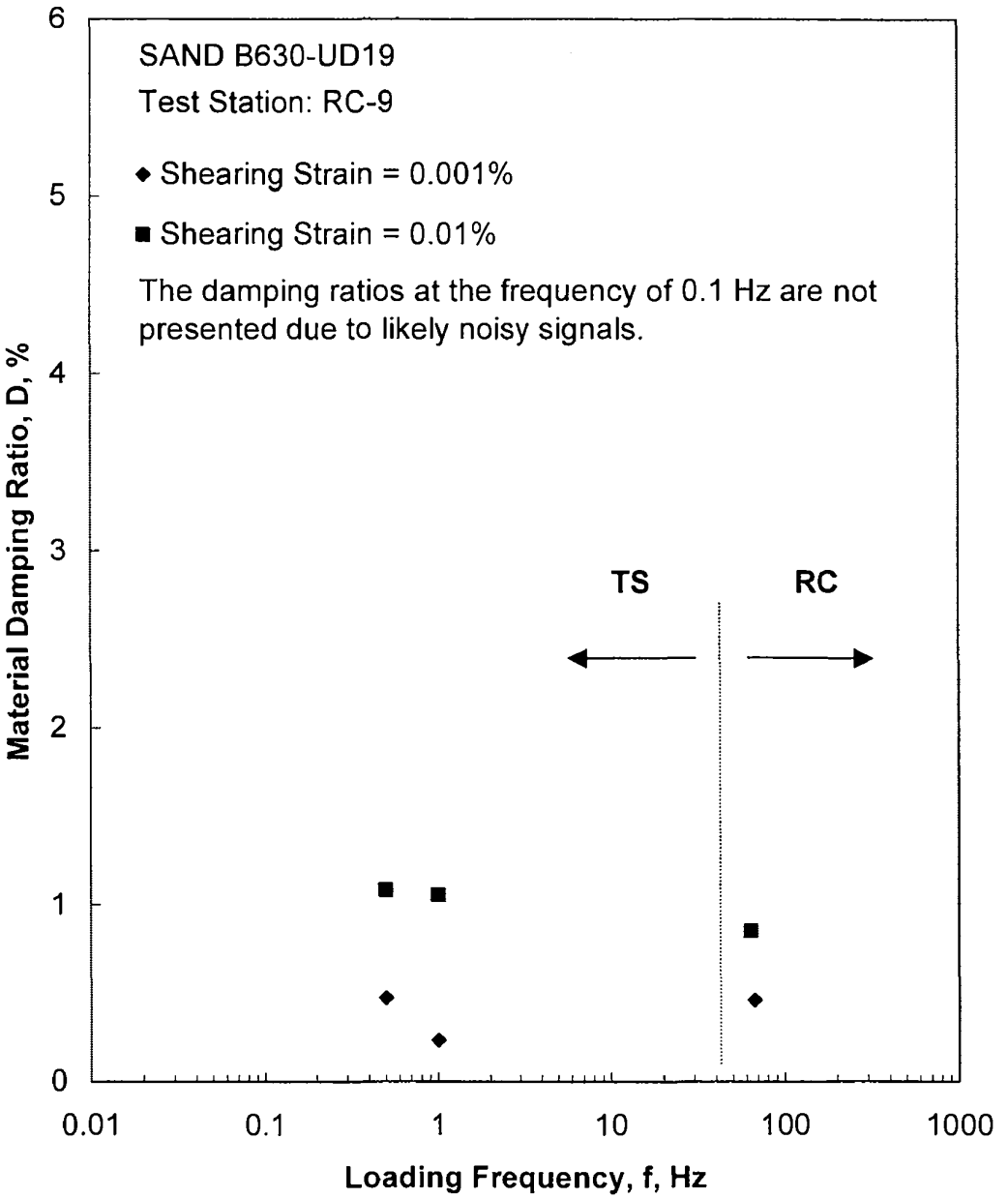


Figure E.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 66 psi from the Combined RCTS Tests

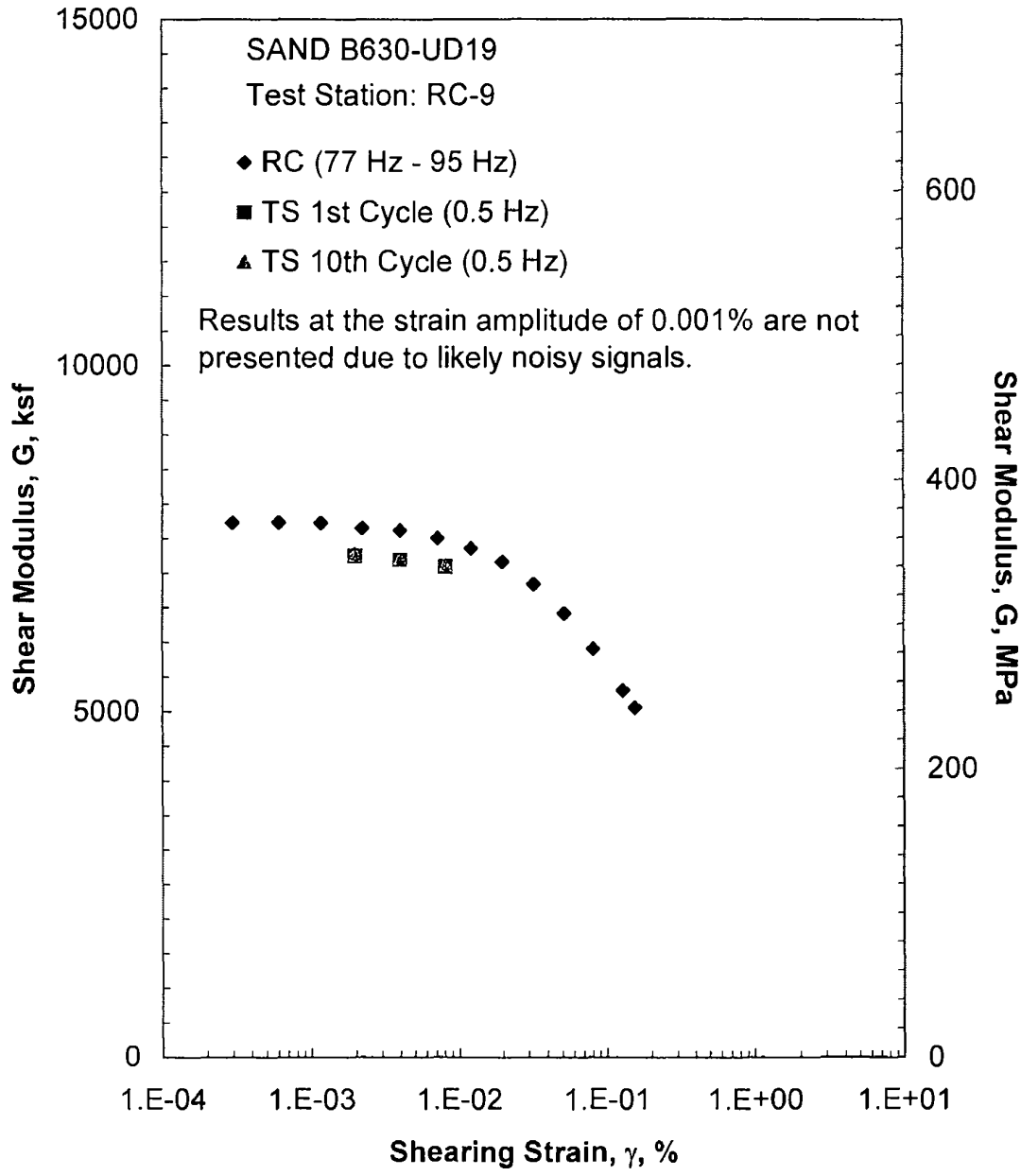


Figure E.16 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 265 psi from the Combined RCTS Tests

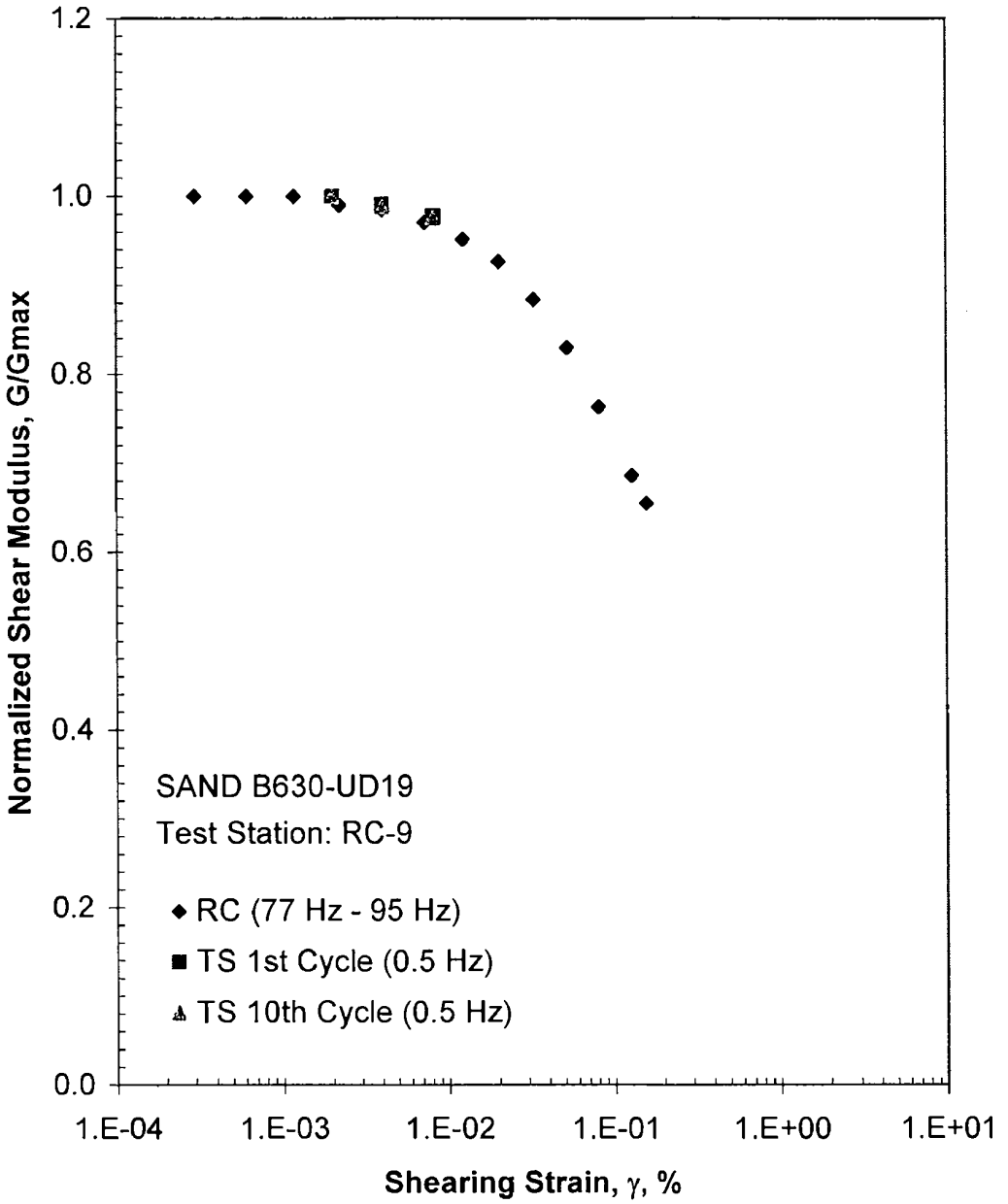


Figure E.17 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 265 psi from the Combined RCTS Tests

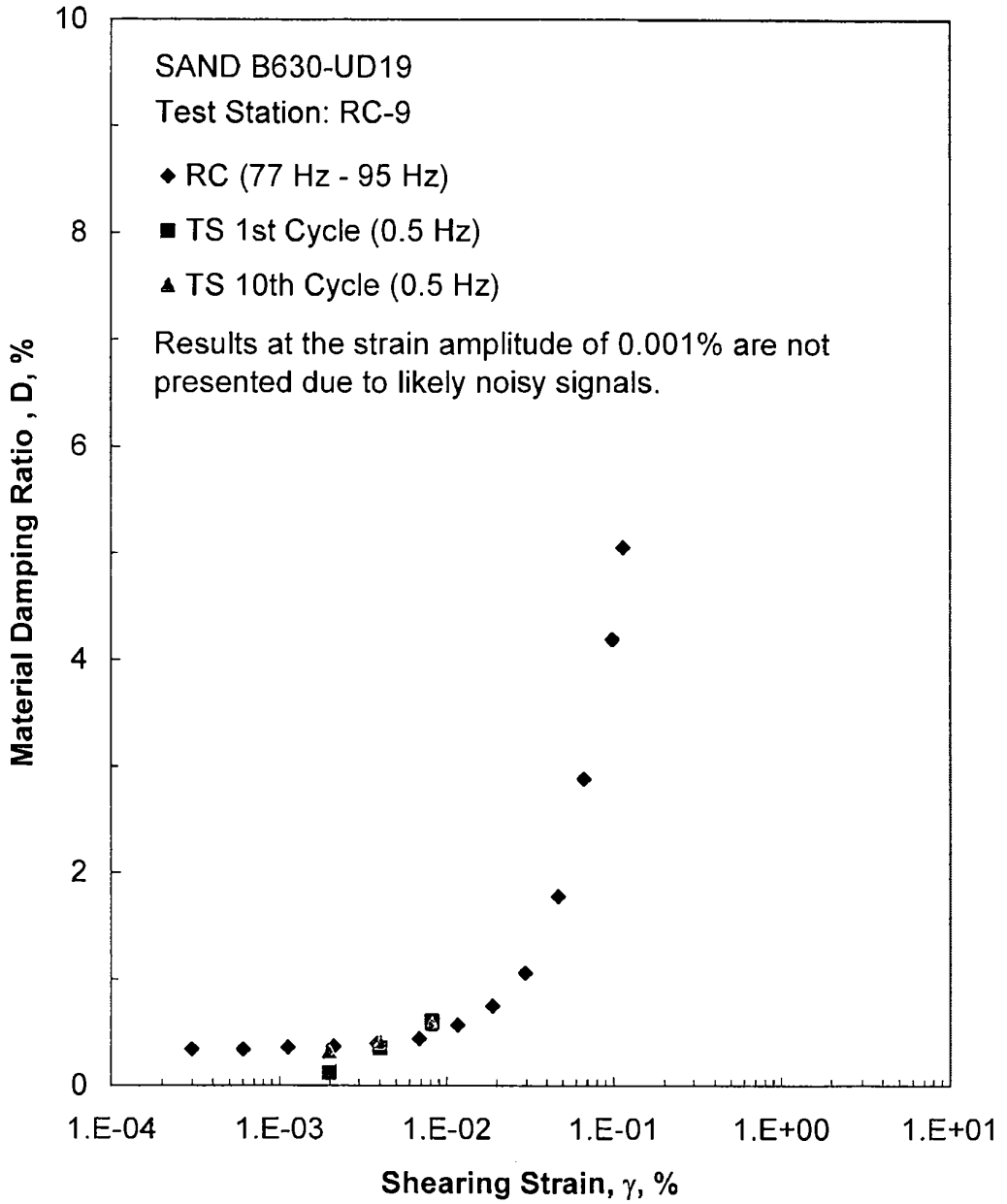


Figure E.18 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 265 psi from the Combined RCTS Tests

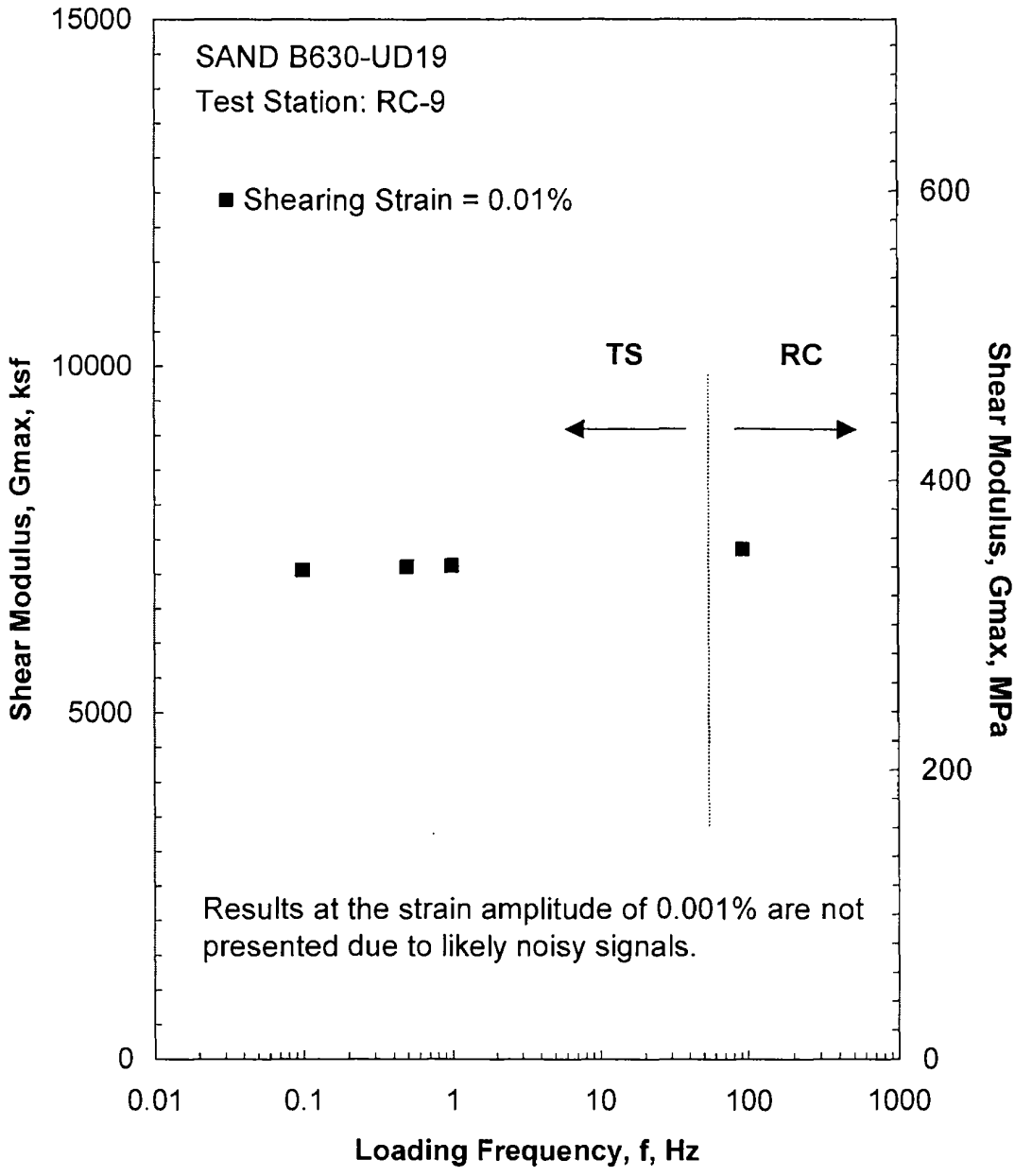


Figure E.19 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 242 psi from the Combined RCTS Tests

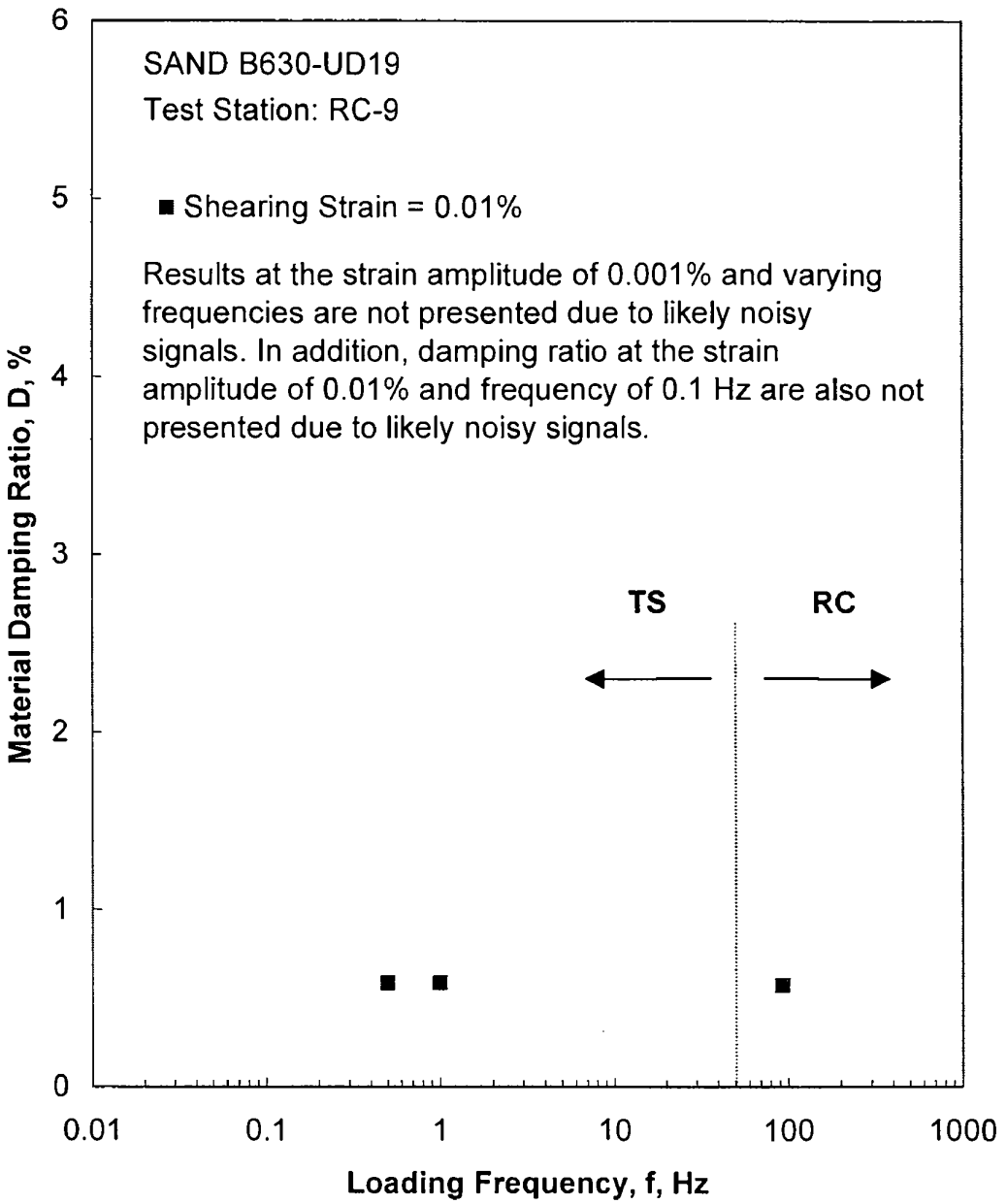


Figure E.20 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 242 psi from the Combined RCTS Tests

Table E.1 Variation in Low-Amplitude Shear Wave Velocity, Low-Amplitude Shear Modulus, Low-Amplitude Material Damping Ratio and Estimated Void Ratio with Isotropic Confining Pressure from RC Tests of Specimen B630-UD19

Isotropic Confining Pressure, σ_o			Low-Amplitude Shear Modulus, G_{max}		Low-Amplitude Shear Wave Velocity, Vs	Low-Amplitude Material Damping Ratio, Dmin	Estimated Void Ratio, e
(psi)	(psf)	(kPa)	(ksf)	(MPa)	(fps)	(%)	
17	2448	117	1854	89	699	0.64	0.72
33	4752	227	2617	126	830	0.50	0.71
66	9504	455	3705	178	987	0.41	0.71
132	19008	909	5579	268	1209	0.36	0.71
265	38160	1826	7729	371	1420	0.34	0.70

Table E.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD19; Isoptropic Confining Pressure, σ_o= 66 psi (9.5ksf = 455 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
3.29E-04	3762	1.00	3.29E-04	0.41
7.01E-04	3762	1.00	7.01E-04	0.41
1.33E-03	3728	0.99	1.27E-03	0.46
2.47E-03	3705	0.98	2.32E-03	0.49
4.45E-03	3637	0.97	4.18E-03	0.55
7.81E-03	3570	0.95	7.27E-03	0.65
1.33E-02	3452	0.92	1.22E-02	0.85
2.18E-02	3312	0.88	1.96E-02	1.29
3.54E-02	3107	0.83	3.04E-02	1.99
5.82E-02	2831	0.75	4.71E-02	2.94
9.82E-02	2473	0.66	7.46E-02	4.24
1.66E-01	2172	0.58	1.16E-01	5.77

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table E.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD19; Isotropic Confining Pressure, σ_o= 66 psi (9.5 ksf = 455 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
1.05E-03	3628	1.00	0.24	1.04E-03	3679	1.00	0.47
2.12E-03	3615	1.00	0.52	2.13E-03	3597	0.98	0.42
4.31E-03	3554	0.98	0.84	4.31E-03	3555	0.97	0.74
8.93E-03	3431	0.95	1.09	8.96E-03	3420	0.93	1.08

Table E.4 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD19; Isoptropic Confining Pressure, σ_o= 265 psi (38.2 ksf = 1826 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
2.99E-04	7729	1.00	2.99E-04	0.34
6.09E-04	7729	1.00	6.09E-04	0.34
1.16E-03	7729	1.00	1.12E-03	0.36
2.20E-03	7652	0.99	2.11E-03	0.37
4.02E-03	7614	0.99	3.86E-03	0.39
7.23E-03	7500	0.97	6.87E-03	0.44
1.22E-02	7354	0.95	1.16E-02	0.57
1.99E-02	7163	0.93	1.88E-02	0.74
3.26E-02	6834	0.88	2.96E-02	1.06
5.19E-02	6412	0.83	4.67E-02	1.78
8.07E-02	5896	0.76	6.70E-02	2.88
1.28E-01	5301	0.69	9.85E-02	4.19
1.57E-01	5057	0.65	1.14E-01	5.05

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table E.5 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD19; Isotropic Confining Pressure, σ_o= 265 psi (38.2 ksf = 1826 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
2.00E-03	7251	1.00	0.12	1.99E-03	7279	1.00	0.32
4.03E-03	7186	0.99	0.35	4.03E-03	7192	0.99	0.40
8.17E-03	7091	0.98	0.60	8.16E-03	7103	0.98	0.58

APPENDIX F

Specimen B630-UD23

Borehole 630
Sample UD23
Depth = 260.5 ft (79.4 m)
Total Unit Weight = 121.3 lb/ft^3
Water Content = 27.1 %
Estimated In-Situ Ko = 0.5
Estimated In-Situ Mean Effective Stress = 75 psi

FUGRO JOB #: 0411-08-1701
Testing Station: RC8

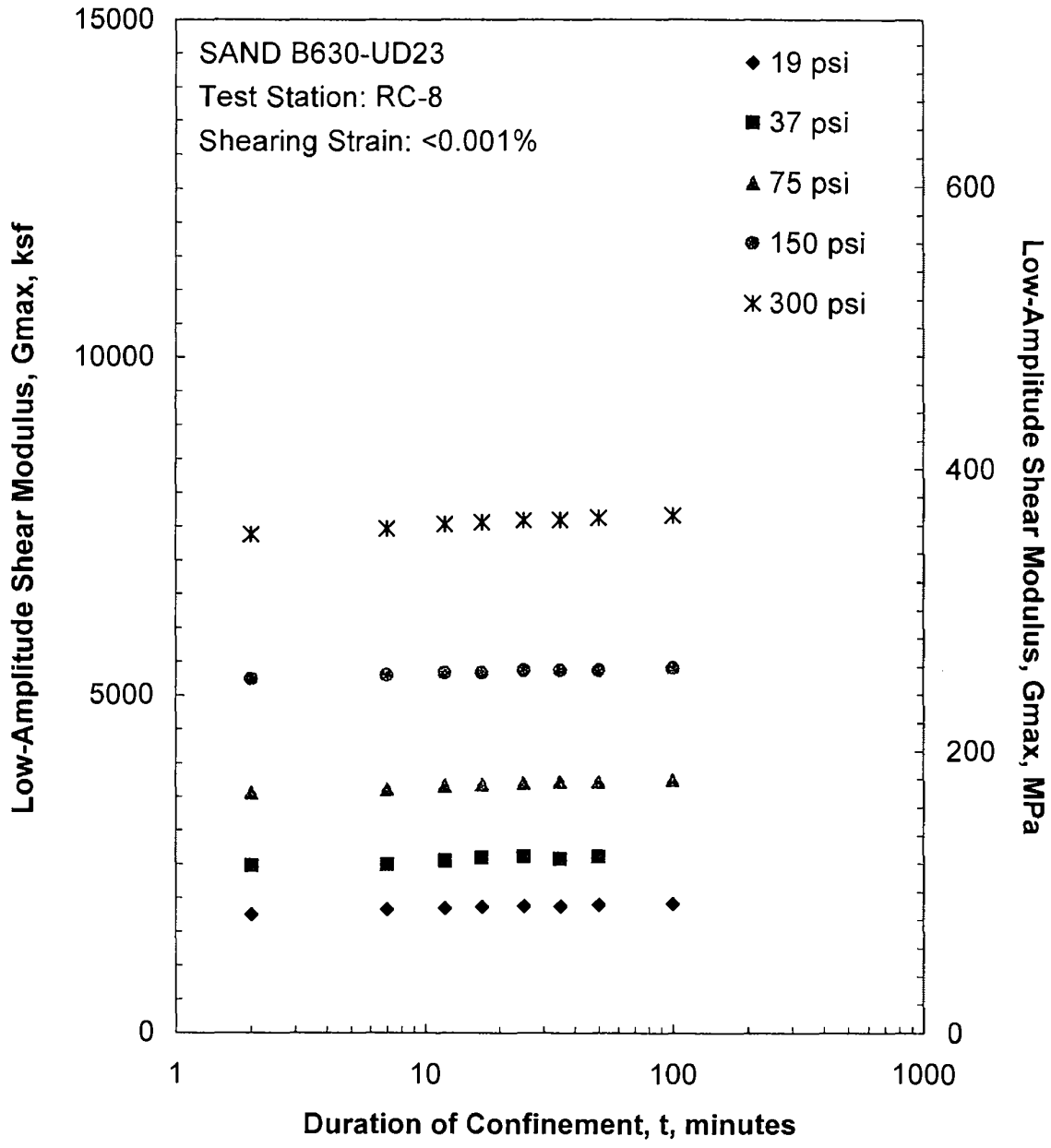


Figure F.1 Variation in Low-Amplitude Shear Modulus with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

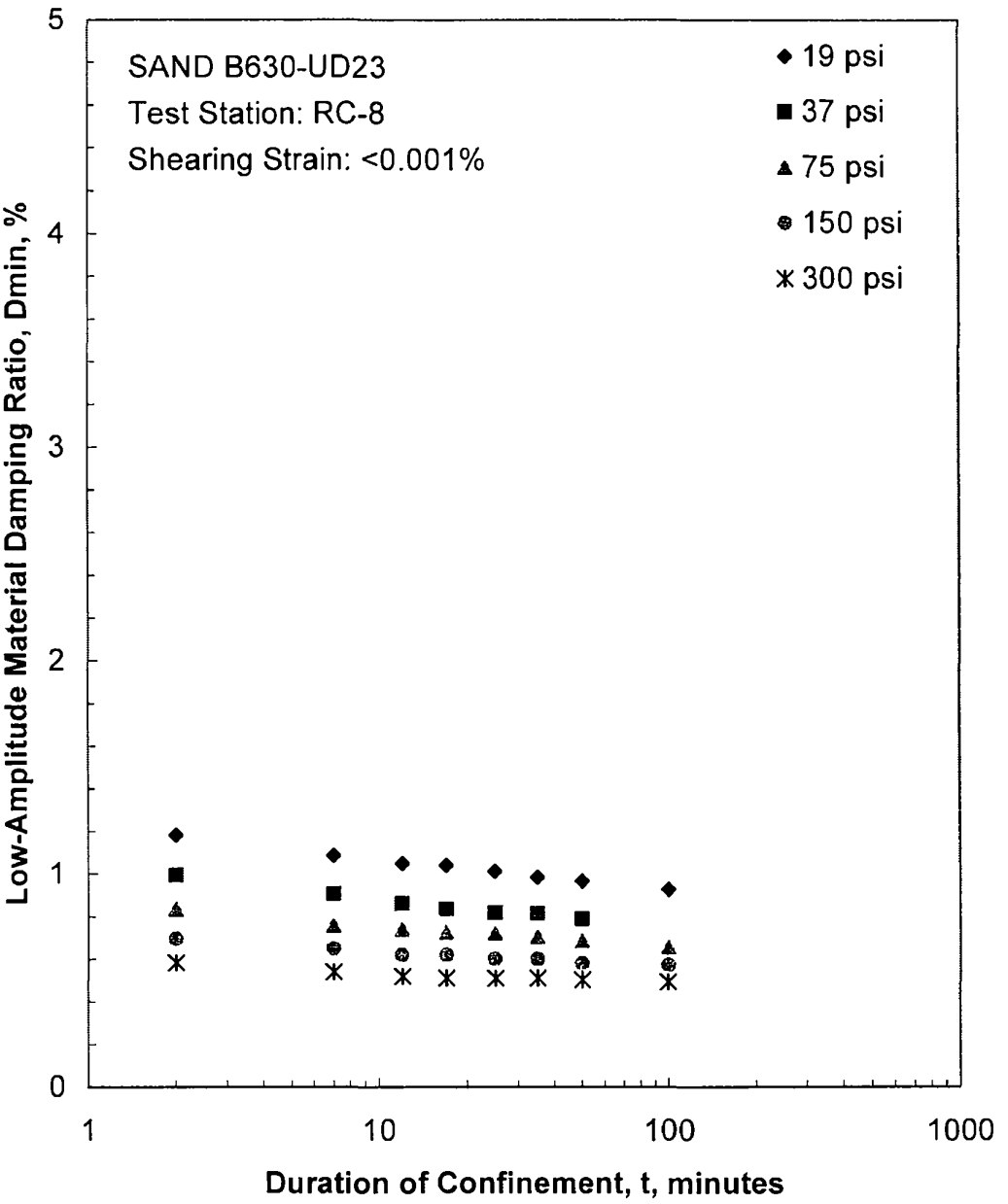


Figure F.2 Variation in Low-Amplitude Material Damping Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

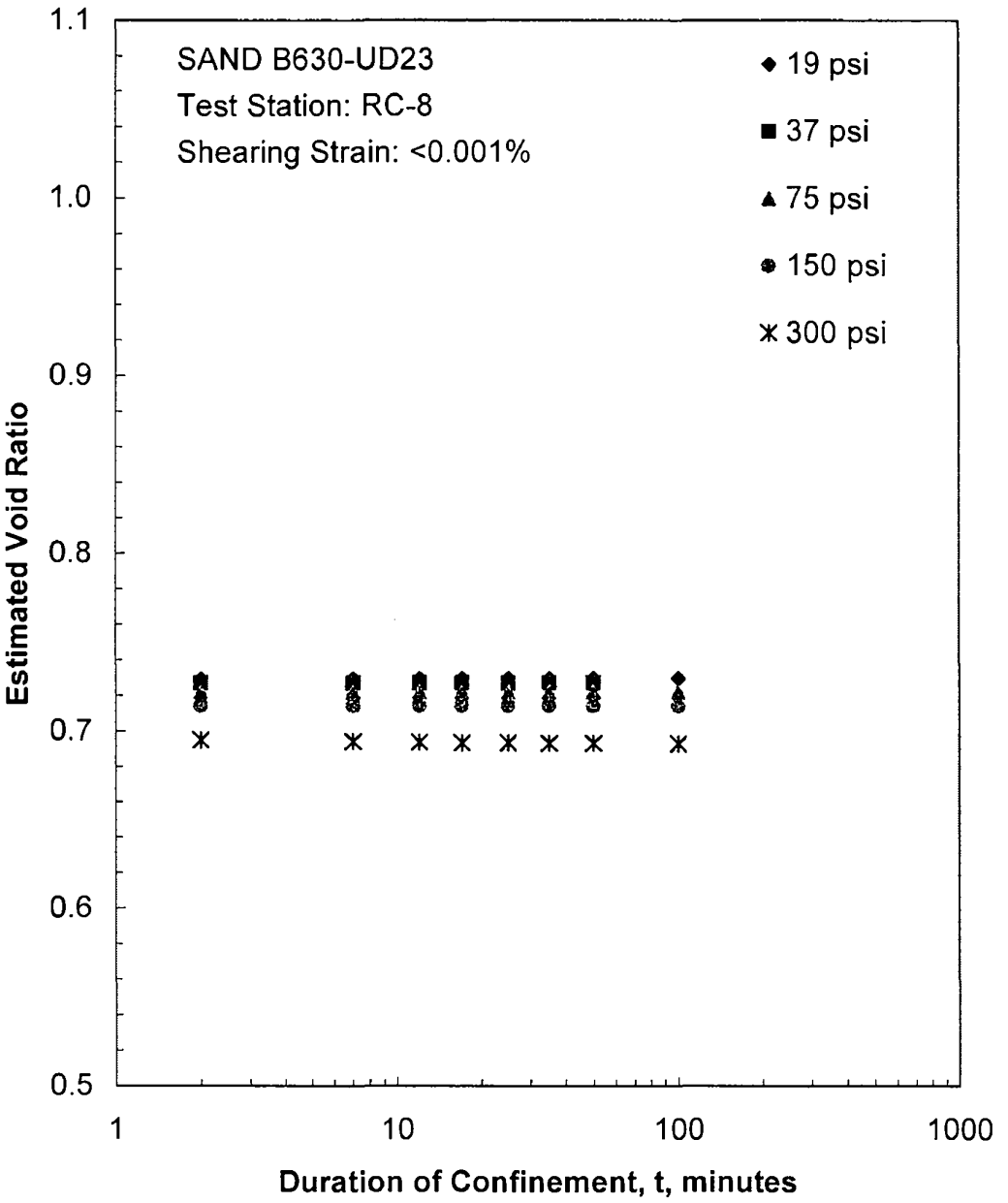


Figure F.3 Variation in Estimated Void Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

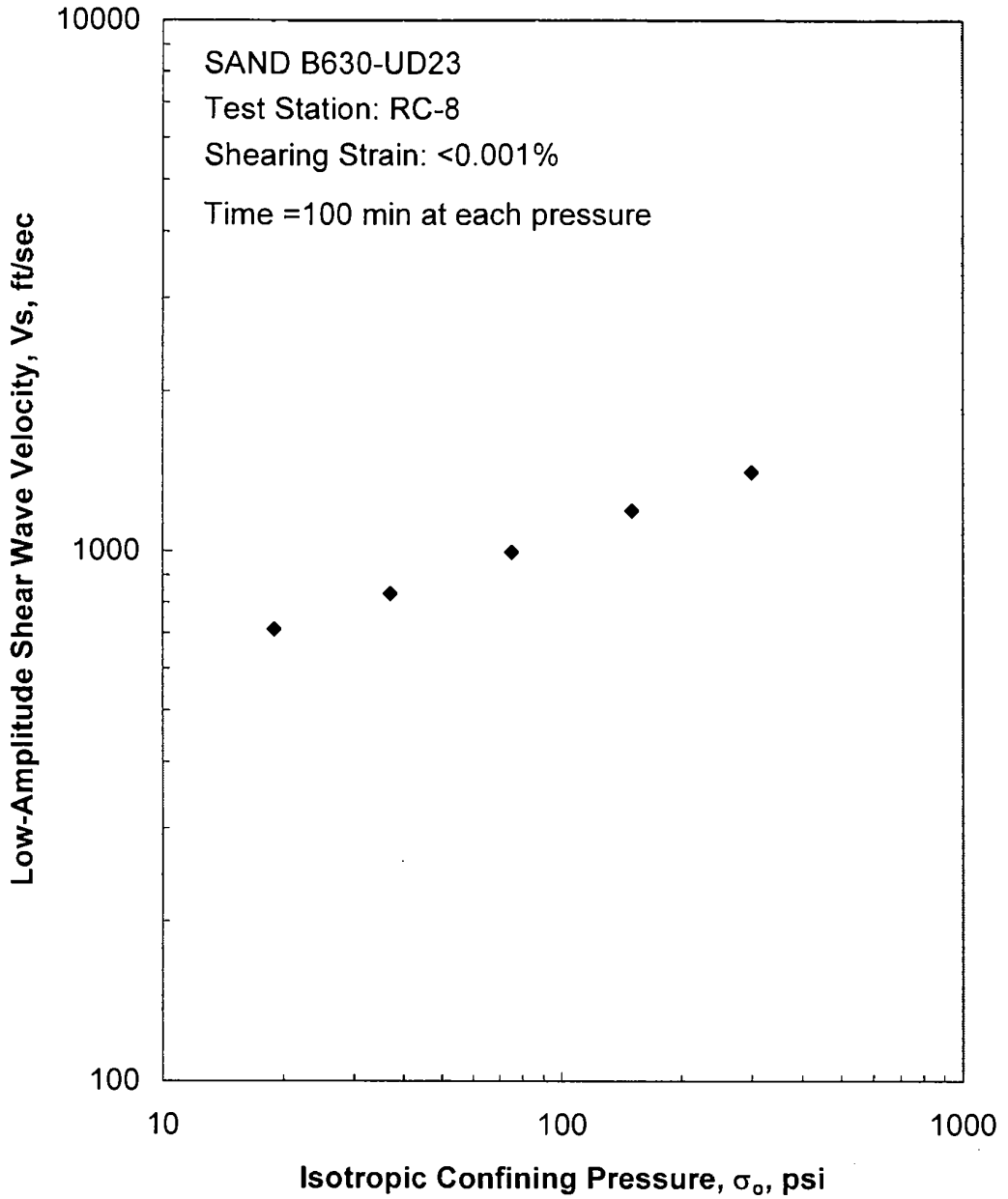


Figure F.4 Variation in Low-Amplitude Shear Wave Velocity with Isotropic Confining Pressure from Resonant Column Tests

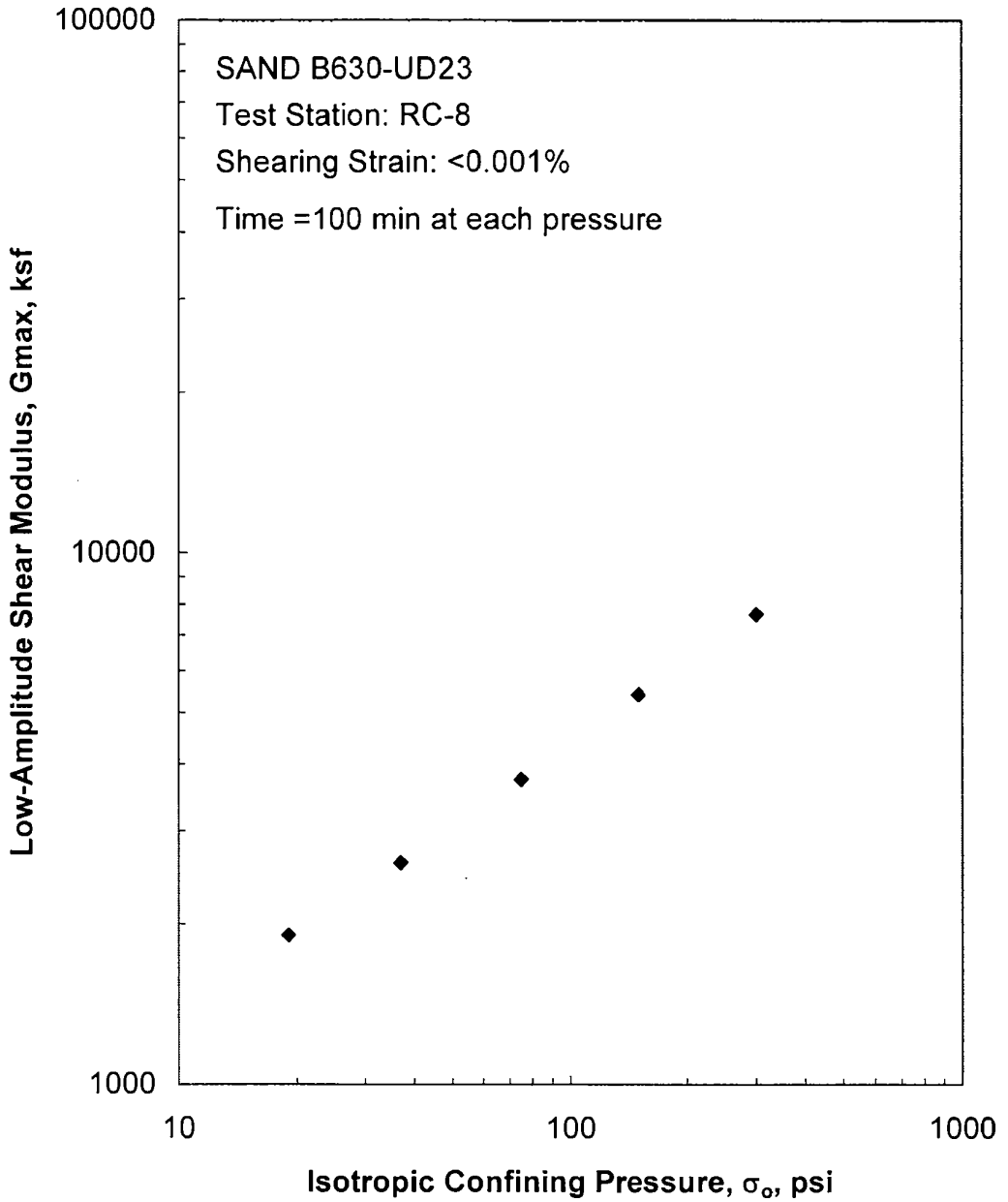


Figure F.5 Variation in Low-Amplitude Shear Modulus with Isotropic Confining Pressure from Resonant Column Tests

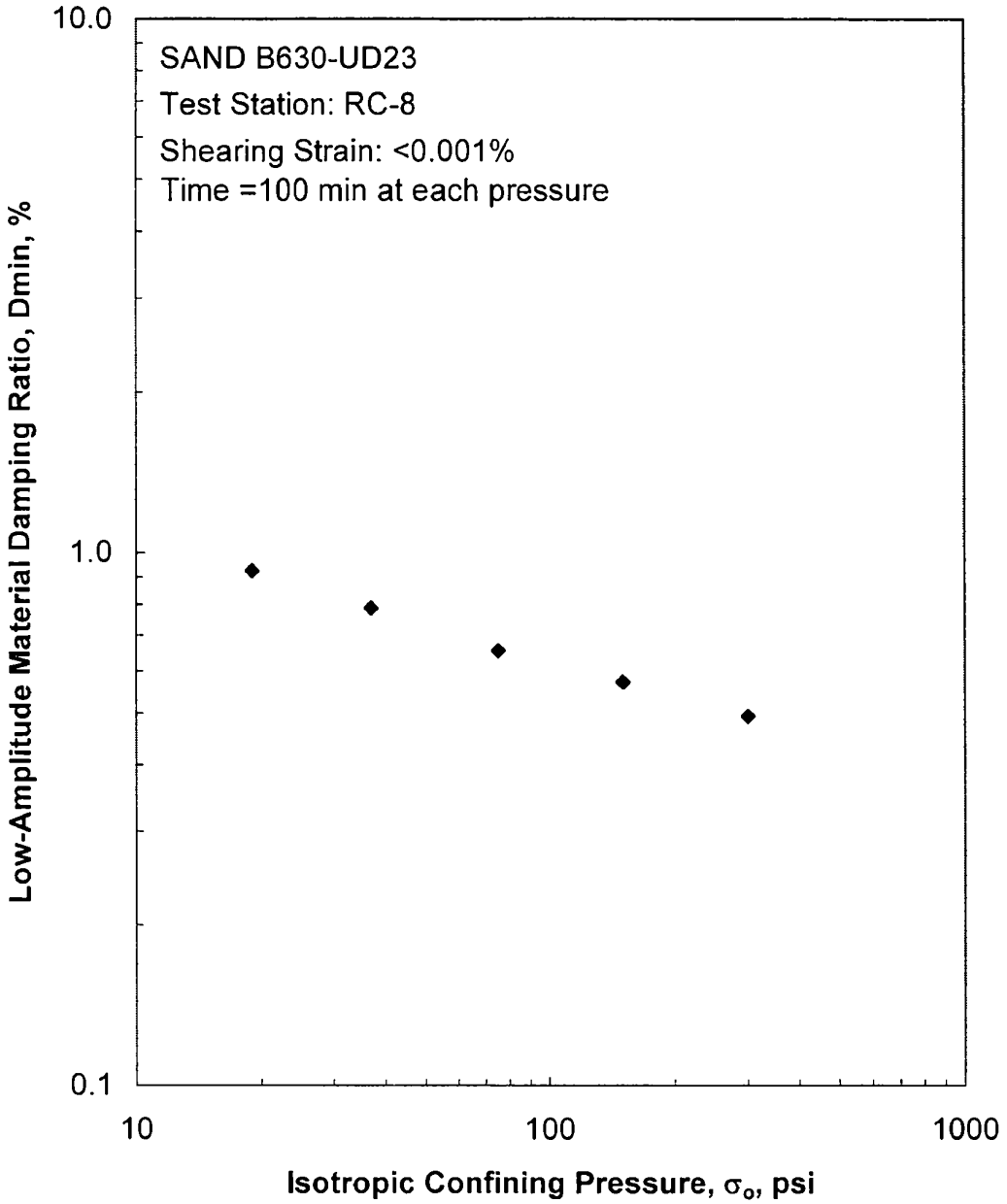


Figure F.6 Variation in Low-Amplitude Material Damping Ratio with Isotropic Confining Pressure from Resonant Column Tests

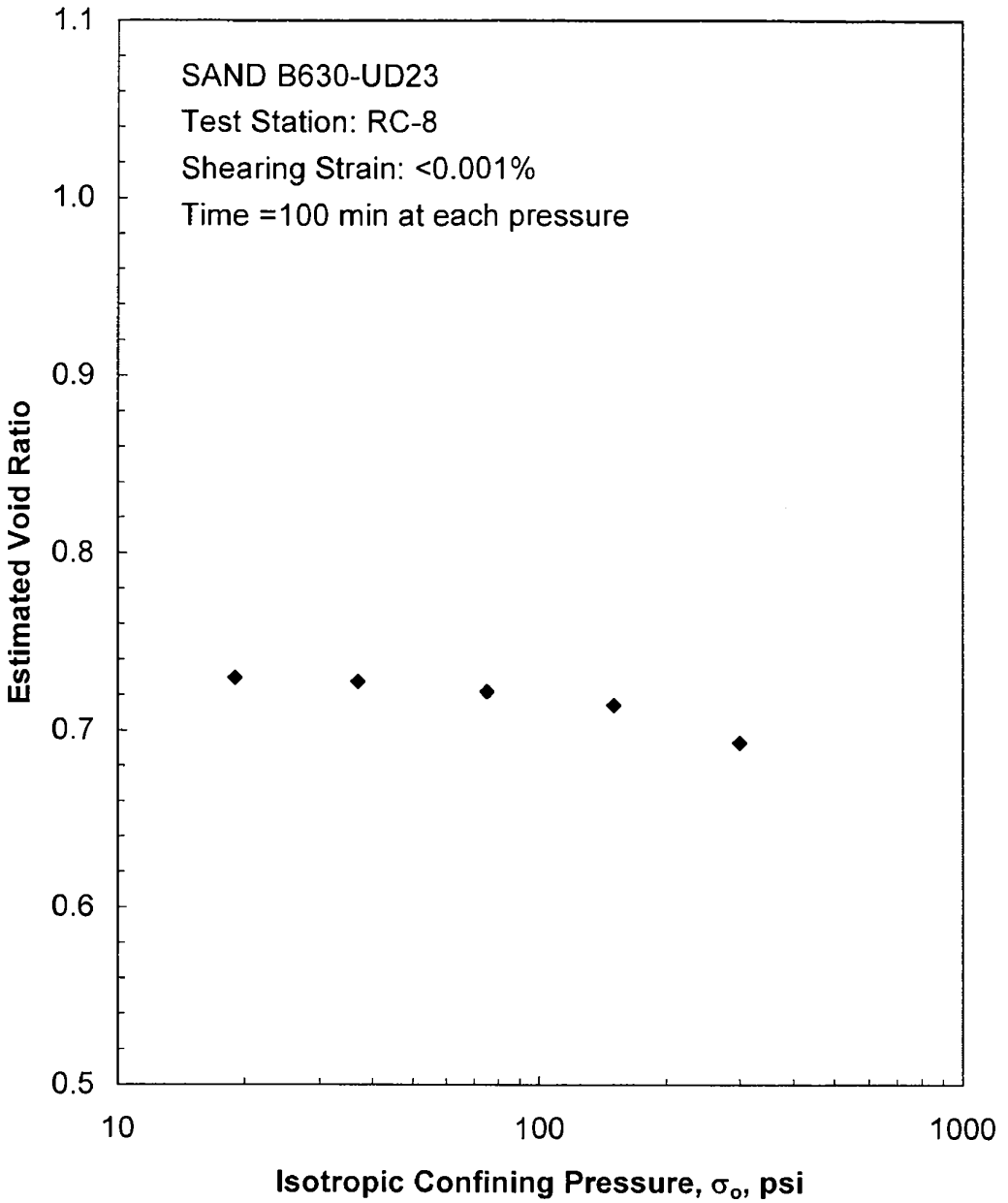


Figure F.7 Variation in Estimated Void Ratio with Isotropic Confining Pressure from Resonant Column Tests

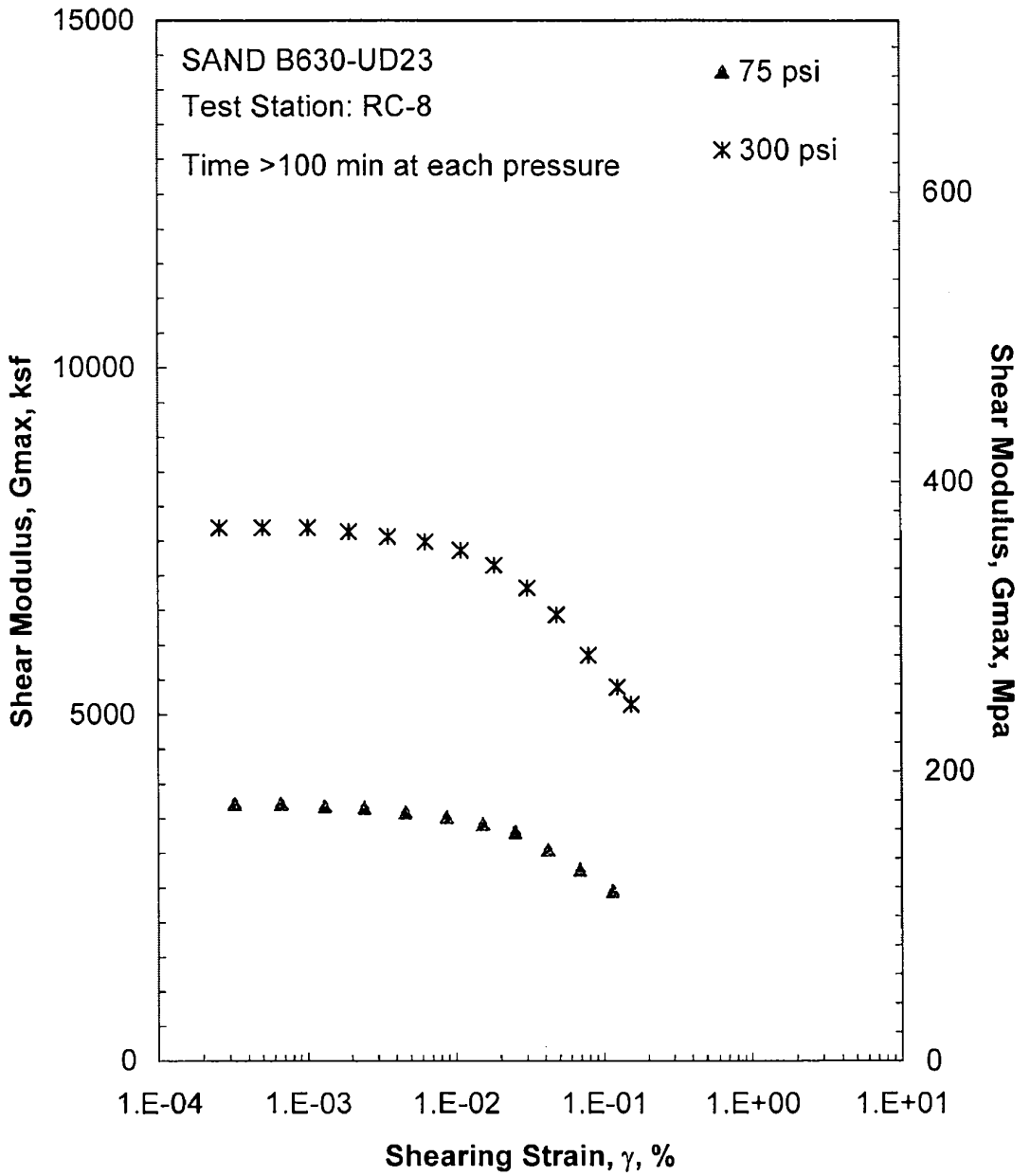


Figure F.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

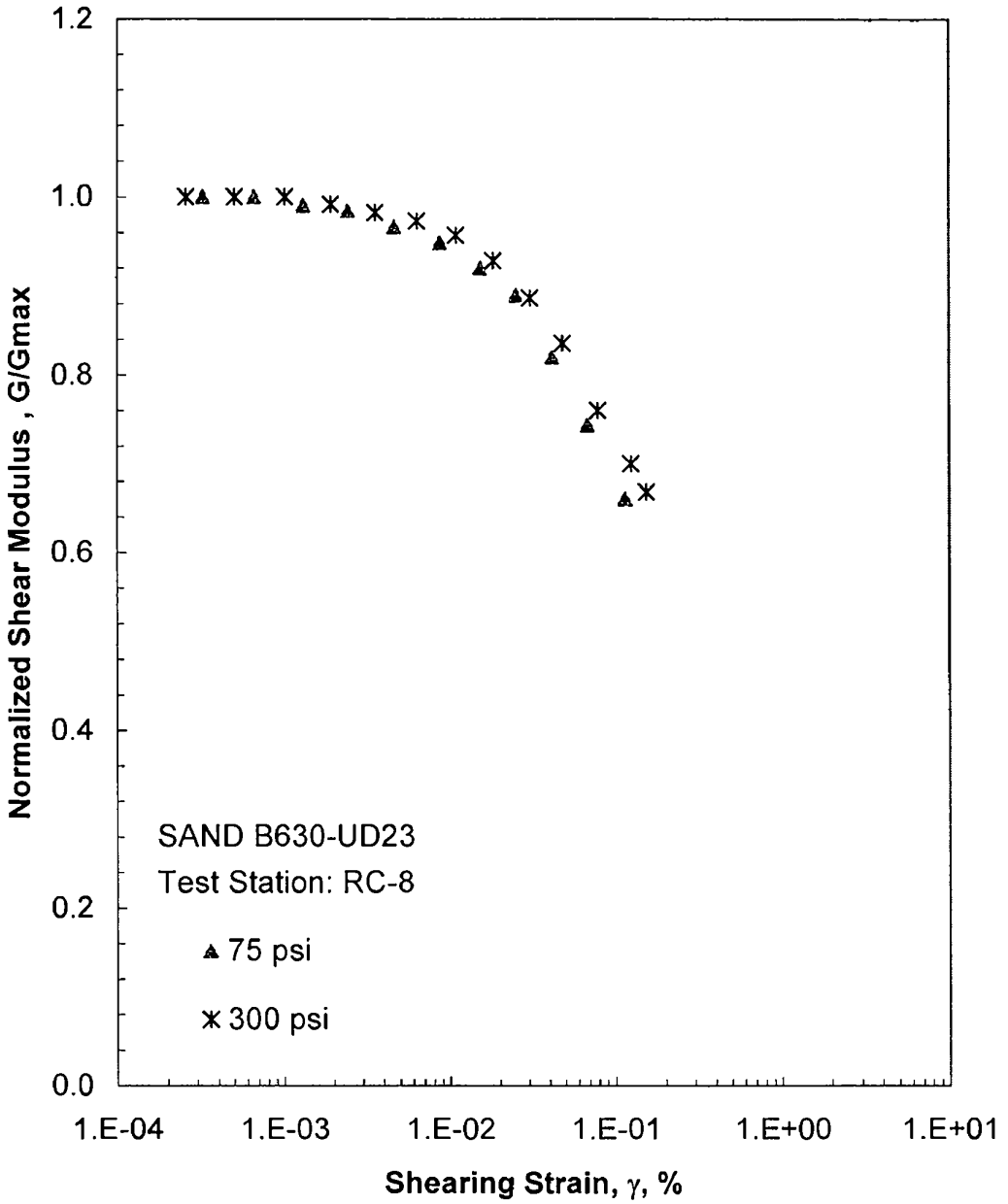


Figure F.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

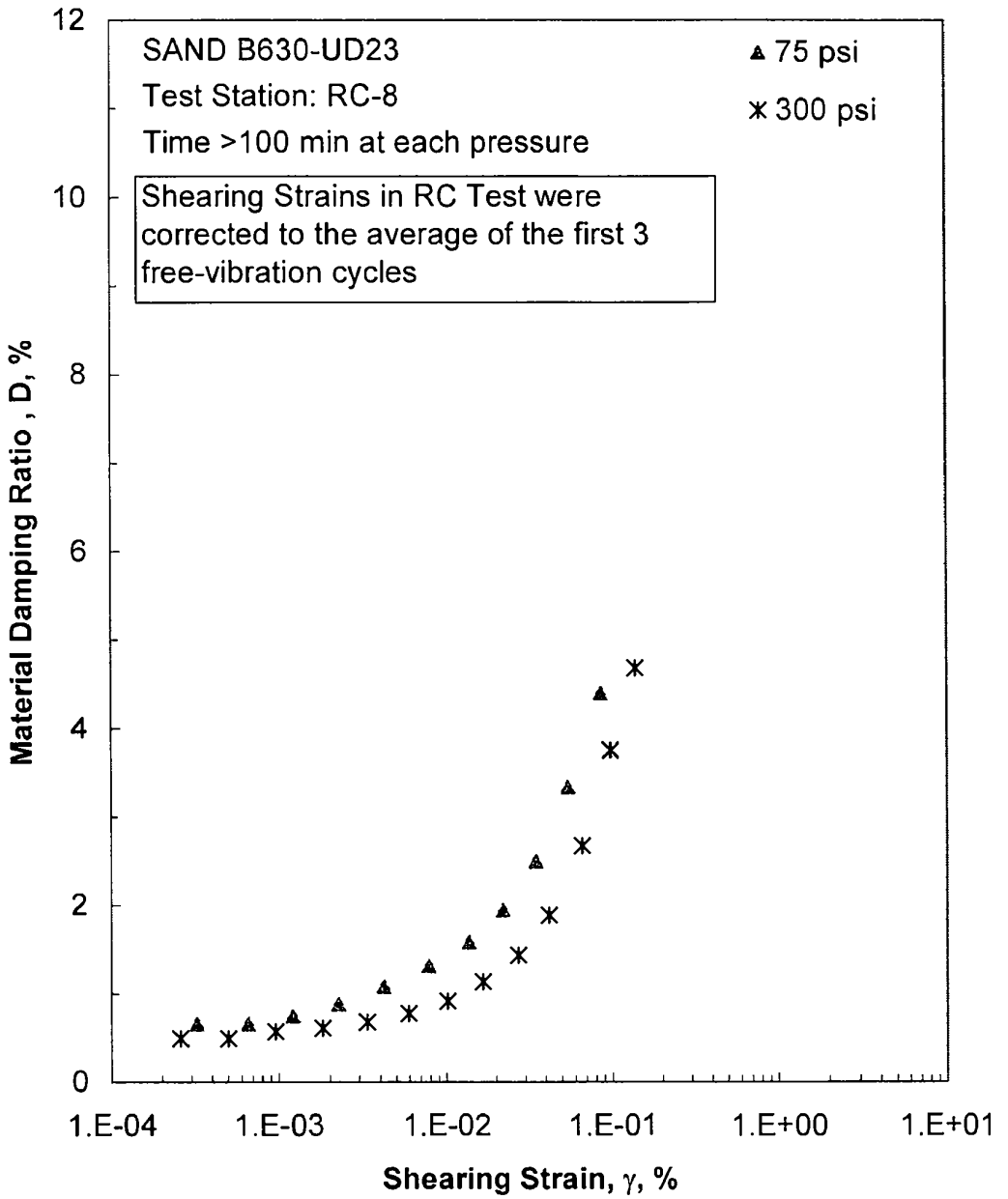


Figure F.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

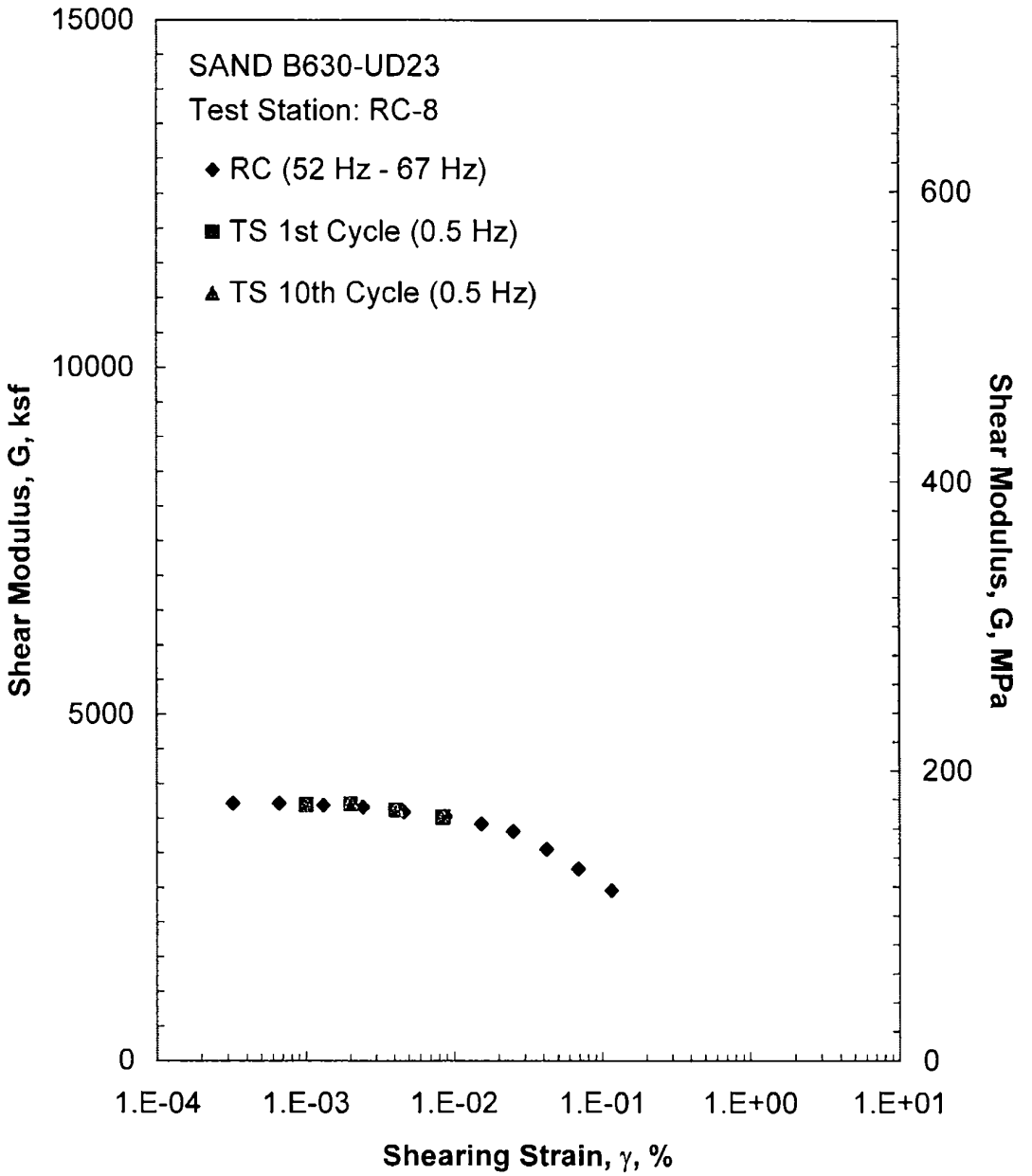


Figure F.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 75 psi from the Combined RCTS Tests

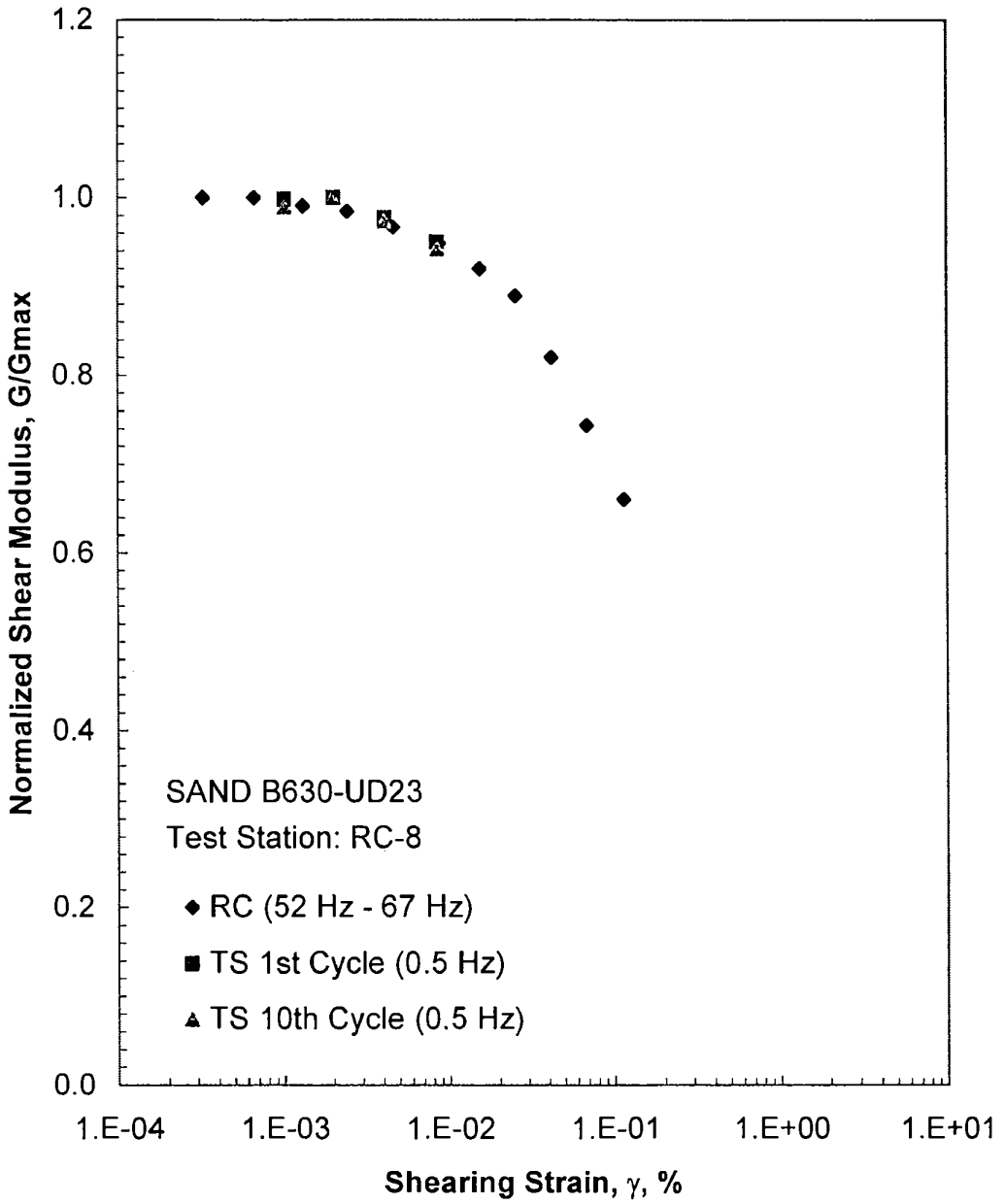


Figure F.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 75 psi from the Combined RCTS Tests

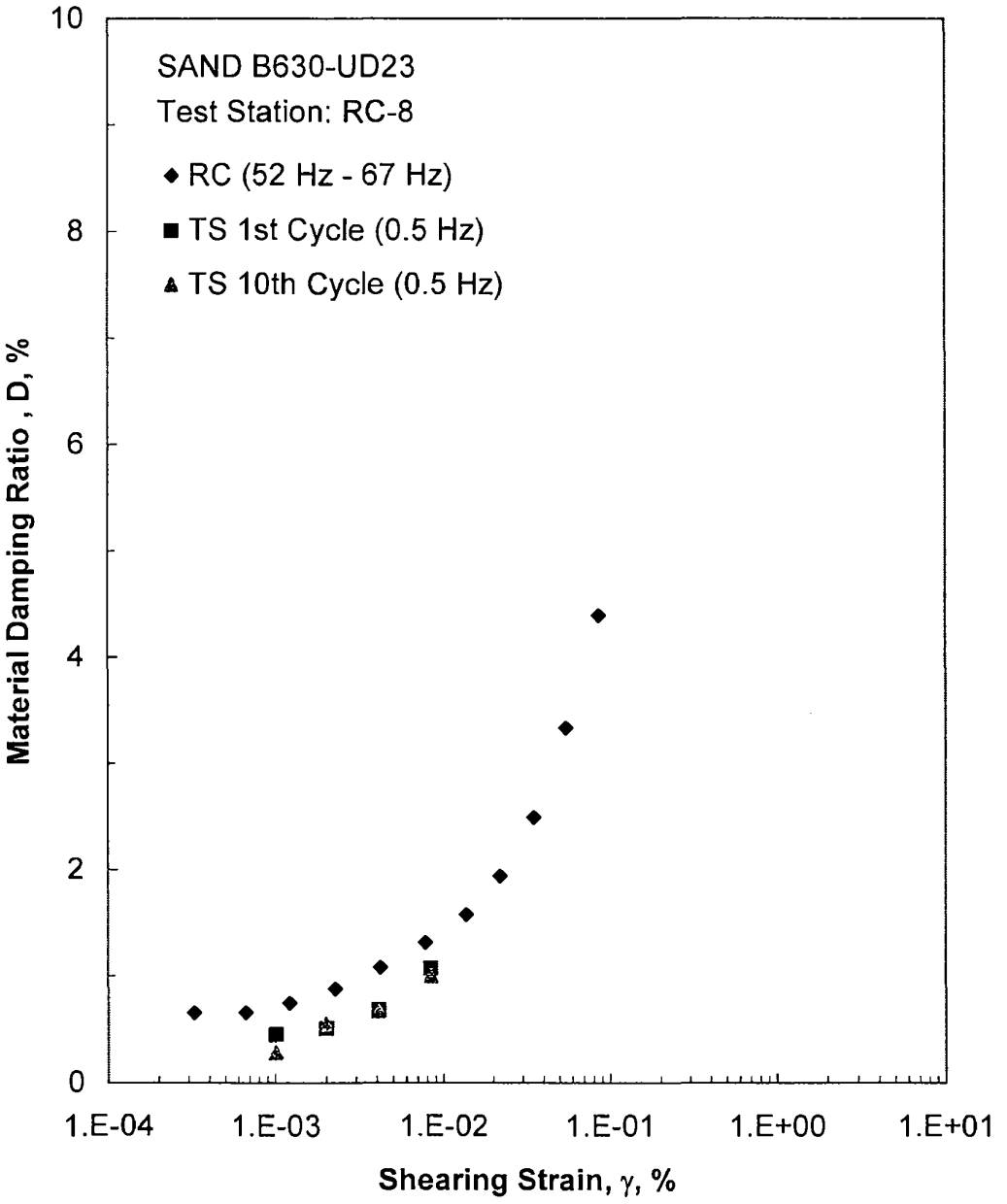


Figure F.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 75 psi from the Combined RCTS Tests

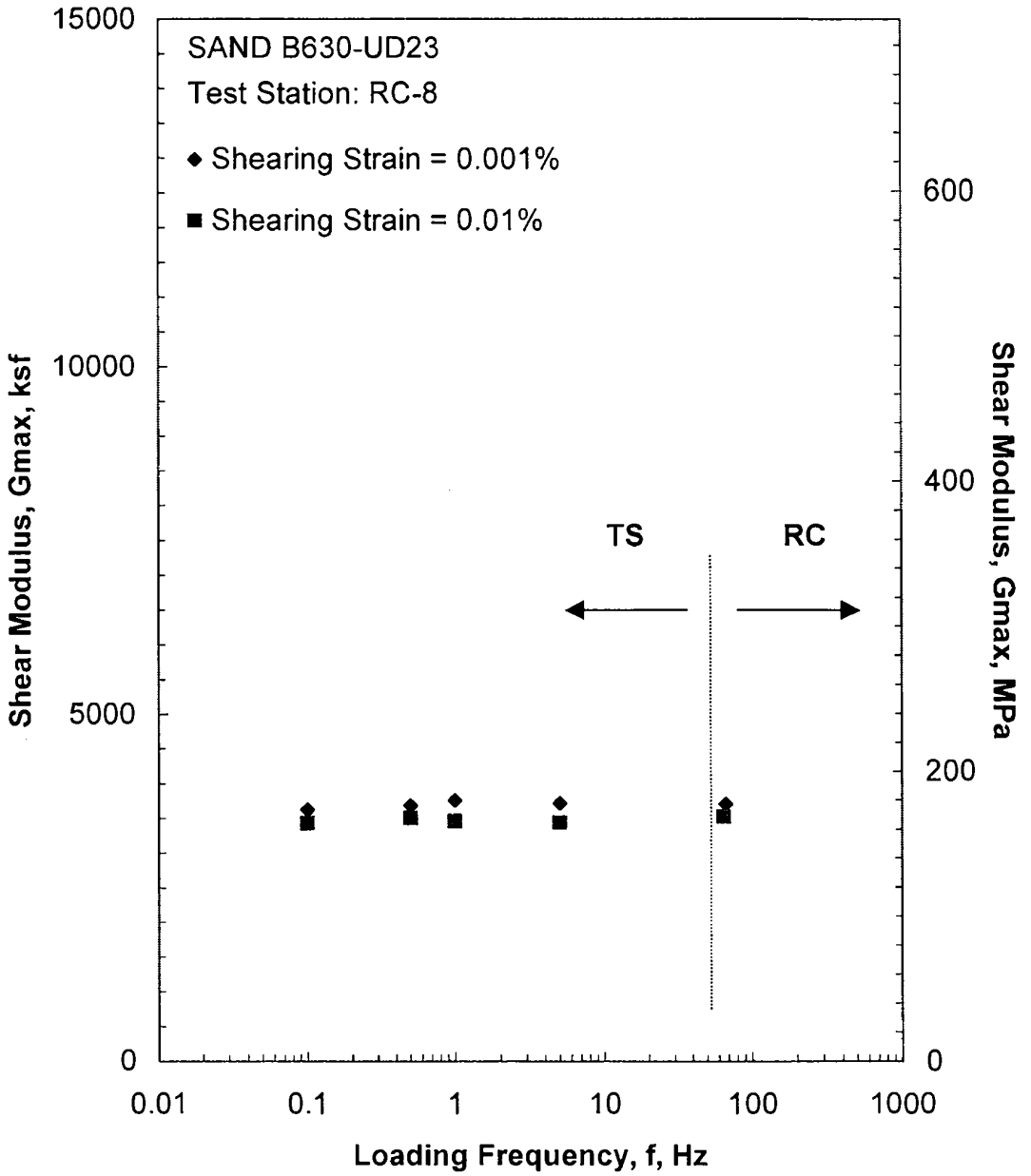


Figure F.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 75 psi from the Combined RCTS Tests

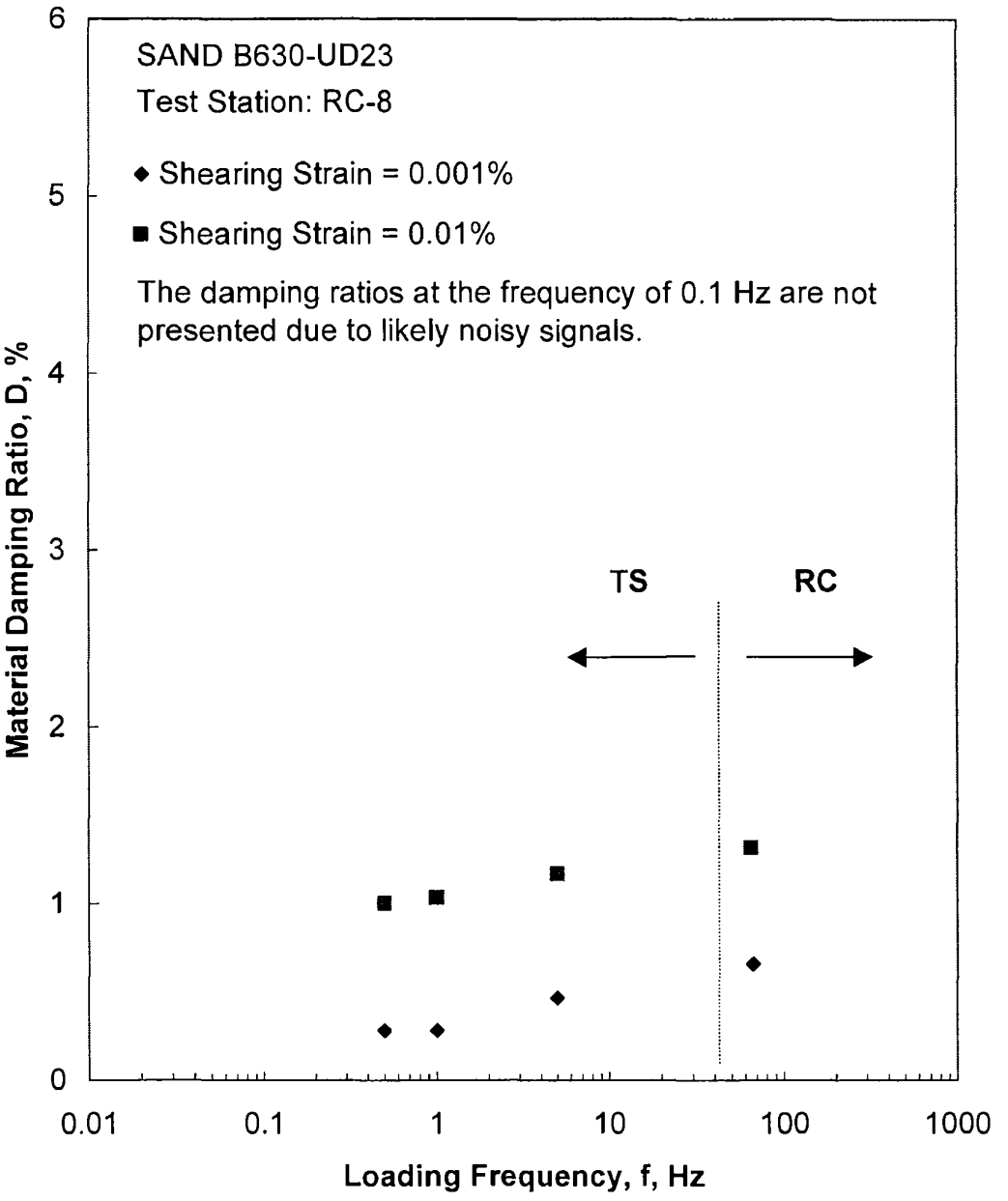


Figure F.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 75 psi from the Combined RCTS Tests

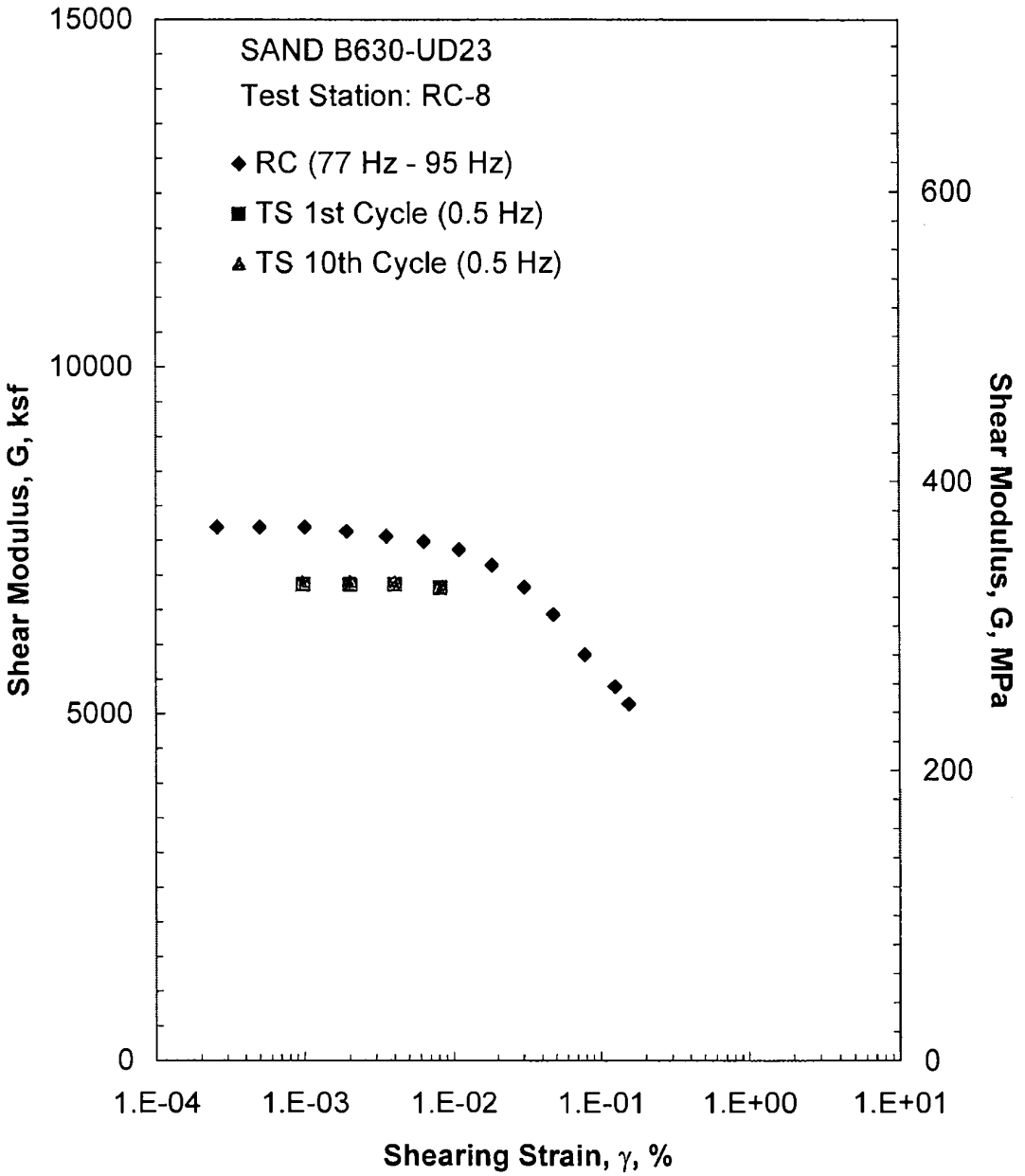


Figure F.16 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 300 psi from the Combined RCTS Tests

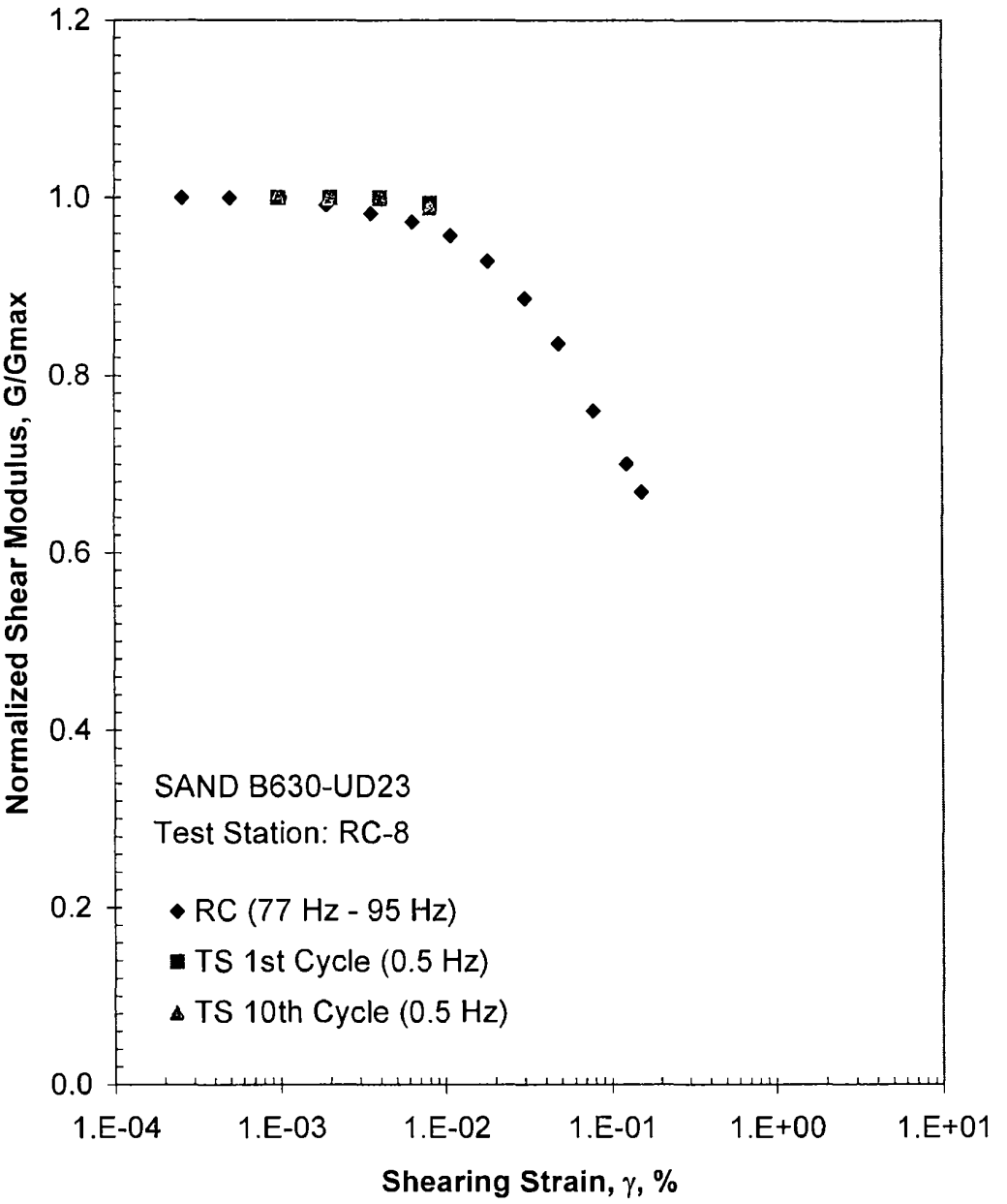


Figure F.17 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 300 psi from the Combined RCTS Tests

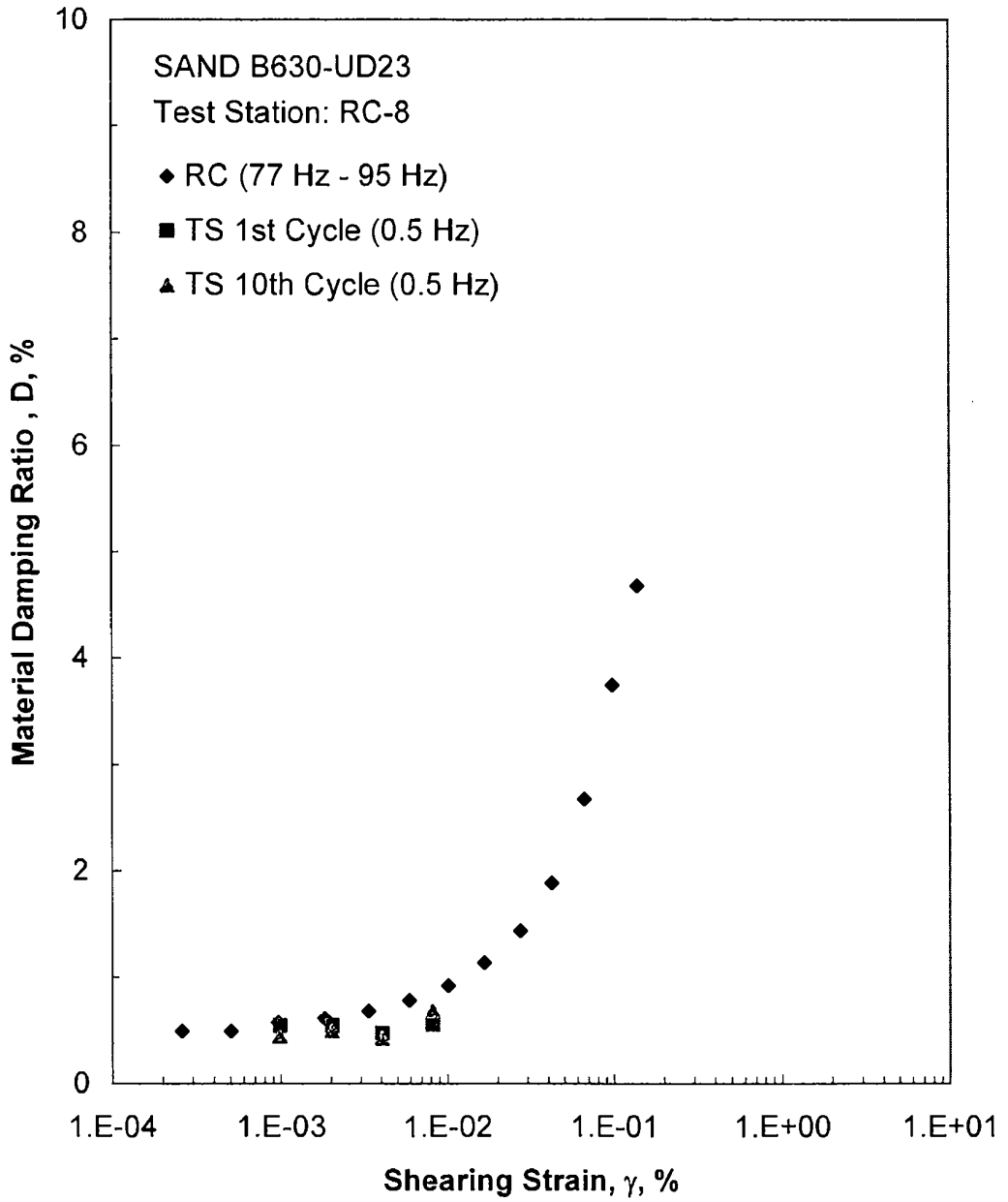


Figure F.18 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 300 psi from the Combined RCTS Tests

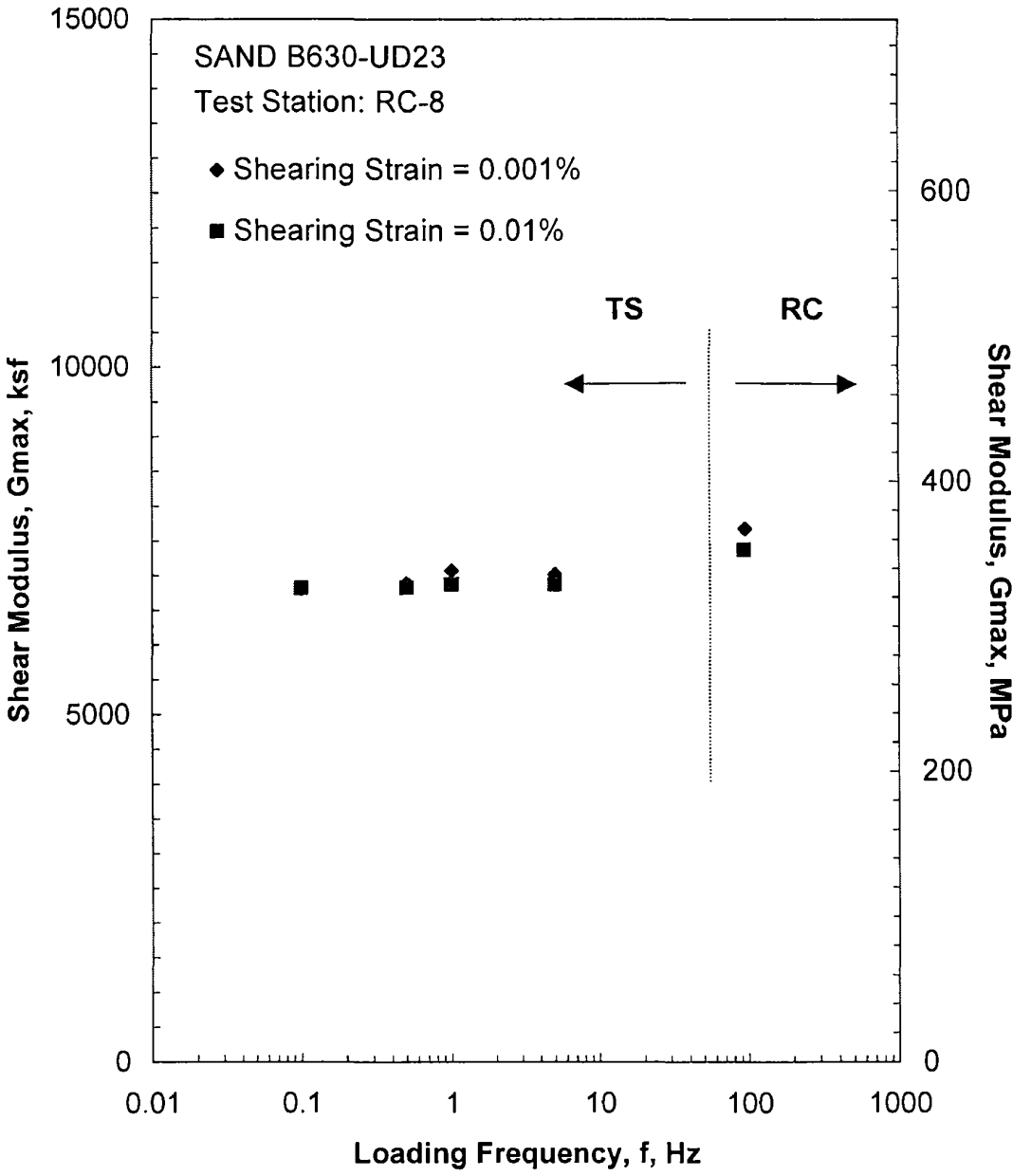


Figure F.19 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 300 psi from the Combined RCTS Tests

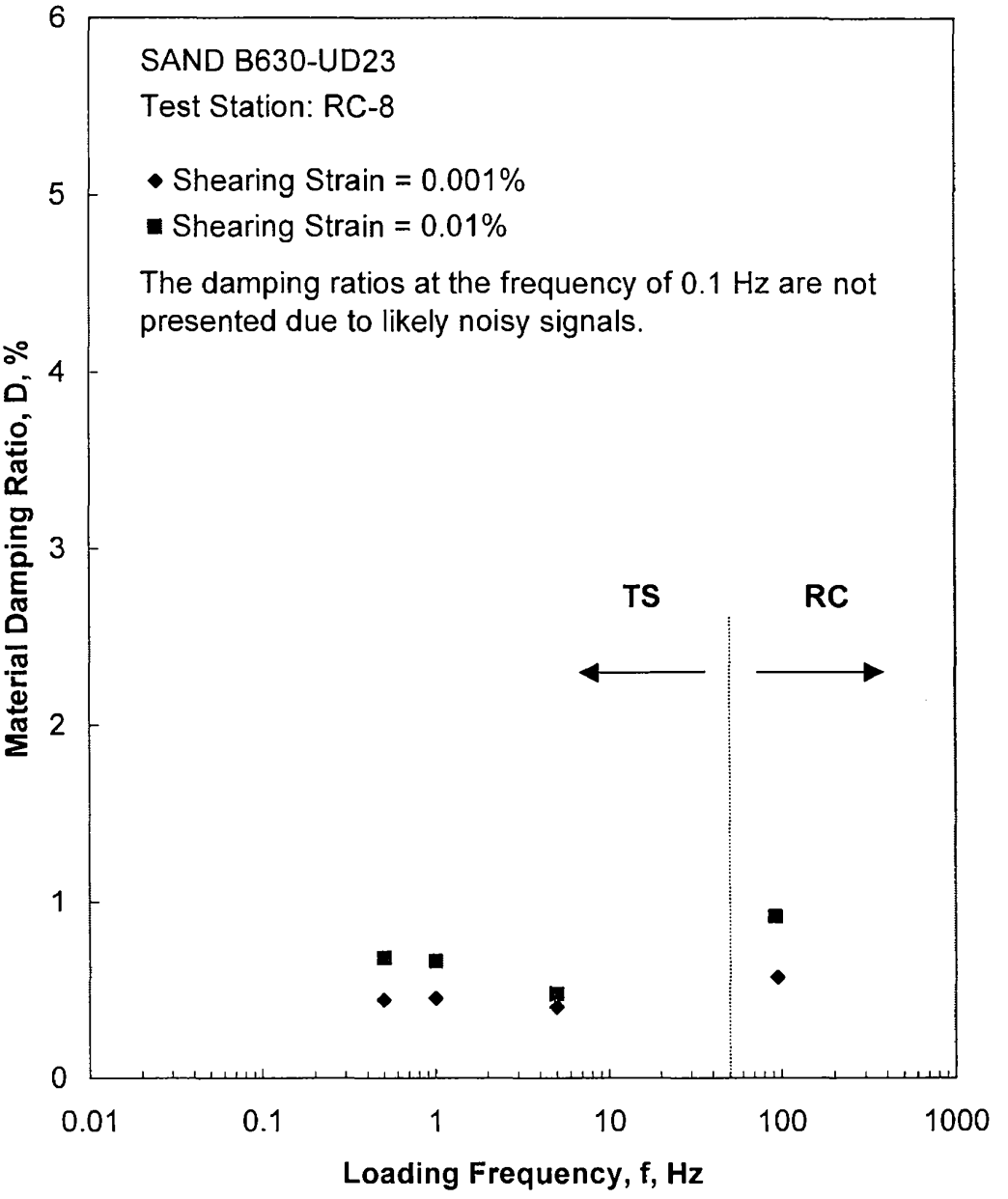


Figure F.20 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 300 psi from the Combined RCTS Tests

Table F.1 Variation in Low-Amplitude Shear Wave Velocity, Low-Amplitude Shear Modulus, Low-Amplitude Material Damping Ratio and Estimated Void Ratio with Isotropic Confining Pressure from RC Tests of Specimen B630-UD23

Isotropic Confining Pressure, σ_o			Low-Amplitude Shear Modulus, G_{max}		Low-Amplitude Shear Wave Velocity, Vs	Low-Amplitude Material Damping Ratio, Dmin	Estimated Void Ratio, e
(psi)	(psf)	(kPa)	(ksf)	(MPa)	(fps)	(%)	
19	2736	131	1908	92	711	0.92	0.73
37	5328	255	2612	125	831	0.79	0.73
75	10800	517	3742	180	993	0.66	0.72
150	21600	1034	5405	259	1191	0.57	0.71
300	43200	2067	7663	368	1409	0.49	0.69

Table F.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD23; Isoptropic Confining Pressure, σ_o= 75 psi (10.8 ksf = 517 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
3.24E-04	3713	1.00	3.24E-04	0.66
6.60E-04	3713	1.00	6.60E-04	0.66
1.30E-03	3679	0.99	1.21E-03	0.74
2.43E-03	3656	0.98	2.26E-03	0.88
4.62E-03	3589	0.97	4.21E-03	1.08
8.71E-03	3523	0.95	7.83E-03	1.31
1.52E-02	3417	0.92	1.37E-02	1.58
2.50E-02	3302	0.89	2.20E-02	1.94
4.17E-02	3043	0.82	3.50E-02	2.49
6.85E-02	2760	0.74	5.48E-02	3.33
1.14E-01	2451	0.66	8.59E-02	4.39

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table F.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD23; Isotropic Confining Pressure, σ_o= 75 psi (10.8 ksf = 517 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
1.00E-03	3694	1.00	0.45	1.01E-03	3677	0.99	0.28
2.00E-03	3700	1.00	0.51	2.00E-03	3715	1.00	0.55
4.09E-03	3616	0.98	0.68	4.10E-03	3617	0.97	0.67
8.43E-03	3515	0.95	1.07	8.47E-03	3500	0.94	1.00

Table F.4 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD23; Isoptropic Confining Pressure, σ_o= 300 psi (43.2 ksf = 2067 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
2.58E-04	7696	1.00	2.58E-04	0.49
5.02E-04	7696	1.00	5.02E-04	0.49
1.01E-03	7696	1.00	9.61E-04	0.57
1.92E-03	7635	0.99	1.82E-03	0.61
3.55E-03	7562	0.98	3.34E-03	0.68
6.32E-03	7489	0.97	5.94E-03	0.78
1.09E-02	7365	0.96	1.01E-02	0.91
1.82E-02	7146	0.93	1.66E-02	1.13
3.04E-02	6822	0.89	2.73E-02	1.43
4.81E-02	6430	0.84	4.19E-02	1.88
7.89E-02	5847	0.76	6.63E-02	2.67
1.24E-01	5386	0.70	9.81E-02	3.75
1.54E-01	5138	0.67	1.38E-01	4.68

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table F.5 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD23; Isotropic Confining Pressure, σ_o= 168 psi (43.2 ksf = 2067 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
9.87E-04	6865	1.00	0.54	9.81E-04	6898	1.00	0.44
2.02E-03	6865	1.00	0.54	2.01E-03	6898	1.00	0.49
4.05E-03	6865	1.00	0.47	4.04E-03	6893	1.00	0.42
8.17E-03	6817	0.99	0.55	8.17E-03	6820	0.99	0.68

APPENDIX G

Specimen B630-UD27

Borehole 630
Sample UD27
Depth = 294.0 ft (89.6m)
Total Unit Weight = 121.3 lb/ft^3
Water Content = 25.5 %
Estimated In-Situ Ko = 0.5
Estimated In-Situ Mean Effective Stress = 84 psi

FUGRO JOB #: 0411-08-1701
Testing Station: RC8

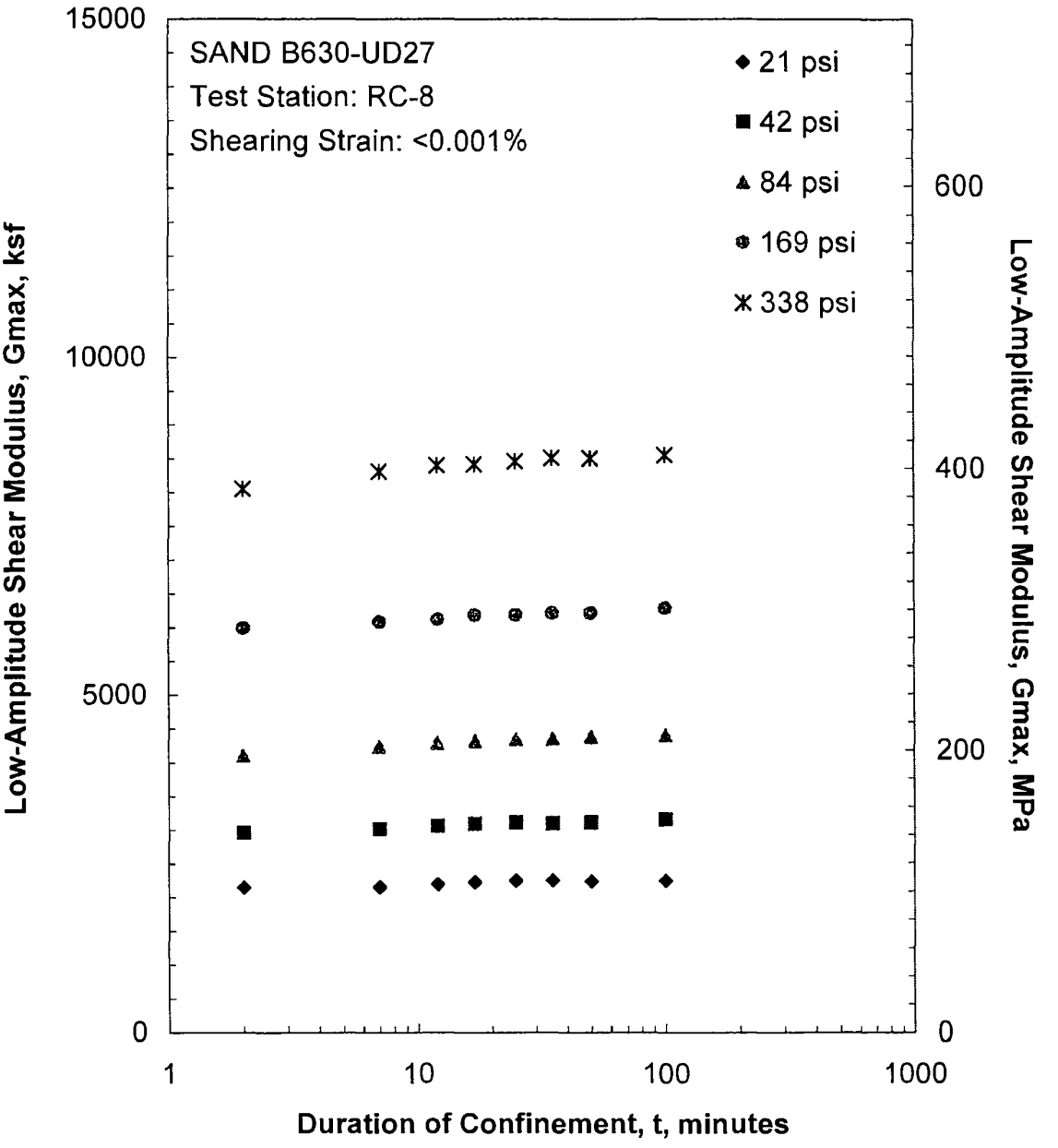


Figure G.1 Variation in Low-Amplitude Shear Modulus with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

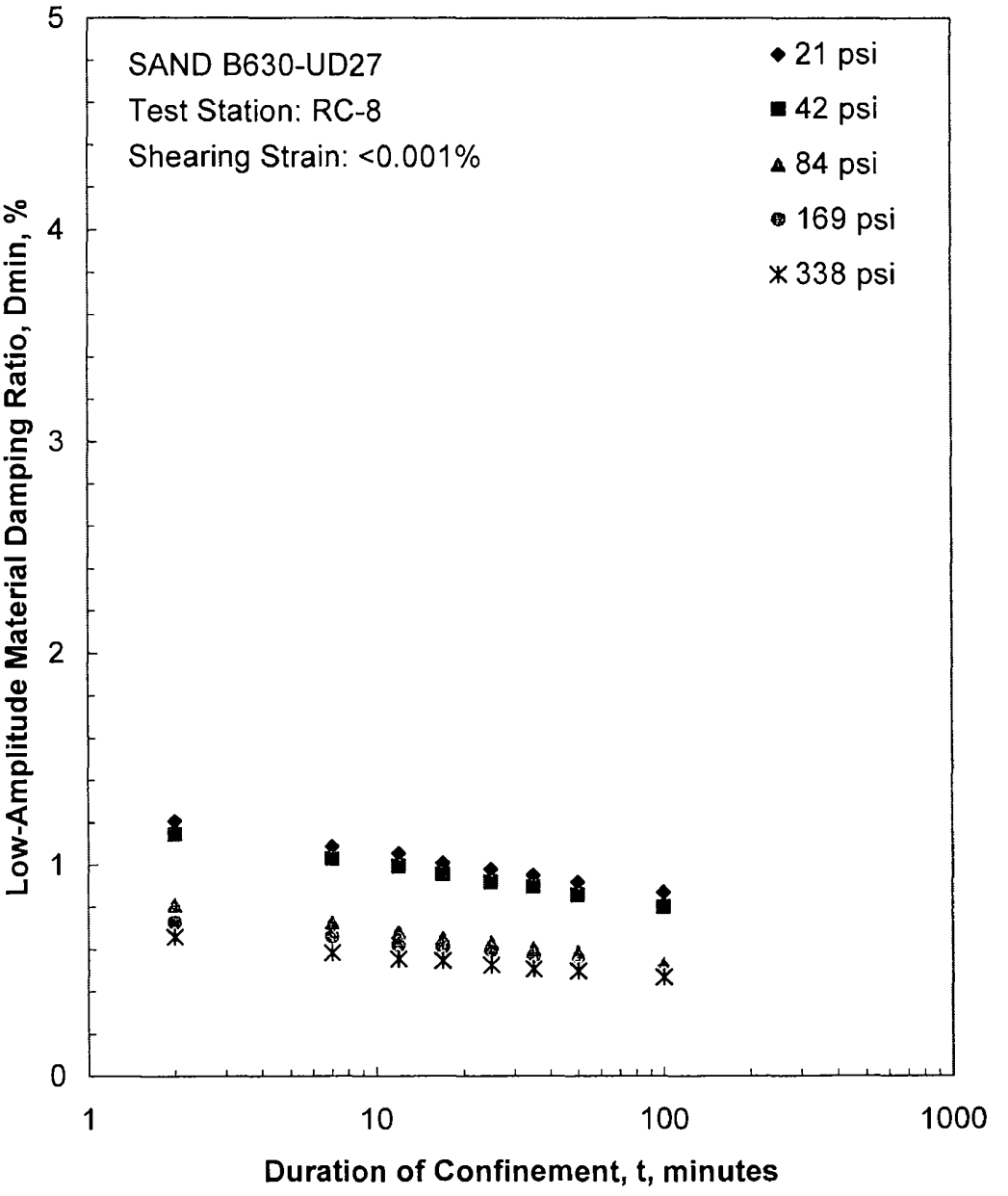


Figure G.2 Variation in Low-Amplitude Material Damping Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

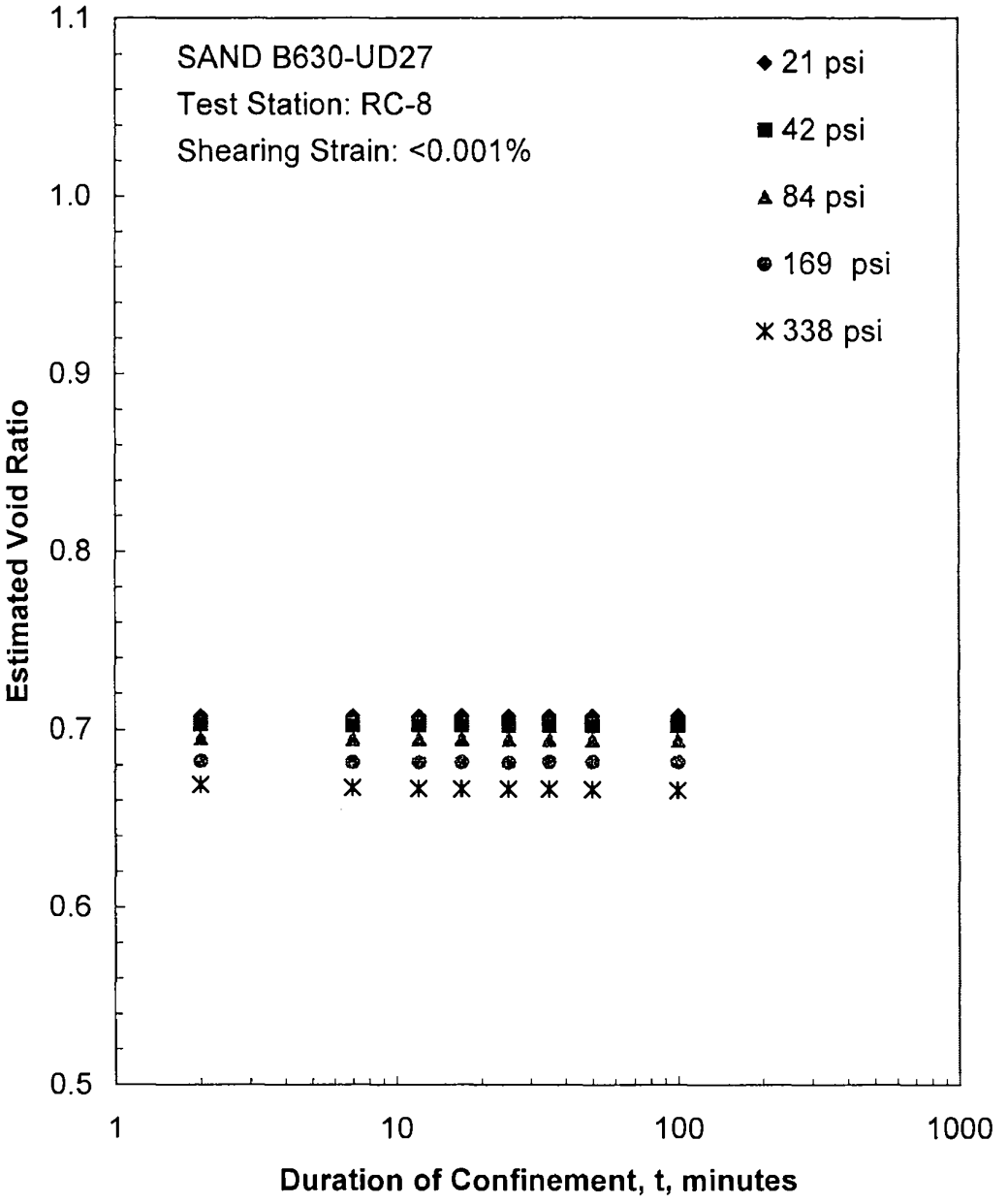


Figure G.3 Variation in Estimated Void Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

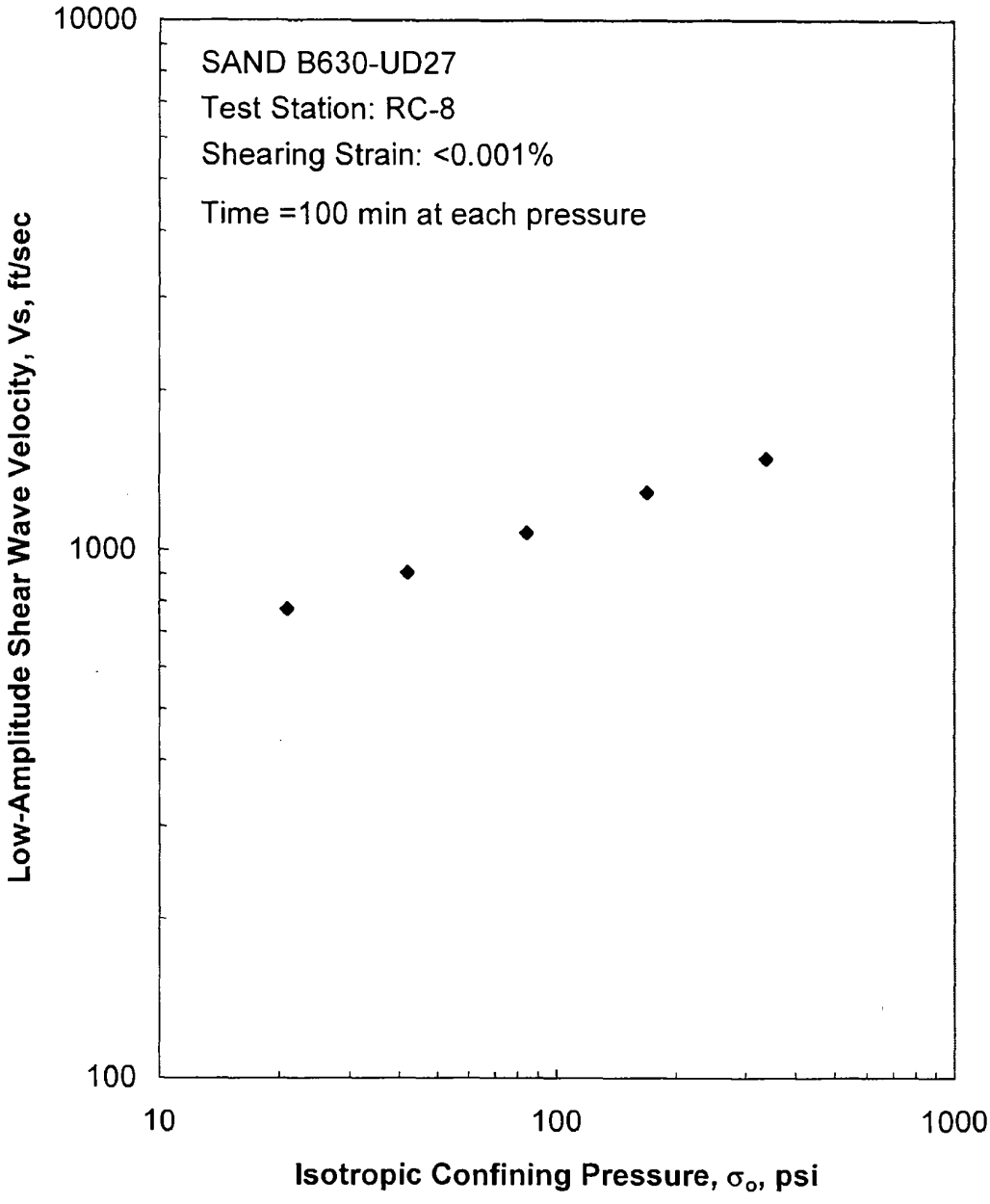


Figure G.4 Variation in Low-Amplitude Shear Wave Velocity with Isotropic Confining Pressure from Resonant Column Tests

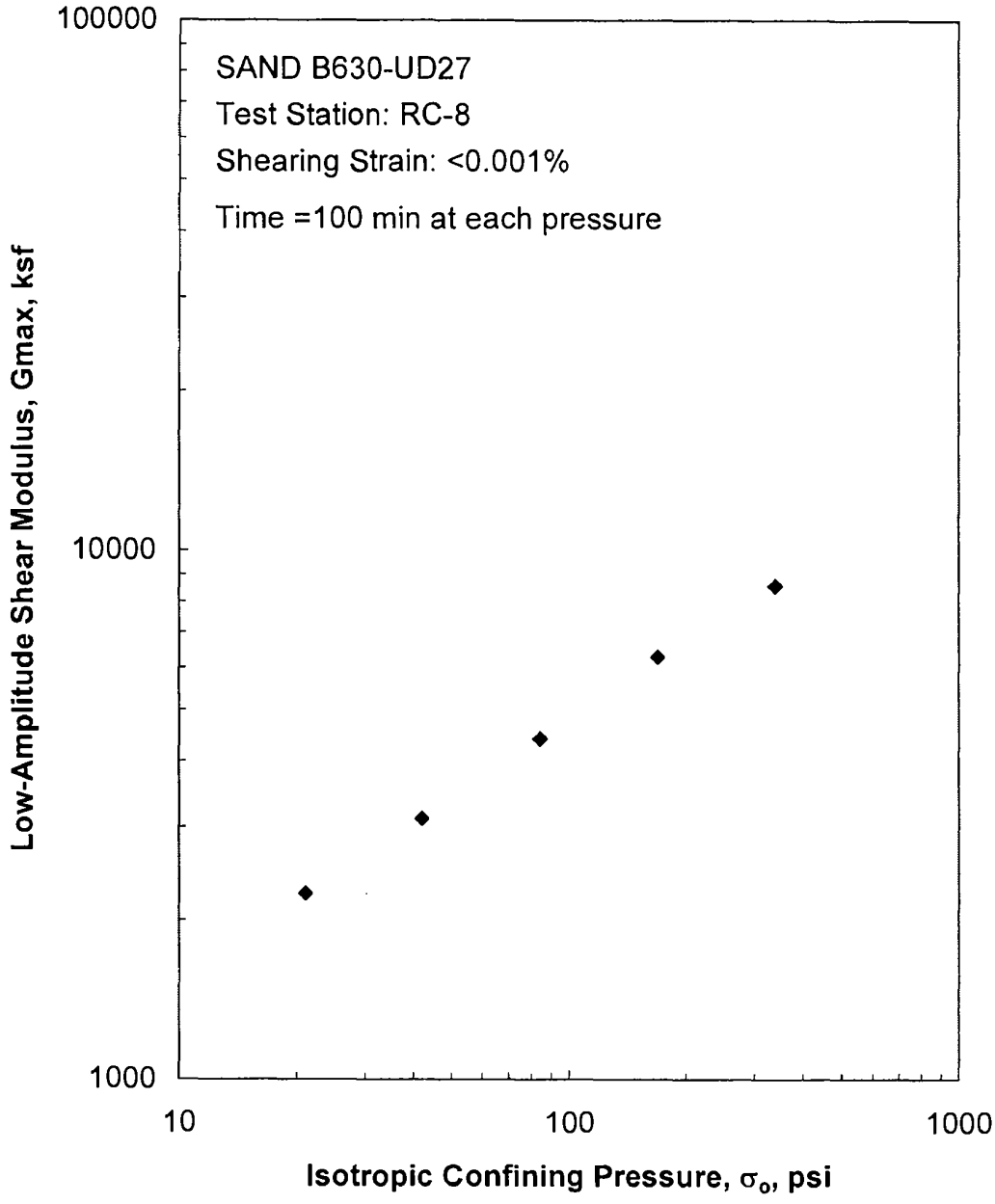


Figure G.5 Variation in Low-Amplitude Shear Modulus with Isotropic Confining Pressure from Resonant Column Tests

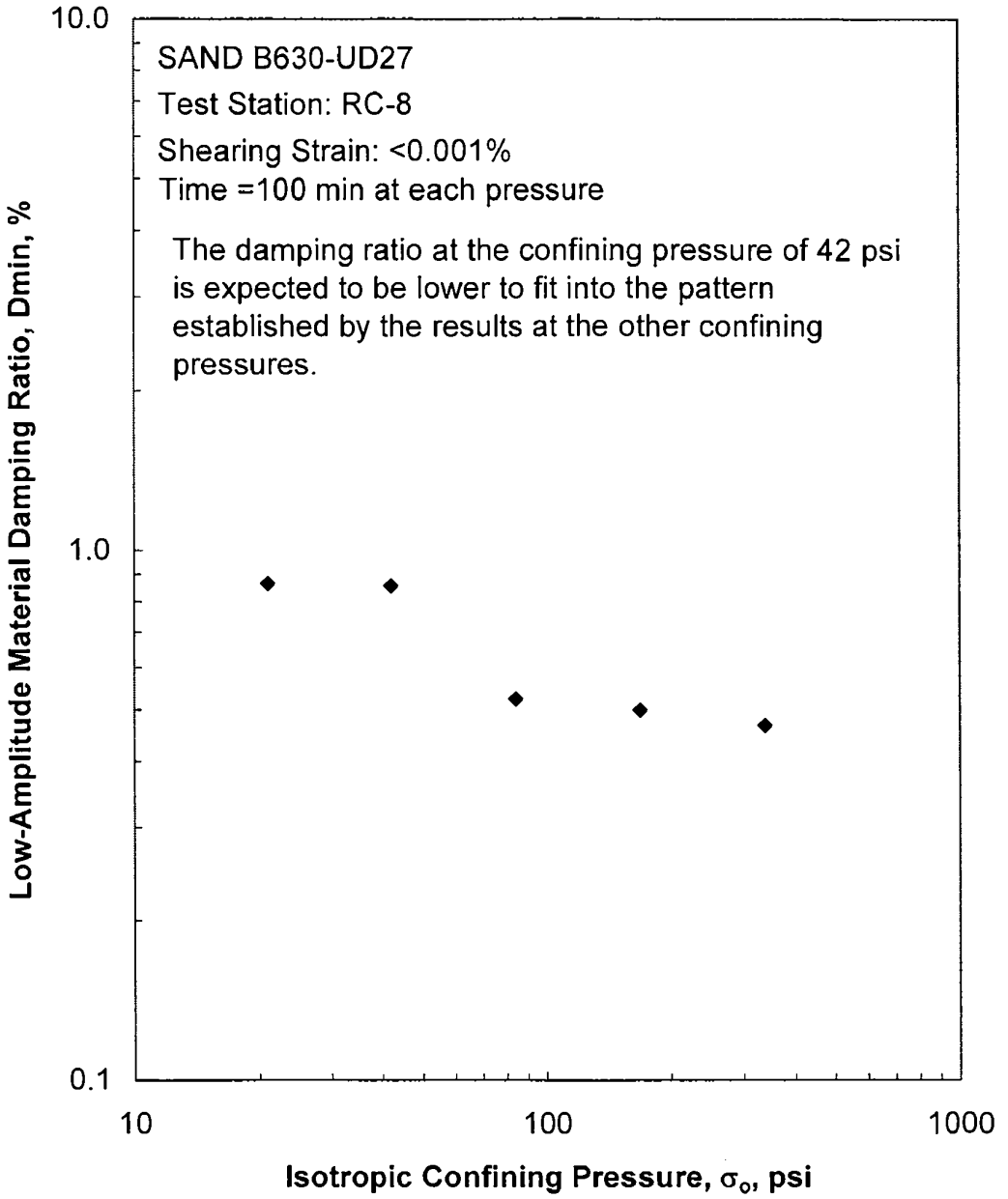


Figure G.6 Variation in Low-Amplitude Material Damping Ratio with Isotropic Confining Pressure from Resonant Column Tests

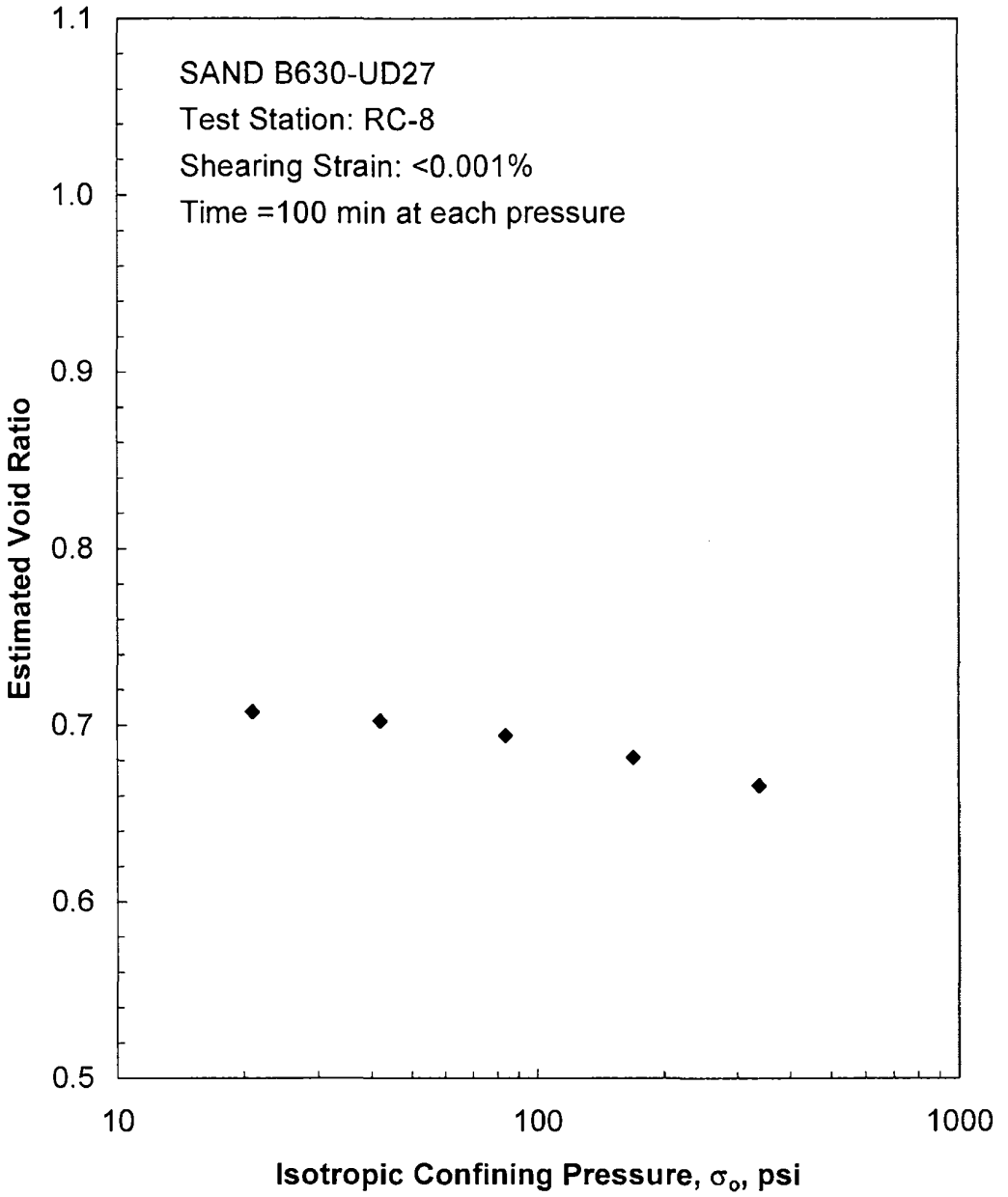


Figure G.7 Variation in Estimated Void Ratio with Isotropic Confining Pressure from Resonant Column Tests

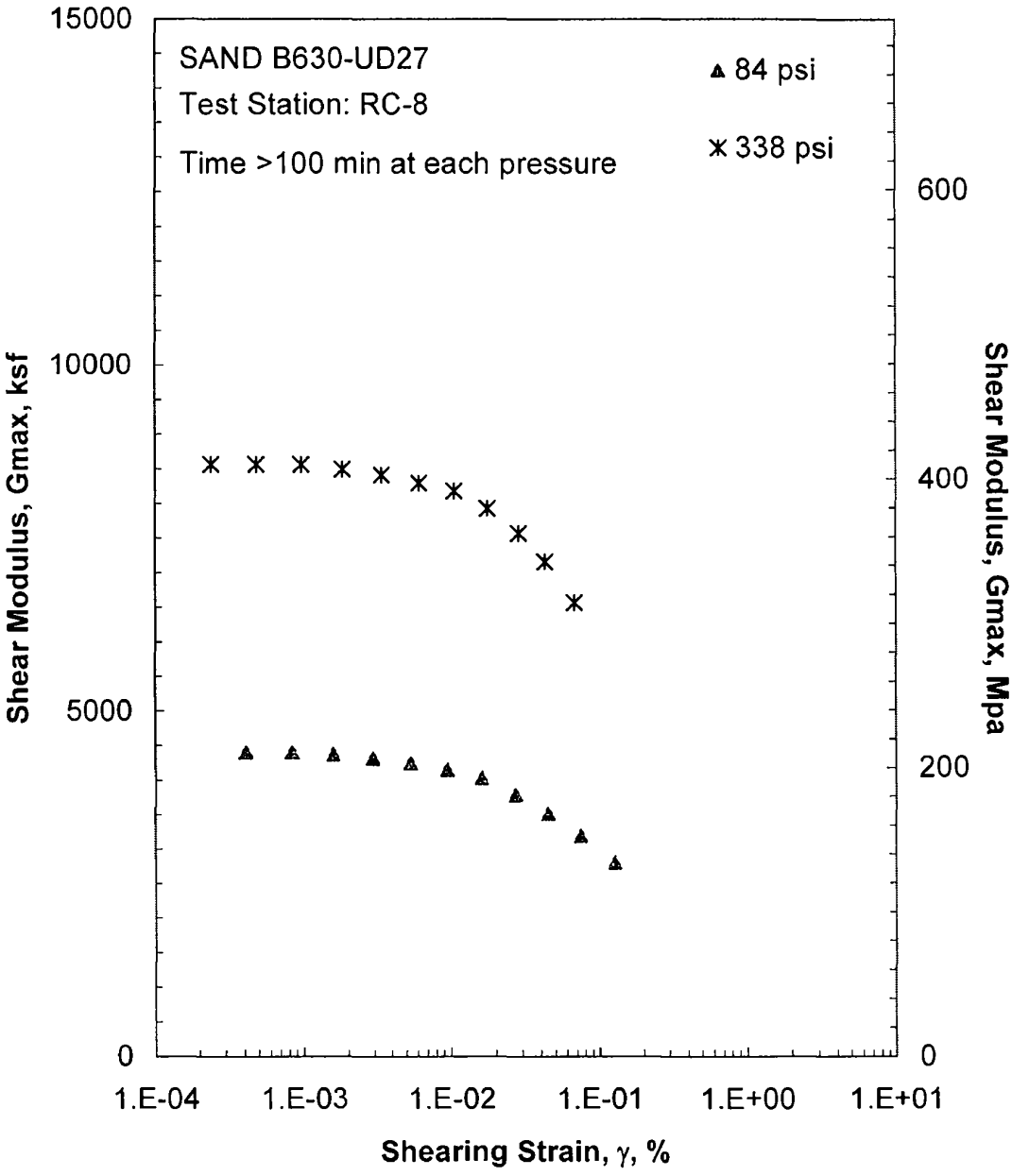


Figure G.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

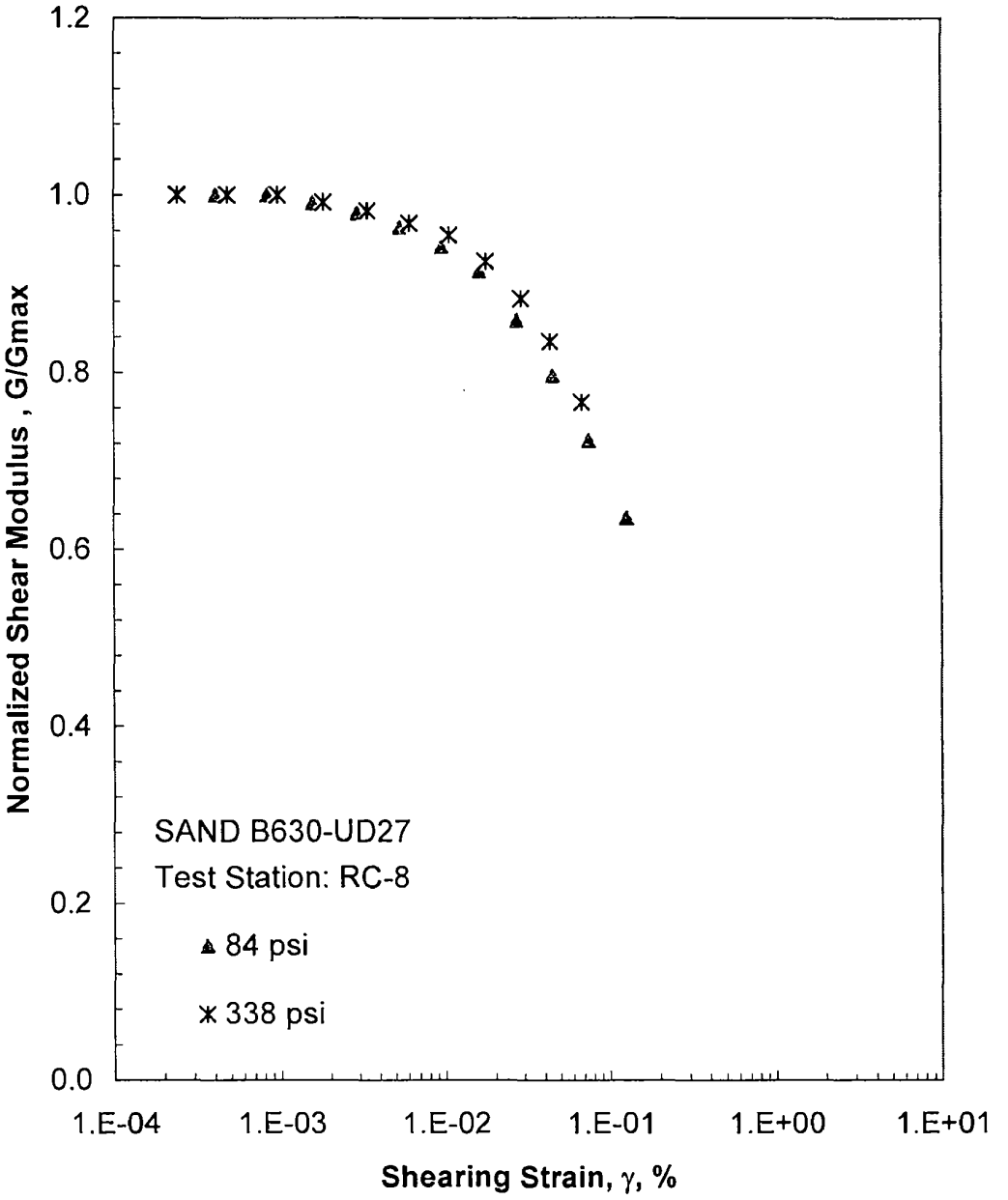


Figure G.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

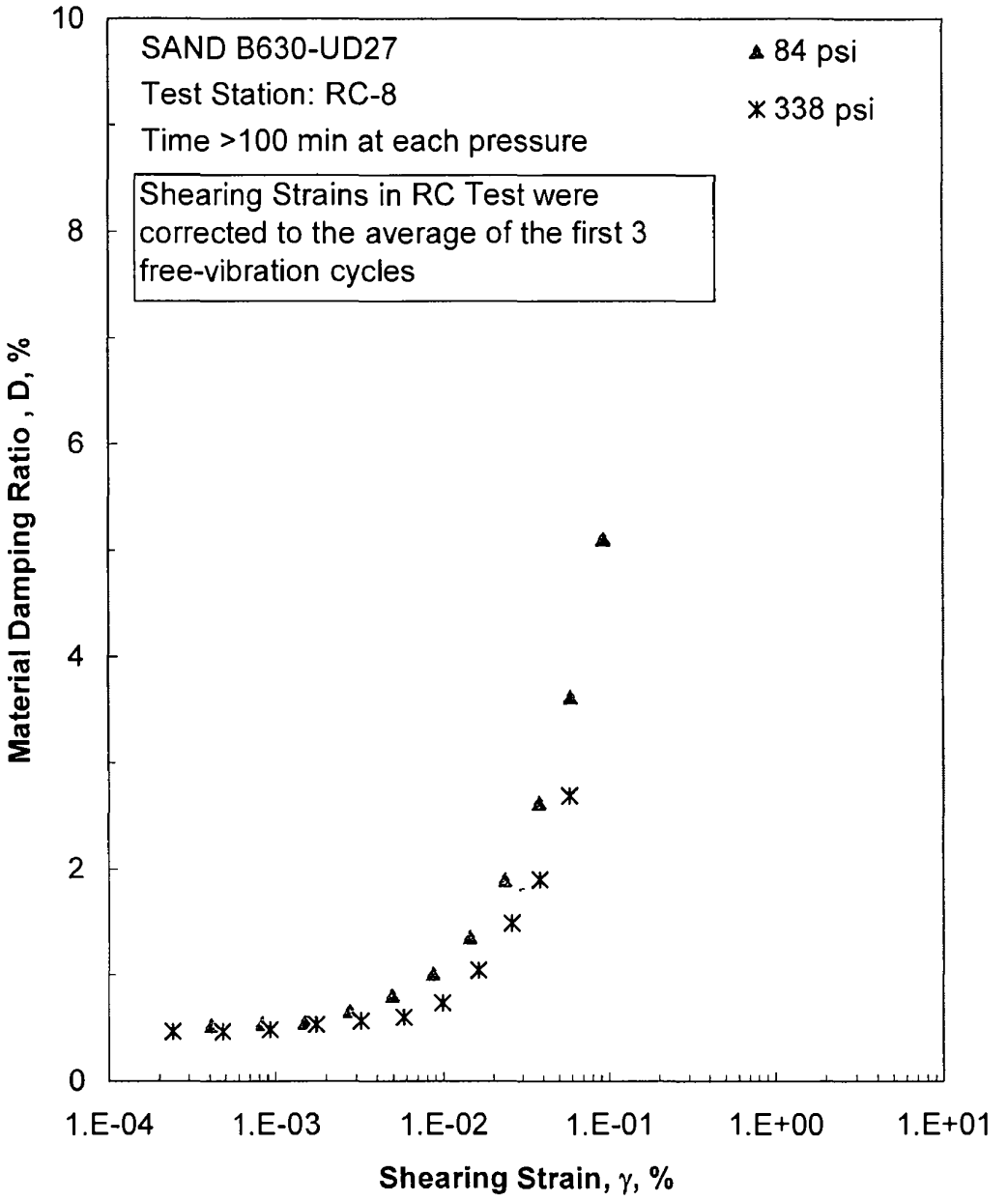


Figure G.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

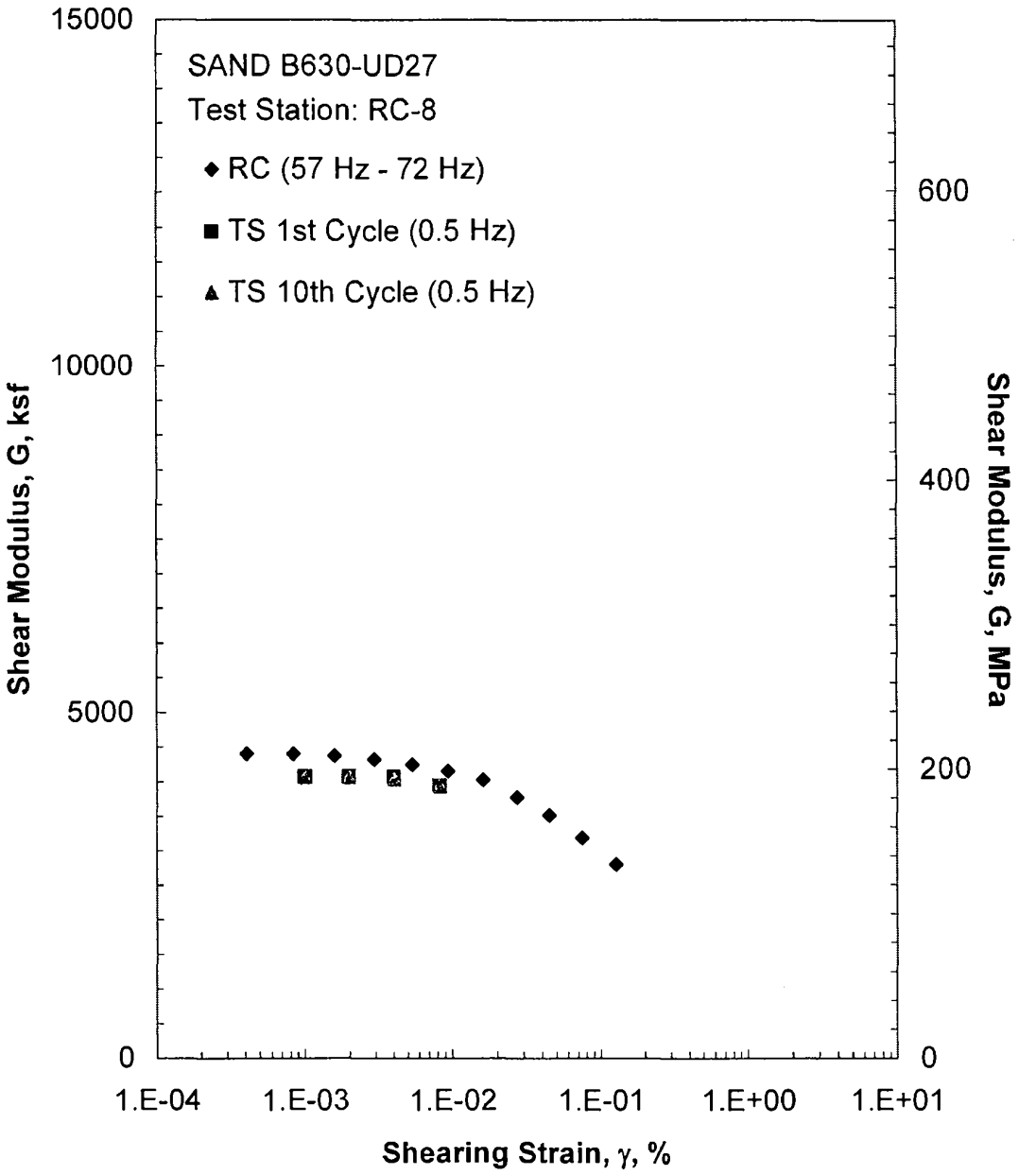


Figure G.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 84 psi from the Combined RCTS Tests

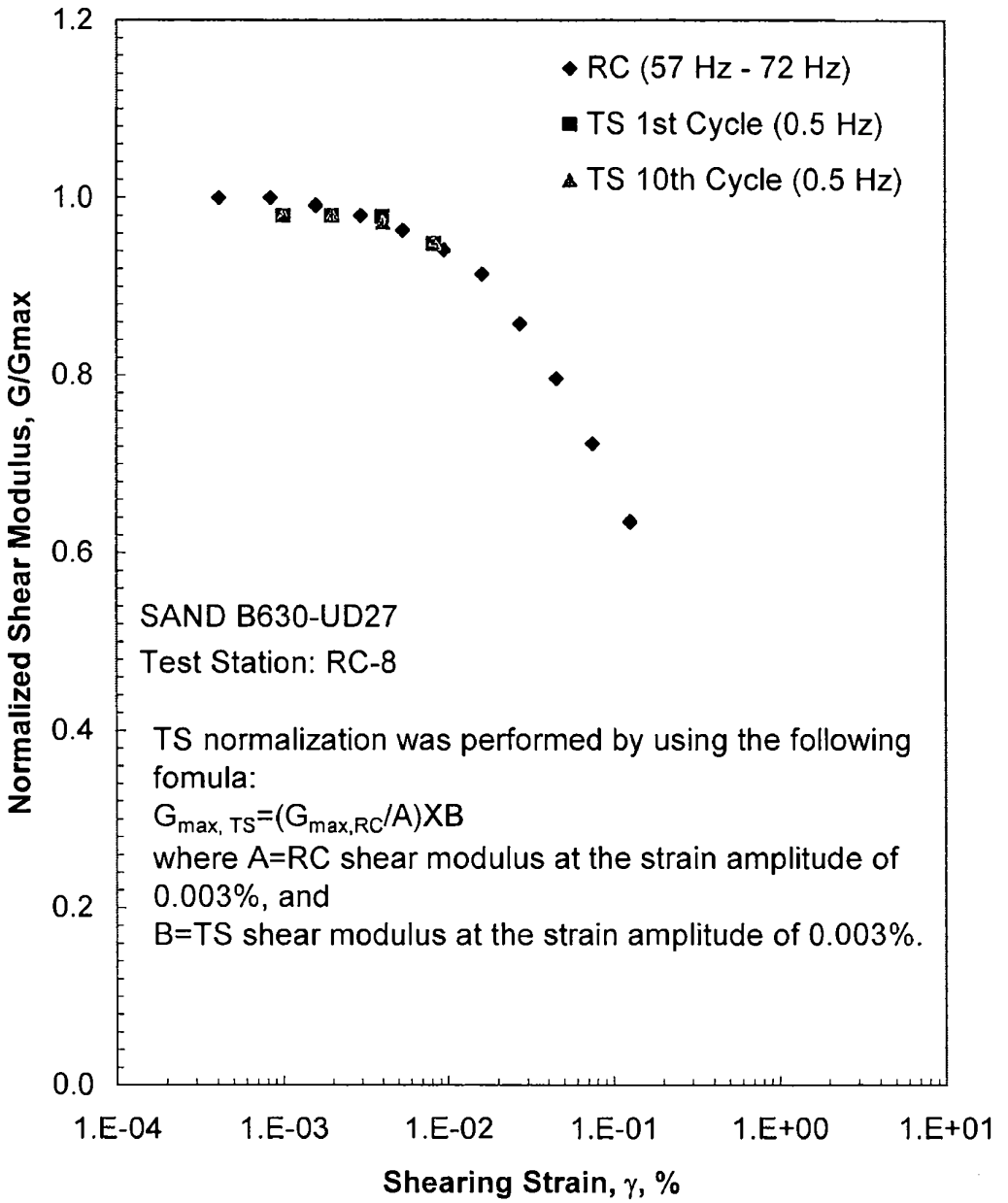


Figure G.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 84 psi from the Combined RCTS Tests

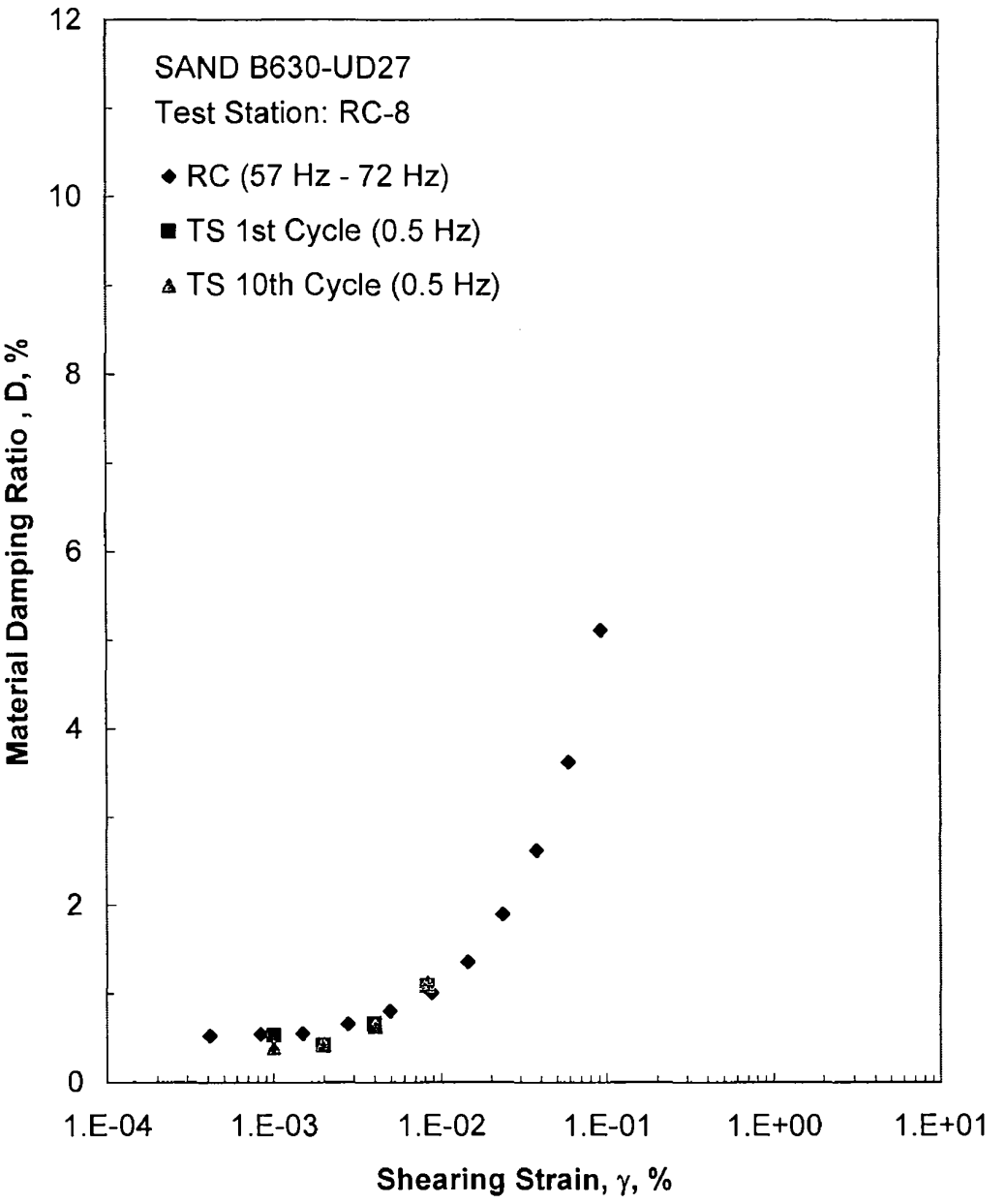


Figure G.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 84 psi from the Combined RCTS Tests

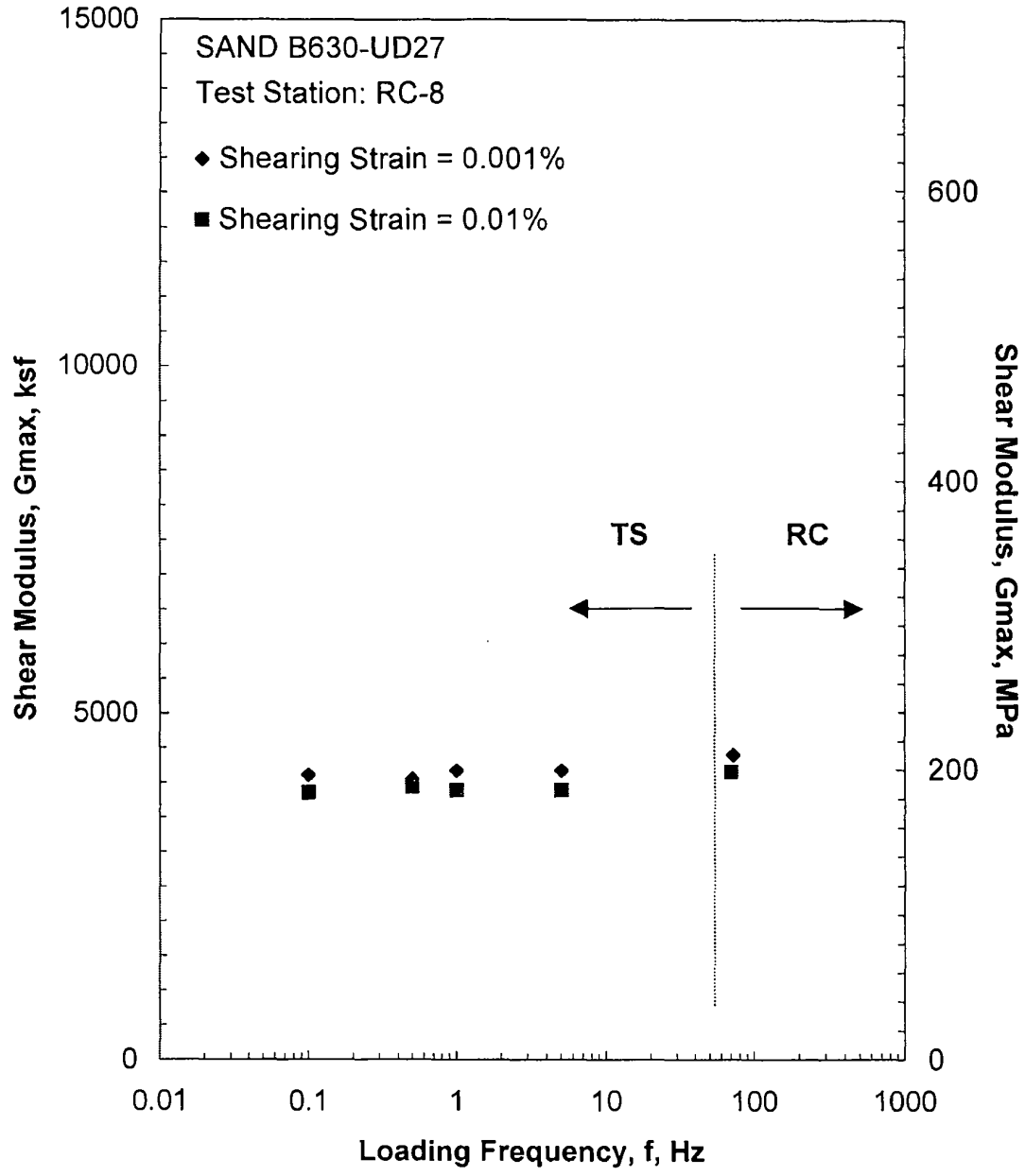


Figure G.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 84 psi from the Combined RCTS Tests

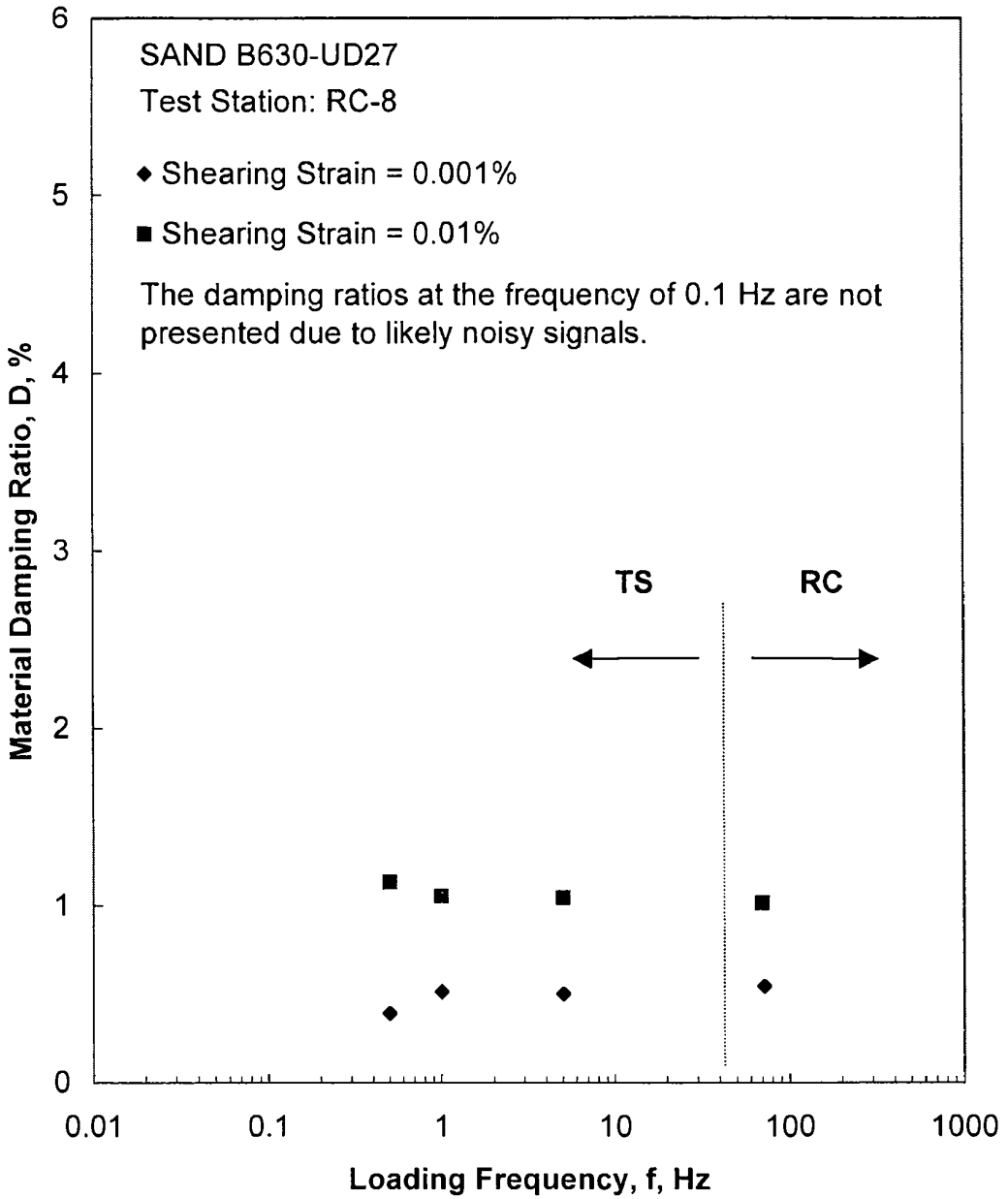


Figure G.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 84 psi from the Combined RCTS Tests

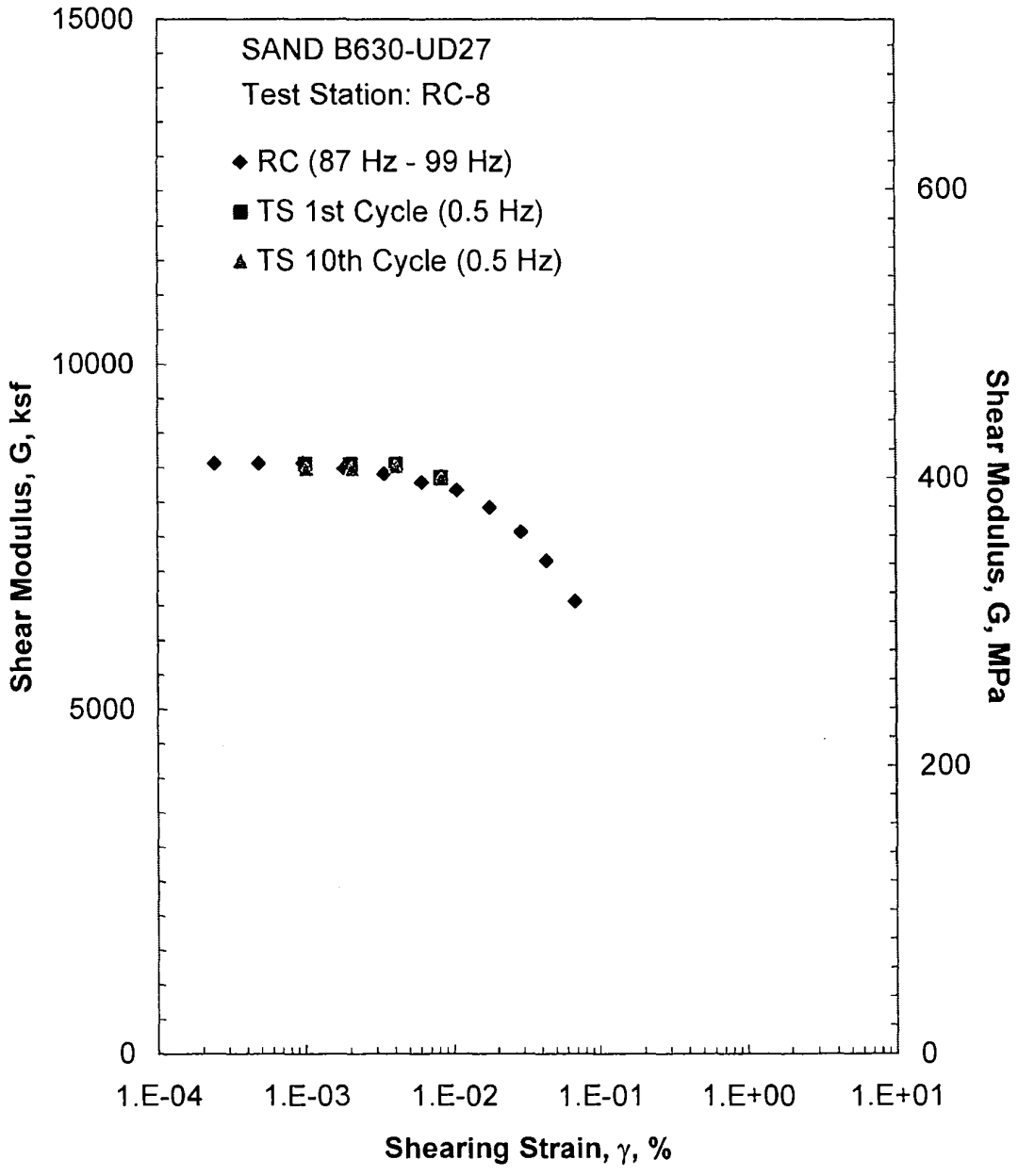


Figure G.16 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 338 psi from the Combined RCTS Tests

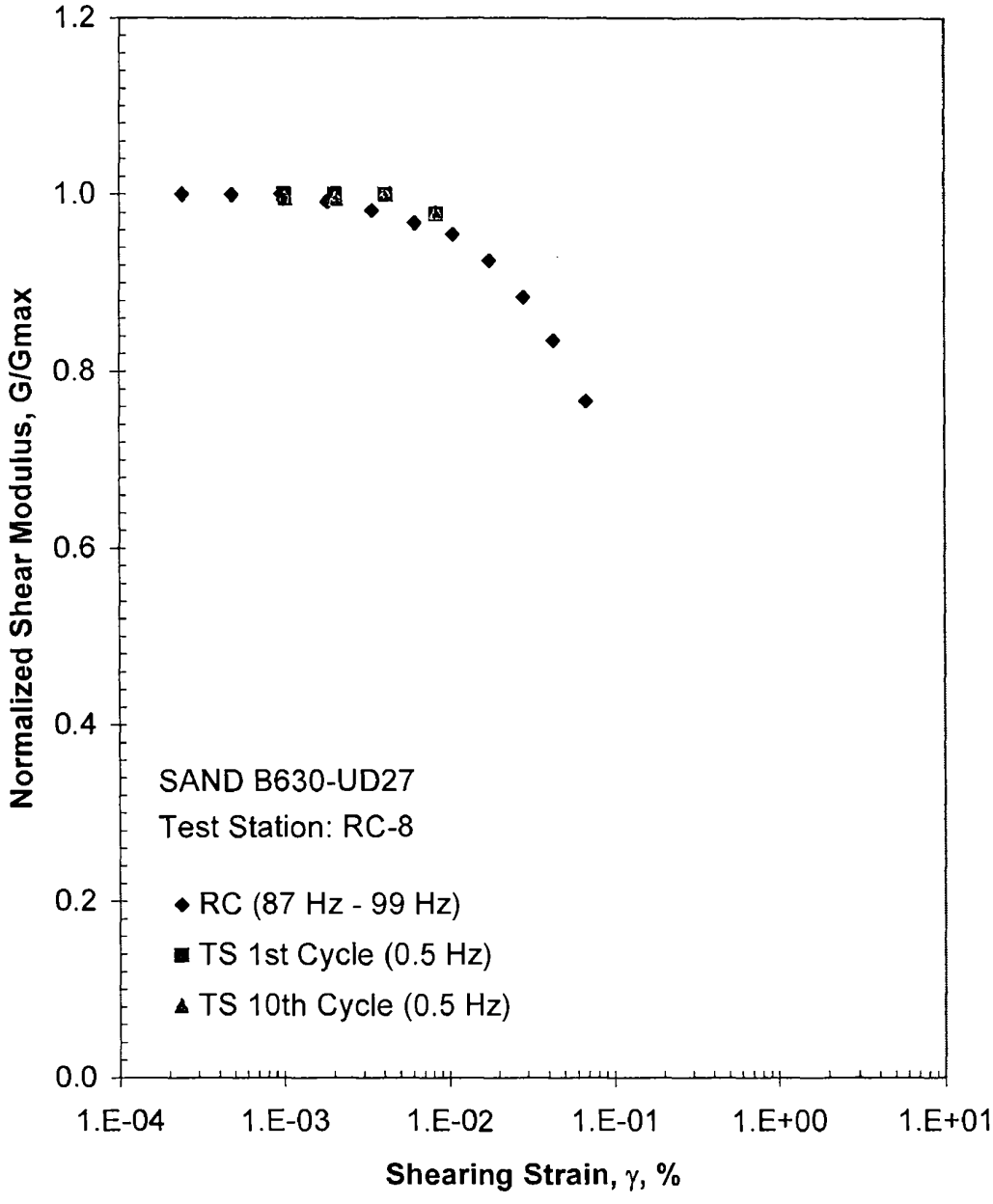


Figure G.17 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 338 psi from the Combined RCTS Tests

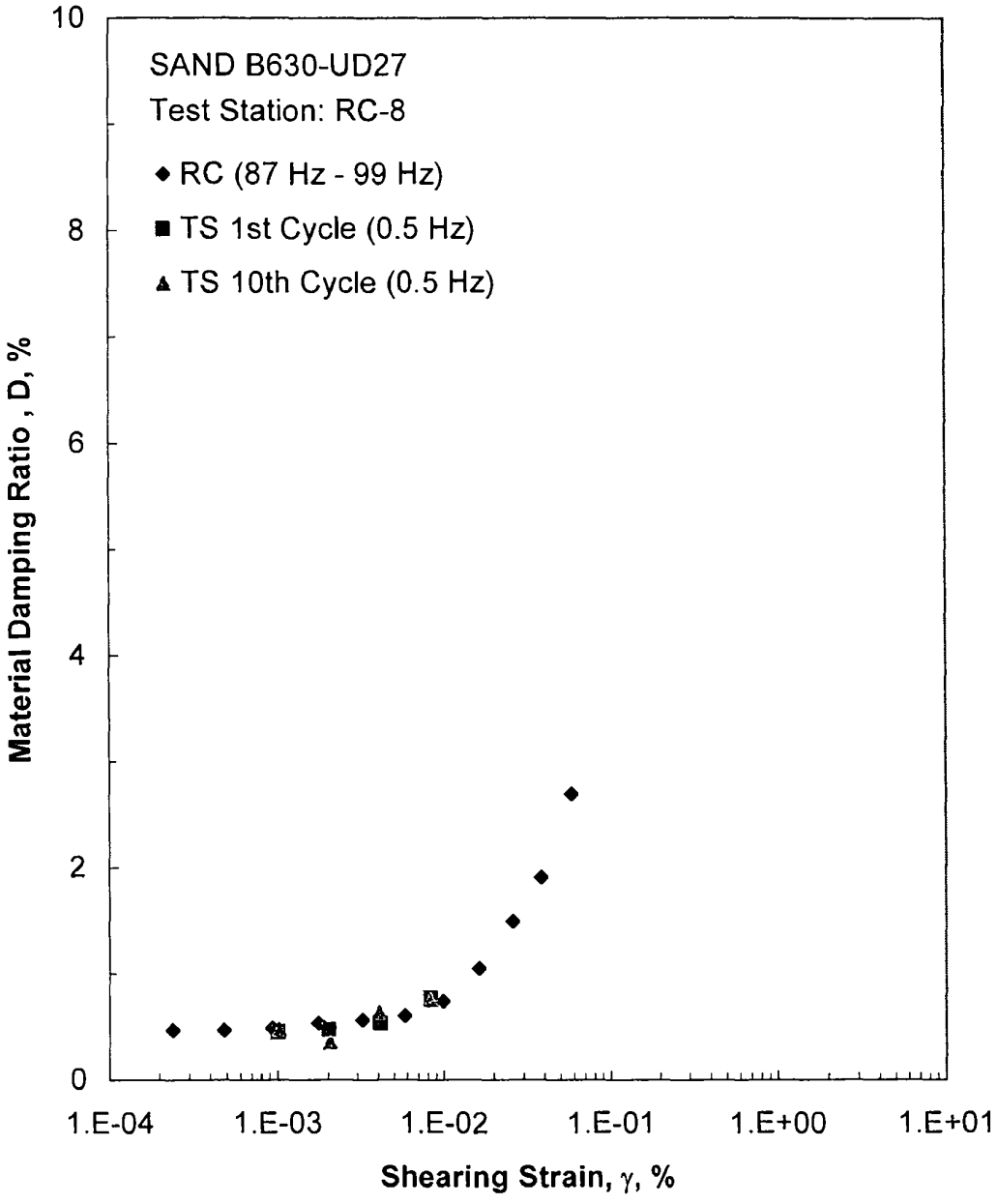


Figure G.18 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 338 psi from the Combined RCTS Tests

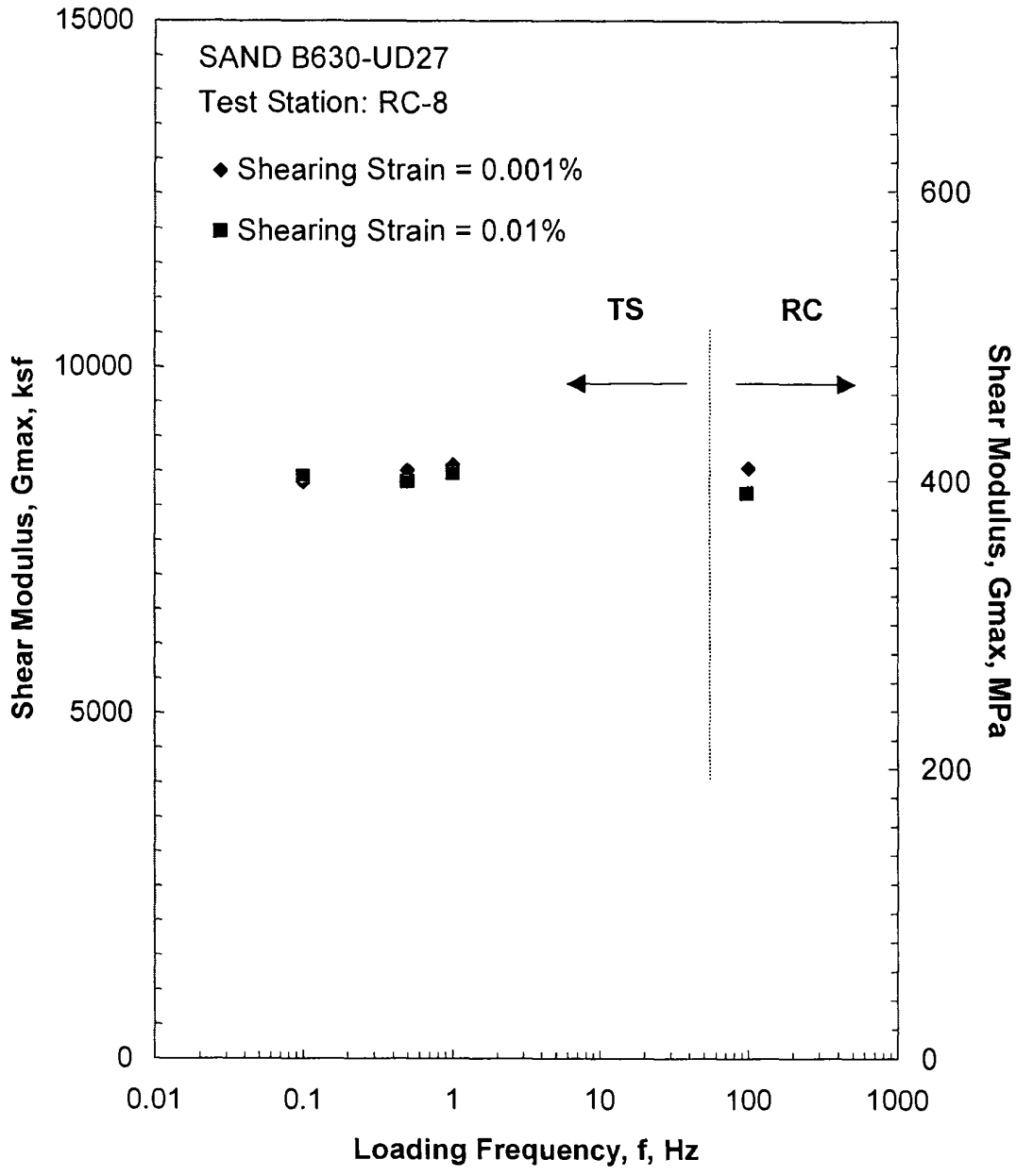


Figure G.19 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 338 psi from the Combined RCTS Tests

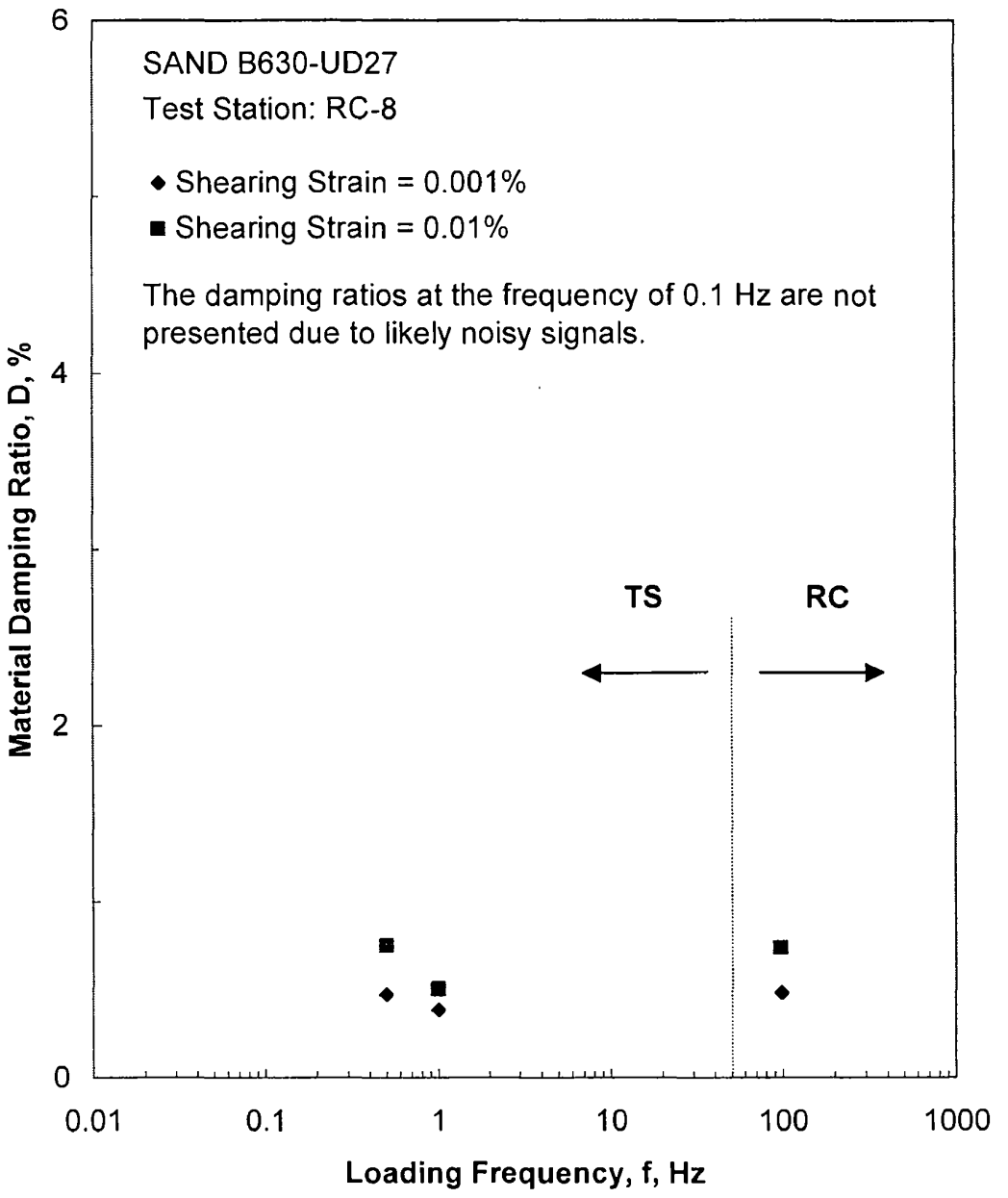


Figure G.20 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 338 psi from the Combined RCTS Tests

Table G.1 Variation in Low-Amplitude Shear Wave Velocity, Low-Amplitude Shear Modulus, Low-Amplitude Material Damping Ratio and Estimated Void Ratio with Isotropic Confining Pressure from RC Tests of Specimen B630-UD27

Isotropic Confining Pressure, σ_o			Low-Amplitude Shear Modulus, G_{max}		Low-Amplitude Shear Wave Velocity, Vs	Low-Amplitude Material Damping Ratio, Dmin	Estimated Void Ratio, e
(psi)	(psf)	(kPa)	(ksf)	(MPa)	(fps)	(%)	
21	3024	145	2246	108	771	0.87	0.71
42	6048	289	3108	149	905	0.86	0.70
84	12096	579	4401	211	1075	0.52	0.69
169	24336	1164	6283	302	1279	0.50	0.68
338	48672	2329	8549	410	1485	0.47	0.67

Table G.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD27; Isoptropic Confining Pressure, σ_o= 84 psi (12.1 ksf = 579 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
4.10E-04	4404	1.00	4.10E-04	0.52
8.37E-04	4404	1.00	8.37E-04	0.54
1.58E-03	4367	0.99	1.50E-03	0.55
2.94E-03	4318	0.98	2.77E-03	0.66
5.34E-03	4244	0.96	4.96E-03	0.81
9.49E-03	4147	0.94	8.73E-03	1.01
1.61E-02	4026	0.91	1.45E-02	1.36
2.71E-02	3780	0.86	2.35E-02	1.89
4.50E-02	3508	0.80	3.78E-02	2.62
7.47E-02	3183	0.72	5.90E-02	3.62
1.27E-01	2797	0.63	9.28E-02	5.11

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table G.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD27; Isotropic Confining Pressure, σ_o= 84 psi (12.1 ksf = 579 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
1.00E-03	4074	0.98	0.53	1.00E-03	4061	0.98	0.39
1.98E-03	4074	0.98	0.42	1.99E-03	4061	0.98	0.42
3.99E-03	4068	0.98	0.66	4.03E-03	4027	0.97	0.63
8.23E-03	3942	0.95	1.09	8.25E-03	3933	0.95	1.13

Table G.4 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen B630-UD27; Isoptropic Confining Pressure, σ_o= 338 psi (48.7 ksf = 2329 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
2.41E-04	8564	1.00	2.41E-04	0.47
4.81E-04	8564	1.00	4.81E-04	0.47
9.67E-04	8564	1.00	9.28E-04	0.48
1.83E-03	8495	0.99	1.75E-03	0.53
3.39E-03	8413	0.98	3.22E-03	0.56
6.12E-03	8291	0.97	5.82E-03	0.60
1.06E-02	8180	0.96	9.92E-03	0.74
1.76E-02	7925	0.93	1.62E-02	1.04
2.88E-02	7566	0.88	2.59E-02	1.49
4.30E-02	7151	0.84	3.83E-02	1.90
6.79E-02	6562	0.77	5.77E-02	2.69

[+] Average Shearing Strain from the First Three Cycles of the Free Vibration Decay Curve

[x] Average Damping Ratio from the First Three Cycles of the Free Vibration Decay Curve

Table G.5 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen B630-UD27; Isotropic Confining Pressure, σ_o= 338 psi (48.7 ksf = 2329 kPa)

First Cycle				Tenth Cycle			
Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %	Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Material Damping Ratio, D, %
1.01E-03	8551	1.00	0.45	1.02E-03	8486	1.00	0.47
2.03E-03	8551	1.00	0.47	2.05E-03	8486	1.00	0.35
4.10E-03	8551	1.00	0.53	4.07E-03	8523	1.00	0.63
8.31E-03	8362	0.98	0.77	8.32E-03	8352	0.98	0.75

FINAL DATA REPORT Rev. 2
GEOTECHNICAL EXPLORATION AND TESTING

TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA

October 6, 2008

VOLUME 4
Appendix G – Groundwater Data

Prepared By:

MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina

MACTEC Project No. 6468-07-1950

Prepared For:

Bechtel Power Corporation
Subcontract No. 25409-102-HC4-CY00-00001

Contents

Well Construction Permits
Observation Well Records
Well Development Records
Well Sampling Records
Laboratory Test Reports
Slug Test Data Forms

Well Construction Permits

To: Tom McDaniel

Folio #: 30-7031-000-0010

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-7671
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/ Application No.
WUP

1. Florida Power & Light Co 9700 SW 344th Street Florida City 33034 3052466402
Owner, Legal Name of Entity if Corporation — Address — City — Zip — Telephone Number
Attn Ed Paula
2. Turkey Point Nuclear Generating Station 9760 SW 344th Street Florida City FL 33035
Well Location — Address, Road Name or Number, City
3. MACTEC Engineering & Consulting Inc - Philip Pitts FL # 11035 404 8734761
Well Drilling Contractor — License No. — Telephone No.
396 Plasters Ave
Address
4. SW (Quarter) 1/4 of NW (Quarter) 1/4 of Section 34
Atlanta GA 30324
City — State — Zip
5. Township 57S Range 40E
(Indicate Well on Chart)
6. Miami Dade N/A N/A N/A N/A
County — Subdivision Name — Lot — Block — Unit

NW NE SW SE

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation Well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility ____ Estimated start of construction date 5/21/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment) Date Sealed

9. Estimated: Well Depth 130'+1' Sump Casing Depth 120' Screen Interval from 120'
Casing Material: Blk-Steel / Gal / (PVC) Casing Diameter 2" Seal Material Sel Grout

10. If applicable: Proposed Grouting Interval From 120 to 131 Seal Material 16/20 Silica Sand
From 117 to 120 Seal Material Bentonite
From 0 to 117 Seal Material Portland/Bentonite slurry

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized (PVC) Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
____ Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 20 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ____ Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27 ____ NAD 83 ____)

APPROVED
MIAMI-DADE COUNTY HEALTH DEPARTMENT
PERMIT #: 13-59-7671
5-23-08

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

OW 606 D
DA North
N
West
East
South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit. If needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that all necessary approval from other federal, state, or local governments, if applicable, I agree to provide a well completion report to the District within 30 days after drilling of the well is completed, whether or not I am

I certify that I am the owner of this property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner accepts no personal or the WMD or a representative access to the well site.

Signature of Contractor — License No. 11035 — Owner or Agent's Signature — Date 5/20/08

DO NOT WRITE BELOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: Astrid Edwards Issue Date: 5-23-08 Hydrologist Approval ____ (Initials)
Owner Number: ____ Fee Received: $ 50 Receipt No.: IO805204308 Check No.: ____
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0129 Rev. 4/95

13-WD-34019 IO805204308

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-7743
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta | Georgia | 30324
City | State | Zip

4. SW (smallest) 1/4 of NW (biggest) 1/4 of Section 34

(Indicate Well on Chart)

NW	NE
X	
SW	SE

5. Township 57S Range 40E

6. Miami-Dade | N/A | N/A | N/A | N/A
County | Subdivision Name | Lot | Block | Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ Date Slurry
(Reason for Abandonment)

9. Estimated: Well Depth 101* ft Casing Depth 90 ft Screen Interval from 90 to 100
Casing Material: Blk-Steel / Gal / PVC rvc Casing Diameter 2" Seal Material see below

10. If applicable: Proposed Grouting Interval
From 88 to 100 Seal Material 10/20 silica sand
From 83 to 85 Seal Material Bentonite
From 0 to 83 Seal Material Portland/bentonite slurry

*Well will be installed with a one-foot stickup

APPROVED
Permit no. 13-59-7743
Date: 2-19-08
Miami-Dade County
Health Department

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27 ____ NAD 83 ____)

North

OW-606L

see attached drawings for proposed well locations

West East

South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governmental, if applicable. I agree to provide a well completion report to the District within 30 days after drilling and a pump installation report if it occurs first.

Signature of Contractor 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner and the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature 2/15/08 Date

DO NOT WRITE BELOW THIS LINE. FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____

Owner Number: ____ Fee Received: $ 50 Receipt No.: To802546 Check No.: 52453 4
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

Fax #: 919-831-8136

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM *MUST* BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-4741
Florida Unique I.D. 30-7034-02-0010
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No. _____

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached 8760 SW 344th St Homestead FL 33035
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta | Georgia | 30324
City | State | Zip

4. SW (smallest) 1/4 of NW (biggest) 1/4 of Section 34
(Indicate Well on Chart)

5. Township 57S Range 40E

NW	NE
X	
SW	SE

6. Miami-Dade | N/A | N/A | N/A | N/A
County | Subdivision Name | Lot | Block | Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) _____ Domestic Monitor (type) Observation well
_____ Irrigation (type) (See Back) Public Water Supply (type) _____ (See Back) List Other _____
Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction _____ Repair/Modify _____ Abandonment _____ (Reason for Abandonment)

9. Estimated: Well Depth 26* ft Casing Depth 15 ft Screen Interval from 15 to 25
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

*Well will be installed with a one-foot sump

10. If applicable: Proposed Grouting Interval
From 13 to 25 Seal Material 10/20 silica sand
From 10 to 13 Seal Material Bentonite
From 0 to 10 Seal Material Portland/bentonite slurry

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): _____

12. Method of Construction: X Rotary _____ Cable Tool _____ Combination
X Auger _____ Other (specify:) _____)

13. Indicate total No. of wells on site 0 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ____ or map ____ or survey ____ *(map datum NAD 27____ NAD 83____)*

Date Stamp
APPROVED
Permit No. 13-59-4741
Date 2-19-08
Miami-Dade County
Health Department

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

North
OW-606U
N
West
see attached drawings for proposed well locations
East
South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after drilling or the permit expiration, whichever occurs first.

Signature of Contractor — License No. 11035

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner's consent to presential of the WMD or a representative access to the well site.

Owner's or Agent's Signature — Date 2/19/08

DO NOT WRITE BELOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: Astrid Edwards Issue Date: 2-19-08 Hydrologist Approval _____ Initials

Owner Number: _____ Fee Received: $ 50 Receipt No.: I080215406 Check No.: 524534
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0128 Rev. 4/95

13-WD-33815 I080215406 DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-2742
Florida Unique I.D. _____
Permit Stipulations Required (See attached)
62-524 wall ☐
CUP/WUP Application No. _____

1. Florida Power and Light Company, Attn: Mr. Ed Paula — 9700 SW 344 Street — Florida City — 33034 — 305-246-6407
   Owner, Legal Name of Entity if Corporation — Address — City — Zip — Telephone Number
2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
   Well Location — Address, Road Name or Number, City
3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 — 404-873-4761
   Well Drilling Contractor — License No. — Telephone No.
   396 Plasters Avenue
   Address
   Atlanta — Georgia — 30324
   City — State — Zip
4. NW (smallest) 1/4 of NW (biggest) 1/4 of Section 34
   (Indicate Well on Chart)
5. Township 57S Range 40E
6. Miami-Dade — N/A — N/A — N/A — N/A
   County — Subdivision Name — Lot — Block — Unit

NW NE X SW SE

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) _____ Domestic Monitor (type) Observation well
   _____ Irrigation (type) (See Back) Public Water Supply (type) _____ (See Back) List Other _____
   Distance from septic system N/A ft. Description of facility Jet. wastewater discharge area Estimated start of construction date 2/19/08
8. Application for: X New Construction ____ Repair/Modify ____ Abandonment _____ (Reason for Abandonment)
9. Estimated: Well Depth 101* ft Casing Depth 90 ft Screen Interval from 90 to 100
   Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below
   *Well will be installed with a one-foot sump
10. If applicable: Proposed Grouting Interval
    From 88 to 100 Seal Material 10/20 silica sand
    From 85 to 85 Seal Material Bentonite
    From 0 to 83 Seal Material Portland/bentonite slurry
11. Telescope Casing ____ or Liner X (check one) Diameter 2"
    Blk-Steel / Galvanized / PVC PVC Other (specify): _____
12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
    X Auger ____ Other (specify:) _____
13. Indicate total No. of wells on site 0 List number of unused wells on site 0
14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
    (If yes, complete the following) CUP/WUP No. N/A
    District well I.D. No. N/A
    Latitude N/A Longitude N/A
    Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27 ____ NAD 83 ____)

APPROVED
Permit no. 13-59-2742
Date 2-19-08
Miami-Dade County Health Department

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

North
OW-621L
see attached drawings for proposed well locations
West
East
South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments. If applicable, I agree to provide a well completion report to the District within 30 days after drilling or the termination of abandonment, whichever occurs first.

Signature of Contractor — 11035 Licensee No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personal of the WMD or a representative access to the well site.

Owner or Agent's Signature — 2/19/08 Date

DO NOT WRITE BELOW THIS LINE FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDUARDES Issue Date: 2-19-08 Hydrologist Approval _____ Initials
Owner Number: _____ Fee Received: $ 50 Receipt No.: T0802150426 Check No.: 52-45 34
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-2744
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City | State | Zip

4. NW (smallest) 1/4 of NW (biggest) 1/4 of Section 34
(Indicate Well on Chart)

5. Township 57S Range 40E

6. Miami-Dade N/A N/A N/A N/A
County | Subdivision Name | Lot | Block | Unit

NW NE
X
SW SE

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other:
Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ Date Started
(Reason for Abandonment)

9. Estimated: Well Depth 26* ft Casing Depth 15 ft Screen Interval from 15 to 25
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

10. If applicable: Proposed Grouting Interval
From 13 to 25 Seal Material 10/20 silica sand
From 10 to 13 Seal Material Bentonite
From 0 to 10 Seal Material Portland/bentonite slurry
*Well will be installed with a one-foot sump

APPROVED
Permit no. 13-59-2744
Date 2-19-08
Miami-Dade County
Health Department

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify):

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0, List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ___ or map ___ or survey ___ (map datum NAD 27___ NAD 83___)

North
OW-621U
see attached drawings for proposed well locations
West
East
South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments. I certify that I agree to provide a well completion report to the District within 30 days after drilling, plus pump installation, is finished, or sooner if required.

11035
Signature of Contractor | License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

2/19/08
Owner's or Agent's Signature | Date

DO NOT WRITE BELOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____

Owner Number: ____ Fee Received: $ 50 Receipt No.: To02154z6 Check No.: 524534
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-7446
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula — 9700 SW 344 Street — Florida City — 33034 — 305-246-6407
   Owner, Legal Name of Entity if Corporation — Address — City — Zip — Telephone Number
2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
   Well Location — Address, Road Name or Number, City
3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 — 404-873-4761
   Well Drilling Contractor — License No. — Telephone No.
   396 Plasters Avenue
   Address
   Atlanta — Georgia — 30324
   City — State — Zip
4. SE (smallest) 1/4 of SE (biggest) 1/4 of Section 34
5. Township 57S Range 40E

(Indicate Well on Chart)

NW	NE
SW	SE (X)

6. Miami-Dade | N/A | N/A | N/A | N/A
   County — Subdivision Name — Lot — Block — Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
   ____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
   Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08
8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)
9. Estimated: Well Depth 101* ft Casing Depth 90 ft Screen Interval from 90 to 100
   Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below
   *Well will be installed with a one-foot sump
10. If applicable: Proposed Grouting Interval
    From 88 to 100 Seal Material 10/20 silica sand
    From 83 to 85 Seal Material Bentonite
    From 0 to 83 Seal Material Portland/bentonite slurry
11. Telescope Casing ____ or Liner X (check one) Diameter 2"
    Blk-Steel / Galvanized / PVC PVC Other (specify): ____
12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
    X Auger ____ Other (specify:) ____
13. Indicate total No. of wells on site 0 List number of unused wells on site 0
14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
    (If yes, complete the following) CUP/WUP No. N/A
    District well I.D. No. N/A
    Latitude N/A Longitude N/A
    Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27 ____ NAD 83 ____)

APPROVED
Permit no. 13-59-7446
Date: 7-19-08
Miami-Dade County
Environmental Resources Management

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

North

OW-636L

West — see attached drawings for proposed well locations — East

South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if required, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that all work will be performed in accordance with other federal, state, or local governments. If applicable, I agree to provide a well completion report to the District within 30 days after drilling or test pumping, whichever occurs first.

Signature of Contractor — License No. 11035

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to permit entry of the WMD or a representative access to the well site.

Owner's or Agent's Signature — Date 2/19/08

DO NOT WRITE BELOW THIS LINE -- FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 7-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 50 Receipt No.: D080215406 Check No.: 52 45 34

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM **MUST** BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13159-7245
Florida Unique I.D.
Permit Stipulations Required (See attached)
82-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City | State | Zip

4. SE (smallest) 1/4 of SE (biggest) 1/4 of Section 34

5. Township 57S Range 40E

(Indicate Well on Chart)

NW NE SW SE — X

8. Miami-Dade | N/A | N/A | N/A | N/A
County | Subdivision Name | Lot | Block | Unit

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 26" ft Casing Depth 15 ft Screen Interval from 15 to 25
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

10. If applicable: Proposed Grouting Interval
From 13 to 25 Seal Material 10/20 silica sand
From 7ft to 13 Seal Material Bentonite
From 0 to 10 Seal Material Portland/bentonite slurry
*Well will be installed with a one-foot sump

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify: ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ___ or map ___ or survey ___ (map datum NAD 27___ NAD 83___)

APPROVED
Permit No. 13159-7245
Date: 2-19-08
Miami-Dade County Health Department

Draw a map of well location and indicate well site within "X". Identify known roads and landmarks; provide distances between well and landmarks.

North
OW-636U
West
see attached drawings for proposed well locations
East
South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments. If applicable, I agree to provide a well completion report to the District within 30 days after completion of the well construction, or the permit occurs first.

Signature of Contractor 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature 2/19/08 Date

DO NOT WRITE BELOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 50 Receipt No.: L0802546 Check No.: 524534
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

To: TOM MCDANIEL

FAX: 305-876-1799

Folio #: 30-7033-004-0010

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-7697
Florida Unique I.D.
Permit Stipulations Required (See attached)
52-524 well ☐
SWFI Application No.

1. Florida Power & Light Co. 9700 SW 344 St Attn Ed Paula Florida City 33034 305 246 6407
Owner, Legal Name of Entity if Corporation — Address — City — Zip — Telephone Number

2. Turkey Point Nuclear Generating Station 9760 SW 344th Street Florida City FL 33035
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering & Consulting Inc - Philip Pitts FL # 11035 404 873 4761
Well Drilling Contractor — License No. — Telephone No.

396 Plasket Ave
Address

Atlanta GA 30324
City — State — Zip

4. NE (Location) 1/4 of SE (Direction) 1/4 of Section 33

5. Township 57 S Range 40 E

(Indicate Well on Chart)

NW NE SW SE — X

6. Miami-Dade N/A N/A N/A N/A
County — Subdivision Name — Lot — Block — Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation Well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility ____ Estimated start of construction date 5/21/08

8. Application for: ____ New Construction ____ Repair/Modify ____ Abandonment ____
(Reason for Abandonment)

9. Estimated: Well Depth 130'+1' Sump Casing Depth 120' Screen Interval from 120 to 130
Casing Material: Blk-Steel / Gal / PVC Casing Diameter 2" Seal Material Sand

10. If applicable: Proposed Grouting Interval From 120 to 131 Seal Material 10/20 Silica Sand
From 117 to 120 Seal Material Bentonite
From 0 to 117 Seal Material Portland/Bentonite Slurry

11. Telescope Casing ____ or Liner ____ (check one) Diameter ____
Blk-Steel / Galvanized / PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
____ Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 20 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ____ Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27 ____ NAD 83 ____)

Draw a map of well location and features near the well site with an "X", identify known roads and landmarks; provide distances between well and landmarks.

OW706 D

North — West — East — South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of activities. I further certify that all information provided on this application is accurate. Further, I will obtain necessary approval from other federal, state, or local governments. I also agree to provide a well completion report to the District within 30 days after drilling or the plugging operation, whichever comes first.

Signature of Contractor — 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. I/we consent to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature — 5/20/08 Date

DO NOT WRITE BELOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 5-23-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 60 Receipt No.: I080520430 Check No.: ____
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

13-WD-3409

I080520430

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-2248
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

Fold at this line in order that address is visible through envelope window

1. Florida Power and Light Company, Attn: Mr. Ed Pauls 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation — Address — City — Zip — Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor — License No. — Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City State Zip

4. NE (smallest) 1/4 of SE (biggest) 1/4 of Section 33

5. Township 57S Range 40E

(Indicate Well on Chart)

NW	NE
	X
SW	SE

6. Miami-Dade | N/A | N/A | N/A | N/A
County — Subdivision Name — Lot — Block — Unit

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

Date Stamp
APPROVED
Permit no. 13-59-2248
Date: 2-19-08
Miami-Dade County
Public Health Department

9. Estimated: Well Depth 101* ft Casing Depth 90 ft Screen Interval from 90 to 100
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

*Well will be installed with a one-foot sump

10. If applicable: Proposed Grouting Interval
From 88 to 100 Seal Material 10/20 silica sand
From 83 to 85 Seal Material Bentonite
From 0 to 83 Seal Material Portland/bentonite slurry

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27 ____ NAD 83 ____)

Draw a map of well location and indicate well site with clear reference. Identify known roads and landmarks; provide distances between well and landmarks.

North

OW-706L

West — see attached drawings for proposed well locations — East

South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after drilling or the permit expiration, whichever occurs first.

Signature of Contractor — License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature — Date: 2/15/08

DO NOT WRITE BELOW THIS LINE - FOR OFFICIAL USE ONLY

Approval Granted By: ALFRED EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 60 Receipt No.: T080215446 Check No.: 524534

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. *This permit is valid for 90 days from date of issue.*

Form 0123 Rev. 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13259-2747
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City State Zip

4. NE (enter) 1/4 of SE (highest) 1/4 of Section 33
(Indicate Well on Chart)

5. Township 57S Range 40E

NW NE
X
SW SE

6. Miami-Dade | N/A | N/A | N/A | N/A
County | Subdivision Name | Lot | Block | Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Ind., wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

Date Stamp
APPROVED
Permit no. 13259-2747
Date 2-19-08
Miami-Dade County Health Department

9. Estimated: Well Depth 26* ft Casing Depth 15 ft Screen Interval from 15 to 25
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below
*Well will be installed with a one-foot sump

10. If applicable: Proposed Grouting Interval From 13 to 25 Seal Material 10/20 silica sand
From 10 to 13 Seal Material Bentonite
From 0 to 10 Seal Material Portland/bentonite slurry

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

North

OW-706U

West — see attached drawings for proposed well locations — East

South

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0, List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___ Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ___ or map ___ or survey ___ (map datum NAD 27 ___ NAD 83 ___)

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if required, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that all necessary approval from other federal, state, or local governments, if applicable, agree to provide a well completion report to the District within 30 days after drilling the permit expiration, whichever occurs first.

Signature of Contractor 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personal or the WMD or a representative access to the well site.

Owner's or Agent's Signature 2/15/08 Date

DO NOT WRITE BELOW THIS LINE -- FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 50 Receipt No.: T080215046 Check No.: 523534

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/96

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM *MUST* BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13159-7760
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation — Address — City — Zip — Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor — License No. — Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City — State — Zip

4. SE (smallest) 1/4 of NE (largest) 1/4 of Section 33
(Indicate Well on Chart)

5. Township 57S Range 40E

6. Miami-Dade N/A N/A N/A N/A
County — Subdivision Name — Lot — Block — Unit

NW NE X SW SE

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells: 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 101* ft Casing Depth 90 ft Screen Interval from 90 to 100
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below
*Well will be furnished with a one-foot sump

10. If applicable: Proposed Grouting Interval From 88 to 100 Seal Material 10/20 silica sand
From 83 to 85 Seal Material Bentonite
From 0 to 83 Seal Material Portland/bentonite slurry

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify: ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0. List number of unused wells on site 0.

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ___ or map ___ or survey ___ (map datum NAD 27___ NAD 83___)

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

North

OW-721L

West — see attached drawings for proposed well locations — East

South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if required, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after drilling the well permit, abandonment, or plugging is complete.

Signature of Contractor — License No. 11035

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to permitted entry of the WMD or a representative access to the well site.

Owner's or Agent's Signature — Date 2/5/08

DO NOT WRITE BELOW THIS LINE FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 60 Receipt No.: T080215006 Check No.: 52145341

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

REVISED 12/07

APPROVED
permit no. 13159-7760
Date: 2-19-08
Miami-Dade County
Health Department

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM *MUST* BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-2749
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/ WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Pauls 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City | State | Zip

4. SE (smallest) 1/4 of NE (biggest) 1/4 of Section 33

(Indicate Well on Chart)

5. Township 57S Range 40E

NW NE X SW SE

6. Miami-Dade | N/A | N/A | N/A | N/A
County | Subdivision Name | Lot | Block | Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Ind, wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 26* ft Casing Depth 15 ft Screen Interval from 15 to 25
Casing Material: Blk-Steel / Gal / PVC pvc Casing Diameter 2" Seal Material see below

*Well will be installed with a one-foot sump

10. If applicable: Proposed Grouting Interval
From 13 to 25 Seal Material 10/20 silica sand
From 10 to 13 Seal Material Bentonite
From 0 to 10 Seal Material Portland/bentonite slurry

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify: ____)

13. Indicate total No. of wells on site 0, List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ___ or map ___ or survey ___ (*map datum NAD 27* ___ NAD 83 ___)

APPROVED
Permit no. 13-59-2749
Date: 2-19-08
Miami-Dade County Health Department

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

North

OW-721U

see attached drawings for proposed well locations

West East South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if required, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governmental jurisdictions, if applicable. I agree to provide a well completion report to the District within 30 days after drilling or physical construction, whichever occurs first.

Signature of Contractor 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature 2/19/08 Date

DO NOT WRITE BELOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 50 Receipt No.: T08021546 Check No.: 524534
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. B-59-7752
Florida Unique I.D.
Permit Stipulations Required (See attached)
82-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation — Address — City — Zip — Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor — License No. — Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City — State — Zip

4. SW (nearest) 1/4 of SE (closest) 1/4 of Section 33

(Indicate Well on Chart)

NW NE
X
SW SE

5. Township 57S Range 40E

6. Miami-Dade N/A N/A N/A N/A
County — Subdivision Name — Lot — Block — Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Test wastewater disposal area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

Date Stamp
APPROVED
Permit no. B-59-225
Date 2-19-08
Miami-Dade County Department

9. Estimated: Well Depth 101* ft Casing Depth 90 ft Screen Interval from 90 to 100
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

*Well will be installed with a one-foot sump

10. If applicable: Proposed Grouting Interval
From 88 to 100 Seal Material 10/20 silica sand
From 83 to 85 Seal Material Bentonite
From 0 to 83 Seal Material Portland/bentonite slurry

Draw a map of well location and indicate well site with arrow. Identify known roads and landmarks; provide distances between well and landmarks.

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0. List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ____ Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27 ____ NAD 83 ____)

North
OW-735L
West
see attached drawings for proposed well locations
East
South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments. If application is approved, I agree to provide a well completion report to the District within 30 days after drilling of the permit expiration, if no work occurs then.

Signature of Contractor — 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to the entry of the WMD or a representative access to the well site.

Owner's or Agent's Signature — 2/15/08 Date

DO NOT WRITE BELOW THIS LINE - FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____

Owner Number: ____ Fee Received: $ 60 Receipt No: E080225446 Check No.: 524534 Initials

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM *MUST* BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. B-59-7751
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

Fold at this line in order that address is visible through envelope window

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
   Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number
2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
   Well Location — Address, Road Name or Number, City
3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
   Well Drilling Contractor | License No. | Telephone No.
   396 Plasters Avenue
   Address
   Atlanta Georgia 30324
   City | State | Zip
4. SW (smallest) 1/4 of SE (largest) 1/4 of Section 33
   (Indicate Well on Chart)
5. Township 57S Range 40E

NW	NE
SW	X SE

6. Miami-Dade | N/A | N/A | N/A | N/A
   County | Subdivision Name | Lot | Block | Unit

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
   ____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
   Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 26* ft Casing Depth 15 ft Screen Interval from 15 to 25
   Casing Material: Blk-Steel / Gal / PVC rvc Casing Diameter 2" Seal Material see below
   *Well will be installed with a one-foot sump

10. If applicable: Proposed Grouting Interval From 13 to 25 Seal Material 10/20 silica sand
    From 10 to 13 Seal Material Bentonite
    From 0 to 10 Seal Material Portland/bentonite slurry

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
    Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
    X Auger ____ Other (specify:) ____)

13. Indicate total No. of wells on site 0. List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
    (If yes, complete the following) CUP/WUP No. N/A
    District well I.D. No. N/A
    Latitude N/A Longitude N/A
    Data obtained from GPS ___ or map ___ or survey ___ (map datum NAD 27___ NAD 83___)

Date Stamp: APPROVED Permit no. B-59-7751 Date: 2-19-08 Miami-Dade County Public Works Department

Draw a map of well location and indicate well site with at least two identifiable known roads and landmarks; provide distances between well and landmarks.

North
OW-735U
N
West
see attached drawings for proposed well locations
East
South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments. If applicable, I agree to provide a well completion report to the District within 30 days after drilling of the permitted well, unless otherwise specified.

Signature of Contractor 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature 1/15/08 Date

DO NOT WRITE BELOW THIS LINE FOR OFFICIAL USE ONLY

Approval Granted By: Astrid Edwards Issue Date: 2-19-08 Hydrologist Approval ____ Initials
Owner Number: ____ Fee Received: $ 50 Receipt No.: 108215166 Check No.: 524534
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-2254
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City | State | Zip

4. NE (actual/req) 1/4 of NE (biggest) 1/4 of Section 34

5. Township 57S Range 40E

(Indicate Well on Chart)

NW NE X SW SE

6. Miami-Dade | N/A | N/A | N/A | N/A
County | Subdivision Name | Lot | Block | Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system: N/A ft. Description of facility 2nd wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 101* ft Casing Depth 90 ft Screen Interval from 90 to 100
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

*Well will be installed with a one-foot stick-up

10. If applicable: Proposed Grouting Interval
From 88 to 100 Seal Material 10/20 silica sand
From 83 to 85 Seal Material Bentonite
From 0 to 83 Seal Material Portland/bentonite slurry

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ____ Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27 ____ NAD 83 ____)

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

North
OW-802L
West
See attached drawings for proposed well locations
East
South

APPROVED
Permit no. 13-59-2254
Date: 2-19-08
Miami-Dade County Health Department

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if required, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after drilling or the permit expiration, whichever occurs first.

Signature of Contractor 1035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature 2/15/08 Date

DO NOT WRITE BELOW THIS LINE. FOR OFFICIAL USE ONLY

Approval Granted By: ASHED EDWARDS Issue Date: 2/19/08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 50 Receipt No.: D080217406 Check No.: 524534
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

Revised 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM *MUST* BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-7763
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City | State | Zip

4. NE (smallest) 1/4 of NE (biggest) 1/4 of Section 34

5. Township 57S Range 40E

(Indicate Well on Chart)

NW NE X SW SE

6. Miami-Dade N/A N/A N/A N/A
County | Subdivision Name | Lot | Block | Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system: N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

Date Stamp: APPROVED Permit no. 13-59-7763 Date 2-19-08 Miami-Dade County Health Department

9. Estimated: Well Depth 26* ft Casing Depth 15 ft Screen Interval from 15 to 25
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

*Well will be installed with a one-foot stump

10. If applicable: Proposed Grouting Interval
From 13 to 25 Seal Material 10/20 silica sand
From 10 to 13 Seal Material Bentonite
From 0 to 10 Seal Material Portland/bentonite slurry

Draw a map of well location and indicate well site with identifiable known roads and landmarks; provide distances between well and landmarks.

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___ Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ___ or map ___ or survey ___ (map datum NAD 27 ___ NAD 83 ___)

North

OW-802U

West — see attached drawings for proposed well locations — East

South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if required, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after drilling or the permit expiration, whichever occurs first.

Signature of Contractor 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner hereby agrees to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature 2/15/08 Date

DO NOT WRITE BELOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: Alfred Edwards Issue Date: 2-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 50 Receipt No.: To8021548 Check No.: 524534

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

Permit No. 13159-7756
Florida Unique I.D.
Permit Stipulations Required (See attached)
82-524 well ☐
CUP/WUP Application No.

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Fold at this line in order that address is visible through envelope window

1. Florida Power and Light Company, Attn: Mr. Ed Paula | 9700 SW 344 Street | Florida City | 33034 | 305-246-6407
   Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number
2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
   Well Location — Address, Road Name or Number, City
3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 | 404-873-4761
   Well Drilling Contractor | License No. | Telephone No.
   396 Plasters Avenue
   Address
   Atlanta | Georgia | 30324
   City | State | Zip
4. NE (smallest) 1/4 of SE (biggest) 1/4 of Section 34
   (Indicate Well on Chart)
5. Township 57S Range 40E
6. Miami-Dade | N/A | N/A | N/A | N/A
   County | Subdivision Name | Lot | Block | Unit

NW NE SW SE — X

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
   ____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
   Distance from septic system N/A ft. Description of facility Fed. wastewater discharge area Estimated start of construction date 2/19/08
8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ Date Started
   (Reason for Abandonment)
9. Estimated: Well Depth 101* ft Casing Depth 90 ft Screen Interval from 90 to 100
   Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below
   *Well will be installed with a one-foot sump
10. If applicable: Proposed Grouting Interval From 88 to 100 Seal Material 10/20 silica sand
    From 85 to 85 Seal Material Bentonite
    From 0 to 83 Seal Material Portland/bentonite slurry
11. Telescope Casing ____ or Liner X (check one) Diameter 2"
    Blk-Steel / Galvanized / PVC PVC Other (specify): ____
12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
    X Auger ____ Other (specify:) ____
13. Indicate total No. of wells on site 0 List number of unused wells on site 0
14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
    (If yes, complete the following) CUP/WUP No. N/A
    District well I.D. No. N/A
    Latitude N/A Longitude N/A
    Data obtained from GPS ___ or map ___ or survey ___ (*map datum NAD 27* ___ *NAD 83* ___)

APPROVED
Permit no. 13159-7756
Date: 2-19-08
Miami-Dade County Health Department

Draw a map of well location and indicate well site within "X". Identify known roads and landmarks; provide distances between well and landmarks.

North
OW-805L
see attached drawings for proposed well locations
West East
South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments. If applicable, I agree to provide a well completion report to the District within 30 days after drilling or the permit expires, whichever occurs first.

Signature of Contractor — 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner/Agent Signature — 2/15/08 Date

DO NOT WRITE BELOW THIS LINE - FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 50 Receipt No.: T080215406 Check No.: 524534

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-4746
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City | State | Zip

4. NE (smallest) 1/4 of SE (biggest) 1/4 of Section 34
(Indicate Well on Chart)

5. Township 57S Range 40E

NW NE SW SE — X

6. Miami-Dade | N/A | N/A | N/A | N/A
County | Subdivision Name | Lot | Block | Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 26* ft Casing Depth 15 ft Screen Interval from 15 to 25
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

*Well will be installed with a one-foot stick-up

10. If applicable: Proposed Grouting Interval
From 13 to 25 Seal Material 10/20 silica sand
From 10 to 13 Seal Material Bentonite
From 0 to 10 Seal Material Portland/bentonite slurry

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

North
OW-805U
West — see attached drawings for proposed well locations — East
South

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ___ or map ___ or survey ___ (map datum NAD 27___ NAD 83___)

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if required, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after drilling or the date of abandonment, whichever occurs first.

Signature of Contractor 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature Date 2/15/08

APPROVED
Permit no. 13-59-4746
Date: 4/19-08
Miami-Dade County Health Department

DO NOT WELL OR LOW THIS LINE. FOR OFFICIAL USE ONLY

Approval Granted By: ANTHONY EDWARDS Issue Date: 4/19-08 Hydrologist Approval ____

Owner Number: ____ Fee Received: $ 50 Receipt No.: 108215406 Check No.: 524534
Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

DCN# TUR060

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-2758
Florida Unique I.D.
Permit Stipulations Required (See attached)
82-524 well ☐
CUP/ WUP Application No.

Fold at this line in order that address is visible through envelope window

1. Florida Power and Light Company, Attn: Mr. Ed Pauls 9700 SW 344 Street Florida City 33034 305-246-6407
   Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number
2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
   Well Location — Address, Road Name or Number, City
3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
   Well Drilling Contractor | License No. | Telephone No.
   396 Plasters Avenue
   Address
   Atlanta | Georgia | 30324
   City | State | Zip
4. NW (smallest) 1/4 of SE (biggest) 1/4 of Section 33
   (Indicate Well on Chart)
5. Township 57S Range 40E

NW NE SW SE — X

6. Miami-Dade | N/A | N/A | N/A | N/A
   County | Subdivision Name | Lot | Block | Unit

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
   ____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
   Distance from septic system N/A ft. Description of facility Ind. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 101* ft Casing Depth 90 ft Screen Interval from 90 to 100
   Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

10. If applicable: Proposed Grouting Interval
    From 88 to 100 Seal Material 10/20 silica sand
    From 83 to 85 Seal Material Bentonite
    From 0 to 83 Seal Material Portland/bentonite slurry

*Well will be installed with a one-foot sump

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
    Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
    X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0 List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
    (If yes, complete the following) CUP/WUP No. N/A
    District well I.D. No. N/A
    Latitude N/A Longitude N/A
    Data obtained from GPS ___ or map ___ or survey ___ (*map datum NAD 27* ___ *NAD 83* ___)

Draw a map of well location and indicate well site with an "X", identify known roads and landmarks; provide distances between well and landmarks.

North
OW-809L
N
West
see attached drawings for proposed well locations
East
South

APPROVED
Permit no. 13/59-2758
Date: 2-19-08
Miami-Dade County
Health Department

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments. If applicable, I agree to provide a well completion report to the District within 30 days after drilling permit's termination. (Whichever occurs first.)

Signature of Contractor — 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature — Date 2/15/08

DO NOT WRITE TO LOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 50 Receipt No.: To802164 Check No.: 52453 4

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

Revised.rev

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM *MUST* BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13592 7752
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation — Address — City — Zip — Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor — License No. — Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City — State — Zip

4. NW (smallest) 1/4 of SE (biggest) 1/4 of Section 33
(Indicate Well on Chart)

5. Township 57S Range 40E

NW NE SW SE (X)

6. Miami-Dade N/A N/A N/A N/A
County — Subdivision Name — Lot — Block — Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Inj. wastewater disposal zone Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 26* ft Casing Depth 15 ft Screen Interval from 15 to 25
Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

*Well will be installed with a one-foot sump

10. If applicable: Proposed Grouting Interval
From 13 to 25 Seal Material 10/20 silica sand
From 10 to 13 Seal Material Bentonite
From 0 to 10 Seal Material Portland/bentonite slurry

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVC PVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0, List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___ Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ___ or map ___ or survey ___ (*map datum NAD 27* ___ NAD 83 ___)

Draw a map of well location and indicate well site with an "X", identify known roads and landmarks; provide distances between well and landmarks.

North

OW-809U

West — see attached drawings for proposed well locations — East

South

APPROVED
Permit no. 13592-225
2/19/08
Miami-Dade County
Public Health Department
Date

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments. If applicable, I agree to provide a well completion report to the District within 30 days after drilling the permit expiration, whichever occurs first.

Signature of Contractor — 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to permanent or reasonable access to the well site.

Owner's or Agent's Signature — 2/15/08 Date

DO NOT WRITE BELOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____ Initials

Owner Number: ____ Fee Received: $ 150 Receipt No: IO8021540 Check No.: 524534

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

FAX #: 919-831-8136

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM *MUST* BE FILLED OUT COMPLETELY.

The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

Permit No. 13-59-7760
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

Fold on this line in order that address is visible through envelope window

1. Florida Power and Light Company, Attn: Mr. Ed Pauls 9700 SW 344 Street Florida City 33034 305-246-6407
   Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number
2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
   Well Location — Address, Road Name or Number, City
3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
   Well Drilling Contractor | License No. | Telephone No.
   396 Plasters Avenue
   Address
   Atlanta Georgia 30324
   City | State | Zip
4. NW (smaller) 1/4 of NE (bigger) 1/4 of Section 33 (Indicate Well on Chart)
5. Township 57S Range 40E

NW	NE
	X
SW	SE

6. Miami-Dade | N/A | N/A | N/A | N/A
   County | Subdivision Name | Lot | Block | Unit

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
   ____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
   Distance from septic system N/A ft. Description of facility Tail water discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 101 * ft Casing Depth 90 ft Screen Interval from 90 to 100
   Casing Material: Blk-Steel / Gal / PVC PVC Casing Diameter 2" Seal Material see below

10. If applicable: Proposed Grouting Interval From 88 to 100 Seal Material 10/20 silica sand
    From 83 to 85 Seal Material Bentonite
    From 0 to 83 Seal Material Portland/bentonite slurry

*Well will be installed with a one-foot sump

APPROVED
Permit no. 13-59-7760
Date: 2/19-08
Miami-Dade County
Health Department

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
    Blk-Steel / Galvanized / PVC PVC Other (specify: ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
    X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0. List number of unused wells on site 0

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
    (If yes, complete the following) CUP/WUP No. N/A
    District well I.D. No. N/A
    Latitude N/A Longitude N/A
    Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27____ NAD 83____)

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distance between well and landmarks.

North

OW-812L

see attached drawings for proposed well locations

West East

South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial drainage permit, if required, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain all necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after drilling or abandoning a well, whichever occurs first.

Signature of Contractor 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personal entry of the WMD or a representative agent to the well site.

Owner's or Agent's Signature 2/15/08 Date

DO NOT WRITE BELOW THIS LINE — FOR OFFICIAL USE ONLY

Approval Granted By: ASTRID EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____

Owner Number: ____ Fee Received: $ 50 Receipt No.: I0802 15406 Check No.: 524534 (Initials)

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

stamped.pdf

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

Permit No. 13-59- 7759
Florida Unique I.D.
Permit Stipulations Required (See attached)
62-524 well ☐
CUP/WUP Application No.

☐ Southwest
☐ Northwest
☐ St. Johns River
☒ South Florida
☐ Suwannee River

CHECK BOX FOR APPROPRIATE DISTRICT. ADDRESS ON BACK OF PERMIT FORM.

THIS FORM MUST BE FILLED OUT COMPLETELY.
The water well contractor is responsible for completing this form and forwarding the permit to the appropriate delegated county where applicable.

1. Florida Power and Light Company, Attn: Mr. Ed Paula 9700 SW 344 Street Florida City 33034 305-246-6407
Owner, Legal Name of Entity if Corporation | Address | City | Zip | Telephone Number

2. Turkey Point Nuclear Generating Station - coordinates of proposed wells attached
Well Location — Address, Road Name or Number, City

3. MACTEC Engineering and Consulting, Inc. - Phillip K. Pitts FL # 11035 404-873-4761
Well Drilling Contractor | License No. | Telephone No.

396 Plasters Avenue
Address

Atlanta Georgia 30324
City State Zip

4. NW (amplified) 1/4 of NE (clipped) 1/4 of Section 33
(Indicate Well on Chart)

5. Township 57S Range 40E

NW	NE
	X
SW	SE

6. Miami-Dade | N/A | N/A | N/A | N/A
County | Subdivision Name | Lot | Block | Unit

Fold at this line in order that address is visible through envelope window

7. Number of proposed wells 1 Check the use of well: (See back of permit for additional choices) ____ Domestic Monitor (type) Observation well
____ Irrigation (type) (See Back) Public Water Supply (type) ____ (See Back) List Other ____
Distance from septic system N/A ft. Description of facility Int. wastewater discharge area Estimated start of construction date 2/19/08

8. Application for: X New Construction ____ Repair/Modify ____ Abandonment ____ (Reason for Abandonment)

9. Estimated: Well Depth 26* ft Casing Depth 15 ft Screen Interval from 15 to 25
Casing Material: Blk-Steel / Gal / PVC nvc Casing Diameter 2" Seal Material see below

10. If applicable: Proposed Grouting Interval
From 13 to 25 Seal Material 10/20 silica sand
From 10 to 13 Seal Material Bentonite
From 0 to 10 Seal Material Portland/bentonite slurry

*Well will be installed with a one-foot sump

11. Telescope Casing ____ or Liner X (check one) Diameter 2"
Blk-Steel / Galvanized / PVCPVC Other (specify): ____

12. Method of Construction: X Rotary ____ Cable Tool ____ Combination
X Auger ____ Other (specify:) ____

13. Indicate total No. of wells on site 0. List number of unused wells on site 0.

14. Is this well or any other well or water withdrawal on the owner's contiguous property covered under a Consumptive Water Use Permit (CUP/WUP) or CUP/WUP Application? X No ___Yes
(If yes, complete the following) CUP/WUP No. N/A
District well I.D. No. N/A
Latitude N/A Longitude N/A
Data obtained from GPS ____ or map ____ or survey ____ (map datum NAD 27 ____ NAD 83 ____)

Date Stamp
APPROVED
Permit no. 13-59-7759
Date: 2/19/08
Miami-Dade County Health Department

Draw a map of well location and indicate well site with an "X". Identify known roads and landmarks; provide distances between well and landmarks.

North
OW-812U
West
see attached drawings for proposed well locations
East
South

15. I hereby certify that I will comply with the applicable rules of Title 40, Florida Administrative Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that all information provided on this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after drilling of the permit expiration, whichever occurs first.

Signature of Contractor 11035 License No.

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to personnel of the WMD or a representative access to the well site.

Owner's or Agent's Signature 2/15/08 Date

DO NOT WRITE BELOW THIS LINE -- FOR OFFICIAL USE ONLY

Approval Granted By: ASHLEY EDWARDS Issue Date: 2-19-08 Hydrologist Approval ____

Owner Number: ____ Fee Received: $ 50 Receipt No.: T080215406 Check No.: 52453 Initials 34

Enter numerical month, day and full, four-digit year.

THIS PERMIT NOT VALID UNTIL PROPERLY SIGNED BY AN AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD. IT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL DRILLING OPERATIONS. ***This permit is valid for 90 days from date of issue.***

Form 0123 Rev. 4/95

Observation Well Records

Observation Well Data Sheet

Prepared by: [illegible] Date: 7-10-08
Checked by: CBS Date: 7/10/08

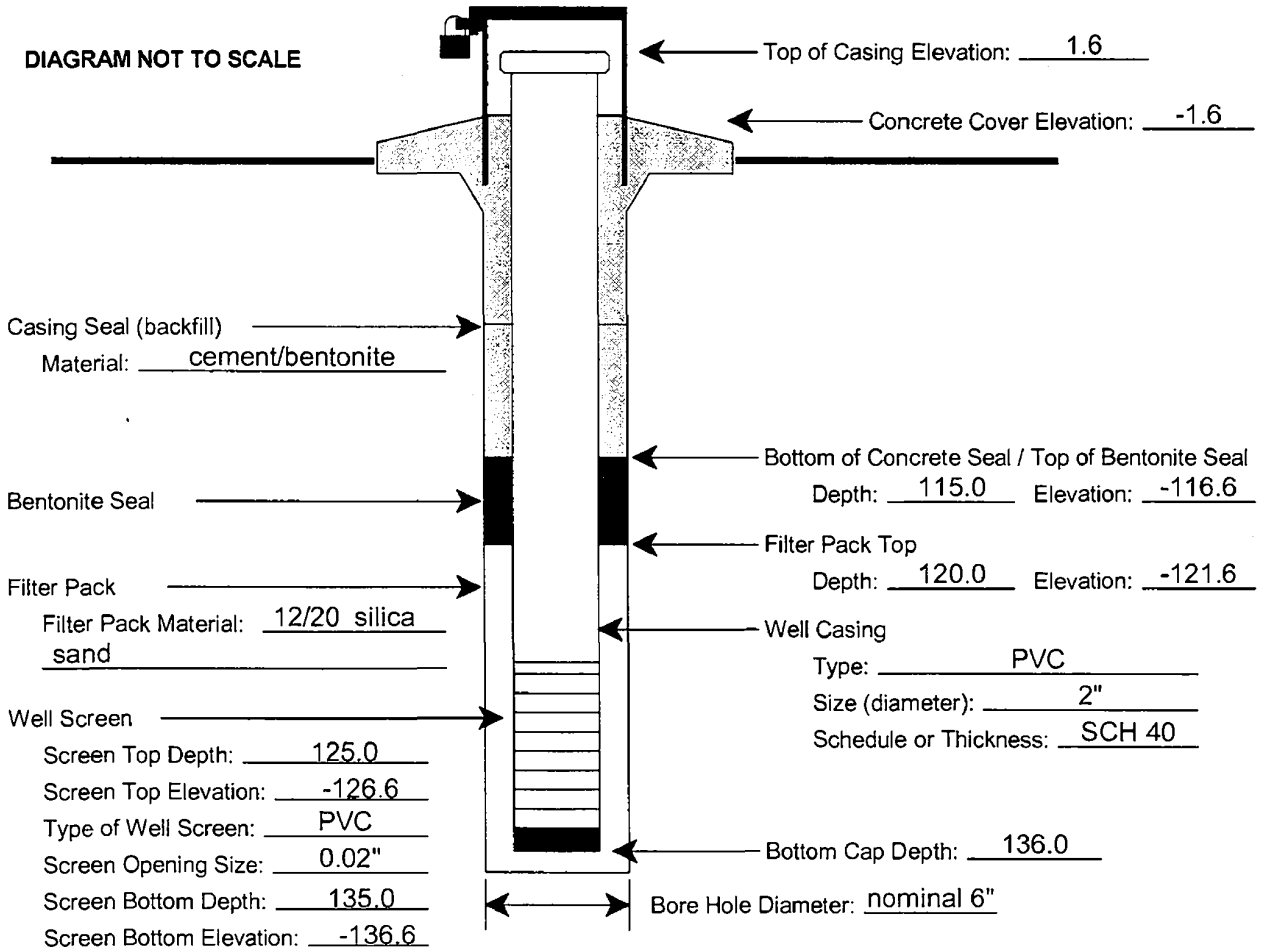
Project Name / No. : Turkey Point Power Station / 6468-07-1950
Observation Well Permit No.: 13-59-2671
County: Miami-Dade County, Florida
Observation Well I.D.: OW-606D
Date of Observation Well Installation: 5/28/08
Date of Well Development: 6/4/08
Observation Well Northing: 396962.8 US ft Easting: 876712.9 US ft
Observation Well Location: Main Island
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Centralizer installation depths not recorded
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 6/4/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Harry Lyatuu
Static Water Level Elevation (with respect to NAVD88) after Well Development: 1.3
Name of Geologic Formation(s) in which Well is completed: See boring log B-606

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: LSG Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 5/14/08
Observation Well Northing: 396979.9 US ft Easting: 876732.6 US ft
Observation Well Location: Main Island

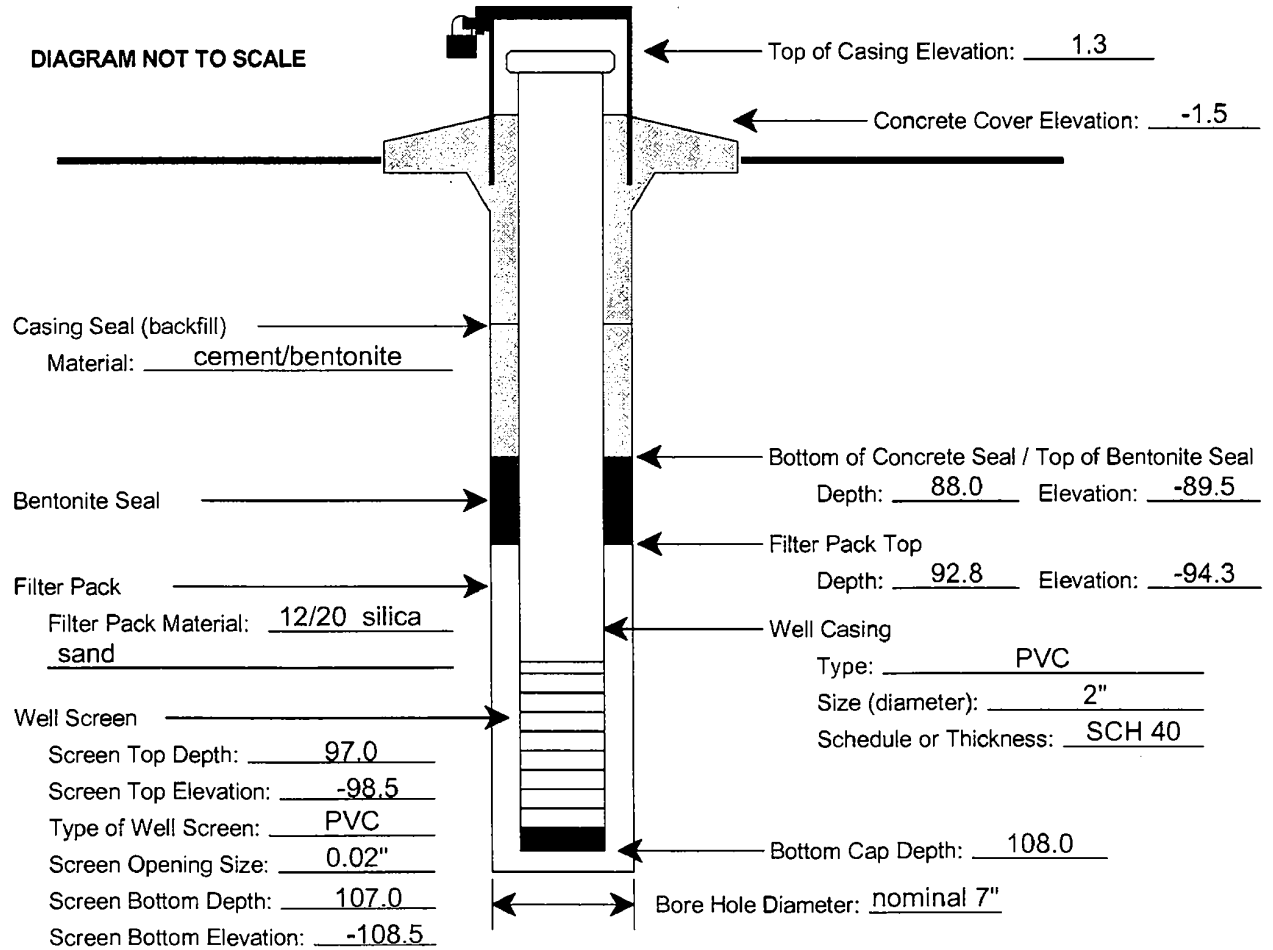
Observation Well Permit No.: 13-59-2243
Observation Well I.D.: OW-606L
Date of Well Development: 5/17/08
Observation Well Driller
Name: Miller Drilling/MACTEC
License No.: 11035

NOTES:

Two, stainless-steel centralizers installed at approximately 47 ft. and 96 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/18/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.
Drill bit lost in hole at 110.0 ft. Bentonite seal installed from 109.0-110.0', with approval of Bechtel.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Kim Charles-Smith
Static Water Level Elevation (with respect to NAVD88) after Well Development: -1.9
Name of Geologic Formation(s) in which Well is completed: See boring log B-606

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSP Date: 7-10-08
Checked by: CBS Date: 7/10/08

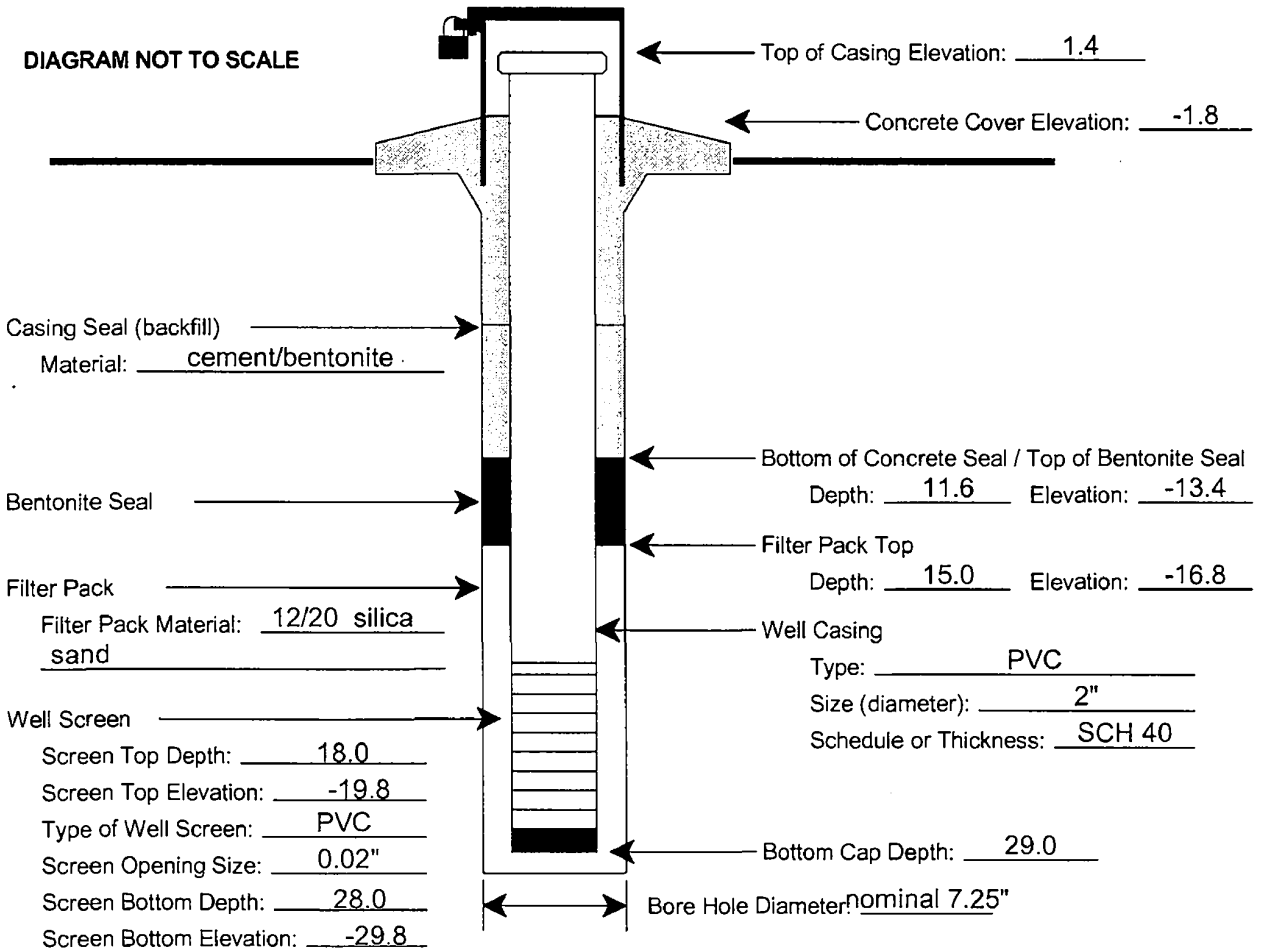
Project Name / No. : Turkey Point Power Station / 6468-07-1950
Observation Well Permit No.: 13-59-2241
County: Miami-Dade County, Florida
Observation Well I.D.: OW-606U
Date of Observation Well Installation: 4/22/08
Date of Well Development: 5/1/08
Observation Well Northing: 396938.0 US ft Easting: 876734.8 US ft
Observation Well Location: Main Island
Observation Well Driller
Name: Miller Drilling/MACTEC
License No.: 11035

NOTES:

One stainless-steel centralizer installed at approximately 11.5 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/20/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Kim Charles-Smith
Static Water Level Elevation (with respect to NAVD88) after Well Development: -2.1
Name of Geologic Formation(s) in which Well is completed: See boring log B-606

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: [illegible] Date: 7-008
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 4/18/08
Observation Well Northing: 397364.5 US ft Easting: 876970.0 US ft
Observation Well Location: Main Island

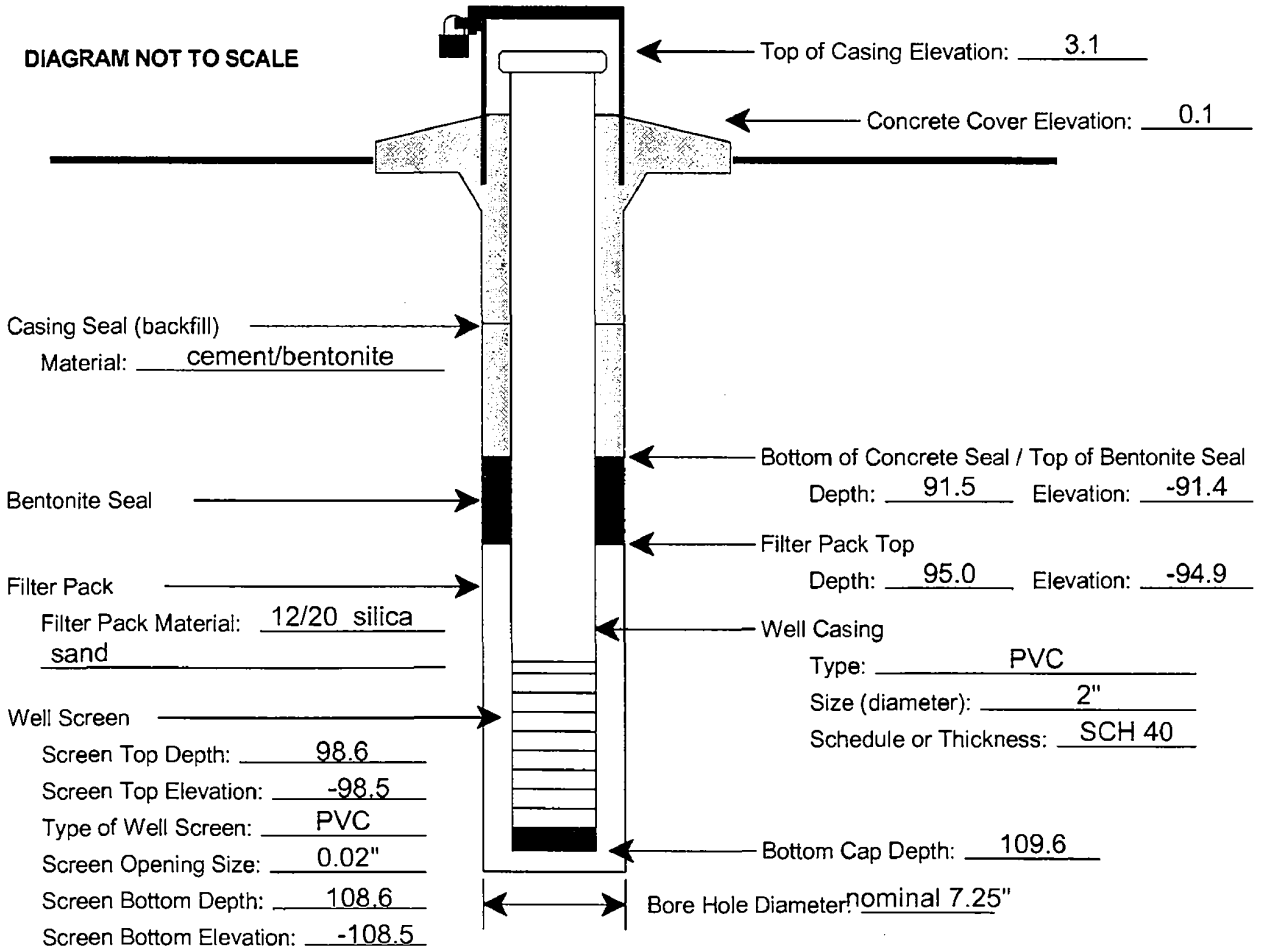
Observation Well Permit No.: 13-59-2242
Observation Well I.D.: OW-621I
Date of Well Development: 5/3/08
Observation Well Driller
Name: Miller Drilling/MACTEC
License No.: 11035

NOTES:

Two, stainless-steel centralizers installed at approximately 48 ft. and 98 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/17/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Chris Burroughs
Static Water Level Elevation (with respect to NAVD88) after Well Development: -1.0
Name of Geologic Formation(s) in which Well is completed: See boring log B-621

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSL Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 4/19/08
Observation Well Northing: 397375.8 US ft Easting: 876930.0 US ft
Observation Well Location: Main Island

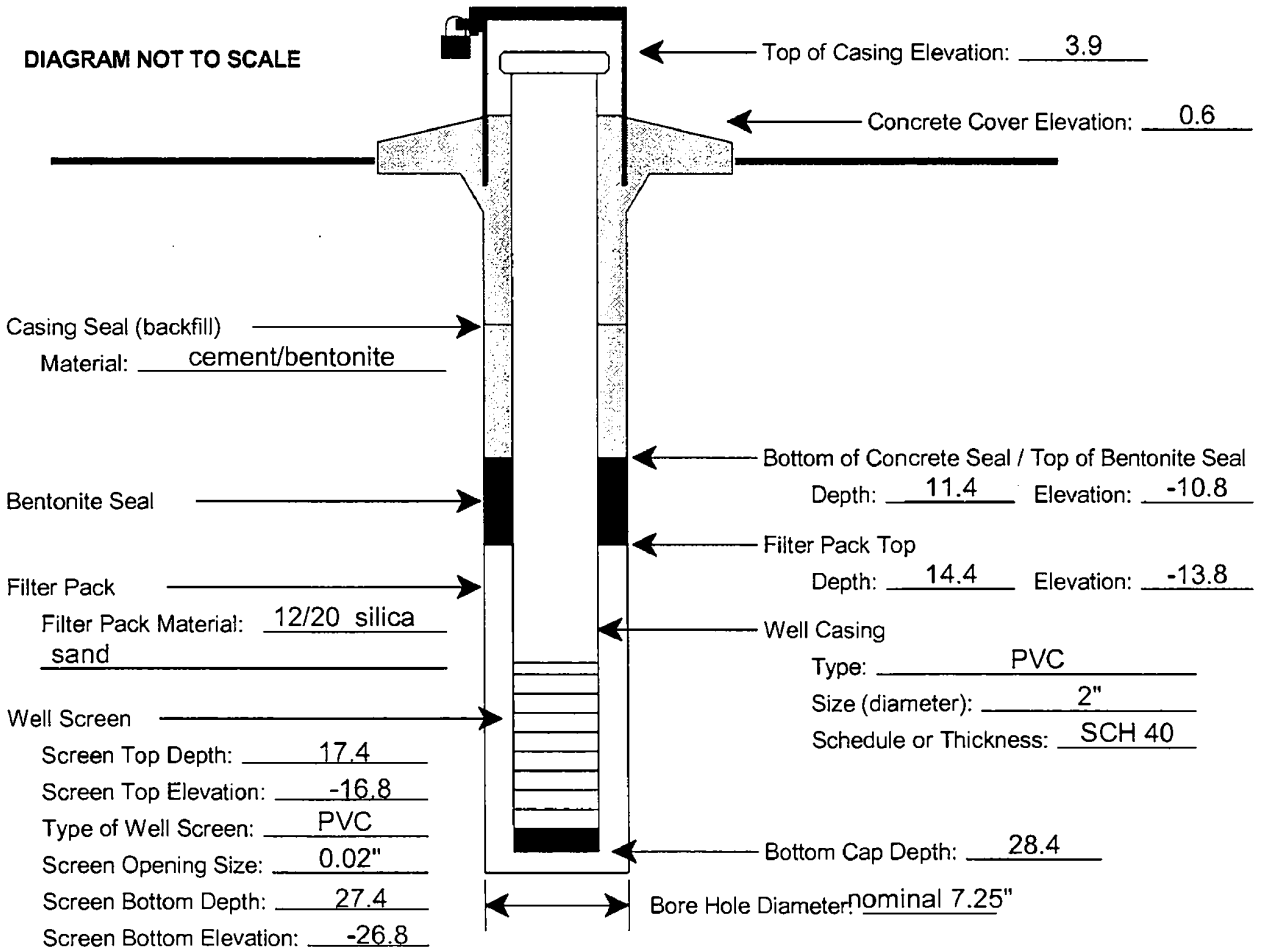
Observation Well Permit No.: 13-59-2244
Observation Well I.D.: OW-621U
Date of Well Development: 5/3/08
Observation Well Driller
Name: Miller Drilling/MACTEC
License No.: 11035

NOTES:

One stainless-steel centralizer installed at approximately 11 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/20/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Chris Burroughs
Static Water Level Elevation (with respect to NAVD88) after Well Development: -1.8
Name of Geologic Formation(s) in which Well is completed: See boring log B-621

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WS Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 4/8/08
Observation Well Northing: 395290.8 US ft Easting: 877257.2 US ft
Observation Well Location: South Island

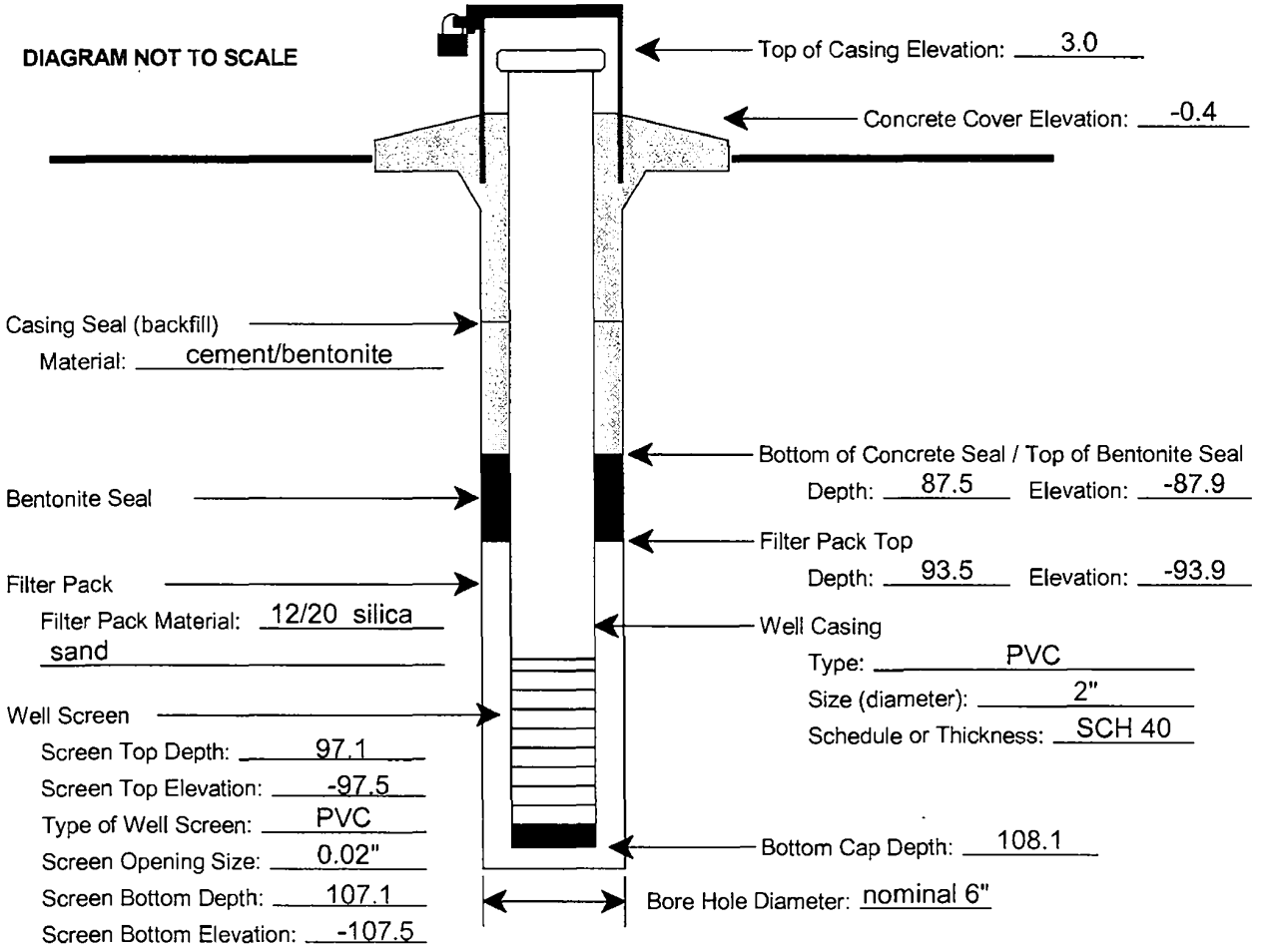
Observation Well Permit No.: 13-59-2246
Observation Well I.D.: OW-636L
Date of Well Development: 5/5/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Two, stainless-steel centralizers installed at approximately 49.5 ft. and 96.6 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/21/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.
Encountered an apparent obstruction at 69.3 ft.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Chris Burroughs
Static Water Level Elevation (with respect to NAVD88) after Well Development: 0.3
Name of Geologic Formation(s) in which Well is completed: See boring log B-806

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WS Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 4/3/08
Observation Well Northing: 395285.8 US ft Easting: 877215.7 US ft
Observation Well Location: South Island

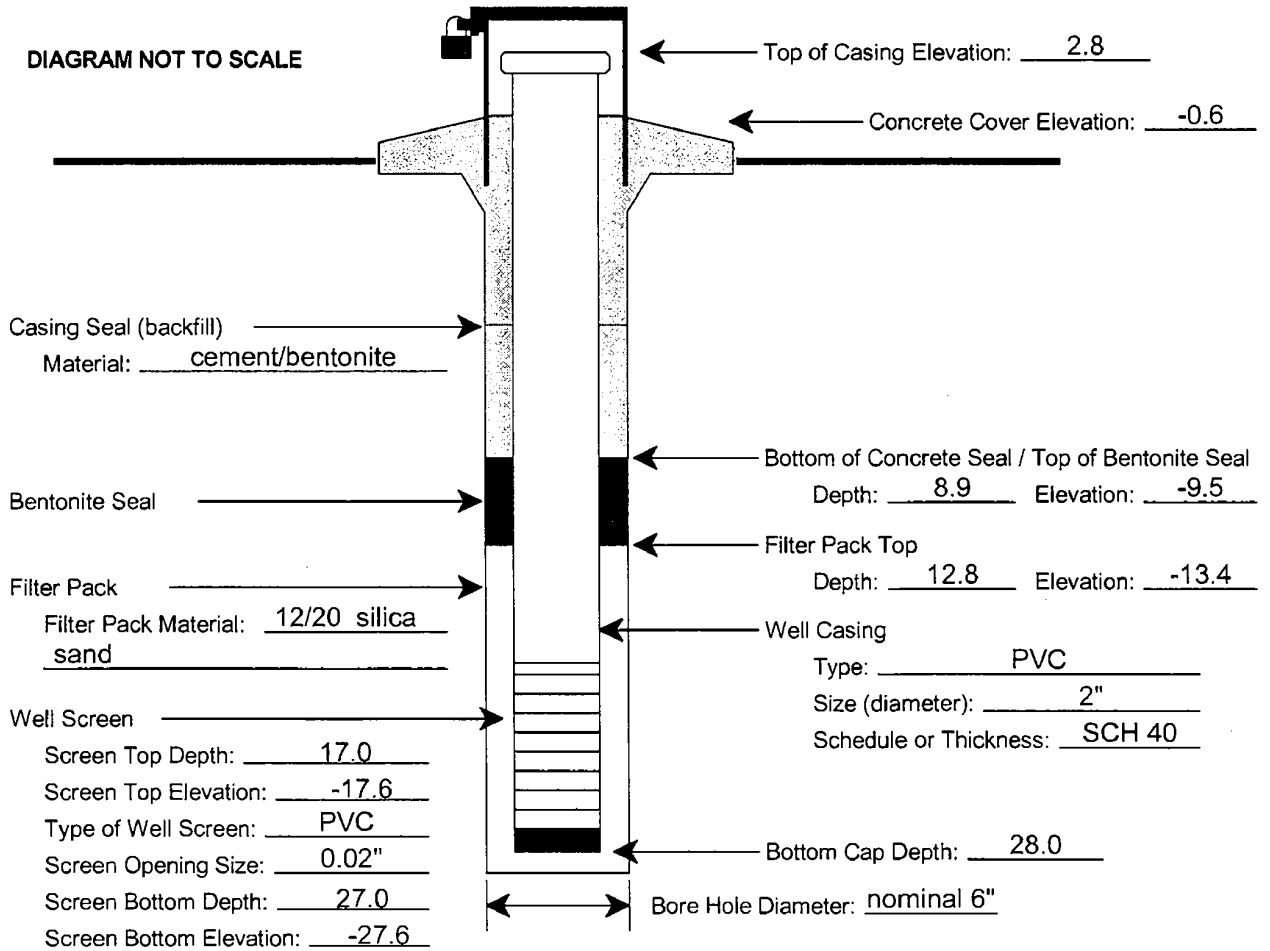
Observation Well Permit No.: 13-59-2245
Observation Well I.D.: OW-636U
Date of Well Development: 5/5/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

One stainless-steel centralizer installed at approximately 16.5 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/21/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Chris Burroughs
Static Water Level Elevation (with respect to NAVD88) after Well Development: -1.6
Name of Geologic Formation(s) in which Well is completed: See boring log B-806

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WS Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 5/29/08
Observation Well Northing: 396960.1 US ft Easting: 875864.4 US ft
Observation Well Location: Main Island

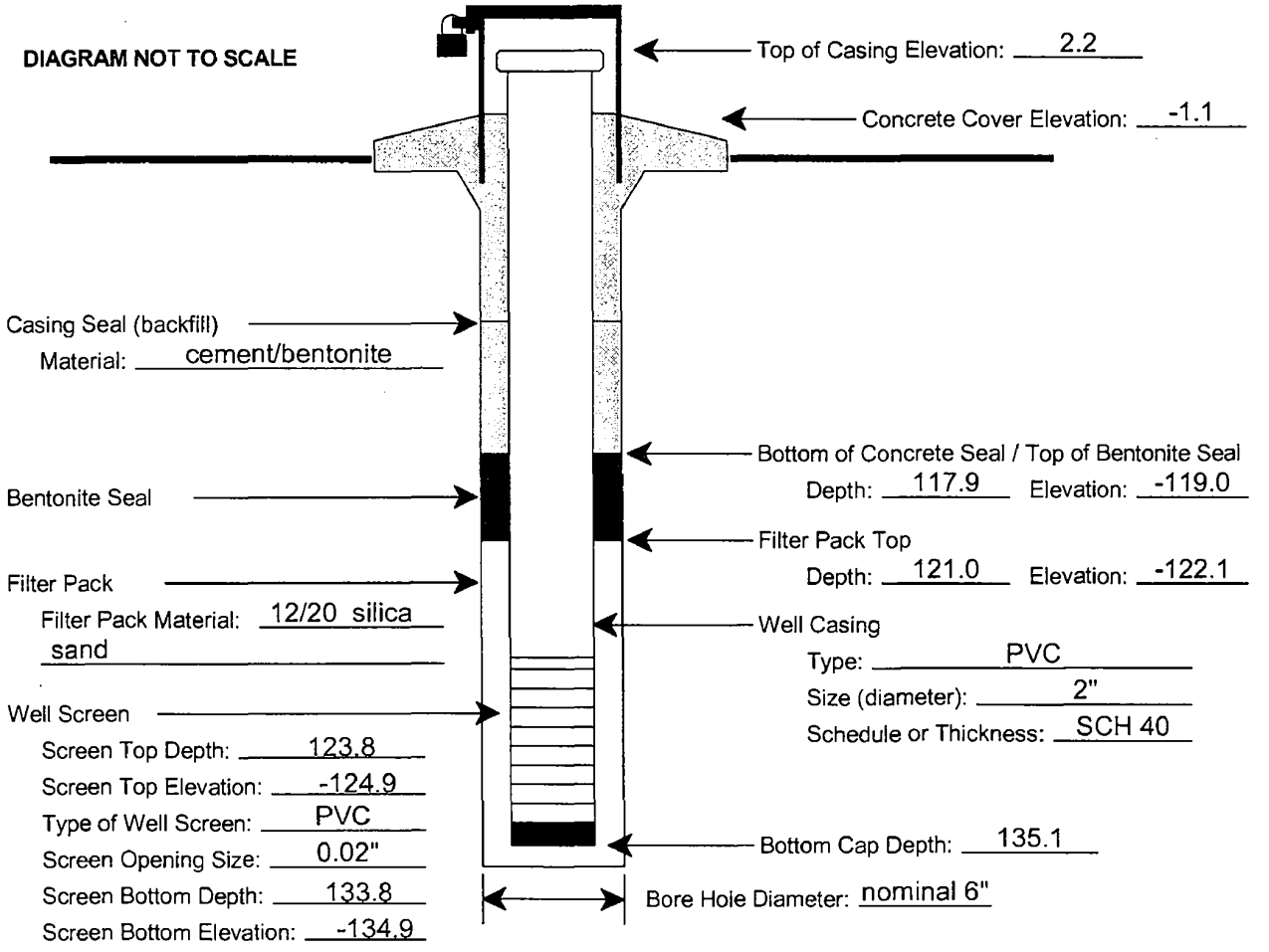
Observation Well Permit No.: 13-59-2672
Observation Well I.D.: OW-706D
Date of Well Development: 6/4/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Centralizer installation depths not recorded
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 6/4/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Chris Burroughs
Static Water Level Elevation (with respect to NAVD88) after Well Development: 1.4
Name of Geologic Formation(s) in which Well is completed: See boring log B-706

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSL Date: 7-10-08
Checked by: CBS Date: 7/10/08

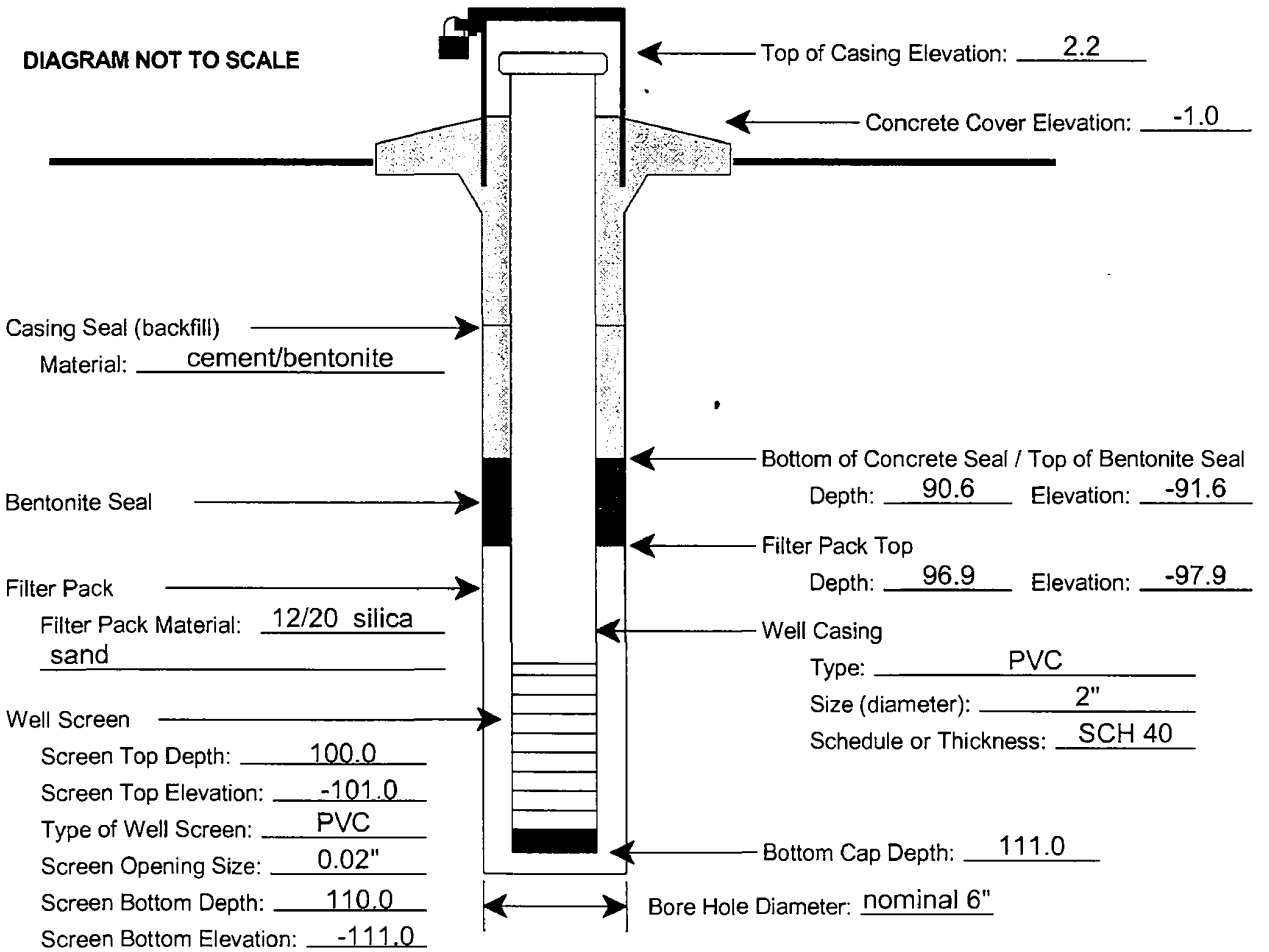
Project Name / No. : Turkey Point Power Station / 6468-07-1950
Observation Well Permit No.: 13-59-2248
County: Miami-Dade County, Florida
Observation Well I.D.: OW-706L
Date of Observation Well Installation: 3/25/08
Date of Well Development: 4/30/08
Observation Well Northing: 396978.2 US ft Easting: 875904.6 US ft
Observation Well Location: Main Island
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Centralizer installation depths not recorded
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/16/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Chris Burroughs
Static Water Level Elevation (with respect to NAVD88) after Well Development: 0.7
Name of Geologic Formation(s) in which Well is completed: See boring log B-706

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSC Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 3/27/08
Observation Well Northing: 396940.1 US ft Easting: 875895.7 US ft
Observation Well Location: Main Island

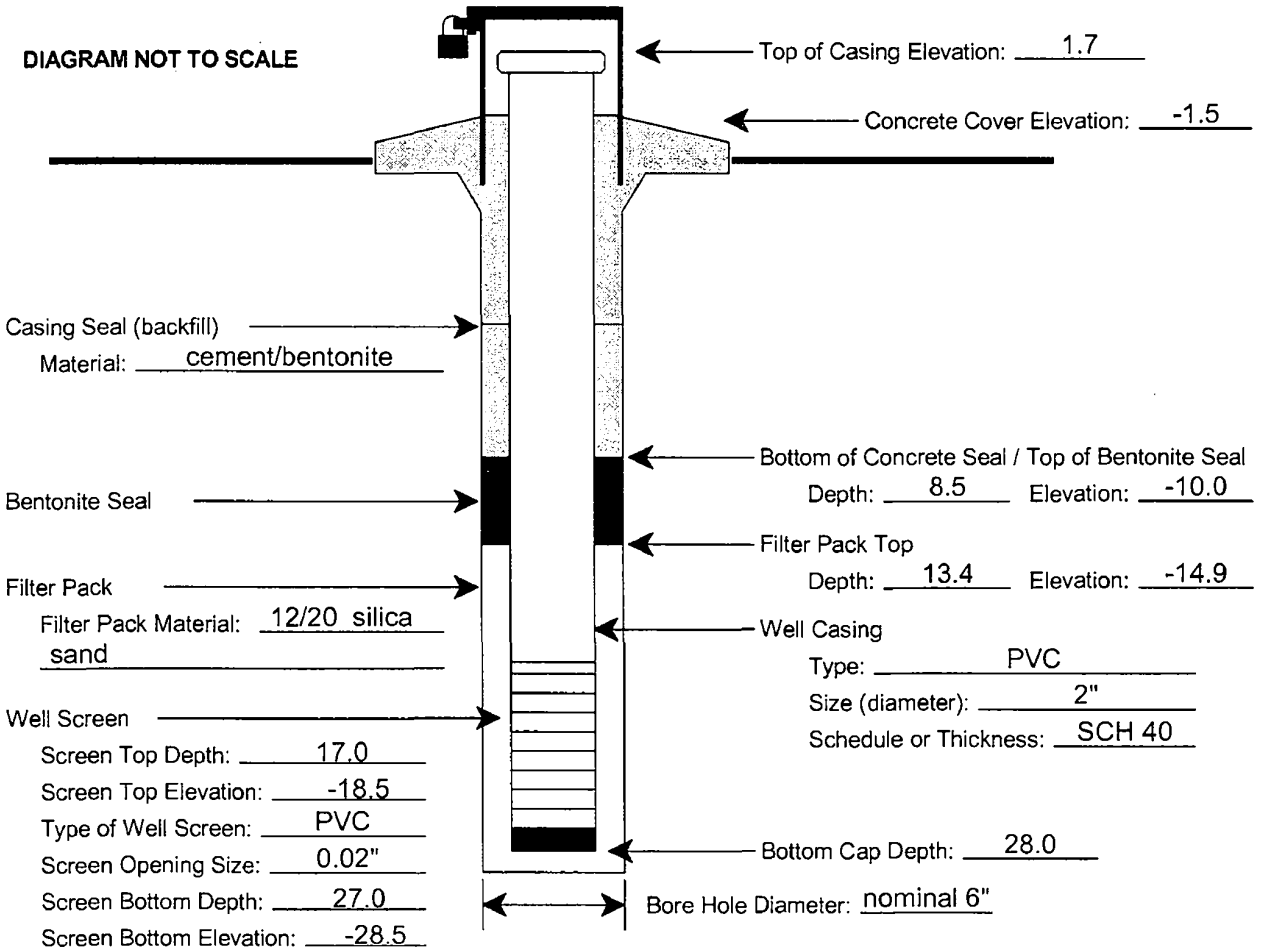
Observation Well Permit No.: 13-59-2247
Observation Well I.D.: OW-706U
Date of Well Development: 4/30/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

One stainless-steel centralizer installed at approximately 16.28 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/16/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Chris Burroughs
Static Water Level Elevation (with respect to NAVD88) after Well Development: -2.0
Name of Geologic Formation(s) in which Well is completed: See boring log B-706

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSH Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 5/3/08
Observation Well Northing: 397321.5 US ft Easting: 876120.3 US ft
Observation Well Location: Main Island

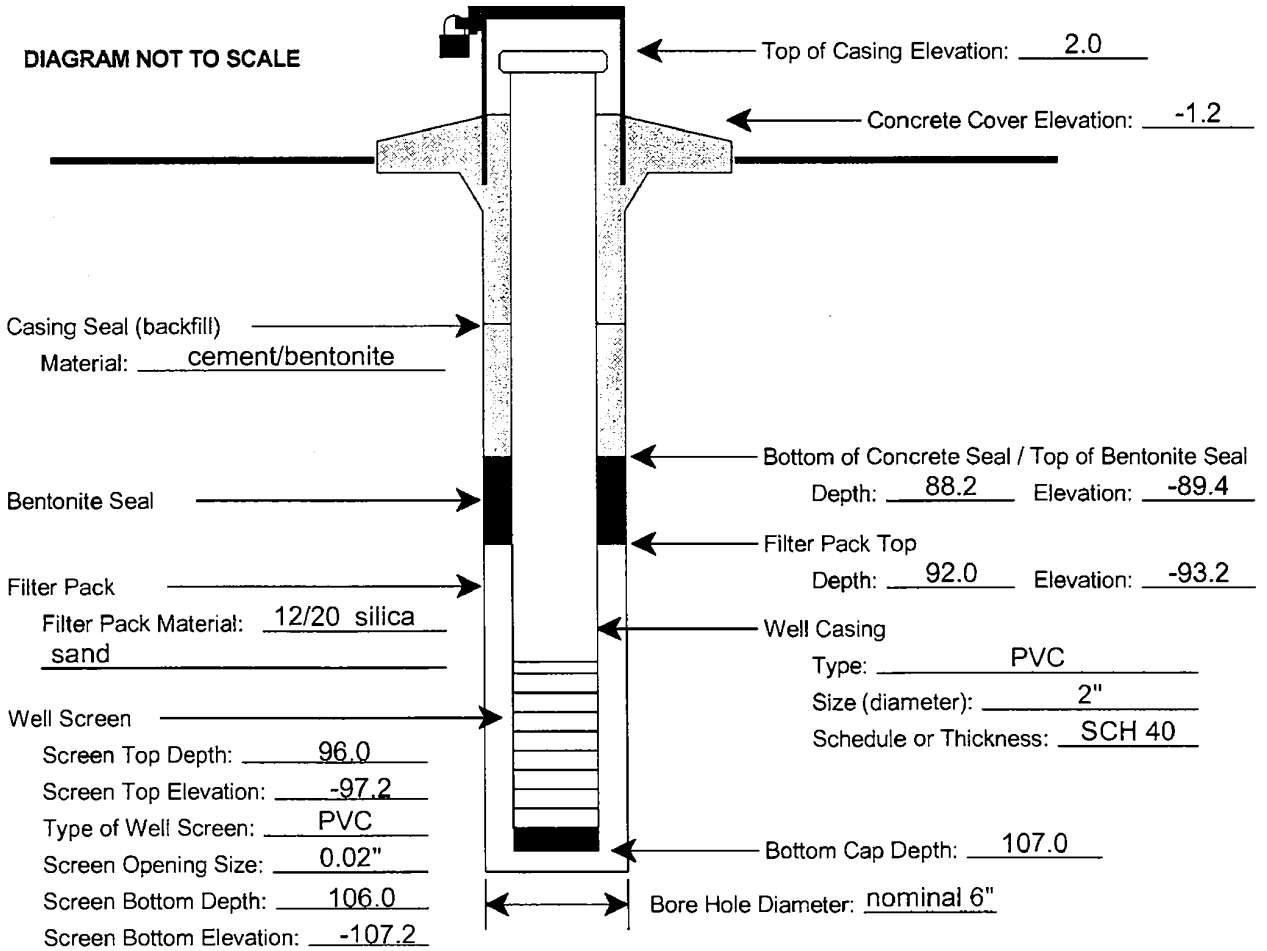
Observation Well Permit No.: 13-59-2250
Observation Well I.D.: OW-721L
Date of Well Development: 5/4/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Two, stainless-steel centralizers installed at approximately 45 ft. and 95 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/20/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Kim Charles-Smith
Static Water Level Elevation (with respect to NAVD88) after Well Development: 0.0
Name of Geologic Formation(s) in which Well is completed: See boring log B-721

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSB Date: 7-6-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 5/1/08
Observation Well Northing: 397361.2 US ft Easting: 876121.4 US ft
Observation Well Location: Main Island

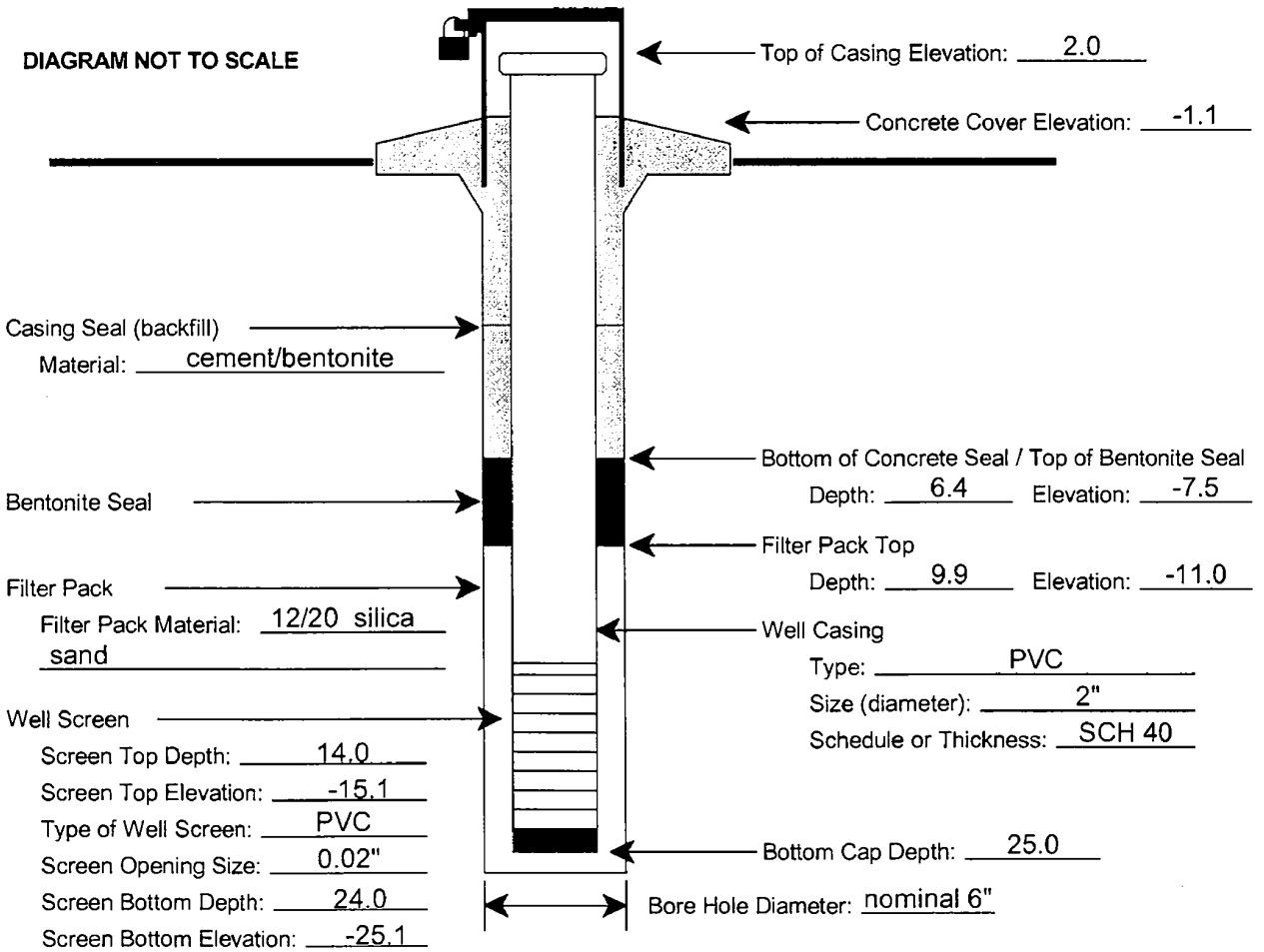
Observation Well Permit No.: 13-59-2249
Observation Well I.D.: OW-721U
Date of Well Development: 5/4/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

One stainless-steel centralizer installed at approximately 13.5 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/15/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Kim Charles-Smith
Static Water Level Elevation (with respect to NAVD88) after Well Development: -2.4
Name of Geologic Formation(s) in which Well is completed: See boring log B-721

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSL Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 4/19/08
Observation Well Northing: 395824.3 US ft Easting: 875669.6 US ft
Observation Well Location: South Island

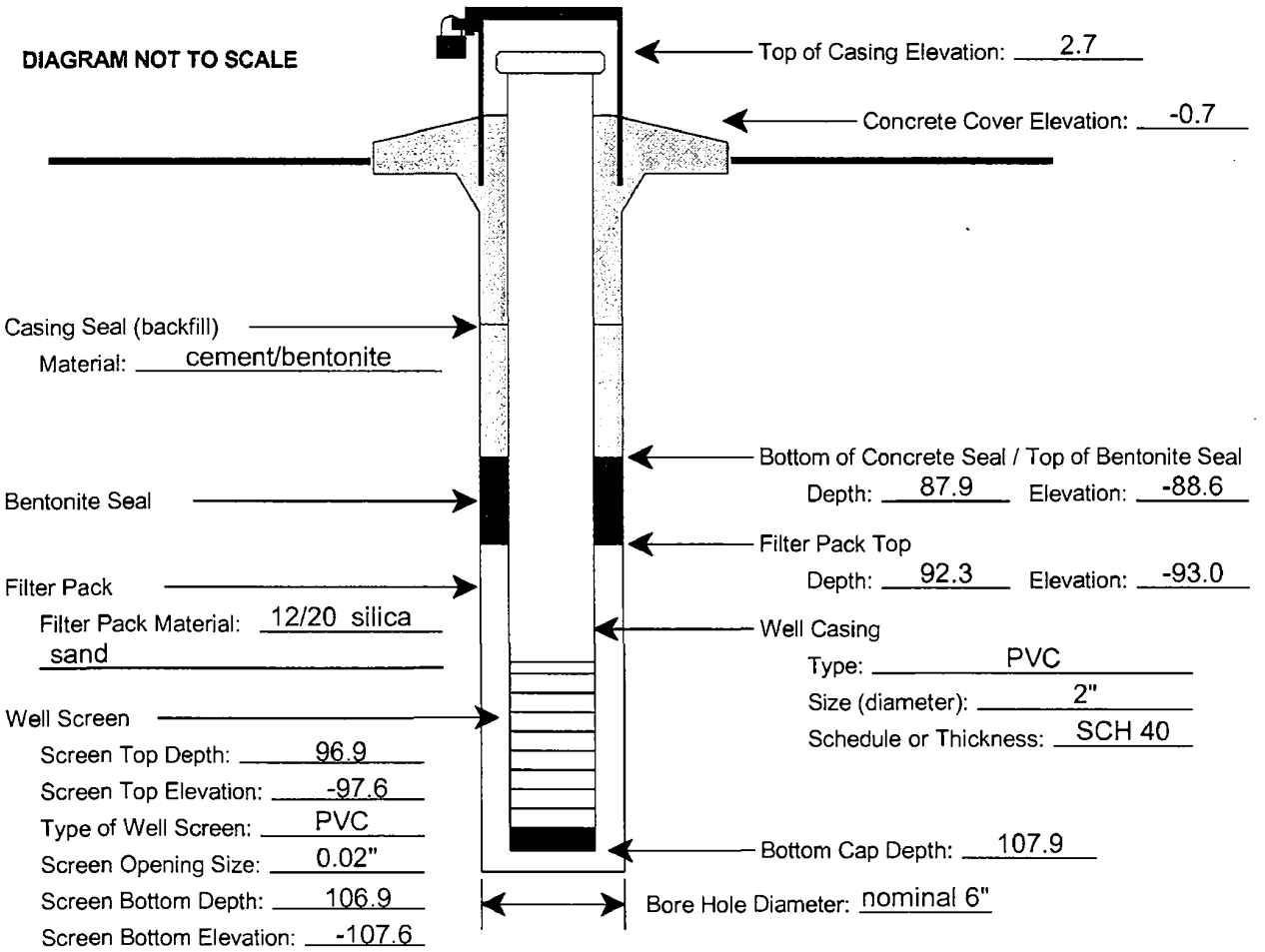
Observation Well Permit No.: 13-59-2252
Observation Well I.D.: OW-735I
Date of Well Development: 4/30/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Two, stainless-steel centralizers installed at approximately 45 ft. and 96 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/13/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Kim Charles-Smith
Static Water Level Elevation (with respect to NAVD88) after Well Development: -0.3
Name of Geologic Formation(s) in which Well is completed: See boring log B-735

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: LMS Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 4/20/08
Observation Well Northing: 395823.3 US ft Easting: 875709.2 US ft
Observation Well Location: South Island

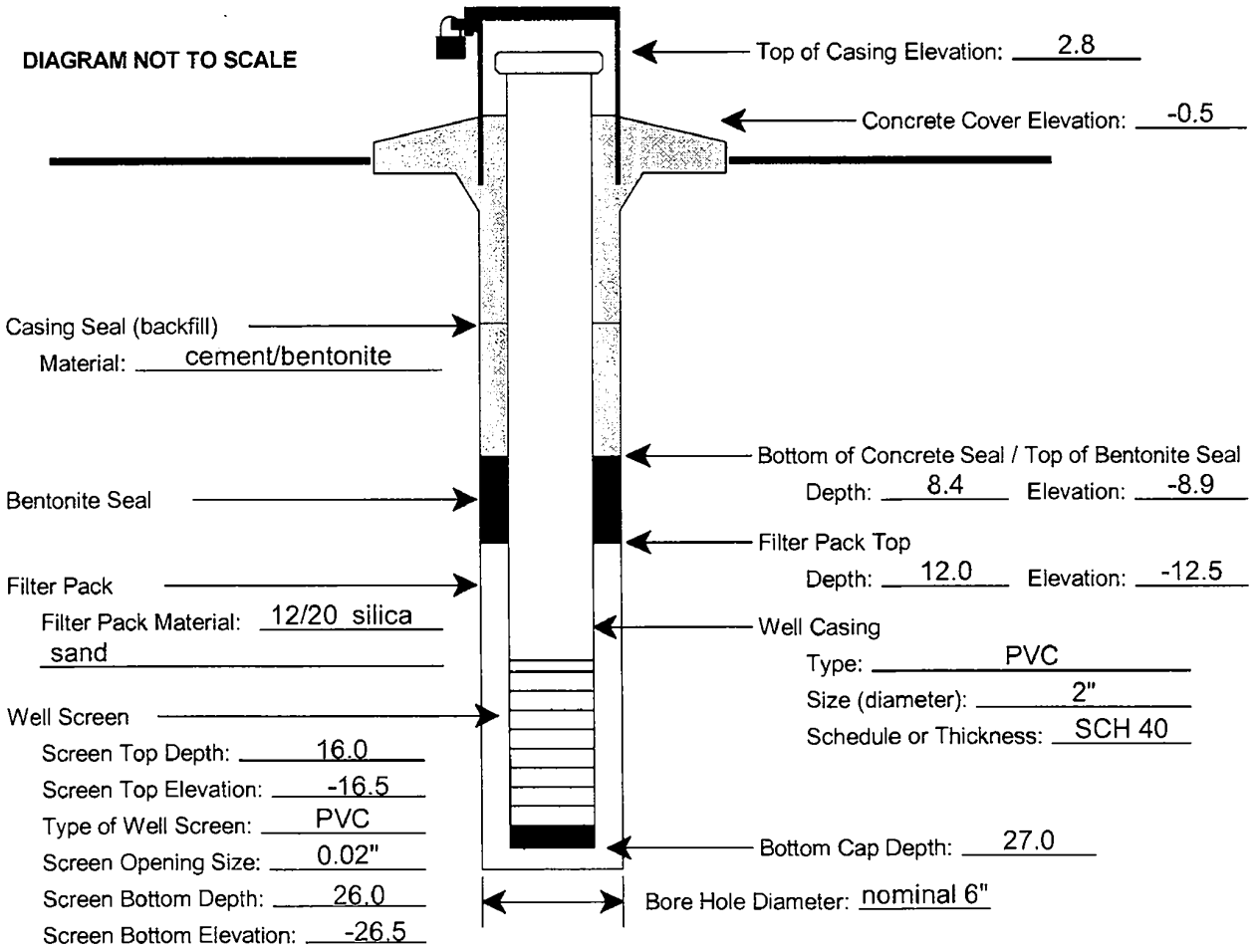
Observation Well Permit No.: 13-59-2251
Observation Well I.D.: OW-735U
Date of Well Development: 4/29/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

One stainless-steel centralizer installed at approximately 15.5 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/16/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Kim Charles-Smith
Static Water Level Elevation (with respect to NAVD88) after Well Development: -1.9
Name of Geologic Formation(s) in which Well is completed: See boring log B-735

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSL Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 5/3/08
Observation Well Northing: 398817.1 US ft Easting: 876265.7 US ft
Observation Well Location: North Island

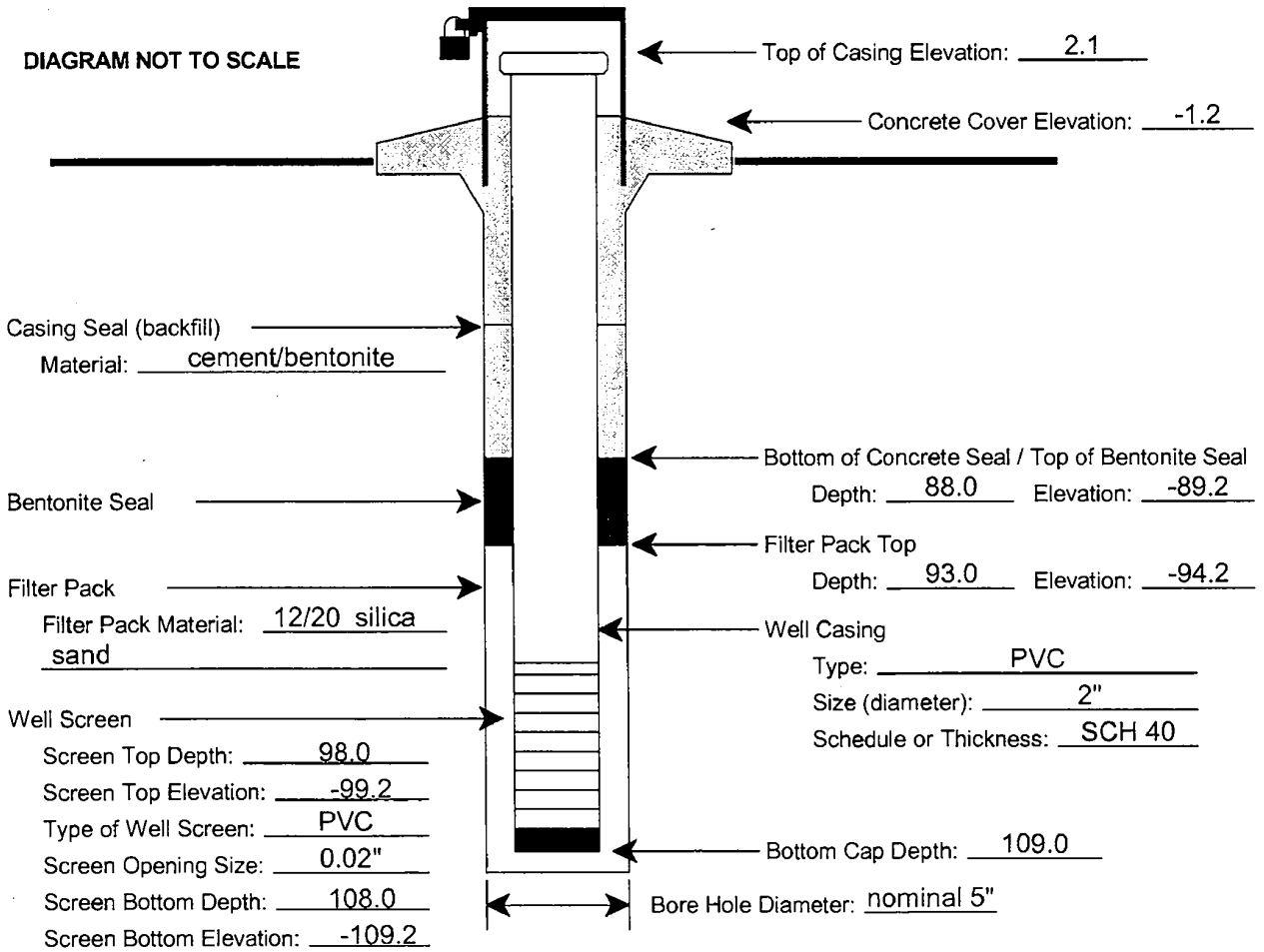
Observation Well Permit No.: 13-59-2254
Observation Well I.D.: OW-802L
Date of Well Development: 5/5/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Centralizer installation depths not recorded
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/20/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Harry Lyatuu
Static Water Level Elevation (with respect to NAVD88) after Well Development: -1.0
Name of Geologic Formation(s) in which Well is completed: See boring log B-802

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSL Date: 7-6-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 5/4/08
Observation Well Northing: 398820.2 US ft Easting: 876243.7 US ft
Observation Well Location: North Island

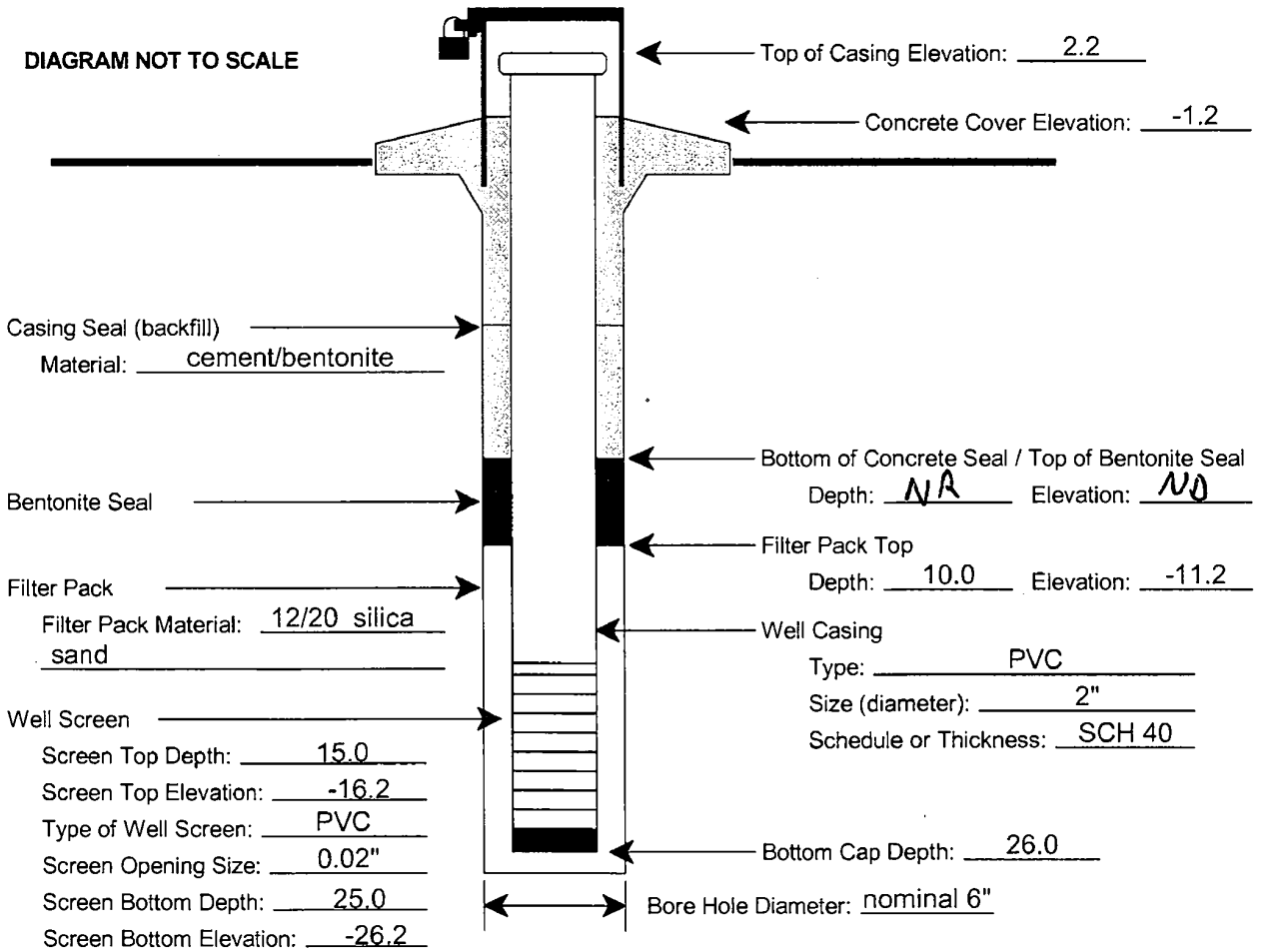
Observation Well Permit No.: 13-59-2253
Observation Well I.D.: OW-802U
Date of Well Development: 5/7/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Centralizer installation depths not recorded
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/20/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.
Depth to bottom of concrete seal not recorded (NR) and elevation not determined (ND).

Geologist, Hydrologist, or Engineer Supervising Well Installation: Harry Lyatuu
Static Water Level Elevation (with respect to NAVD88) after Well Development: -2.4
Name of Geologic Formation(s) in which Well is completed: See boring log B-802

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WJL Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 5/22/08
Observation Well Northing: 396883.0 US ft Easting: 877239.5 US ft
Observation Well Location: Main Island

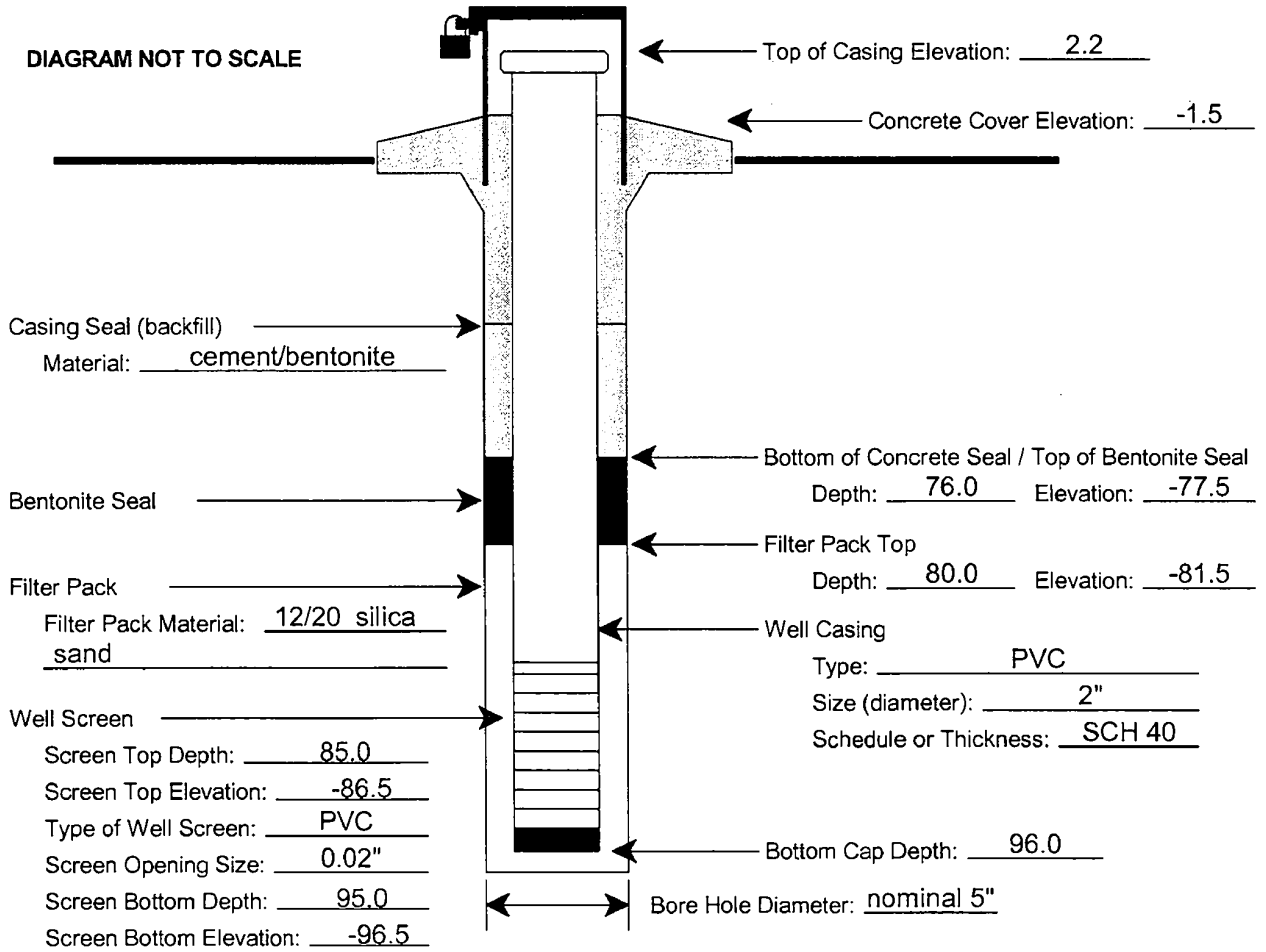
Observation Well Permit No.: 13-59-2256
Observation Well I.D.: OW-805I
Date of Well Development: 6/5/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Centralizer installation depths not recorded
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 6/6/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Harry Lyatuu
Static Water Level Elevation (with respect to NAVD88) after Well Development: -1.0
Name of Geologic Formation(s) in which Well is completed: See boring log B-805

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSL Date: 7-6-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 5/27/08
Observation Well Northing: 396842.8 US ft Easting: 877240.9 US ft
Observation Well Location: Main Island

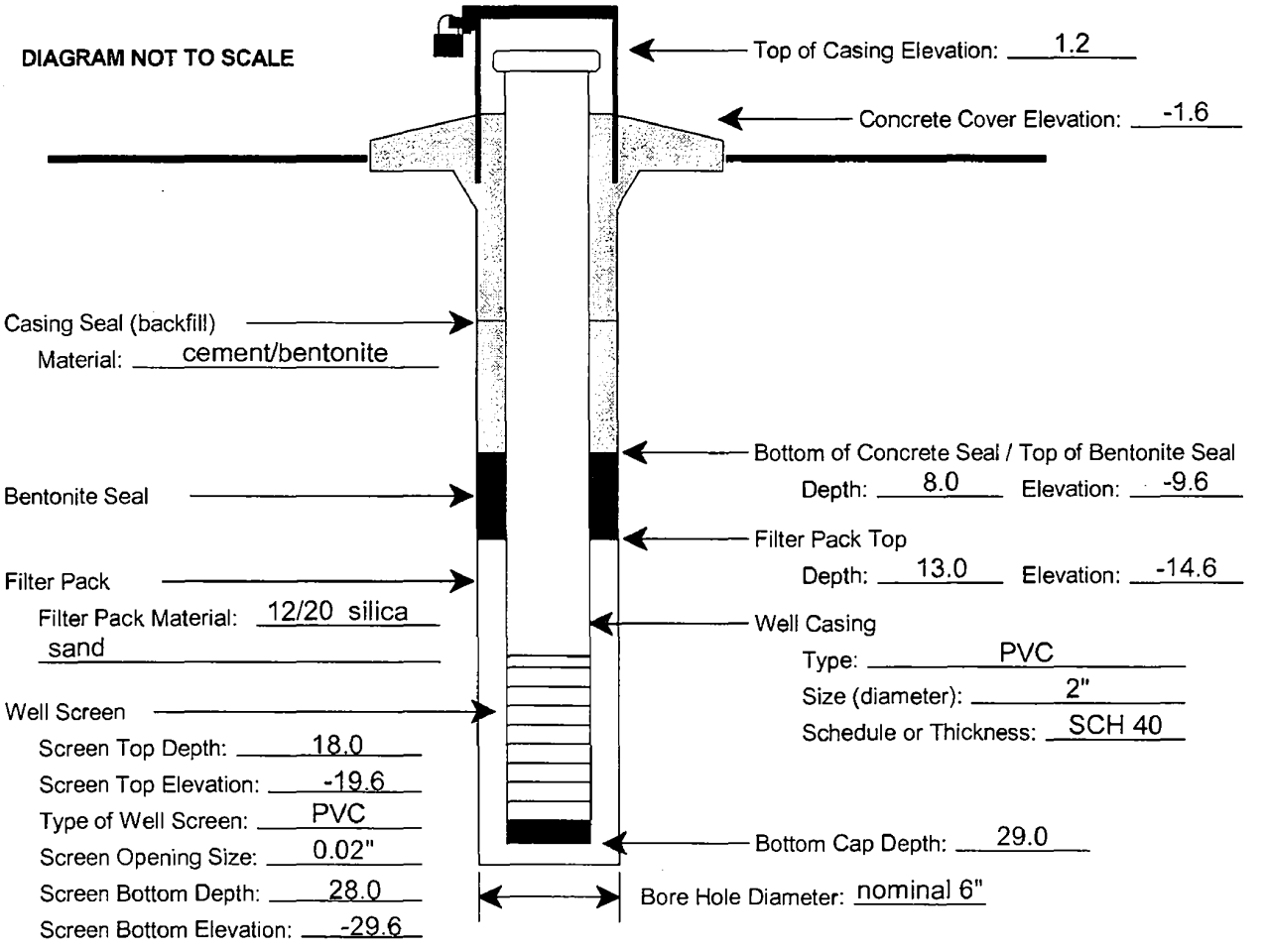
Observation Well Permit No.: 13-59-2255
Observation Well I.D.: OW-805U
Date of Well Development: 6/5/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Centralizer installation depths not recorded
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 6/6/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Harry Lyatuu
Static Water Level Elevation (with respect to NAVD88) after Well Development: -1.8
Name of Geologic Formation(s) in which Well is completed: See boring log B-805

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSB Date: 7-6-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 5/7/08
Observation Well Northing: 397007.9 US ft Easting: 875152.3 US ft
Observation Well Location: Main Island

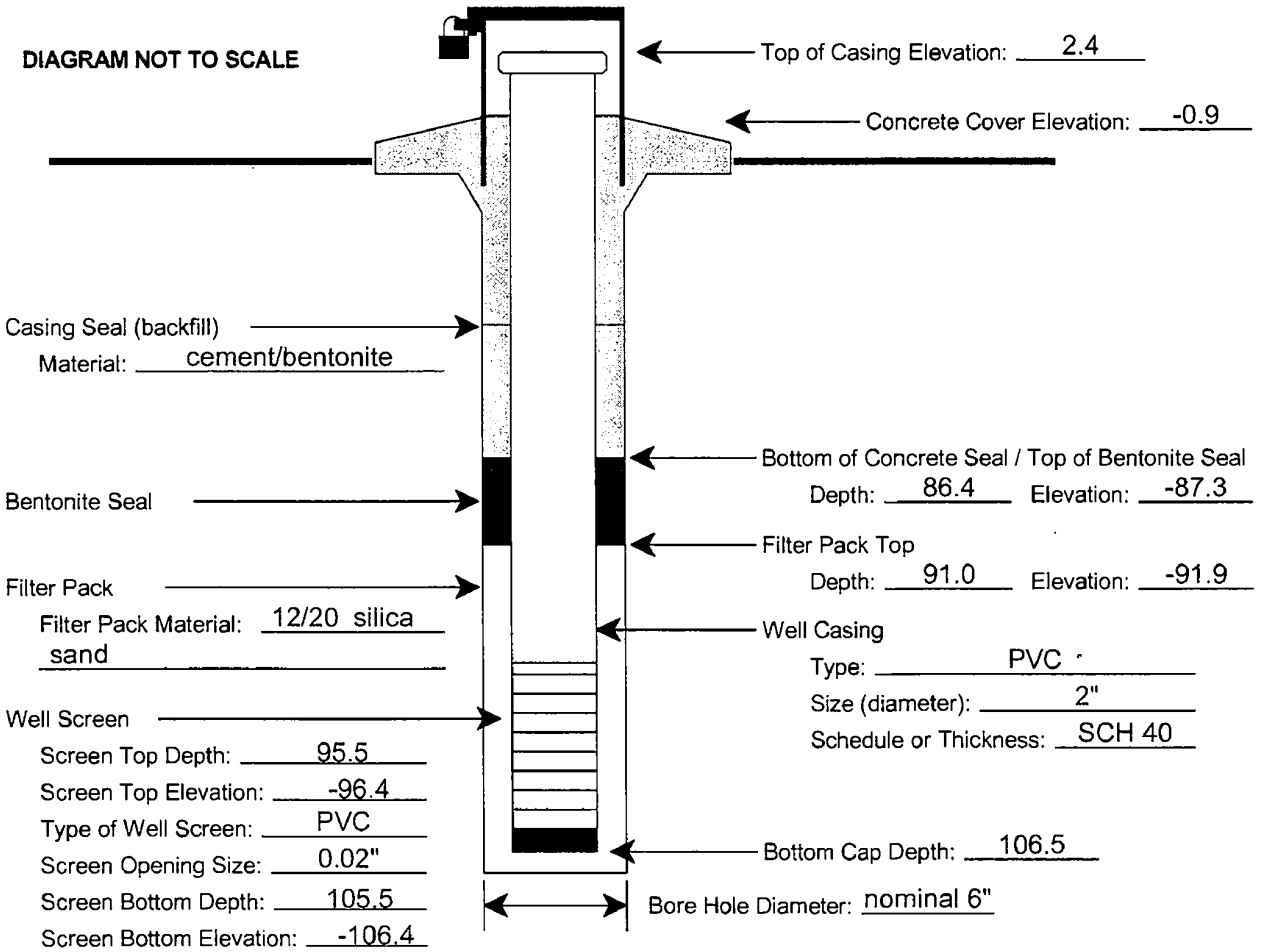
Observation Well Permit No.: 13-59-2258
Observation Well I.D.: OW-809I
Date of Well Development: 5/13/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Two, stainless-steel centralizers installed at approximately 45.5 ft. and 95 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/15/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Gautham Pillappa/Kim Charles-Smith
Static Water Level Elevation (with respect to NAVD88) after Well Development: -0.9
Name of Geologic Formation(s) in which Well is completed: See boring log B-809

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSB Date: 7-10-08
Checked by: CBS Date: 7/10/08

Project Name / No. : Turkey Point Power Station / 6468-07-1950
County: Miami-Dade County, Florida
Date of Observation Well Installation: 4/1/08
Observation Well Northing: 397045.8 US ft Easting: 875152.4 US ft
Observation Well Location: Main Island

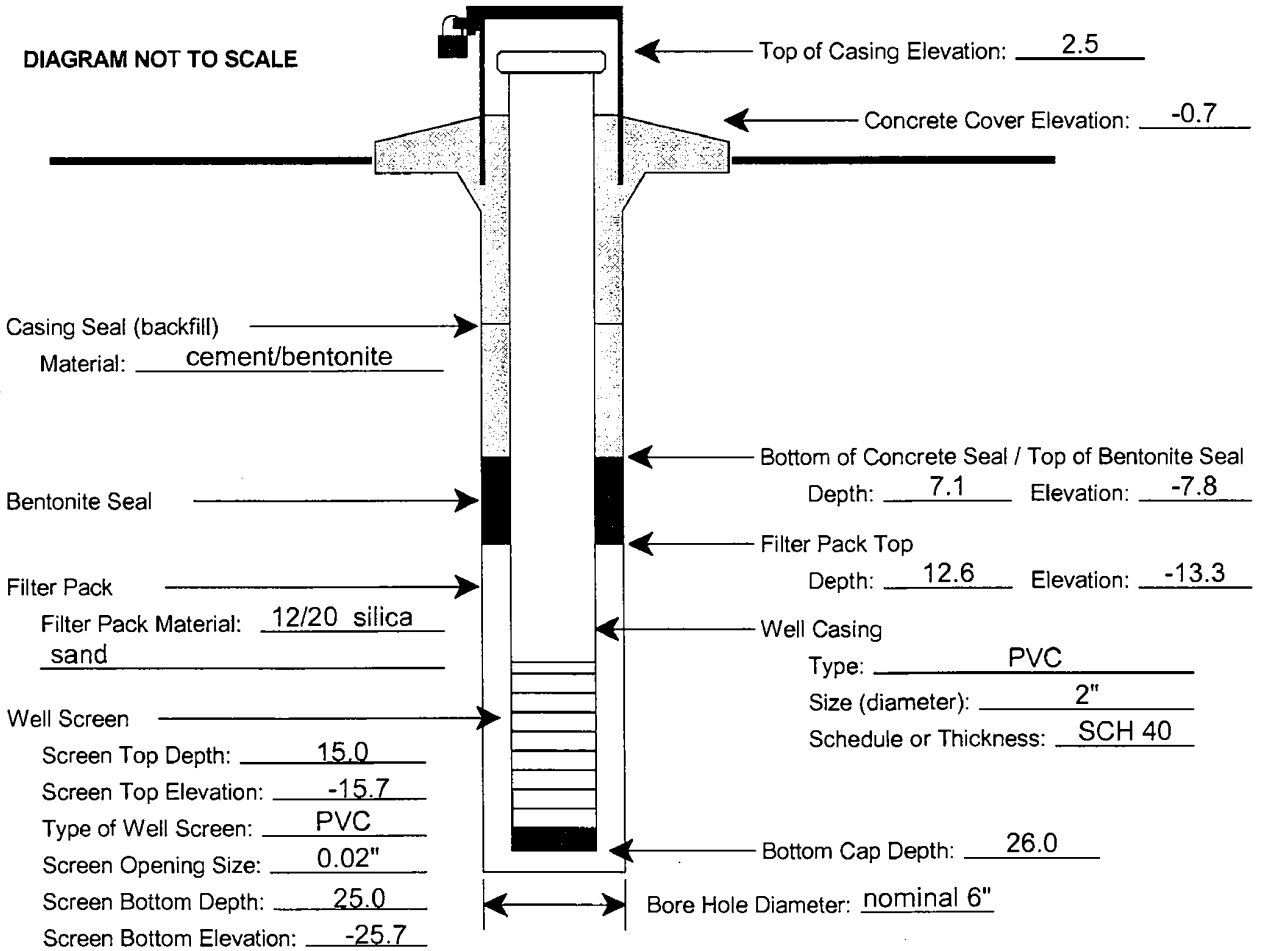
Observation Well Permit No.: 13-59-2257
Observation Well I.D.: OW-809U
Date of Well Development: 5/1/08
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

One stainless-steel centralizer installed at approximately 14.8 ft.
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/15/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Chris Burroughs
Static Water Level Elevation (with respect to NAVD88) after Well Development: -2.2
Name of Geologic Formation(s) in which Well is completed: See boring log B-809

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WS Date: 7-10-08
Checked by: CBS Date: 7/10/08

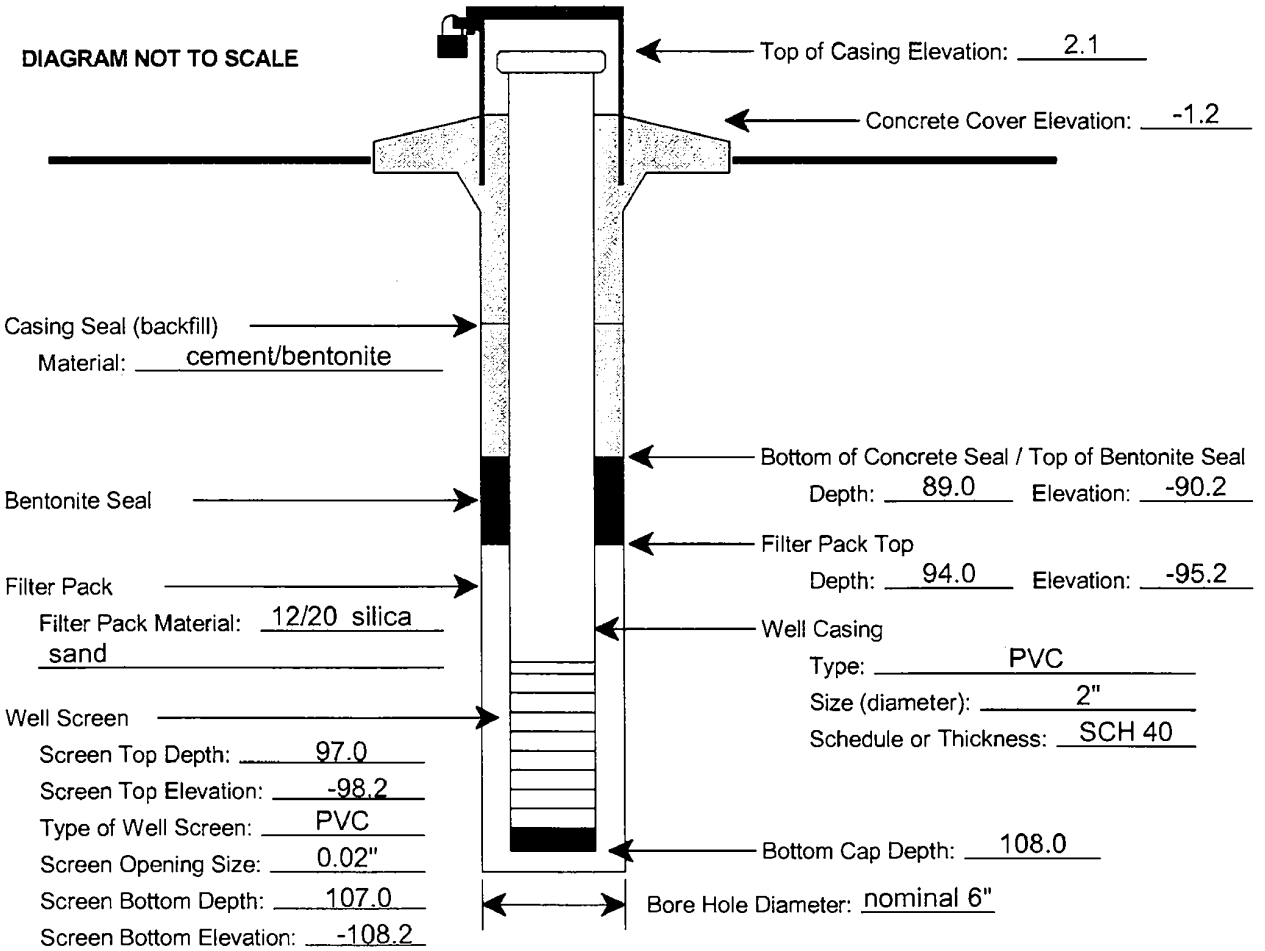
Project Name / No. : Turkey Point Power Station / 6468-07-1950
Observation Well Permit No.: 13-59-2260
County: Miami-Dade County, Florida
Observation Well I.D.: OW-812L
Date of Observation Well Installation: 5/7/08
Date of Well Development: 5/13/08
Observation Well Northing: 398892.8 US ft Easting: 875045.5 US ft
Observation Well Location: North Island
Observation Well Driller
Name: MACTEC
License No.: 11035

NOTES:

Centralizer installation depths not recorded
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/20/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.

Geologist, Hydrologist, or Engineer Supervising Well Installation: Harry Lyatuu
Static Water Level Elevation (with respect to NAVD88) after Well Development: -0.9
Name of Geologic Formation(s) in which Well is completed: See boring log B-812

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Observation Well Data Sheet

Prepared by: WSC Date: 7-6-08
Checked by: CBS Date: 7/10/08

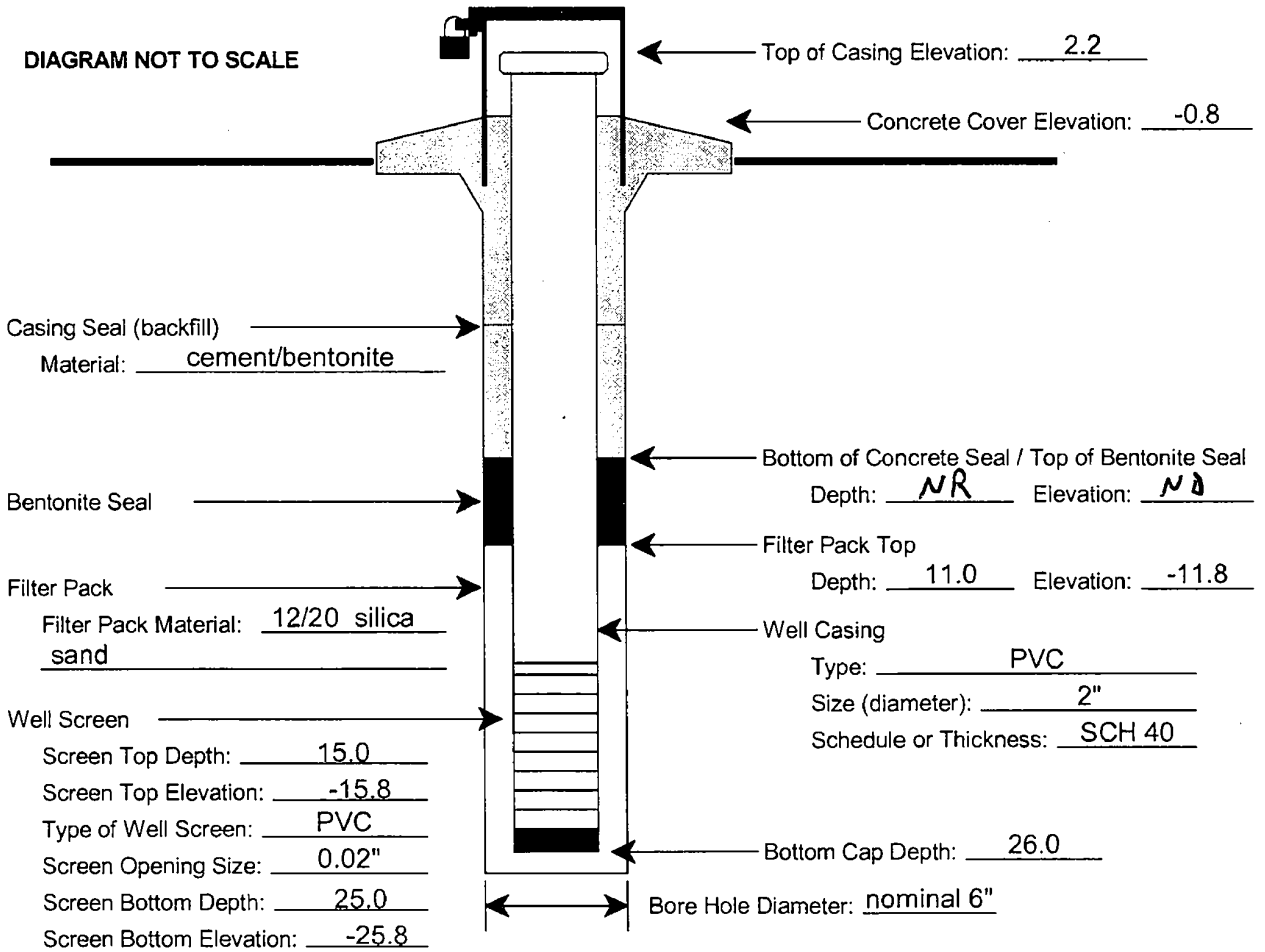
Project Name / No. : Turkey Point Power Station / 6468-07-1950
Observation Well Permit No.: 13-59-2259
County: Miami-Dade County, Florida
Observation Well I.D.: OW-812U
Date of Observation Well Installation: 5/6/08
Date of Well Development: 5/7/08
Observation Well Northing: 398933.9 US ft Easting: 875043.5 US ft
Observation Well Location: North Island
Observation Well Driller Name: MACTEC
License No.: 11035

NOTES:

Centralizer installation depths not recorded
PVC well screen machine-slotted by the manufacturer.
Observation well developed using a submersible pump.
Static water measurement collected 5/20/08.
Upon completion of well installation, MACTEC installed two seep holes in the protective steel cover.
Depth to bottom of concrete seal not recorded (NR) and elevation not determined (ND).

Geologist, Hydrologist, or Engineer Supervising Well Installation: Harry Lyatuu
Static Water Level Elevation (with respect to NAVD88) after Well Development: -2.4
Name of Geologic Formation(s) in which Well is completed: See boring log B-812

Type of Locking Device: Masterlock - 0536 Type of Casing Protection: Steel
Concrete Surface Pad (with steel reinforcement) Dimensions: 2'x2'x0.5'



Well Development Records

Well Development Record

Well No.: OW-606L

Project No. 6468-07-1950	Logged By: Kim Chadd-Smith	
Client Name: Bechtel	Project Name: TP COL	Checked By:
Well Installation Date: 5-14-08	Start Date: 4-23-08	Finish Date: 5-14-08
Well Development Date: 5-17-08	Start Time: 1002	Finish Time: 1132

Initial Water Level (ft.): 0.48' From TOC.

Water Level during **Initial** Pumping/Purging (ft).: 0.88' From TOC

Water Level at **Termination** of Pumping/Purging (ft).: 0.68' From TOC

Weather: Sunny ~ 80°F

Height of Water Column: _____ (ft.) x _____ 0.16 gal./ft. (2 in.) / 0.65 gal./ft. (4 in.) / 1.5 gal./ft. (6 in.) / _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

KH 5-17-08 See notes

	Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
0.88'	1) 26 gal.	1011	27.95	6.43	9.29	3.1 gpm	197
	2) 52 gal.	1020	29.03	7.01	9.04	↓	153
0.89'	3) 78 gal.	1029	31.00 29.54	7.02 7.07	8.95 8.88	↓	107
	4) 104 gal.	1038	29.00	7.08	8.96	3.1 gpm	104
0.88'	5) 130 gal.	1047	28.59	7.09	9.04	↓	101
	6) 156 gal.	1056	28.82	7.08	8.98	↓	20
	7) 182 gal.	1105	28.60	7.07	9.03	3.1 gpm	8
0.88'	8) 208 gal.	1114	28.61	7.08	9.03	↓	7 KH 5-17-08
	9) 234 gal.	1123	28.65	7.07	9.01	↓	5
	10) 260 gal.	1132	28.59	7.09	9.03	↓	3

Notes: Surged well Sump + Screen for entire 1st well volume. KH 5-17-08 & while pumping. Water is Gray w/very Fine Sand Set pump in middle of Screen.
- See well volume calculation Spreadsheet for volume calcs.

Well Developers Signature: Kim Chadd-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: OW-Cooled

Project No. CAle8-07 | Logged By: Kim

Client Name: Bechtel | Project Name: TPCOL | Checked By:

Well Installation Date: 4-22-08 | Start Date: 4-22-08 | Finish Date: 4-22-08

Well Development Date: 5-1-08 | Start Time: 1107 | Finish Time: 1137

Initial Water Level (ft.): Artesia Flowing

Water Level during **Initial** Pumping/Purging (ft).: 0.24' From TOC

Water Level at **Termination** of Pumping/Purging (ft).: 0.35' From TOC

Weather: Sunny ~ 75°F

See notes KJ 5-1-08

Height of Water Column: _____ (ft.) x _____ 0.16 gal./ft. (2 in.) / 0.65 gal./ft. (4 in.) / 1.5 gal./ft. (6 in.) / _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

Water level below TOC	Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
0.24'	(1) 13 gal.	1110	27.74	7.14	62.8	5 gpm	6.93
	(2) 26 gal.	1113	27.83	7.13	62.9	5 gpm	2.69
	(3) 39 gal.	1116	27.84	7.13	63.0	5 gpm	1.67
0.24'	(4) 52 gal.	1119	27.83	7.12	63.3	5 gpm	1.43
	(5) 65 gal.	1122	27.85	7.14	63.4	5 gpm	1.24
	(6) 78 gal.	1125	27.38	7.15	63.7	5 gpm	1.01
0.20'	(7) 91 gal.	1128	27.41	7.13	63.4	5 gpm	0.96
	(8) 104 gal.	1131	28.01	7.14	63.1	5 gpm	0.80
	(9) 117 gal.	1134	28.03	7.14	63.4	5 gpm	0.75
0.20'	(10) 130 gal.	1137	28.03	7.16	63.2	5 gpm	0.53

Notes: - Surged well with Grundfos to remove Sediment from bottom of well.
- See well Volume Calculation sheet for volume calcs.

Well Developers Signature: [signature]

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: OW-621L

Project No. 6468-07-1950	Logged By: Kim Chalo-Smith	
Client Name: Bechtel	Project Name: TPCOL	Checked By:
Well Installation Date: 4-18-08	Start Date: 4-17-08	Finish Date: 4-18-08
Well Development Date: 5-3-08	Start Time: 1335	Finish Time: 1505

Initial Water Level (ft.): 0' Artesian Flowing KJS 5-3-08 KJS 5-3-08

Water Level during **Initial** Pumping/Purging (ft).: ~~0'~~ Artesian Flowing 0.80'

Water Level at **Termination** of Pumping/Purging (ft).: 0.80' KJS 5-3-08

Weather: Sunny ~ 80°F

5-3-08 KJS See notes

Height of ~~Water~~ Column: _____ (ft.) × _____ 0.16 gal./ft. (2 in.) / 0.65 gal./ft. (4 in.) / ~~1.5 gal./ft. (6 in.)~~ / _____ gal./ft. (____ in.) = _____ Well Volume (gal./ft.)

Water level below TOC	Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
0.80'	(1) 26 gal.	1344	28.62	6.48	55.3	3.0 gpm	56.9
	(2) 52 gal.	1353	28.27	7.00	56.3	3.0 gpm	17.6
0.80'	(3) 78 gal.	1402	28.21	7.07	57.0	3.0 gpm	11.8
	(4) 104 gal.	1411	28.46	7.11	57.4	3.0 gpm	6.08
0.80'	(5) 130 gal.	1420	28.20	7.12	57.6	3.0 gpm	5.23
	(6) 156 gal.	1429	28.43	7.12	57.8	3.0 gpm	3.97
	(7) 182 gal.	1438	28.33	7.13	57.9	3.0 gpm	3.90
0.81'	(8) 208 gal.	1447	28.36	7.13	58.0	3.0 gpm	3.52
	(9) 234 gal.	1456	28.27	7.12	58.1	3.0 gpm	3.54
0.80'	(10) 260 gal.	1505	28.17	7.13	58.1	3.0 gpm	3.04

Notes:

Set Grundfos Approx. 2' above Screen and Surged well w/ pump to clean out Sump. Cannot pump.

- See well volume calculation spreadsheet for volume calcs.

Well Developers Signature: Kimberly Chalo-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: OW-621U

Project No. 6468-07-1950	Logged By: Kim Chubb-Smith	
Client Name: Bechtel	Project Name: TPCOL 4-18-08	Checked By:
Well Installation Date: 4-19-08	Start Date: ~~5-3-08~~ 5-3-08	Finish Date: 4-19-08
Well Development Date: 5-3-08	Start Time: ~~1554~~ 1557 5-3-08	Finish Time: 1624
Initial Water Level (ft.): 1.66'		
Water Level during **Initial** Pumping/Purging (ft).: 1.86'		
Water Level at **Termination** of Pumping/Purging (ft).: 1.88'		
Weather: Sunny ~ 80°F		

KK 5-3-08 See notes

Height of Water Column: _____ (ft.) x _____ 0.16 gal./ft. (2 in.) / _____ 0.65 gal./ft. (4 in.) / ~~1.5 gal./ft. (6 in.)~~ / _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

	Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: µS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
1.86'	(1) 13 gal.	1557	29.07	7.17	54.9	5 gpm	24.5
	(2) 26 gal.	1600	28.67	7.17	55.0	5 gpm	12.5
1.86'	(3) 39 gal.	1603	28.54	7.17	54.8	5 gpm	8.12
	(4) 52 gal.	1606	28.44	7.16	54.9	5 gpm	6.67
1.88'	(5) 65 gal.	1609	28.40	7.16	55.0	5 gpm	5.58
	(6) 78 gal	1612	28.64	7.16	55.0	5 gpm	3.97
1.88'	(7) 91 gal	1615	28.55	7.16	55.1	5 gpm	3.59
	(8) 104 gal.	1618	28.46	7.15	55.1	5 gpm	3.46
	(9) 117 gal.	1621	28.48	7.15	55.2	5 gpm	2.07
1.88'	(10) 130 gal.	1624 KK 5-3-08	28.65	7.15	55.2	5 gpm	2.19

Notes: Set Grundfos Approx. 2' Above bottom of well
Surged well while pumping.
- See well volume calculation sheet for volume calcs.

Well Developers Signature: Kimberly Chubb-Smith

FIGURE 9

Graphics\Misc.\Forms

MACTEC Engineering and Consulting, Inc.

Well Development Record

Well No.: OW-636L

Project No. 6468-07-1950	Logged By: KrisCharles-Smith		
Client Name: Bechtel KY	Project Name: TPCoL 4 KY 5-5-08		Checked By:
Well Installation Date: ~~4-4-08~~ 5-5-08 4-6-08	Start Date: 4-6-08		Finish Date: 4-6-08
Well Development Date: 5-5-08	Start Time: 0958		Finish Time: 1138
Initial Water Level (ft.): 2.16			
Water Level during **Initial** Pumping/Purging (ft).: 3.92'			
Water Level at **Termination** of Pumping/Purging (ft).: 2.07'			
Weather: Sunny ~ 84°F			

Height of Water Column: _____ (ft.) x ~~0.16 gal./ft. (2 in.)~~ ~~0.65 gal./ft. (4 in.)~~ ~~1.5 gal./ft. (6 in.)~~ _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

KY 5-5-08 See notes

Water level From TOC

Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
KY 5-5-08 3.92 (1) 24 gal.	1008	29.46	7.05	36.4	2.5 GPM	2.73
(2) 48 gal.	1018	29.28	7.01	36.2	2.5 GPM	1.23
4.12' (3) 72 gal.	1028	29.34	7.05	36.4	3.0 GPM	1.13
(4) 96 gal.	1038	29.40	7.01	36.7	3.0 GPM	1.31
4.10' (5) 120 gal.	1048	29.453	7.02	37.1	3.0 GPM	1.39
(6) 144 gal.	1058	KY 5-5-08 29.49	7.02	37.1	3.0 GPM	1.32
4.09' (7) 168 gal.	1108	29.56	7.02	37.4	3.0 GPM	1.21
(8) 192 gal.	1118	29.64	7.03	37.4	3.0 GPM	1.15
4.07' (9) 216 gal.	1128	29.96	7.03	37.5	3.0 GPM	0.88
4.06' (10) 240 gal.	1138	29.62	7.04	37.7	3.0 GPM	0.84

Notes: Set grundfos pump Approx 2' above Sump and Surged well with pump running for first volume.

- See well volume calculation Spreadsheet for volume calcs.

Well Developers Signature: Kris Charles-Smith III

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: OW-636A

Project No. 6468-07-1950	Logged By: Kim Charles-Smith	
Client Name: Bechtel	Project Name: TPCOL	Checked By:
Well Installation Date: 4-3-08	Start Date: 4-3-08	Finish Date: 4-3-08
Well Development Date: 5-5-08	Start Time: 0906	Finish Time: 0924
Initial Water Level (ft.): 3.90'		
Water Level during **Initial** Pumping/Purging (ft).: 3.90'		
Water Level at **Termination** of Pumping/Purging (ft).: 2.95'		
Weather: Sunny ~ 84°F		

Height of Water Column: _____ (ft.) × _____ 0.16 gal./ft. (2 in.) / 0.65 gal./ft. (4 in.) / ~~1.5 gal./ft.~~ (6 in.) / _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

KJ 5-5-08 See notes

Water level below TOC

Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
3.90' 1) 10 gal.	0906	24.70	7.03	46.9	5 gpm	3.13
2) 20 gal.	0908	27.04	6.91	41.3	↓	1.51
3.90' 3) 30 gal.	0910	27.15	6.95	42.2	↓	0.85
4) 40 gal.	0912	27.22	6.99	42.6	↓	1.50
5) 60 gal.	0914	27.27	7.01	42.8	5 gpm	0.72
3.08' 6) 60 gal.	0916	27.31	7.00	42.8	↓	0.40
7) 70 gal.	0918	27.24	7.01	42.8	↓	0.67
8) 80 gal.	0920	27.31	7.00	43.1	↓	0.61
3.08' 9) 90 gal.	0922	27.33	7.02	43.1	↓	0.70
10) 100 gal.	0924	27.31	7.02	43.2	5 gpm	0.83

Notes: KJ 5-5-08 Set Grundfos 2' ~~abv~~ above sump and surged well with pump running for first volume - See well volume calculation spreadsheet for volume calcs.

Well Developers Signature: Kim Charles-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

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Well Development Record

Well No.: MW-706L

Project No: 468-07-1950	Logged By: Kim Clark-Smith	
Client Name: Bechtel	Project Name: TP COL	Checked By:
Well Installation Date: 3-22-08 to 3-25-08	Start Date: 3-22-08	Finish Date: 3-25-08
Well Development Date: 4-30-08	Start Time: 1230	Finish Time: 1420

Initial Water Level (ft.): 0.21' from TOC (Artesian)

Water Level during **Initial** Pumping/Purging (ft).: 1.07' KK 4-30-08

Water Level at **Termination** of Pumping/Purging (ft).: 0.30' below TOC

Weather: Sunny ~ 75°F 0.52'

KK 4-30-08 See notes

~~Height of Water Column: _____ (ft.)~~ _____ 0.16 gal./ft. (2 in.)
_____ 0.65 gal./ft. (4 in.)
~~1.5 gal./ft. (6 in.)~~
_____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

TOC water level

Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
1.07' (1) 25 gal.	1245	29.84	7.06	49.0	2.5 gpm	2.19
(2) 50 gal.	1255	27.67	7.00	49.3	2.5 gpm	0.75
(3) 75 gal.	1310	27.50	KK 4-30-08 6.98	50.9	2.5 gpm	0.58
1.19' (4) 100 gal.	1320	27.62	6.99	52.1	2.5 gpm	0.68
(5) 125 gal.	1330	27.66	7.00	52.4	2.5 gpm	0.80
(6) 150 gal.	1340	27.63	7.00	53.1	2.5 gpm	0.56
1.19' (7) 175 gal.	1350	27.64	7.01	53.5	2.5 gpm	0.73
(8) 200 gal.	1400	27.81	7.00	53.4	2.5 gpm	0.44
1.21' (9) 225 gal.	1410	27.71	6.99	54.4	2.5 gpm	0.38
(10) 250 gal.	1420	27.78	7.00	54.5	2.5 gpm	0.40

Notes: Set Grundfos ~ 2' above bottom of well surged well while running pump until water ran clear, Approx. 5-10 gallons.

Well Developers Signature: Kimberly Clark-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

See Well Volume Calculation Spread Sheet for Volume Calcs.

Well Development Record

Well No.: AW-706d

Project No. 6468-07-1950	Logged By: Kim Charlo Smith		
Client Name: Bechtel	Project Name: TPCOL		Checked By:
Well Installation Date: 3-26-08 to 3-27-08	Start Date: 3-26-08		Finish Date: 3-27-08
Well Development Date: 4-30-08	Start Time: 1509		Finish Time: 1539

Initial Water Level (ft.): 1.60' from TOC

Water Level during **Initial** Pumping/Purging (ft).: 1.68' below TOC

Water Level at **Termination** of Pumping/Purging (ft).: 1.62' below TOC

Weather: Sunny ~ 75°F

KMF 4-30-08

~~Height of Water Column:~~ _____ (ft.) x ~~0.16 gal./ft. (2 in.)~~ ~~0.65 gal./ft. (4 in.)~~ ~~1.5 gal./ft. (6 in.)~~ _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

See notes

Water level from TOC

Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
1.68' (1) 11 gal.	1512	28.83	6.86	82.5	4.0 gpm	5.99
1.72' (2) 22 gal.	1515	28.51	6.85	83.1	5.0 gpm	5.99
(3) 33 gal.	1518	27.66	6.89	83.1	5.0 gpm	7.33
(4) 44 gal.	1521	28.50	6.86	82.4	5.0 gpm	4.20
1.76' (5) 55 gal.	1524	28.25	6.84	82.7	5.0 gpm	3.38
(6) 66 gal.	1527	28.26	6.86	82.6	5.0 gpm	3.50
1.76' (7) 77 gal.	1530	28.20	6.86	82.3	5.0 gpm	2.18
(8) 88 gal.	1533	27.85	6.84	82.7	5.0 gpm	2.77
1.76' (9) 99 gal.	1536	27.64	6.86	82.6	5.0 gpm	1.80
1.76' (10) 110 gal	1539	27.66	6.86	82.8	5.0 gpm	1.82

Notes: Set Grundfos pump ~ 2' from bottom of well. Surged well w/pump. ~~pumped to~~ KMF 4-30-08 Until water ran clear Approx. 5 gallons.

See well volume calculation spreadsheet for volume calcs.

Well Developers Signature: Kimberly Charlo-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: OW-721L

Project No. 6468-07-1950	Logged By: Kevin Charles-Smith	
Client Name: Bechtel	Project Name: TPCOL	Checked By:
Well Installation Date: 5-3-08	Start Date: 5-2-08	Finish Date: 5-3-08
Well Development Date: 5-4-08	Start Time: 1101	Finish Time: 1337

Initial Water Level (ft.): 1.93'

Water Level during **Initial** Pumping/Purging (ft).: 4.40'

Water Level at **Termination** of Pumping/Purging (ft).: 2.56'

Weather: Sunny ~ 80°F

Height of Water Column: _____ (ft.) x _____ 0.16 gal./ft. (2 in.) / 0.65 gal./ft. (4 in.) / 1.5 gal./ft. (6 in.) / _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

KC 5-4-08 See notes

underlined From Toc

Number of Well Volumes:	Time: (KC 5-4-08)	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
4.40' (1.93 KC 5-4-08) (1) 23 gal.	1110	29.38	7.12	51.1	2.25 gpm	>1000
(2) 46 gal.	1137	29.32	7.07	42.8	2.25 gpm	146
3.59' (3) 69 gal.	1147	29.30	7.06	42.0	2.25 gpm	106
(4) 92 gal.	1157	29.38	7.07	42.0	2.25 gpm	86.8
3.95' (5) 115 gal.	1207	29.45	7.06	42.1	2.25 gpm	78.8
(6) 138 gal.	1217	29.35	7.06	41.2	2.25 gpm (5-4-08)	72.4
(7) 161 gal.	1227	29.56	7.07	42.3	2.25 gpm	72.6
3.87' (8) 184 gal.	1237	29.33	7.05	42.9	2.25 gpm	21.8
(9) 207 gal.	1247	29.30	7.05	42.8	2.25 gpm	16.5
3.87' (10) 230 gal.	1257	29.31	7.06	42.5	2.25 gpm	28.9
(12) 276 gal.	1317	29.69	7.05	42.5	2.25 gpm	16.2
(14) 322 gal.	1537	29.44	7.05	42.5	2.25 gpm	8.41

Notes: Set Grundfos Approx 2' above Sump and Surged Well with pump.
- See well volume calculation Sheet for Volume calcs.

Well Developers Signature: Kevin Charles-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: OW-721U

Project No. 6468-07-1950	Logged By: Kim Charles-Smith	
Client Name: Bechtel	Project Name: TPCOL	Checked By:
Well Installation Date: 5-2-08	Start Date: 5-2-08	Finish Date: 5-2-08
Well Development Date: 5-4-08	Start Time: 0948	Finish Time: 1008
Initial Water Level (ft.): 0.84'		
Water Level during **Initial** Pumping/Purging (ft).: 1.86'		
Water Level at **Termination** of Pumping/Purging (ft).: 0.97'		
Weather: Sunny ~ 80°F		

KK 5-4-08 See notes

Height of Water Column: _____ (ft.) x _____ 0.16 gal./ft. (2 in.) / _____ 0.65 gal./ft. (4 in.) / _____ 1.5 gal./ft. (6 in.) / _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

Number of Well Volumes:	Time: 5.4.08 KK	Temperature: °C	pH: SU	Conductivity: ms/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
water level From TOC						
1.86' (1) 10 gal.	0950	27.76	6.69	41.0	5 gpm	54.8
(2) 20 gal.	0952	28.07	7.00	42.4	↓	25.4
(3) 30 gal	0954	28.64	7.03	42.3	↓	14.2
1.73' (4) 40 gal.	0956	28.77	7.06	43.0	5 gpm	14.6
(5) 50 gal.	0958	28.79	7.05	43.1	↓	16.9
1.50' (6) 60 gal.	1000	28.74	7.08	43.5	5 gpm	9.73
(7) 70 gal.	1002	28.84	7.07	43.3	↓	7.92
(8) 80 gal.	1004	28.93	7.08	43.2	↓	7.14
1.49' (9) 90 gal.	1006	28.95	7.07	43.0	5 gpm	6.31
(10) 100 gal.	1008	28.96	7.07	43.1	5 gpm	5.03

Notes: Set Grundfos Approx 2' above bottom of well + Surged to clean out Sump.
- See well volume calculation spreadsheet for volume calcs.

Well Developers Signature: Kimberly Charles-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: OW-735L

Project No. 6468-07-1950	Logged By: Kim Clarke-Smith	
Client Name: Bechtel	Project Name: TPCOL	Checked By:
Well Installation Date: 4-15-08 to 4-19-08	Start Date: 4-15-08	Finish Date: 4-19-08
Well Development Date: 4-29-08/4-30-08	Start Time: 1440 (4-29-08)	Finish Time: 0932 (4-30-08)
Initial Water Level (ft.): 0.34' from TOC		
Water Level during **Initial** Pumping/Purging (ft).: 0.49'		
Water Level at **Termination** of Pumping/Purging (ft).: TOC (Artesian)		
Weather: Sunny / partly Cloudy 72°F		

KJ 4-30-08 See notes

Height of Water Column: _____ (ft.)
x 0.16 gal./ft. (2 in.)
x 0.65 gal./ft. (4 in.)
x 1.5 gal./ft. (6 in.)
x _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

Water level From TOC

	Number of Well Volumes:	Time:	Temperature: °C	pH: Std	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
0.83'	1) 25 gal.	1430	29.51	6.63	62.8	2.5 gpm	25.3
	2) 50 gal.	1440	29.44	6.64	62.5	2.5 gpm	14.4
	3) 75 gal.	1450	29.31	6.65	62.6	2.5 gpm	9.95
	4) 100 gal.	1500	29.19	6.65	62.5	2.5 gpm	9.59
0.84'	5) 125 gal.	1510	28.93	6.66	62.3	2.5 gpm	7.94
	6) 150 gal.	1520	28.71	6.66	62.1	2.5 gpm	7.26
	7) 175 gal.	1530	28.72	6.65	62.2	2.5 gpm	7.45
	8) 200 gal.	1540	28.71	6.66	62.5	2.5 gpm	6.24
0.65'	9) 225 gal.	0922	27.38	6.65	79.0	2.5 gpm	8.21
	10) 250 gal.	0932	28.41	6.67	82.9	2.5 gpm	4.42

Notes:

Set Grundfos pump ~ 2' from bottom of well tagged T.D. Surged well w/pump and lowered pump to clean out Sediment.
Completed well Development Volumes 9 & 10 on 4-30-08 due to Thunderstorm on 4-29-08.

Well Developers Signature: Kim Clarke-Smith

FIGURE 9

Graphics\Misc.\Forms

MACTEC Engineering and Consulting, Inc.

See well volume Calculation Sheet for volume calcs.

Well Development Record

Well No.: OW-7354

Project No. 6468-07-1950	Logged By: KinCholo-Smith	
Client Name: Bechtel	Project Name: TP COL	Checked By:
Well Installation Date: 4-20-08	Start Date: 4-20-08	Finish Date: 4-20-08
Well Development Date: 4-29-08	Start Time: 1130	Finish Time: 1353
Initial Water Level (ft.): 2.0' from TOC		
Water Level during **Initial** Pumping/Purging (ft).: Unchanged -2.04'		
Water Level at **Termination** of Pumping/Purging (ft).: 2.03'		
Weather: SUNNY, ~75°F		

Height of Water Column: _____ (ft.) x _____ 0.16 gal./ft. (2 in.) / 0.65 gal./ft. (4 in.) / 1.5 gal./ft. (6 in.) / _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

See notes

Water level	Number of Well Volumes:	Time:	Temperature:	pH: SU	Conductivity: mS/cm (see note)	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
2.03'	1 (10 gal.)	1130 4-29-08	28.12	6.77	0.001 KB 4-29-08	2.0 gpm	17.7
	2 (20 gal.)	1148	29.83	6.89	0.001 KB 4-29-08	3.0 gpm	12.0
	3 (30 gal.)	1156	30.31	6.88	60.5	2.5 gpm	7.96
	4 (40 gal.)	1200	29.25	6.48	60.4	2.5 gpm	5.82
2.04'	5 (50 gal.)	1335	29.70	6.73	61.7	2.5 gpm	2.71
	6 (60 gal.)	1339	29.95	6.77	62.0	3.0 gpm	4.34
2.02'	7 (70 gal.)	1344	29.77	6.78	62.5	4.0 gpm	7.65
	8 (80 gal.)	1347	29.72	6.79	62.2	4.0 gpm	8.80
	9 (90 gal.)	1350	29.81	6.80	62.1	4.5 gpm	8.41
2.03'	10 (100 gal.)	1353	29.93	6.81	62.5	4.5 gpm	8.20

Notes:
- Grundfos pump set Approximately 2.0' off bottom of tagged T.D
- Surged well for first 3 vol. by turning off pump and allowing well to settle then turning on pump again.
- Lowered pump to bottom of well @ Approximately 50 gal.

Well Developers Signature: Kristy Choy-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

note: had a problem with Conductivity, had to change probes. First two conductivity readings not valid. KB 4-29-08

See well volume calculation sheet for well volume factors.

Well Development Record

Well No.: OW-802L

Project No. 6468-07-1950	Logged By: Kim Chesley-Smith		
Client Name: Bechtel	Project Name: TPCOL		Checked By:
Well Installation Date: 5-4-08	Start Date: 5-3-08		Finish Date: 5-4-08
Well Development Date: 5-5-08	Start Time: 1451		Finish Time: 1631

Initial Water Level (ft.): Artesian Flowing

Water Level during **Initial** Pumping/Purging (ft).: 0.77'

Water Level at **Termination** of Pumping/Purging (ft).: 0.28'

Weather: Sunny ~84°F

KMJ 5-5-08 See note

Height of Water ~~Column~~: _____ (ft.) x ~~0.16 gal./ft. (2 in.)~~ ~~0.65 gal./ft. (4 in.)~~ ~~1.5 gal./ft. (6 in.)~~ _____ gal./ft. (_____ in.) = Well Volume (gal./ft.)

water level from TOC

Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
0.77' 1) 24 gal.	1501	29.39	6.86	49.9	3.0 gpm	0.49
0.81' 2) 48 gal.	1509	29.40	6.88	50.5		0.42
3) 72 gal.	1517	28.95	6.92	50.7		0.35
4) 96 gal.	1525	29.12	6.93	51.0		0.32
5) 120 gal.	1533	29.22	6.96	51.7	↓	0.44
0.86' 6) 144 gal.	1541	28.97	6.95	51.8	3.0 gpm	0.29
7) 168 gal.	1549	28.76	6.95	52.4		0.27
0.87' 8) 192 gal.	1557	28.65	6.95	52.6		0.59
9) 216 gal.	1605	28.59	6.94	52.9	↓	0.65
0.89 10) 240 gal.	1613	28.61	6.94	52.8	3.0 gpm	0.36
	~~1621~~ KMJ 5-5-08					

Notes: Surged Sump w/ grundfos while pumping, for first well volumes removed.
— See well volume calculation spreadsheet for volume calcs.

Well Developers Signature: Kimmy Chesley-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: OW-802U

Project No. 6468-07-1950	Logged By: Kim Charles-Smith	
Client Name: Bechtel	Project Name: TPCOL	Checked By:
Well Installation Date: 5-4-08	Start Date: 5-4-08	Finish Date: 5-4-08
Well Development Date: 5-7-08	Start Time: ~~5-7-08~~ KHf	Finish Time: ~~1413~~ KHf

Initial Water Level (ft.): 2.10' KHf 5-7-08 ~~1353~~ 5-7-08 1513 5-7-08

Water Level during **Initial** Pumping/Purging (ft).: ~~2.10'~~ 2.64' 1455 KHf 5-7-08

Water Level at **Termination** of Pumping/Purging (ft).: 2.99'

Weather: Sunny ~ 85°F

~~Height of Water Column: _____ (ft.)~~ x ~~0.16 gal./ft. (2 in.)~~ ~~0.65 gal./ft. (4 in.)~~ ~~1.5 gal./ft. (6 in.)~~ ~~_____ gal./ft. (_____ in.)~~ = ~~_____ Well Volume (gal./ft.)~~

See notes KHf 5-7-08

Water level from TOC

Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
2.64' 1) 10 gal.	~~14~~ 1355	28.97	6.36	66.5	5 gpm	4.42
2) 20 gal.	1357	28.68	6.70	68.6	↓	2.49
2.65' 3) 30 gal.	1359	28.66	6.75	69.8	5 gpm	1.87
4) 40 gal.	1401	28.64	6.76	70.4	↓	1.84
5) 50 gal.	1403	28.58	6.77	70.3	↓	1.76
2.67' 6) 60 gal.	1405	28.70	6.75	70.6	5 gpm	1.25
7) 70 gal.	1407	28.68	6.81	70.7	↓	1.19
2.68' 8) 80 gal.	1409	28.70	6.82	71.1	↓	1.16
9) 90 gal.	1411	28.69	6.82	71.1	5 gpm	1.06
2.68' 10) 100 gal.	1413	28.71	6.82	71.3	5 gpm	0.82
	~~14~~ KHf 5-7-08					

Notes: Surged Sump with Grundfos for 1st volume until water ran clear.
- See well volume calculation Spreadsheet for volume calcs.

Well Developers Signature: Kim Charles-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: AW-809L

Project No. LA68-07-1950	Logged By: Kim Charles-Smith		
Client Name: Bechtel	Project Name: TPCOL		Checked By:
Well Installation Date: 5-07-08	Start Date: 5-5-08		Finish Date: 5-7-08
Well Development Date: 5-13-08	Start Time: 1337		Finish Time: 1507
Initial Water Level (ft.): 3.36'			
Water Level during **Initial** Pumping/Purging (ft).: 3.92'			
Water Level at **Termination** of Pumping/Purging (ft).: 3.44'			
Weather: Sunny ~ 85°F			

KJC 5-13-08 See notes

Height of Water Column: _____ (ft.) × _____ 0.16 gal./ft. (2 in.) / _____ 0.65 gal./ft. (4 in.) / _____ 1.5 gal./ft. (6 in.) / _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
3.92' 1) 23 gal.	1346	31.38	6.71	40.5	2.8 gpm	13.3
2) 46 gal.	1355	29.76	6.66	40.8	↓	7.47
3 KJC 5-13-08 3) 69 gal.	1404	29.78	6.67	41.1	↓	5.31
4.94' 4) 92 gal.	1413	29.60	6.68	41.5	2.8 gpm	3.83
5) 115 gal.	1422	29.75	6.70	41.8		2.96
3 KJC 5-13-08 4.95' 6) 138 gal.	1431	29.76	6.71	42.1		2.45
7) 161 gal.	1440	29.72	6.70	42.7		2.43
8) 184 gal.	1449	29.74	6.72	43.0	↓	2.49
3.92' 9) 207 gal.	1458	29.81	6.73	43.3	2.8 gpm	2.06
10) 230 gal.	1507	29.77	6.72	43.3		2.05

KJC 5-13-08 KJC 5-13-08

Notes: Surged ~~Grund. pump~~ Sump w/Grundfos to remove sediment. Set pump in middle of Screen and removed 10 well volumes.
- See well volume calculation spreadsheet for volume calcs.

Well Developers Signature: Kimberly Charles-Smith

FIGURE 9

Graphics\Misc.\Forms

MACTEC Engineering and Consulting, Inc.

Well Development Record

Well No.: OW-809U

Project No. 6468-07-1950	Logged By: Kim Clarke-Smith	
Client Name: Bechtel	Project Name: TPCA	Checked By:
Well Installation Date: 4-1-08	Start Date 4-1-08	Finish Date: 4-1-08
Well Development Date: 5-1-08	Start Time: 0844	Finish Time: 0910
Initial Water Level (ft.): 2.79'		
Water Level during **Initial** Pumping/Purging (ft).: 3.92'		
Water Level at **Termination** of Pumping/Purging (ft).: 2.82'		
Weather: Sunny ~ 73°F		

See notes
KJ 5-1-08

~~Height of Water Column: _____ (ft.) x _____ 0.16 gal./ft. (2 in.) _____ 0.65 gal./ft. (4 in.) _____ 1.5 gal./ft. (6 in.) _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)~~

Water Level From TOC	Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
3.92'	(1) 10 gal.	0847	26.80	6.38	65.8	4.0 gpm	2.37
	(2) 20 gal.	0850	27.97	6.91	69.1	4.0 gpm	1.86
2.99'	(3) 30 gal.	0853	29.29	6.96	69.3	4.0 gpm	1.53
	(4) 40 gal.	0856	29.34	6.99	68.9	4.0 gpm	1.46
2.98'	(5) 50 gal.	0859	29.32	6.97	68.8	4.0 gpm	1.48
	(6) 60 gal.	0902	29.53	6.99	68.9	5.0 gpm	1.23
2.98'	(7) 70 gal.	0904	29.43	7.00	68.9	5.0 gpm	0.63
	(8) 80 gal.	0906	29.04	7.02	68.8	5.0 gpm	0.92
2.98'	(9) 90 gal.	0908	29.15	7.01	68.7	5.0 gpm	1.29
	(10) 100 gal.	0910	29.18	7.00	68.6	5.0 gpm	1.58

Notes: - Surged well with Grundfos to remove sediment from bottom of well.
- See well volume calculation sheet for volume calcs.

Well Developers Signature: Kim Clarke-Smith

FIGURE 9

MACTEC Engineering and Consulting, Inc.

Graphics\Misc.\Forms

Well Development Record

Well No.: OW-812L

Project No. 24468-07-1950	Logged By: Kim Clark-Smith		
Client Name: Bechtel	Project Name: TPCOL		Checked By:
Well Installation Date: 5-6-08 KJ 5-13-08		Start Date: 5-6-08	Finish Date: 5-7-08
Well Development Date: 5-13-08		Start Time: 1010	Finish Time: 1136
Initial Water Level (ft.): 1.46'			
Water Level during **Initial** Pumping/Purging (ft).: 1.90'			
Water Level at **Termination** of Pumping/Purging (ft).: 1.55'			
Weather: Sunny ~ 80°F			

KJ 5-13-08 see notes

Height of Water Column: _____ (ft.) x _____ 0.16 gal./ft. (2 in.) / _____ 0.65 gal./ft. (4 in.) / _____ 1.5 gal./ft. (6 in.) / _____ gal./ft. (_____ in.) = _____ Well Volume (gal./ft.)

	Number of Well Volumes:	Time:	Temperature: °C	pH: SU	KJ 5-13-08 Conductivity: ~~mS/cm~~ mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
1.90'	1) 23 gal.	1024	31.74	6.57	43.6	3.0 gpm	0.75
	2) 46 gal.	1032	31.23	6.84	42.0	↓	1.23
1.85'	3) 69 gal.	1040	31.01	6.84	42.5	↓	0.80
	4) 92 gal.	1048	30.78	6.84	42.2	↓	0.58
1.85'	5) 115 gal.	1056	30.93	6.85	42.2	3.0 gpm	0.42
	6) 138 gal.	1104	30.83	6.86	42.6	↓	0.63
1.86'	7) 161 gal.	1112	30.91	6.86	42.6	↓	0.58
	8) 184 gal.	1120	30.83	6.86	42.7	↓	0.64
1.85'	9) 207 gal.	1128	30.77	6.86	42.8	3.0 gpm	0.66
	10) 230 gal.	1136	30.80	6.85	42.7	↓	0.51

Notes: Surged well sump with grundfos to remove sediment Set KJ 5-13-08 Grundfos pump in screen and removed 10 well volumes.
- see well volume calculation spreadsheet for volume calcs.

Well Developers Signature: Kimmy Clark-Smith

FIGURE 9

Graphics\Misc.\Forms

MACTEC Engineering and Consulting, Inc.

Well Development Record

Well No.: OW-812U

Project No. 6468-07-1950	Logged By: Kim Charles-Smith	
Client Name: Bechtel	Project Name: TPCoL	Checked By:
Well Installation Date: 5-7-08	Start Date: 5-7-08	Finish Date: 5-7-08
Well Development Date: 5-7-08	Start Time: 1333	Finish Time: 1453 KF 5-7-08
Initial Water Level (ft.): 2.31'		
Water Level during **Initial** Pumping/Purging (ft).: 2.68'		
Water Level at **Termination** of Pumping/Purging (ft).: 2.45'		
Weather: Sunny ~ 85°F		

Height of Water Column: _____ (ft.) × 0.16 gal./ft (2 in.) / 0.65 gal./ft. (4 in.) / 1.5 gal./ft. (6 in.) / _____ gal./ft. (_____ in.) = Well Volume (gal./ft.)

See notes KF 5-7-08

Water level From TOC	Number of Well Volumes:	Time:	Temperature: °C	pH: SU	Conductivity: mS/cm	Approximate Pumping Rate (gal./min.):	Turbidity (NTU's):
2.68'	1) 10 gal.	1335	KF 5-7-08 32.77	6.80	76.3	5 gpm	5.08
	2) 20 gal.	1337	32.44	6.79	76.7		3.30
	3) 30 gal	1339	32.90	6.80	79.6		1.89
2.76'	4) 40 gal.	1341	33.05	6.80	KF 5-7-08 77.2		1.26
	5) 50 gal.	1343	33.28	6.81	77.6	5 gpm	0.80
2.78'	6) 60 gal.	1345	33.20	6.81	77.5		0.83
	7) 70 gal.	5-7-08 1347	33.01	6.82	77.8		0.78
2.79'	8) 80 gal.	KF 1349	33.17	6.81	77.7		0.88
	9) 90 gal.	1351	33.16	6.81	77.7	5 gpm	0.67
2.80'	10) 100 gal	1353 KF 5-7-08	33.10	6.81	77.4	5 gpm	0.51

Notes:
Until Surged Sump with grundfos for 1st volume water ran clear.
KF 5-7-08
See well volume Calculation spreadsheet for volume calcs.
KF 5-7-08

Well Developers Signature: Kimmy Charles-Smith

FIGURE 9

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MACTEC Engineering and Consulting, Inc.

Well Sampling Records

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-606U**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**5/28/2008**
MEASURED WELL DEPTH:	**31.91 FT.**	SCREENED INTERVAL:	**18-28 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.0**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**2.71**
SAMPLING PERSONNEL:	**L. Bisson**		WATER-COLUMN HEIGHT:		**29.20**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO	
LOCKING CAP:	☑	YES	☐	NO	
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO	
NONPOTABLE LABEL:	☑	YES	☐	NO	
ID PLATE:	☑	YES	☐	NO	
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO	
WELL YIELD:	☑	HIGH	☐	MODERATE	☐ LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
12.2	0.4	28.66	6.86	1.65	66.7	2.00	-355	
26.2	0.4	28.70	6.88	1.55	66.9	0.39	-368	
32.6	0.4	28.70	6.84	1.61	66.8	0.46	-339	
39.0	0.4	28.71	6.84	1.66	66.9	0.30	-342	
45.4	0.4	28.71	6.84	1.64	66.9	0.34	-347	
Sample	**0.3**	**28.71**	**6.84**	**1.66**	**66.9**	**0.34**	**-344**	

Sample collected at 16:10 for the following tests

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: [signature] Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-606L**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida Cirty, Florida**	DATE:	**5/28/2008**
MEASURED WELL DEPTH:	**111.31 FT.**	SCREENED INTERVAL:	**97-107 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**2.8**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:	**Dedicated, Disposable Tubing**	
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**2.30**
SAMPLING PERSONNEL:	**K. Charles-Smith**		WATER-COLUMN HEIGHT:		**109.01**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO		
LOCKING CAP:	☑	YES	☐	NO		
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO		
NONPOTABLE LABEL:	☑	YES	☐	NO		
ID PLATE:	☑	YES	☐	NO		
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO		
WELL YIELD:	☑	HIGH	☐	MODERATE	☐	LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
26	0.4	28.78	7.41	10.02	52.6	1.22	-306	
52	0.4	28.32	7.09	9.57	52.8	0.61	-365	
65	0.4	28.38	7.08	9.89	52.9	0.91	-367	
78	0.4	28.14	7.09	9.98	52.7	0.74	-370	
91	0.4	28.09	7.08	9.84	52.7	0.83	-370	
Sample	**0.3**	**28.29**	**7.08**	**9.92**	**52.8**	**0.77**	**-370**	

Sample collected at 15:40 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: [signature] Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-621U**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**5/29/2008**
MEASURED WELL DEPTH:	**32.36 FT.**	SCREENED INTERVAL:	**17.4-27.4 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.30**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**5.23**
SAMPLING PERSONNEL:	**K. Charles-Smith**		WATER-COLUMN HEIGHT:		**27.13**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO	
LOCKING CAP:	☑	YES	☐	NO	
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO	
NONPOTABLE LABEL:	☑	YES	☐	NO	
ID PLATE:	☑	YES	☐	NO	
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO	
WELL YIELD:	☑	HIGH	☐	MODERATE	☐ LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
12	0.4	27.81	7.16	0.07	92.6	21.8	-306	
24	0.4	27.82	7.10	0.05	90.6	3.72	-342	
30	0.4	27.81	7.08	0.05	90.9	2.93	-349	
36	0.4	27.81	7.08	0.05	91.0	2.89	-351	
42	0.4	27.83	7.07	0.05	91.1	2.90	-350	
Sample	**0.3**	**27.82**	**7.08**	**0.05**	**91.0**	**2.91**	**-351**	

Sample collected at 16:10 for the following tests

Analytical Method
TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: CWSL Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-621L**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**6/4/2008**
MEASURED WELL DEPTH:	**111.55 FT.**	SCREENED INTERVAL:	**98.6-108.6 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.0**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**3.50**
SAMPLING PERSONNEL:	**K. Charles-Smith**		WATER-COLUMN HEIGHT:		**108.05**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO		
LOCKING CAP:	☑	YES	☐	NO		
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO		
NONPOTABLE LABEL:	☑	YES	☐	NO		
ID PLATE:	☑	YES	☐	NO		
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO		
WELL YIELD:	☑	HIGH	☐	MODERATE	☐	LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
26	0.4	27.74	7.07	1.68	>99.9	0.31	-353	
52	0.4	27.72	7.06	1.67	>99.9	0.34	-352	
65	0.4	27.81	7.05	1.66	>99.9	0.20	-347	
78	0.4	27.81	7.06	1.66	>99.9	0.21	-347	
91	0.4	27.81	7.06	1.66	>99.9	0.21	-349	
Sample	**0.3**	**27.80**	**7.06**	**1.66**	**>99.9**	**0.21**	**-349**	

Sample collected at 14:20 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: [signature] Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-706U**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**5/29/2008**
MEASURED WELL DEPTH:	**31.72 FT.**	SCREENED INTERVAL:	**17-27 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.2**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**3.02**
SAMPLING PERSONNEL:	**L. Bisson and K. Charles-Smith**		WATER-COLUMN HEIGHT:		**28.70**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO		
LOCKING CAP:	☑	YES	☐	NO		
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO		
NONPOTABLE LABEL:	☑	YES	☐	NO		
ID PLATE:	☑	YES	☐	NO		
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO		
WELL YIELD:	☑	HIGH	☐	MODERATE	☐	LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
10	0.4	29.16	6.67	1.17	74.9	18.1	-373	
20	0.4	29.55	6.62	1.34	76.5	1.84	-378	
26	0.4	29.95	6.66	1.20	76.7	1.25	-385	
32	0.4	30.19	6.67	1.10	76.7	1.09	-388	
38	0.4	30.70	6.66	1.15	76.7	1.08	-391	
Sample	**0.3**	**30.85**	**6.65**	**1.13**	**76.6**	**0.83**	**-392**	

Sample collected at 11:00 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: WS Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-706L**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**5/29/2008**
MEASURED WELL DEPTH:	**114.56 FT.**	SCREENED INTERVAL:	**17-27 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.2**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**0.62**
SAMPLING PERSONNEL:	**K. Charles-Smith**		WATER-COLUMN HEIGHT:		**113.94**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO		
LOCKING CAP:	☑	YES	☐	NO		
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO		
NONPOTABLE LABEL:	☑	YES	☐	NO		
ID PLATE:	☑	YES	☐	NO		
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO		
WELL YIELD:	☑	HIGH	☐	MODERATE	☐	LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
24	0.4	29.50	6.87	1.92	44.4	9.05	-287	
48	0.4	29.42	6.85	1.79	46.7	0.86	-334	
60	0.4	29.54	6.88	1.61	45.7	0.57	-343	
72	0.4	29.57	6.85	1.57	46.2	0.35	-346	
84	0.4	29.60	6.86	1.51	46.2	0.24	-351	
Sample	**0.3**	**29.61**	**6.83**	**1.49**	**46.4**	**0.20**	**-351**	

Sample collected at 12:35 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: [illegible] Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-721U**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**5/28/2008**
MEASURED WELL DEPTH:	**28.00 FT.**	SCREENED INTERVAL:	**14-24 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.1**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**3.23**
SAMPLING PERSONNEL:	**K. Charles-Smith**		WATER-COLUMN HEIGHT:		**24.77**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO		
LOCKING CAP:	☑	YES	☐	NO		
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO		
NONPOTABLE LABEL:	☑	YES	☐	NO		
ID PLATE:	☑	YES	☐	NO		
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO		
WELL YIELD:	☑	HIGH	☐	MODERATE	☐	LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
9	0.4	28.91	7.12	10.8	54.8	0.28	-361	
18	0.4	29.22	7.11	10.6	55.5	0.48	-364	
22.5	0.4	29.26	7.08	10.6	52.7	0.37	-364	
27	0.4	29.27	7.08	10.6	53.0	0.46	-362	
31.5	0.4	29.30	7.07	10.8	52.8	0.30	-362	
Sample	**0.3**	**28.92**	**7.10**	**10.6**	**53.1**	**0.36**	**-364**	

Sample collected at 11:00 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: WSL Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-721L**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**5/28/2008**
MEASURED WELL DEPTH:	**107.62 FT.**	SCREENED INTERVAL:	**96-106 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.2**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**1.07**
SAMPLING PERSONNEL:	**L. Bisson**		WATER-COLUMN HEIGHT:		**106.55**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO	
LOCKING CAP:	☑	YES	☐	NO	
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO	
NONPOTABLE LABEL:	☑	YES	☐	NO	
ID PLATE:	☑	YES	☐	NO	
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO	
WELL YIELD:	☑	HIGH	☐	MODERATE	☐ LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
25.2	0.4	28.86	6.80	1.71	73.6	175	-337	
48.0	0.4	28.68	6.78	1.18	74.3	5.41	-358	
60.0	0.4	28.62	6.75	1.24	74.4	7.20	-361	
72.0	0.4	28.64	6.75	1.08	74.4	7.60	-364	
84.0	0.4	28.60	6.77	1.17	74.3	7.55	-369	
Sample	**0.3**	**28.56**	**6.76**	**1.18**	**74.3**	**7.55**	**-370**	

Sample collected at 13:25 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: WSB Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-735U**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**5/27/2008**
MEASURED WELL DEPTH:	**30.19 FT.**	SCREENED INTERVAL:	**16-26 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.3**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**4.40**
SAMPLING PERSONNEL:	**K. Charles-Smith**		WATER-COLUMN HEIGHT:		**25.79**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO	
LOCKING CAP:	☑	YES	☐	NO	
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO	
NONPOTABLE LABEL:	☑	YES	☐	NO	
ID PLATE:	☑	YES	☐	NO	
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO	
WELL YIELD:	☑	HIGH	☐	MODERATE	☐ LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
9.5	0.4	29.42	7.02	0.04	84.6	0.99	-334	
19	0.4	29.46	7.01	0.02	84.7	0.99	-351	
23.75	0.4	29.46	7.00	0.01	84.8	0.92	-357	
28.5	0.4	29.45	6.99	0.02	84.8	0.86	-357	
33.25	0.4	29.48	6.99	0.02	84.8	0.90	-357	
Sample	**0.3**	**29.47**	**7.00**	**0.02**	**86.6**	**0.92**	**-360**	

Sample collected at 11:35 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: [signature] Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-802U**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**6/5/2008**
MEASURED WELL DEPTH:	**29.11 FT.**	SCREENED INTERVAL:	**15-25 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.4**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**4.05**
SAMPLING PERSONNEL:	**K. Charles-Smith**		WATER-COLUMN HEIGHT:		**25.06**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO		
LOCKING CAP:	☑	YES	☐	NO		
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO		
NONPOTABLE LABEL:	☑	YES	☐	NO		
ID PLATE:	☑	YES	☐	NO		
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO		
WELL YIELD:	☑	HIGH	☐	MODERATE	☐	LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
10	0.4	28.23	6.86	2.05	82.7	0.91	-352	
20	0.4	28.20	6.86	1.76	82.7	0.50	-355	
25	0.4	28.22	6.89	1.90	82.7	0.57	-360	
30	0.4	28.50	6.88	1.91	82.6	0.52	-363	
35	0.4	28.36	6.84	1.90	82.6	0.48	-361	
Sample	**0.3**	**28.27**	**6.80**	**1.90**	**82.8**	**0.48**	**-322**	

Sample collected at 12:35 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: CWSL Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-805U**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**6/5/2008**
MEASURED WELL DEPTH:	**33.85 FT.**	SCREENED INTERVAL:	**18-28 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**2.8**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:		**Dedicated, Disposable Tubing**
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**3.05**
SAMPLING PERSONNEL:	**K. Charles-Smith**		WATER-COLUMN HEIGHT:		**30.80**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO	
LOCKING CAP:	☑	YES	☐	NO	
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO	
NONPOTABLE LABEL:	☑	YES	☐	NO	
ID PLATE:	☑	YES	☐	NO	
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO	
WELL YIELD:	☑	HIGH	☐	MODERATE	☐ LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
10.5	0.4	28.04	7.29	1.19	64.0	0.86	-296	
21.0	0.4	28.31	7.14	1.18	61.1	0.43	-342	
26.5	0.4	28.19	7.13	1.18	61.0	0.36	-345	
32.0	0.4	28.31	7.10	1.19	60.8	0.32	-345	
37.5	0.4	28.35	7.11	1.19	61.1	0.33	-344	
Sample	**0.3**	**28.26**	**7.10**	**1.19**	**60.9**	**0.32**	**-346**	

Sample collected at 15:00 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: CWS Date: 7-7-08

Checked by: CBS Date: 7/7/08

MACTEC

MACTEC Engineering and Consulting, Inc.
3301 Atlantic Avenue
Raleigh, North Carolina 27604

OBSERVATION WELL SAMPLING WORKSHEET

OBSERVATION WELL ID:	**OW-809U**			MACTEC JOB NUMBER:	**6468-07-1950**
PROJECT:	**Turkey Point COL Project**	SITE:	**Florida City, Florida**	DATE:	**5/27/2008**
MEASURED WELL DEPTH:	**29.71 FT.**	SCREENED INTERVAL:	**15-25 FT.**	WELL DIAMETER:	**2 IN.**
HEIGHT OF MEASURING POINT ABOVE LAND SURFACE:		**3.2**	CASING MATERIAL:		**PVC**
SAMPLING DEVICE:	**See below**		TUBING TYPE:	**Dedicated, Disposable Tubing**	
MEASURING POINT:	**Top of Casing**		DEPTH TO GROUNDWATER:		**3.38**
SAMPLING PERSONNEL:	**K. Charles-Smith**		WATER-COLUMN HEIGHT:		**26.33**

STEEL GUARD PIPE AROUND CASING:	☑	YES	☐	NO		
LOCKING CAP:	☑	YES	☐	NO		
PROTECTIVE POST/ABUTMENT:	☐	YES	☑	NO		
NONPOTABLE LABEL:	☑	YES	☐	NO		
ID PLATE:	☑	YES	☐	NO		
WELL INTEGRITY SATISFACTORY:	☑	YES	☐	NO		
WELL YIELD:	☑	HIGH	☐	MODERATE	☐	LOW

COMMENTS **Monsoon submersible pump, Horiba U-22 S/N MO15-09.**

Purge volume determined by multiplying water-column height by 0.16 gal/ft for a 2-inch well

PURGE VOLUME (gallons)	PURGE RATE (gpm)	TEMP (°C)	PH (S.U.)	D.O. (mg/L)	SP. COND. (mS/cm)	TURBIDITY (NTU)	O.R.P. (± mV)	NOTES
9	0.4	31.02	6.99	0.01	85.1	4.39	-368	
18	0.4	30.83	6.98	0.02	84.0	1.09	-370	
22.5	0.4	30.99	6.98	0.02	84.1	0.97	-371	
27	0.4	30.81	6.98	0.01	84.0	0.99	-370	
31.5	0.4	30.81	6.98	0.01	83.9	0.99	-371	
Sample	**0.3**	**30.82**	**6.98**	**0.01**	**83.9**	**0.97**	**-371**	

Sample collected at 14:55 for the following tests

Analytical Method

TDS - Method 160.1 / Alkalinity - Method 310.1
Anions and Nitrate/Nitrite - Method 300.0
Cations - Method 6020
Ammonia - Method 350.1
Kd - distribution coefficient

Observation wells purged in accordance with ASTM D-6452-99

Prepared by: [signature] Date: 7-7-08

Checked by: CBS Date: 7/7/08

Laboratory Test Reports

Supplier Deviation Disposition Request

Notes

1. COMPLETE INSTRUCTIONS ON BACK OF THIS SHEET
2. Items 1-18 below to be completed by supplier
3. *Items, Bechtel entries only
4. Nonapplicable items to be marked "N/A"
5. Attach additional information whenever necessary
6. Bechtel must be notified within 5 days after detection of deviation
7. A copy of the completed SDDR form shall be included by the supplier in the quality verification data package for each item to which this SDDR applies.

For Supplier Use			For Bechtel Use	
Supplier SDDR No.	Date Submitted	Project FPL Turkey Point COL Job No. 25409	Bechtel SDDR No.	Date Received
76	5/18/09		see above	~~4/19/09~~ 5-19-09

1. Supplier Name	Address	City & State	Zip Code
MACTEC Engineering and Consulting, Inc	3301 Atlantic Avenue	Raleigh, NC	27604

2. Supplier's Order No.	3. Supplier's Part No.	4. Supplier's Part Name	5. Deviation Detected Date	5. Deviation Detected Method	6. All Previous SDDRs (Numbers and Dates)
NA	NA	NA	9/22/2008	NCR	

7. Bechtel PO & Rev. No.	8. Bechtel Part No.	9. Bechtel Part Name	10. Bechtel SQR Notified Date	10. Bechtel SQR Notified Method	11. Bechtel Eng. Notified Date	11. Bechtel Eng. Notified Method
Subcontract No. 25409-102-3PS-CT20-00001 rev 001	NA	NA	5/18/2009	SDDR	5/18/2009	SDDR

12. Deviation Description (Attach extra sheets, photographs, sketches, etc., as necessary and identify quantity and serial numbers as applicable)
Please see attached NCR TP 40 (attachment 3 pgs).

13. Supplier's Proposed Disposition [ ] Use-As-Is [ ] Repair [X] Modify Bechtel Requirement

DATA REJECTED AS INDICATED BY ATTACHED NCR TP 40.

14. Cost Impact None

15. Schedule Impact None

16. Proposed Disposition and Technical (plus Cost/Schedule if applicable) Justification: Attach extra sheets, sketches, etc., as necessary
Please see attached document with information (attachment 3 pgs).

17. Associated Supplier Document Change(s) none

18. Supplier's Authorized Representative

Name	Signature	Title	Date
RICHARD S. ALLEN		PROJECT MANAGER	5-18-09

*19. Bechtel Engineering Action

[ ]	Accepted	Engineering	[ ]	Drawing Change	[ ]	Bechtel	[ ]	Supplier	[ ] Licensing Doc. Changes
[√]	Rejected	Follow-up	[ ]	Spec/Req. Change	[ ]	Bechtel	[ ]	Supplier	[ ] Price Adjustment
			[ ]	Other Suppliers Affected			[ ]	Other	

*20. Bechtel Disposition Statement Including Justification (Attach extra sheets, sketches, etc., as necessary).
SEE PAGE 5 FOR DISPOSITION Construction Action Required [ ] Yes [√] No

*21. Bechtel Disposition Approval/Signature		Date	22. Supplier	Date
RE		6/17/09	N/A	
Checker		6/17/09		
EGS	JLM	6/17/09	*23. Bechtel Supplier Quality Representative	Date
PE		6-17-09	N/A	

SDDR Document – attachment 3 Pages **DCN# TUR765**

6-16-09

Rev. 1

FPL COL PROJECT – Turkey Point **MACTEC Project No. 6468-07-1950**

NCR TP 40	**Nonconformance and Corrective Action Report**	
Organization: MACTEC Engineering and Consulting		Location: Raleigh
Reported By: William S. Grimes		Date: 9/22/08

Nonconformance

Description of Nonconformance:

Description of Nonconformance: Based on review of the laboratory test reports, it appears that the total dissolved solids (TDS) results are erroneous. The measured TDS results are typically less than the sum of the individual analytes. TDS values should be as large or larger than the sum of the available analytes.

Representative Notified: Al Tice

Date Notified: 9/22/2008 | Date Corrective Action Plan Due:10/10/2008

Corrective Action Plan

Description of Evaluation to Determine Root Cause: MACTEC Senior Scientists reviewed the laboratory test reports and concluded that the TDS results did not appear accurate. Additionally, MACTEC QA personnel interviewed TestAmerica to review their testing procedures to determine if errors were made during the testing.

Assignable Cause: Due to the high concentrations of analytes in the samples, a diluted aliquot was necessary to meet the final method requirements of not exceeding 200 milligrams of residue for the TDS tests. TestAmerica reported in their investigation that any suspended particulates may have affected pipette volume accuracy. Therefore, the TDS values could differ from the sum of available analytes based on an insufficient sample volume.

Potential Harm: Based on discussions with the Bechtel, we understand that the primary objective for the groundwater sampling and testing assignment was to support review of specific conductivity data. Therefore, we believe the potentially erroneous TDS test results will not compromise Bechtel's objective for the assignment. This will be confirmed with formal submittal of an SDDR to cover this NCR.

Description of Corrective Actions (current and to prevent recurrence): A MACTEC Senior Chemist reviewed the laboratory test reports to identify issues and disposition the data. Additionally, MACTEC QA coordinated with TestAmerica to identify steps /procedures to make sure this issue is not repeated in future analyses.

Estimated Completion Date: 10/15/08

Recommended disposition of nonconforming items (i.e. reject/dispose, repair, rework, use-as-is) Include technical justification:

MACTEC rejects the TDS results, please see attached disposition statement.

10 CFR 21 Notification Required: YES NO

Signature of Preparer: William S. Grimes	**Date:** 5-14-09
Corrective Action Approval Signature: (Principal or Chief Engineer)	**Date:** 5-14-09

Corrective Action Closure

Comments:

Approved/Actual Disposition of Nonconforming Items:

BECHTEL Approval Signature: To be confirmed with SDDR	**Date:**
MACTEC QAR Approval Signature:	**Date:** 5/14/09
MACTEC Chief Engineer Signature:	**Date:** ~~5/13/09~~ SJC 5/14/09

DCN: TUR

SDDR PAGE 2 of 5

NCR TP 40 Disposition Statement

Laboratory reported TDS values should be at least equal to, if not greater than the summation of the individual cations and anions that comprise TDS. During our review of the TDS data, MACTEC identified that the reported TDS values for eight of the twelve groundwater samples tested were less than the summation of the individual analytes. MACTEC identified that the charge balances were all below 10% error which suggests good analytical accuracy for the cation and anion results thus supporting the use of the summed totals for comparison with reported TDS values. Based on these comparisons, the TDS values reported by TestAmerica were deemed suspect.

MACTEC QA personnel interviewed TestAmerica to determine if there were operational or procedural issues that affected the test results. TestAmerica identified that to meet the method requirement for final residue weight, they had to dilute the sample and use a smaller than normal sample aliquot. TestAmerica used a narrow tipped pipette and determined that any suspended particles could have affected pipette volume accuracy, which would have produced lower TDS results (see attached report). To eliminate this potential source of error, TestAmerica ordered custom-made, wide mouth pipettes for drawing small volume aliquots. Additionally, TestAmerica implemented a policy to check to TDS/chloride ratio for samples to determine if the test needs to be rerun within the hold times.

No definite cause for this error could be determined through our investigation. However, MACTEC suspects that inaccurate sample volume is the source for the lower than expected TDS results. Therefore, MACTEC **rejects** all TDS results reported by TestAmerica.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10-10-08

Turkey Point Data

After re-reviewing the data for the TDS and Chlorides, no definitive answer for the higher Chloride result could be determined. The data for the samples, balances, pipettes and internal QC were re-reviewed and no definitive cause for the low bias to the TDS could be determined. The laboratory conducted an ion mass balance evaluation for the samples, which showed that the charge balance differences were all below 10%, indicating good analytical accuracy for the cations and anions, including chloride. Data was also reviewed by a corporate technical director. The samples were run, for all parameters, at a high dilution due to the high levels of the requested analytes present in the samples. Initially it was suspected that the high levels of the salts may have been a contributing factor. After reviewing technical documents it was decided that the high salt levels in the samples, while making the analysis difficult due to the dilutions we had to apply, really would not explain the lower TDS numbers. The original sample containers were pulled and there were no visible solids found in the sample remaining in the containers.

The Method blanks and LCS samples run with each set of data met all criteria. The balances and pipettes used for the analyses were calibrated the day of use and fell within acceptance criteria. The laboratory has passed the last several sets of PT samples for TDS.

One possible reason for the low TDS result in these samples is the small amount of material used to perform the TDS analysis. The method requires that the final weight of the residue not exceed 200 mg. In order to meet this, the lab used 1 ml of sample, due to the high levels of TDS present. The one ml aliquot is drawn up using a narrow tipped pipette. Any suspended particulates in the sample could interfere with the pipette volume accuracy. The lab has ordered a custom made Class A wide mouth pipette to eliminate this potential source of error.

Another corrective action we will implement is an immediate check of the TDS/Chloride ratio for samples, so that if it fails we can re-run within hold time.

We continue to monitor and evaluate the TDS analysis.

Mark Ward

Marti Ward
Quality Assurance Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

13715 Rider Trail North
Earth City, MO 63045
314-298-8566
www.testamericainc.com

Supplier Deviation Disposition Request (Continuation Sheet)

Bechtel SDDR No. 25409-102-YD4-CY00-00076

20. Bechtel Disposition Statement

This SDDR addresses MACTEC NCR TP 40 regarding the laboratory test results for water sample TDS values. The test results have been rejected by MACTEC as the total TDS values for eight of the twelve groundwater samples tested were less than the summation of the individual analytes. TDS totals should be as large as or larger than the sum of the analytes.

Bechtel concurs with rejecting the data and requests that groundwater samples be retested. The October 10, 2008 letter from TestAmerica indicates there are changes that could be made to improve the test procedure and the TDS results while staying within the 200 mg residue limit. Bechtel requests that the TestAmerica test procedure be reviewed and accepted prior to running any further tests as the extremely high salinity values in the groundwater must be accounted for.

Bechtel does not concur with the proposed disposition of **MODIFY BECHTEL REQUIREMENT** as the data has been rejected.

Supplier Deviation Disposition Request

Notes

1. COMPLETE INSTRUCTIONS ON BACK OF THIS SHEET
2. Items 1-18 below to be completed by supplier
3. *Items, Bechtel entries only
4. Nonapplicable items to be marked "N/A"
5. Attach additional information whenever necessary
6. Bechtel must be notified within 5 days after detection of deviation
7. A copy of the completed SDDR form shall be included by the supplier in the quality verification data package for each item to which this SDDR applies.

For Supplier Use		Project FPL Turkey Point COL	For Bechtel Use	
Supplier SDDR No.	Date Submitted	Job No. 25409	Bechtel SDDR No.	Date Received
77	6/5/09		SEE ABOVE	6/9/09

1. Supplier Name	Address	City & State	Zip Code
MACTEC Engineering and Consulting, Inc	3301 Atlantic Avenue	Raleigh, NC	27604

2. Supplier's Order No.	3. Supplier's Part No.	4. Supplier's Part Name	5. Deviation Detected Date	5. Deviation Detected Method	6. All Previous SDDRs (Numbers and Dates)
NA	NA	NA	5/20/2009	NCR	

7. Bechtel PO & Rev. No.	8. Bechtel Part No.	9. Bechtel Part Name	10. Bechtel SQR Notified Date	10. Bechtel SQR Notified Method	11. Bechtel Eng. Notified Date	11. Bechtel Eng. Notified Method
Subcontract No. 25409-102-3PS-CT20-00001 rev 001	NA	NA	6/5/2009	SDDR	6/5/2009	SDDR

12. Deviation Description (Attach extra sheets, photographs, sketches, etc., as necessary and identify quantity and serial numbers as applicable)
Please see attached NCR TP 41 (attachment 6 pgs).

13. Supplier's Proposed Disposition [ ] Use-As-Is [X] Repair [ ] Modify Bechtel Requirement

14. Cost Impact None

15. Schedule Impact None

16. Proposed Disposition and Technical (plus Cost/Schedule if applicable) Justification: Attach extra sheets, sketches, etc., as necessary
Please see attached document with information (attachment 6 pgs).

17. Associated Supplier Document Change(s) none

18. Supplier's Authorized Representative

Name	Signature	Title	Date
RICHARD S. ARCER		PROJECT MANAGER	6/5/09

*19. Bechtel Engineering Action

[X]	Accepted	Engineering	[ ]	Drawing Change	[ ]	Bechtel	[ ]	Supplier	[ ] Licensing Doc. Changes
[ ]	Rejected	Follow-up	[ ]	Spec/Req. Change	[ ]	Bechtel	[ ]	Supplier	[ ] Price Adjustment
			[ ]	Other Suppliers Affected			[ ]	Other	

*20. Bechtel Disposition Statement Including Justification (Attach extra sheets, sketches, etc., as necessary).
SEE PAGE 8 FOR DISPOSITION
Construction Action Required [ ] Yes [X] No

*21. Bechtel Disposition Approval/Signature		Date	22. Supplier	Date
RE	Thomas Bleda	6/17/09	S CRISCENZO (SEE NCR TP 41)	6-3-09
Checker		6/17/09		
EGS	for JLM	6/17/09	*23. Bechtel Supplier Quality Representative N/A	Date
PE		6-17-09		

SDDR Document – attachment 6 Pages **DCN# TUR781**

6-16-09

Rev. 1

FPL COL PROJECT – Turkey Point **MACTEC Project No. 6468-07-1950**

NCR TP 41	Nonconformance and Corrective Action Report	
Organization: MACTEC Engineering and Consulting	Location: Raleigh	
Reported By: William S. Grimes		Date: 5/20/2009

Nonconformance

Description of Nonconformance: During review of the bicarbonate and carbonate alkalinity results (Method 310.1) and total alkalinity results (SM18 2320 B), it was noted that the summation of the bicarbonate and carbonate values were significantly lower than the reported total alkalinity results for seven of the twelve samples. TestAmerica informed MACTEC that bicarbonate values reported for these samples were not valid.

Representative Notified: Al Tice

Date Notified: 5/20/2009 | Date Corrective Action Plan Due: 5/20/2009

Corrective Action Plan

Description of Evaluation to Determine Root Cause: MACTEC Senior Scientists reviewed the laboratory test reports and concluded that seven of the Total Alkalinity results did not agree with the summation of the bicarbonate and carbonate results. Upon receiving information from TestAmerica that the bicarbonate results were erroneous, MACTEC requested that TestAmerica evaluate this condition. TestAmerica reported that the test results mannally entered into the report generation software were inadvertently copied from the pH 4.5 column of the bench sheet as opposed to the bicarbonate result column.

Assignable Cause: The assignable cause is a data entry error. Additionally, a second level review of the data was not thoroughly conducted.

Potential Harm: Based on discussions with the Bechtel, we understand that the primary objective for the groundwater sampling and testing assignment was to support review of specific conductivity data. Therefore, we believe this deviation will not compromise Bechtel's objective for the assignment. This will be confirmed with formal submittal of an SDDR to cover this NCR.

Description of Corrective Actions (current and to prevent recurrence): MACTEC requested that TestAmerica investigate this error and prepare a report that describes their investigation, corrective action, and steps to prevent recurrence. No MACTEC corrective action is required. TestAmerica reported that the analyst and second level reviewer were both alerted to the error and re-trained on the critical aspects of TestAmerica's QA policies. To prevent recurrence, TestAmerica has modified their spreadsheet such that the columns to be entered into the laboratory LIMs system are highlighted to serve as a reminder as to what data should be reported.

Estimated Completion Date: 5/28/2009

Recommended disposition of nonconforming items (i.e. reject/dispose, repair, rework, use-as-is) Include technical justification:

Repair – see attached disposition

10 CFR 21 Notification Required: YES NO

Signature of Preparer: William. S. Grimes	Date: 5-28-09
Corrective Action Approval Signature: (Principal or Chief Engineer)	Date: 6-2-09

Corrective Action Closure

Comments:

JDM 6/4/09

Approved/Actual Disposition of Nonconforming Items: ~~Repair~~ REWORK

BECHTEL Approval Signature: To be confirmed with SDDR Date:

MACTEC QAR Approval Signature: Date: 6/4/09

MACTEC Chief Engineer Signature: Date: 6/3/09

DCN: TUR

SDDR PAGE 2 of 8

NCR TP 41 Disposition Statement

Review of the laboratory test data collected from the selected observation wells indicated that the total alkalinity results were significantly greater than the summation of the bicarbonate and carbonate alkalinity results for the groundwater samples collected from observation wells OW-606L, OW-606U, OW-621U, OW-706L, OW-706U, OW-721L, and OW-721U. After being informed of this condition, TestAmerica reported that the bicarbonate alkalinity results were in error and conducted an investigation.

Through their investigation, TestAmerica identified that a data entry error had occurred during the transfer of the data from the laboratory bench sheets to the LIMs system used for data report preparation. The analyst had apparently transferred the results from the pH 4.5 column into the reporting software as opposed to transferring to bicarbonate results. Additionally, TestAmerica identified that the second level data review was not thoroughly conducted for the two sample lots affected. TestAmerica reported that the analyst and second-level reviewer were alerted to this error, and were re-trained in the critical aspects of TestAmerica's Qulaity Assurance policies. To prevent recurrence, TestAmerica reported that they have modified the bench sheets such that the columns of data that are transferred to the LIMs system are highlighted to remind analysts to import the correct data. A copy of TestAmerica's Non-Conformance Report is attached.

Based on these findings, TestAmerica issued revised laboratory test reports for those two sample lots. MACTEC has reviewed these reports and accepted the revised bicarbonate alkalinity results. MACTEC has revised Table 5.3 "Summary of Groundwater Test Results" that was included in the Final Data Report Revision 2 10-6-2008. A copy of this table is attached.

MACTEC's recommended disposition of the bicarbonate alkalinity data is to **repair** the data to include the revisions made by TestAmerica. The revised data, as shown on the attached table, is released as project data.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Non-Conformance Report: Alkalinity (Lot F8E300223, F8E290268)

The alkalinity data was incorrectly reported for Lots F8E290268 and F8E300223. The client notified the lab that in both reports, the total alkalinity results were much higher than the summation of Alkalinity-bicarbonate and Alkalinity-carbonate results. The sample duplicate results were outside (high) of the QC limits for total alkalinity. All other method QC samples were within acceptance criteria.

Review of the data shows an error in transcribing the results from the bench sheet to the laboratory's LIM system. The results manually entered into the report generation software were inadvertently taken from the pH 4.5 column on the spreadsheet, instead of from the bicarbonate results column. (See attached bench sheet) No calculation errors were found, and no changes to the raw data are required.

A second, or peer, review of the data is a requirement of the TestAmerica St. Louis QA program. This review includes a comparison of the data on the spreadsheet to the data entered into the LIMs system. In this instance, the second level review was not thoroughly conducted. We recognize the importance of providing accurate results, the analyst and the second level reviewer have been made aware of the issue and re-trained on the key aspects of our process. QA will monitor the process to ensure compliance.

To determine the extent of the error and to determine if it is systematic, QA reviewed sets of alkalinity data before and after this occurrence. No other instances were identified, indicating that the error is isolated and not indicative of the process. No systematic deficiencies were noted. To prevent further occurrences, the spreadsheet is being updated to highlight the columns that are to be used to enter data into the LIMs system. This will act as a reminder as to which data is to be reported.

TestAmerica St. Louis apologizes for any inconvenience caused by this error. If you have any questions, or require additional information, please contact me at (314) 298-8566 or marti.ward@testamericainc.com.

Regards,

Marti Ward

Marti Ward
Quality Assurance Manager
TestAmerica St. Louis

TestAmerica St. Louis Laboratory
Alkalinity Method 310.1
(Waters)

Analyst: sdb

Titrant Normality (N) 0.0200

Batch: 8154059 8154060
8154061 8154062 8154063

Analysis Date: 8/2/2008

Laboratory ID	Standard Conc. mg/L	Sample Volume mL (Nom. 50ml)	Leachate Volume DI water (Nom. 100ml)	Titrated Volume mL (Nom. 50ml)	Sample pH	Titrant Volume, ml (Nom. 50 ml) pH 4.5	pH 4.2	pH 8.3	Alkalinity, Total mg/L Total pH 4.5	Low pH 4.2	Pharm pH 8.3	Alkalinity as CaCO3 mg/L Carbonate	Bicarbonate	Hydroxide	Recovery %	RPD %
KNX4K		50		50	6.88	8.85			177.00		0.00	0.00	177.00			
KN3HJ		50		50	7.05	9.2			184.00		0.00	0.00	184.00			
KN3JD		50		50	7.12	9			180.00		0.00	0.00	180.00			
KN3JR		50		50	7.22	7.76			155.00		0.00	0.00	155.00			
KN4JT		50		50	7.31	8.25			165.00		0.00	0.00	165.00			
KN5JV		50		50	7.07	10.2			204.00		0.00	0.00	204.00			
KN6J1		50		50	7.34	9.55			191.00		0.00	0.00	191.00			
KN6J2		50		50	7.35	9.45			189.00		0.00	0.00	189.00			
KN6J2S		50		50	8.42	13.95			279.00		0.00	0.00	279.00			
KN6J2X		50		50	7.31	9.3			186.00		0.00	0.00	186.00			12.0%
									#VALUE!		#VALUE!	#VALUE!	#VALUE!	#VALUE!		
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Control Limits (Water): LCS = 90 - 110 RPD 20%
Control Limits (Water): MS = 50 - 121 RPD 20%

SOP	Rev	Date
STL-WC-0019	7	10/23/2007

Total Alkalinity as $CaCO_3$ = itrant X N X 5C / Titrated Vol., m

Total Alkalinity, Low as $CaCO_3$ = 2(ml titrant(pH 4.5))-ml titrant(pH 4.2) X N X 50000 / Titrated Vol., ml

Results are raw calculation and do not reflect rounding, requested significant figures, or client reporting limits.
* Results on spreadsheet are "wet weight".

slsvr01/WetChemResults/Alkalinity.xls, modified 11/18/08

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SDDR PAGE 5 of 8

Lims Data Entry Print Out

EDE115 — TestAmerica Laboratories, Inc. — Date 6/02/2008 Time 12:33:33

Inorganics Batch Review
QC Batch 8154062

Method Code:UK Alkalinity, Bicarbonate (310.1)
Analyst:Steve Krantz

Work Order	Result	Units	LOL/Dil	Prep. - Anal.	Total Solids	PBBL Flag	R/R	Rounded Result	Output LOL	Dil.
KNK8U-1-AJ	179	mg/L	5	06/02/08	.00	N		179	5.0	1.00
KNK8K-1-AJ	177	mg/L	5	06/02/08	.00	N		177	5.0	1.00
KN2K8-1-A2	91	mg/L	5	06/02/08	.00	N		91.0	5.0	1.00
KN2LJ-1-AB	71	mg/L	5	06/02/08	.00	N		71.0	5.0	1.00
KN2LJ-1-BK	73	mg/L	5	06/02/08	.00	N		73.0	5.0	1.00
KN2LW-1-AE	55	mg/L	5	06/02/08	.00	N		55.0	5.0	1.00
KN2LW-1-BM	52	mg/L	5	06/02/08	.00	N		52.0	5.0	1.00
KN2KJ-1-A2	51	mg/L	5	06/02/08	.00	N		51.0	5.0	1.00
KN2KJ-1-G7	50	mg/L	5	06/02/08	.00	N		50.0	5.0	1.00
KN2FX-1-AE	56	mg/L	5	06/02/08	.00	N		56.0	5.0	1.00
KN2P2-1-AE	55	mg/L	5	06/02/08	.00	N		55.0	5.0	1.00
KN3EJ-1-AJ	8.2	mg/L	5	06/02/08	.00	N		8.2	5.0	1.00
KN3JD-1-AJ	9	mg/L	5	06/02/08	.00	N		9.0	5.0	1.00
KN3JR-1-AJ	7.75	mg/L	5	06/02/08	.00	N		7.8	5.0	1.00
KN3J7-1-AJ	8.25	mg/L	5	06/02/08	.00	N		8.2	5.0	1.00
KN46M-1-A2	76	mg/L	5	06/02/08	.00	N		76.0	5.0	1.00
KN46M-1-DM	78	mg/L	5	06/02/08	.00	N		78.0	5.0	1.00
KN47P-1-AD	55	mg/L	5	06/02/08	.00	N		55.0	5.0	1.00
KN5JV-1-AK	10.2	mg/L	5	06/02/08	.00	N		10.2	5.0	1.00
KN5J1-1-AM	9.55	mg/L	5	06/02/08	.00	N		9.6	5.0	1.00
KN5J2-1-AM	9.45	mg/L	5	06/02/08	.00	N		9.4	5.0	1.00
KN5J2-1-A5	9.3	mg/L	5	06/02/08	.00	N		9.3	5.0	1.00
KN6WN-1-A3	52	mg/L	5	06/02/08	.00	N		52.0	5.0	1.00
KN6XA-1-AE	79	mg/L	5	06/02/08	.00	N		79.0	5.0	1.00
KN6XH-1-AE	121	mg/L	5	06/02/08	.00	N		121	5.0	1.00

SM 6-4-8

DCN# TUR781

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SDDR PAGE 6 of 8

TABLE 5.3
SUMMARY OF GROUNDWATER TEST RESULTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Analytical Method →		160.1	6020C								300.0						310.1 - Alkalinity		SM 18 2320B	350.1	SM18 1030F & AFI
Constituent →		TDS	Calcium	Iron	Magnesium	Manganese	Potassium	Silica	Silicon	Sodium	Bromide	Chloride	Fluoride	Sulfate	Nitrate	Nitrite	Bicarbonate	Carbonate	Total Alkalinity	Ammonia*	Ion Balance Difference
Well ID	Date Collected	mg/L	µg/L								mg/L						mg/L		mg/L	µg/L	%
OW-606L	5/28/2008	49100[R]	632,000 N	<50U	1,880,000 N	39.1	549,000 N	2,630	<250,000 N	15,100,000 N	62.5	29,600	<20.0	3,860	<0.20	<200	165	<5.0	165	1,580	3.2
OW-606U	5/28/2008	43100[R]	535,000 N	318 NB	1,730,000 N	35.4	525,000 N	729	<250,000 N	14,400,000 N	56.6	27,900	<20.0	3,470	<0.20	<200	155	<5.0	155	844	2.7
OW-621L	6/4/2008	52800[R]	574,000 N	<50,000 N	1,960,000 N	<2,000 N	586,000 N	133,000 JB	62,100 JBN	16,300,000 N	65.9	31,300 B	<20.0	3,610	<0.20	<200	181	<5.0	181	1,300	2.8
OW-621U	5/29/2008	19400[R]	492,000 N	453 NB	1,600,000 N	36.8	476,000 N	637	<250,000 N	13,100,000 N	50.6	25,500	<1.0	3,210	<4.0	<200	189	<5.0	189	588	2.7
OW-706L	5/29/2008	17400[R]	413,000 N	531 NB	1,170,000 N	8.3	327,000 N	7,560	<250,000 N	9,440,000 N	37.7 J	19,100	<1.0	2,280	<4.0	<200	191	<5.0	191	611	4.0
OW-706U	5/29/2008	40500[R]	725,000 N	178 NB	2,150,000 N	43.5	658,000 N	1,840	<250,000 N	17,500,000 N	70.5	33,300	<1.0	3,850	<4.0	<200	204	<5.0	204	2,090	1.1
OW-721L	5/28/2008	54600[R]	667,000 N	362 NB	2,020,000 N	46.2	587,000 N	3,170	<250,000 N	16,300,000 N	64.9	31,100	<20.0	3,990	<0.20	<200	180	<5.0	180	1,820	1.7
OW-721U	5/28/2008	45400[R]	603,000 N	329 NB	1,890,000 N	58.1	569,000 N	848	<250,000 N	15,400,000 N	60.1	29,900	<20.0	3,860	<0.20	<200	164	<5.0	164	1,680	2.8
OW-735U	5/27/2008	40,200[R]	749,000 N	133 NB	2,140,000 N	32.7	655,000 N	<250	<250,000 N	17,700,000 N	262	37,500	<20.0	4,090	<4.0	<200	179	<5.0	179	2,150	6.7
OW-802U	6/5/2008	53900[R]	579,000 N	<50,000 N	1,980,000 N	<2,000 N	586,000 N	143,000 J	66,700 JN	16,400,000 N	65.1	31,600 B	<20.0	3,720	<0.20	<200	178	<5.0	178	1,400	3.0
OW-805U	6/5/2008	45700[R]	447,000 N	<50,000 N	1,570,000 N	<2,000 N	493,000 N	107,000 J	49,900 JN	13,200,000 N	53.6	27,600 B	<20.0	3,070	<0.20	<200	177	<5.0	177	548	6.9
OW-809U	5/27/2008	34,800[R]	704,000 N	158 NB	2,040,000 N	28.1	607,000 N	<250	<250,000 N	16,700,000 N	241 J	35,900	<1.0	4,050	<4.0	<200	177	<5.0	177	2,210	7.4

* = Test conducted on Nitrogen, as Ammonia.
< # = Indicates analyte not detected at or above the method detection limit.
<50U = Indicates analyte detected in the associated method blank at a concentration between the method detection limit and quantitation limit. Based on EPA 540-R-04-004, this result has been flagged as "non-detect" at the quantitation limit.
N = Spiked analyte recovery is outside stated control limits. Method performance confirmed using Laboratory Control Spike sample results.
J = Estimated result. Result is less than the reporting limit.
B = Method blank contamination. The associated method blank contains the target analyte at a reportable level. These data should be used with caution.
[1] = Because the initial results exceeded the SOP limits for this test, the samples were diluted and re-analyzed. Re-analysis was conducted out of hold time.
[R] = Indicates result has been rejected during data review process (see Section 5.5 for discussion). These results are not considered valid and should not be used.

Prepared by: [signature] Date: 5-22-09
Checked by: CBS Date: 5/22/09

Page 7 of 8

DCN# TUR781 6/6

Supplier Deviation Disposition Request (Continuation Sheet)

Bechtel SDDR No. 25409-102-YD4-CY00-00077

20. Bechtel Disposition Statement

This SDDR addresses MACTEC NCR TP 41 regarding the bicarbonate alkalinity laboratory test results for groundwater sample from observation wells OW-606L, OW-606U, OW-621U, OW-706L, OW-706U, OW-721L, and OW-721U. The reported total alkalinity results were much higher than the summation of alkalinity-bicarbonate and alkalinity-carbonate results.

Bechtel concurs with the corrective actions taken:

- MACTEC notified the analytical laboratory (TestAmerica), which after review of the data identified that a data entry error had occurred during transfer of the data from the laboratory bench sheets to the LIMs system used for report preparation. No calculation errors were found, and no changes in the raw data were required.
- TestAmerica, in order to prevent a recurrence of this problem, retrained their analysts in the critical aspects of TestAmerica's Quality Assurance policies and modified data sheets to highlight columns of data that are transferred to the LIMs system as a reminder to the analysts to import the correct data.
- TestAmerica issued revised laboratory test reports to MACTEC.
- MACTEC QA reviewed these reports and accepted the revised bicarbonate alkalinity results and revised Table 5.3 "Summary of Groundwater Test Results" included in the Final Data Report Revision 2 10-6-2008.

Bechtel concurs with the proposed disposition of **REPAIR** the data to include the revisions made by TestAmerica.

6-16-09

MACTEC

DOCUMENTATION OF TECHNICAL REVIEW
SUBCONTRACTOR WORK PRODUCT

Project Name: Turkey Point COL Project

Project Number: 6468-07-1950

Project Manager: Scott Auger

Project Principal: Tom McDaniel

The report described below has been prepared by the named subcontractor retained in accordance with the MACTEC QAPD. The work and report have been reviewed by a MACTEC technically qualified person. Comments on the work or report, if any, have been satisfactorily addressed by the subcontractor. The attached report is approved in accordance with section QS-7 of MACTEC's QAPD.

The information and data contained in the attached report are hereby released by MACTEC for project use.

REPORT : **Analytical Report Lot #: F8F050344_rev1**

SUBCONTRACTOR: **TestAmerica, Earth City, MO**

DATE OF ACCEPTANCE : 7/23/2008

TECHNICAL REVIEWER: William S. Grimes

PROJECT PRINCIPAL: Tom McDaniel

MACTEC

Client **Bechtel Power Corp.** Laboratory **TestAmerica Inc.**

MACTEC Project **6468-07-1950** Data Report Number/Date **Lot# F8F050344_rev1/ 7-9-08**

LABORATORY DATA REVIEW CHECKLIST

		YES	NO	NOT APPLICABLE
1.	Laboratory analytical data report appears complete (all data results present for all samples submitted for analysis) and there are no apparent transcription errors:	✓	___	___
2.	Samples analyzed within applicable holding times (based on date of sample collection):*	✓		___
3.	Trip blanks, field blanks or laboratory method blanks are free of blank contamination:	___	✓[1]	___
4.	If field duplicate samples collected, calculated results meet Relative Percent Difference guidelines: **	___	___	✓
5.	Surrogate recoveries (organic analyses only) within laboratory reported recovery acceptance ranges:	___	___	✓
6.	If Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples required to meet project objectives, Percent Recoveries (%R) and Relative Percent Difference (RPD) within laboratory reported acceptance ranges:	___	✓[2]	___
7.	Reported detection limits meet project objectives (e.g., are capable of achieving applicable site standards):	✓	___	___
8.	Completed Chain-Of-Custody received noting sample/custody seal condition (with airbill, if appropriate):	✓	___	___
9.	Analytical costs within authorized budget for these services:	___	___	✓

COMMENTS: **[1] Estimated concentrations of silica, silicon, and chloride were detected in the method blank, at concentrations between the PQL and MDL. Concentrations of these analytes in site samples were considerably higher, and likely reflect ambient aquifer conditions. [2] MS/MSD recoveries were outside QC limits for several analytes possibly due to matrix interference. QC established based on acceptable LCS recoveries and results for analytes with acceptable recoveries.**

Notes: 1. This checklist is intended for use with the laboratory reporting formats typical of most projects. If "no" is answered to one or more of the above checklist questions 1 through 7, a more detailed Data Validation may be required, and a person knowledgeable in Data Validation protocols should be consulted. This checklist should not be used if the project scope requires Data Validation from the onset.

2. * = Based upon EPA Guidance and the applicable analytical method references. See reverse side of checklist for details.

3. ** = Based upon EPA Guidance. Use these criteria on duplicate and sample results which exceed five times the reported detection limit. See reverse side of checklist for details.

Checked by: William A. Lee Date: 7-14-08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

REVISED

PROJECT NO. 6468071950

FPL Turkey Point COL

Lot #: F8F050344

Al Tice

MACTEC Engineering and Cons.
3301 Atlantic Ave.
Raleigh, NC 27604

TESTAMERICA LABORATORIES, INC.

Ivan Vania
Project Manager

July 9, 2008

Case Narrative
LOT NUMBER: F8F050344 – Revision 1

This report contains the analytical results for the sample received under chain of custody by TestAmerica St. Louis on June 5, 2008. This sample is associated with your FPL Turkey Point COL project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

This revision contains results for TDS analysis and corrections to flags for ion balance.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

ICP-MS (SW846-6020)
The MS (MSD) recoveries for batch 8168278 - calcium, potassium, magnesium, sodium, silicon are outside the established QC limits. The analyte concentrations in the original sample are greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8F050344 (1): OW-6211

The MS (MSD) recoveries for batch 8168278 – iron are outside the established QC limits. The RPD is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8F050344 (1): OW-6211

The MS (MSD) recoveries for batch 8164260 - manganese are outside the established QC limits due to matrix interference. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8F050344 (1): OW-6211

Batch 8168278:
The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limits were adjusted for the dilution since no analysis at a lesser dilution was performed.
Affected Samples:
F8F050344 (1): OW-6211

Batch 8168278:
The serial dilution for calcium is outside of method acceptance criteria indicating a potential matrix interference. All associated samples are flagged accordingly.
Affected Samples:
F8F050344 (1): OW-6211

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F8F050344

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Aqueous	SW846 9040	SW846 9040
Alkalinity, Total	SM18 2320 B	SM18 2320 B
Bicarbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Bromide	MCAWW 300.0A	MCAWW 300.0A
Carbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Ion Balance (%Difference)	SM18 1030F & AP	SM18 1030F & AP
ICP-MS (6020)	SW846 6020	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Nitrogen, Ammonia	MCAWW 350.1	MCAWW 350.1
Sulfate	MCAWW 300.0A	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SM18 "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8F050344

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KPF63	001	OW-6211	06/04/08	14:20

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-6211

TOTAL Metals

Lot-Sample #...: F8F050344-001 Matrix.....: WATER
Date Sampled...: 06/04/08 14:20 Date Received..: 06/05/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8168278						
Calcium	574000 N	100000	ug/L	SW846 6020	06/16-06/25/08	KPF631AD
		Dilution Factor: 1000		Analysis Time..: 17:38		
Iron	ND N	50000	ug/L	SW846 6020	06/16-06/25/08	KPF631AE
		Dilution Factor: 1000		Analysis Time..: 17:38		
Potassium	586000 N	100000	ug/L	SW846 6020	06/16-06/25/08	KPF631AF
		Dilution Factor: 1000		Analysis Time..: 17:38		
Magnesium	1960000 N	50000	ug/L	SW846 6020	06/16-06/25/08	KPF631AG
		Dilution Factor: 1000		Analysis Time..: 17:38		
Manganese	ND N	2000	ug/L	SW846 6020	06/16-06/25/08	KPF631AH
		Dilution Factor: 1000		Analysis Time..: 17:38		
Sodium	16300000 N	50000	ug/L	SW846 6020	06/16-06/25/08	KPF631AJ
		Dilution Factor: 1000		Analysis Time..: 17:38		
Silicon	62100 BN	250000	ug/L	SW846 6020	06/16-06/25/08	KPF631AK
		Dilution Factor: 1000		Analysis Time..: 17:38		
Prep Batch #...: 8175115						
Silica	133000 J,B	250000	ug/L	SW846 6020	06/16-06/25/08	KPF631AL
		Dilution Factor: 1000		Analysis Time..: 17:38		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

B The associated method blank contains thetarget analyte at a reportable level.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-6211

General Chemistry

Lot-Sample #...: F8F050344-001 **Work Order #...: KPF63** **Matrix.....: WATER**
Date Sampled...: 06/04/08 14:20 **Date Received..: 06/05/08**

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.2	0.10	No Units	SW846 9040	06/05/08	8158106
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	181	5.0	mg/L	MCAWW 310.1	06/10/08	8161269
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	65.9	50.0	mg/L	MCAWW 300.0A	06/05/08	8175487
		Dilution Factor: 200		Analysis Time..: 08:25		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/10/08	8161267
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	31300 J	2000	mg/L	MCAWW 300.0A	06/05/08	8175488
		Dilution Factor: 10000		Analysis Time..: 08:49		
Fluoride	ND	20.0	mg/L	MCAWW 300.0A	06/05/08	8175489
		Dilution Factor: 200		Analysis Time..: 08:25		
Ion Balance Difference	2.8	0.10	%	SM18 1030F & API	07/01/08	8183319
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	0.20	mg/L	MCAWW 300.0A	06/05/08	8158391
		Dilution Factor: 10		Analysis Time..: 08:13		
Nitrite	ND	200	mg/L	MCAWW 300.0A	06/05/08	8158392
		Dilution Factor: 10000		Analysis Time..: 08:49		
Nitrogen, as Ammonia	1300	100	ug/L	MCAWW 350.1	06/06/08	8156506
		Dilution Factor: 2		Analysis Time..: 00:00		
Sulfate	3610	500	mg/L	MCAWW 300.0A	06/05/08	8175490
		Dilution Factor: 1000		Analysis Time..: 08:37		
Total Alkalinity	181	5.0	mg/L	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	52800	500	mg/L	MCAWW 160.1	06/11-06/12/08	8163486
		Dilution Factor: 100		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F8F050344 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F8F160000-278 **Prep Batch #...:** 8168278						
Calcium	ND B	100	ug/L	SW846 6020	06/16-06/25/08	KP13D1AA
		Dilution Factor: 1				
		Analysis Time..: 17:30				
Iron	ND	50	ug/L	SW846 6020	06/16-06/25/08	KP13D1AC
		Dilution Factor: 1				
		Analysis Time..: 17:30				
Magnesium	ND	50	ug/L	SW846 6020	06/16-06/25/08	KP13D1AE
		Dilution Factor: 1				
		Analysis Time..: 17:30				
Manganese	ND	2	ug/L	SW846 6020	06/16-06/25/08	KP13D1AF
		Dilution Factor: 1				
		Analysis Time..: 17:30				
Potassium	ND	100	ug/L	SW846 6020	06/16-06/25/08	KP13D1AD
		Dilution Factor: 1				
		Analysis Time..: 17:30				
Silicon	**67.1 B**	**250**	**ug/L**	**SW846 6020**	**06/16-06/25/08**	**KP13D1AH**
		Dilution Factor: 1				
		Analysis Time..: 17:30				
Sodium	ND	50	ug/L	SW846 6020	06/16-06/25/08	KP13D1AG
		Dilution Factor: 1				
		Analysis Time..: 17:30				
MB Lot-Sample #: F8F230000-115 **Prep Batch #...:** 8175115						
Silica	**144 J**	**250**	**ug/L**	**SW846 6020**	**06/16-06/25/08**	**KQL7H1AA**
		Dilution Factor: 1				
		Analysis Time..: 17:38				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8F050344 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity		Work Order #: KPLC11AA		MB Lot-Sample #:	F8F090000-269	
	ND	5.0	mg/L	MCAWW 310.1	06/10/08	8161269
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Bromide		Work Order #: KQG151AA		MB Lot-Sample #:	F8F230000-487	
	ND	0.25	mg/L	MCAWW 300.0A	06/05/08	8175487
		Dilution Factor: 1				
		Analysis Time..: 07:51				
Carbonate Alkalinity		Work Order #: KPLCR1AA		MB Lot-Sample #:	F8F090000-267	
	ND	5.0	mg/L	MCAWW 310.1	06/10/08	8161267
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Chloride		Work Order #: KQG161AA		MB Lot-Sample #:	F8F230000-488	
	0.026 B	**0.20**	**mg/L**	**MCAWW 300.0A**	**06/05/08**	**8175488**
		Dilution Factor: 1				
		Analysis Time..: 07:51				
Fluoride		Work Order #: KQG191AA		MB Lot-Sample #:	F8F230000-489	
	ND	0.10	mg/L	MCAWW 300.0A	06/05/08	8175489
		Dilution Factor: 1				
		Analysis Time..: 07:51				
Nitrate		Work Order #: KPM9F1AA		MB Lot-Sample #:	F8F060000-391	
	ND	0.020	mg/L	MCAWW 300.0A	06/05/08	8158391
		Dilution Factor: 1				
		Analysis Time..: 07:51				
Nitrite		Work Order #: KPM9K1AA		MB Lot-Sample #:	F8F060000-392	
	ND	0.020	mg/L	MCAWW 300.0A	06/05/08	8158392
		Dilution Factor: 1				
		Analysis Time..: 07:51				
Nitrogen, as Ammonia		Work Order #: KPD7C1AA		MB Lot-Sample #:	F8F040000-506	
	ND	50.0	ug/L	MCAWW 350.1	06/06/08	8156506
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Sulfate		Work Order #: KQG2C1AA		MB Lot-Sample #:	F8F230000-490	
	ND	0.50	mg/L	MCAWW 300.0A	06/05/08	8175490
		Dilution Factor: 1				
		Analysis Time..: 07:51				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8F050344 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity		Work Order #: KPLCP1AA		MB Lot-Sample #:	F8F090000-265	
	ND	5.0	mg/L	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: KPQXJ1AA		MB Lot-Sample #:	F8F110000-486	
	ND	5.0	mg/L	MCAWW 160.1	06/11-06/12/08	8163486
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8F050344 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F8F160000-278 **Prep Batch #...:** 8168278					
Calcium	104	(85 - 115)	SW846 6020	06/16-06/25/08	KP13D1AJ
		Dilution Factor: 1		Analysis Time..: 17:34	
Iron	107	(85 - 115)	SW846 6020	06/16-06/25/08	KP13D1AK
		Dilution Factor: 1		Analysis Time..: 17:34	
Potassium	105	(85 - 115)	SW846 6020	06/16-06/25/08	KP13D1AL
		Dilution Factor: 1		Analysis Time..: 17:34	
Magnesium	102	(85 - 115)	SW846 6020	06/16-06/25/08	KP13D1AM
		Dilution Factor: 1		Analysis Time..: 17:34	
Manganese	112	(85 - 115)	SW846 6020	06/16-06/25/08	KP13D1AN
		Dilution Factor: 1		Analysis Time..: 17:34	
Sodium	102	(85 - 115)	SW846 6020	06/16-06/25/08	KP13D1AP
		Dilution Factor: 1		Analysis Time..: 17:34	
Silicon	113	(85 - 115)	SW846 6020	06/16-06/25/08	KP13D1AQ
		Dilution Factor: 1		Analysis Time..: 17:34	
LCS Lot-Sample#: F8F230000-115 **Prep Batch #...:** 8175115					
Silica	113 N	(0.0- 0.0)	SW846 6020	06/16-06/25/08	KQL7H1AC
		Dilution Factor: 1		Analysis Time..: 00:00	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: F8F050344 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia	WO#:KPD7C1AC-LCS/KPD7C1AD-LCSD					LCS Lot-Sample#: F8F040000-506	
	103	(90 - 110)			MCAWW 350.1	06/06/08	8156506
	100	(90 - 110)	2.7	(0-20)	MCAWW 350.1	06/06/08	8156506

Dilution Factor: 1 Analysis Time..: 00:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F050344 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)		Work Order #: KPGWD1AA	LCS Lot-Sample#: F8F060000-106		
	100	(99 - 101)	SW846 9040	06/05/08	8158106
		Dilution Factor: 1	Analysis Time..: 00:00		
Bicarbonate Alkalinity		Work Order #: KPLC11AC	LCS Lot-Sample#: F8F090000-269		
	101	(90 - 110)	MCAWW 310.1	06/10/08	8161269
		Dilution Factor: 1	Analysis Time..: 00:00		
Bromide		Work Order #: KQG151AC	LCS Lot-Sample#: F8F230000-487		
	101	(90 - 110)	MCAWW 300.0A	06/05/08	8175487
		Dilution Factor: 1	Analysis Time..: 07:41		
Carbonate Alkalinity		Work Order #: KPLCR1AC	LCS Lot-Sample#: F8F090000-267		
	101	(90 - 110)	MCAWW 310.1	06/10/08	8161267
		Dilution Factor: 1	Analysis Time..: 00:00		
Chloride		Work Order #: KQG161AC	LCS Lot-Sample#: F8F230000-488		
	98	(90 - 110)	MCAWW 300.0A	06/05/08	8175488
		Dilution Factor: 1	Analysis Time..: 07:41		
Fluoride		Work Order #: KQG191AC	LCS Lot-Sample#: F8F230000-489		
	99	(90 - 110)	MCAWW 300.0A	06/05/08	8175489
		Dilution Factor: 1	Analysis Time..: 07:41		
Nitrate		Work Order #: KPM9F1AC	LCS Lot-Sample#: F8F060000-391		
	101	(90 - 110)	MCAWW 300.0A	06/05/08	8158391
		Dilution Factor: 1	Analysis Time..: 07:41		
Nitrite		Work Order #: KPM9K1AC	LCS Lot-Sample#: F8F060000-392		
	100	(90 - 110)	MCAWW 300.0A	06/05/08	8158392
		Dilution Factor: 1	Analysis Time..: 07:41		
Sulfate		Work Order #: KQG2C1AC	LCS Lot-Sample#: F8F230000-490		
	95	(90 - 110)	MCAWW 300.0A	06/05/08	8175490
		Dilution Factor: 1	Analysis Time..: 07:41		
Total Alkalinity		Work Order #: KPLCP1AC	LCS Lot-Sample#: F8F090000-265		
	101	(90 - 110)	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8F050344 **Matrix.....:** WATER
Date Sampled...: 06/04/08 14:20 **Date Received..:** 06/05/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F8F050344-001 **Prep Batch #...:** 8168278							
Calcium	0 N	(75 - 125)			SW846 6020	06/16-06/25/08	KPF631A8
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/16-06/25/08	KPF631A9
		Dilution Factor: 1000					
		Analysis Time..: 17:45					
Iron	0 N	(75 - 125)			SW846 6020	06/16-06/25/08	KPF631CA
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/16-06/25/08	KPF631CC
		Dilution Factor: 1000					
		Analysis Time..: 17:45					
Magnesium	0 N	(75 - 125)			SW846 6020	06/16-06/25/08	KPF631CF
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/16-06/25/08	KPF631CG
		Dilution Factor: 1000					
		Analysis Time..: 17:45					
Manganese	117	(75 - 125)			SW846 6020	06/16-06/25/08	KPF631CH
	130 N	(75 - 125)	11	(0-20)	SW846 6020	06/16-06/25/08	KPF631CJ
		Dilution Factor: 1000					
		Analysis Time..: 17:45					
Potassium	0 N	(75 - 125)			SW846 6020	06/16-06/25/08	KPF631CD
	17 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/16-06/25/08	KPF631CE
		Dilution Factor: 1000					
		Analysis Time..: 17:45					
Silicon	85 B	(75 - 125)			SW846 6020	06/16-06/25/08	KPF631CM
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/16-06/25/08	KPF631CN
		Dilution Factor: 1000					
		Analysis Time..: 17:45					
Sodium	0 N	(75 - 125)			SW846 6020	06/16-06/25/08	KPF631CK
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/16-06/25/08	KPF631CL
		Dilution Factor: 1000					
		Analysis Time..: 17:45					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F050344 **Matrix.....:** WATER
Date Sampled...: 06/04/08 14:20 **Date Received..:** 06/05/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #...: KPF631CP		MS Lot-Sample #: F8F050344-001	
	92	(90 - 110)	MCAWW 300.0A	06/05/08	8175487
		Dilution Factor: 200	Analysis Time..: 08:25		
Chloride		Work Order #...: KPF631CR		MS Lot-Sample #: F8F050344-001	
	97	(90 - 110)	MCAWW 300.0A	06/05/08	8175488
		Dilution Factor: 10000	Analysis Time..: 08:49		
Fluoride		Work Order #...: KPF631CU		MS Lot-Sample #: F8F050344-001	
	100	(90 - 110)	MCAWW 300.0A	06/05/08	8175489
		Dilution Factor: 200	Analysis Time..: 08:25		
Nitrate		Work Order #...: KPF631A2		MS Lot-Sample #: F8F050344-001	
	93	(90 - 110)	MCAWW 300.0A	06/05/08	8158391
		Dilution Factor: 10	Analysis Time..: 08:13		
Nitrite		Work Order #...: KPF631A4		MS Lot-Sample #: F8F050344-001	
	102	(90 - 110)	MCAWW 300.0A	06/05/08	8158392
		Dilution Factor: 10000	Analysis Time..: 08:49		
Nitrogen, as Ammonia		Work Order #...: KPC951C5		MS Lot-Sample #: F8F040293-001	
	96	(90 - 110)	MCAWW 350.1	06/06/08	8156506
		Dilution Factor: 1	Analysis Time..: 00:00		
Sulfate		Work Order #...: KPF631CW		MS Lot-Sample #: F8F050344-001	
	100	(90 - 110)	MCAWW 300.0A	06/05/08	8175490
		Dilution Factor: 1000	Analysis Time..: 08:37		
Total Alkalinity		Work Order #...: KPF631A0		MS Lot-Sample #: F8F050344-001	
	92	(80 - 120)	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F050344 **Work Order #...:** KPC95-SMP KPC95-DUP **Matrix.....:** WATER

Date Sampled...: 06/02/08 09:46 **Date Received..:** 06/04/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia						SD Lot-Sample #: F8F040293-001		
	190	160	ug/L	14	(0-20)	MCAWW 350.1	06/06/08	8156506

Dilution Factor: 1 Analysis Time..: 00:00

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F050344 **Work Order #...:** KN9V9-SMP KN9V9-DUP **Matrix.....:** WATER

Date Sampled...: 06/02/08 07:50 **Date Received..:** 06/03/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8F030220-002		
	57.0	56.0	mg/L	1.8	(0-15)	MCAWW 310.1	06/10/08	8161269
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8F030220-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/10/08	8161267
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F050344 **Work Order #...:** KPF63-SMP KPF63-DUP **Matrix.....:** WATER

Date Sampled...: 06/04/08 14:20 **Date Received..:** 06/05/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide						SD Lot-Sample #: F8F050344-001		
	65.9	65.0	mg/L	1.5	(0-20)	MCAWW 300.0A	06/05/08	8175487
		Dilution Factor: 200				Analysis Time..: 08:25		
Chloride						SD Lot-Sample #: F8F050344-001		
	31300 J	32900	mg/L	4.8	(0-20)	MCAWW 300.0A	06/05/08	8175488
		Dilution Factor: 10000				Analysis Time..: 08:49		
Fluoride						SD Lot-Sample #: F8F050344-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	06/05/08	8175489
		Dilution Factor: 200				Analysis Time..: 08:25		
Sulfate						SD Lot-Sample #: F8F050344-001		
	3610	3600	mg/L	0.34	(0-20)	MCAWW 300.0A	06/05/08	8175490
		Dilution Factor: 1000				Analysis Time..: 08:37		
Nitrite						SD Lot-Sample #: F8F050344-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	06/05/08	8158392
		Dilution Factor: 10000				Analysis Time..: 08:49		
Nitrate						SD Lot-Sample #: F8F050344-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	06/05/08	8158391
		Dilution Factor: 10				Analysis Time..: 08:13		
Total Alkalinity						SD Lot-Sample #: F8F050344-001		
	181	183	mg/L	1.1	(0-20)	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1				Analysis Time..: 00:00		
pH (liquid)						SD Lot-Sample #: F8F050344-001		
	7.2	7.2	No Units	0.0	(0-0.0)	SW846 9040	06/05/08	8158106
		Dilution Factor: 1				Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

F8F050344 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-131-132,M

Project Manager: IV | Quote #: 79192 | SDG:

Date Received: 2008-06-05

Project: 6468071950 | FPL Turkey Point COL

Analytical Due Date: 2008-06-24

PO#: 200807151 | Report to: Al Tice

Report Due Date: 2008-06-26

Client: 63036 MACTEC Engineering & Consulting Inc

Report Type: W

#SMPS In LOT: 1 | EDD Code: 00

Inform PM of any receiving issues.

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	OW-621I			2008-06-04 / 1420	KPF63	WATER

SAMPLE COMMENTS:

	FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
	SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
	XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
S	XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
S	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
S	XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
X	XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
X	XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
X	XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
X	XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

CUR 3550

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
MACTEC	Scott Auger	06-04-08	062466
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
3301 Atlantic Avenue	919-876-0416		
City / State / Zip Code	**Site Contact**	**Lab Contact**	
Raleigh NC 27604	Matt Cooke	Ivan Vania	
Project Name and Location (State)	**Carrier/Waybill Number**		
Turkey Point Col	FE 8656 2694 6064		
Contract/Purchase Order/Quote No.			
6468-07-1950			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): 1L pH 10 yes	1L pH TDS Alkalinity/pH	125 mL pH Ammonia	125 mL pH Nitrate/Nitrite	(6250 M)	Special Instructions/ Conditions of Receipt
OW-621L	06/04/08	1420		X			1	2	1				1	1	2		1L, 3x250ml	Cation: Calcium, Iron, Magnesium, Manganese, Potassium, Silicia, Sodium - pH-EPA SW846 9045(D) TDS-EPA 160.1 - Cation-EPA 6020C Inorganic Ions McAWW 300.0A - Alkalinity-EPA 310.1 - Ammonia-EPA-350.1 Nitrate Nitrite - EPA 300.0

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other Standard

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.	Kristy Chupp-Smith	06/04/08		B-Rel	6/5/08	0915
2.						
3.						

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): - 3550 - F8F050354 RD 544

Condition Upon Receipt Form

Client: Master COC/RFA No: 06246 Date: 6/5/08
Quote No: 79142 Initiated By: BD Time: 0915

Shipping Information

Shipper Name: FE Multiple Packages Y (N)

Shipping # (s):*		Sample Temperature (s):**	
1. 8456 2694 6666 4	6.	1. 4	6.
2.	7.	2.	7.
3.	8.	3.	8.
4.	9.	4.	9.
5.	10.	5.	10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH!? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N	If N/A- Was pH taken by original TestAmerica lab?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:

Corrective Action:

- ☐ Client Contact Name: _____ Informed by: _____
- ☐ Sample(s) processed "as is"
- ☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 6-6-8

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004, REVISED 08/06/07\\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin004 rev11.doc

MACTEC

DOCUMENTATION OF TECHNICAL REVIEW
SUBCONTRACTOR WORK PRODUCT

Project Name: Turkey Point COL Project

Project Number: 6468-07-1950

Project Manager: Scott Auger

Project Principal: Tom McDaniel

The report described below has been prepared by the named subcontractor retained in accordance with the MACTEC QAPD. The work and report have been reviewed by a MACTEC technically qualified person. Comments on the work or report, if any, have been satisfactorily addressed by the subcontractor. The attached report is approved in accordance with section QS-7 of MACTEC's QAPD.

The information and data contained in the attached report are hereby released by MACTEC for project use.

REPORT : **Analytical Report Lot #: F8E280143_rev1**

SUBCONTRACTOR: **TestAmerica, Earth City, MO**

DATE OF ACCEPTANCE : 7/25/2008

TECHNICAL REVIEWER: William S. Grimes

SENIOR PROJECT PRINCIPAL: J. Allan Tice

MACTEC
3301 Atlantic Avenue, Raleigh, NC 27604

MACTEC

Client **Bechtel Power Corp.** Laboratory **TestAmerica Inc.**

MACTEC Project **6468-07-1950** Data Report Number/Date **Lot# F8E280143_rev1/ 6-27-08**

LABORATORY DATA REVIEW CHECKLIST

		YES	NO	NOT APPLICABLE
1.	Laboratory analytical data report appears complete (all data results present for all samples submitted for analysis) and there are no apparent transcription errors:	___	✓[1]	___
2.	Samples analyzed within applicable holding times (based on date of sample collection):*	___	✓[2]	___
3.	Trip blanks, field blanks or laboratory method blanks are free of blank contamination:	___	✓[3]	___
4.	If field duplicate samples collected, calculated results meet Relative Percent Difference guidelines: **	___	___	✓
5.	Surrogate recoveries (organic analyses only) within laboratory reported recovery acceptance ranges:	___	___	✓
6.	If Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples required to meet project objectives, Percent Recoveries (%R) and Relative Percent Difference (RPD) within laboratory reported acceptance ranges:	___	✓[4]	___
7.	Reported detection limits meet project objectives (e.g., are capable of achieving applicable site standards):	✓	___	___
8.	Completed Chain-Of-Custody received noting sample/custody seal condition (with airbill, if appropriate):	✓	___	___
9.	Analytical costs within authorized budget for these services:	___	___	✓

COMMENTS: **[1] Iron results should be flagged indicating method blank contamination. [2] Samples OW-735U and OW-809U for TDS were tested out of hold. B/c the samples were stored under refrigeration, biological degradation should not have been an issue. [3] An estimated concentration of iron was detected in the method blank, at a concentration between the PQL and MDL. Iron concentrations in site samples were considerably higher, and likely reflect ambient aquifer conditions. [4] MS/MSD recoveries were outside QC limits for several analytes possibly due to matrix interference. QC established based on acceptable LCS recoveries and results for analytes with acceptable recoveries.**

Notes: 1. This checklist is intended for use with the laboratory reporting formats typical of most projects. If "no" is answered to one or more of the above checklist questions 1 through 7, a more detailed Data Validation may be required, and a person knowledgeable in Data Validation protocols should be consulted. This checklist should not be used if the project scope requires Data Validation from the onset.

2. * = Based upon EPA Guidance and the applicable analytical method references. See reverse side of checklist for details.

3. ** = Based upon EPA Guidance. Use these criteria on duplicate and sample results which exceed five times the reported detection limit. See reverse side of checklist for details.

Checked by: _____ Date: 7-15-08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

REVISED

PROJECT NO. 6468071950

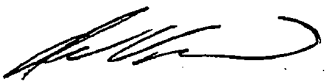
FPL Turkey Point COL

Lot #: F8E280143

Al Tice

MACTEC Engineering and Cons.
3301 Atlantic Ave.
Raleigh, NC 27604

TESTAMERICA LABORATORIES, INC.



Ivan Vania
Project Manager

June 27, 2008

Case Narrative
LOT NUMBER: F8E280143 – Revision 1

This report contains the analytical results for the two samples received under chain of custody by TestAmerica St. Louis on May 28, 2008. These samples are associated with your FPL Turkey Point COL project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

This revision contains corrections to the TDS mass listed in the case narrative.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

ICP-MS (SW846-6020)
Batch 8155134:
The MS (MSD) recoveries for calcium, potassium, magnesium, and sodium are outside the established QC limits. The analyte concentrations in the original samples are greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8E280143 (1): 0W-735U
F8E280143 (2): 0W-809U

Batch 8155134:
The MS (MSD) recovery for iron is outside the established QC limits. The RPD is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery. No further action is required.
Affected Samples:
F8E280143 (1): 0W-735U
F8E280143 (2): 0W-809U

Batch 8155134:
The MS (MSD) recovery for silicon is outside the established QC limits. Matrix interference is physically evident in the sample. The samples are high in salts. Method performance is demonstrated by acceptable LCS recovery
Affected Samples:
F8E280143 (1): 0W-735U
F8E280143 (2): 0W-809U

Batch 8155134:
The Measured Intensity Mean for lead, as measured during the daily performance check, was low. However, the calibration and the second source checks were all within acceptable QC limits. The samples were reported with this narrative.
Affected Samples:
F8E280143 (1): 0W-735U
F8E280143 (2): 0W-809U

Batch 8155134:
The samples were analyzed at a dilution due to high concentrations of salts. The reporting limits were adjusted for the dilution.
Affected Samples:
F8E280143 (1): 0W-735U
F8E280143 (2): 0W-809U

Total Dissolved Solids (MCAWW 160.1)
Batch 8156338:
Initial results exceeded the SOP limit of 200mg. The samples were re-analyzed at a 100X dilution out of hold.
Affected Samples:
F8E280143 (1): 0W-735U
F8E280143 (2): 0W-809U

Anions (MCAWW 300.0A)
Poor matrix spike recovery for Chloride in batch 8165334, Nitrite in batch 8165337, and Ortho Phos in batch 8165338 is attributed to matrix interference. The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries.
Affected Samples:
F8E280143 (1): 0W-735U
F8E280143 (2): 0W-809U

The MS recoveries for Bromide in batch 8165345, Chloride in batch 8165346, Fluoride in batch 8165347, Sulfate in batch 8165348, Nitrite in batch 8165349, and Nitrate in batch 8165350 are outside the established QC limits. Matrix interference is evident in the sample. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8E280143 (1): 0W-735U
F8E280143 (2): 0W-809U

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F8E280143

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Aqueous	SW846 9040	SW846 9040
Alkalinity, Total	SM18 2320 B	SM18 2320 B
Bicarbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Bromide	MCAWW 300.0A	MCAWW 300.0A
Carbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Ion Balance % Difference	SM18 1030F & AP	SM18 1030F & AP
ICP-MS (6020)	SW846 6020	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Nitrogen, Ammonia	MCAWW 350.1	MCAWW 350.1
Sulfate	MCAWW 300.0A	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SM18 "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8E280143

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KNX8D	001	0W-735U	05/27/08	11:35
KNX8K	002	0W-809U	05/27/08	14:55

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: 0W-735U

TOTAL Metals

Lot-Sample #...: F8E280143-001 **Matrix.....: WATER**
Date Sampled...: 05/27/08 11:35 Date Received..: 05/28/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8155134						
Calcium	**749000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/24/08**	**KNX8D1AN**
		Dilution Factor: 1000		Analysis Time..: 15:45		
Iron	**133 N**	**100**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KNX8D1AP**
		Dilution Factor: 2		Analysis Time..: 02:09		
Potassium	**655000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KNX8D1AQ**
		Dilution Factor: 1000		Analysis Time..: 22:10		
Magnesium	**2140000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KNX8D1AR**
		Dilution Factor: 1000		Analysis Time..: 22:10		
Manganese	**32.7**	**4**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KNX8D1AT**
		Dilution Factor: 2		Analysis Time..: 02:09		
Sodium	**17700000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KNX8D1AU**
		Dilution Factor: 1000		Analysis Time..: 22:10		
Silicon	ND N	250000	ug/L	SW846 6020	06/11-06/21/08	KNX8D1AV
		Dilution Factor: 1000		Analysis Time..: 22:10		
Prep Batch #...: 8175113						
Silica	ND	250	ug/L	SW846 6020	06/11-06/21/08	KNX8D1AW
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

MACTEC Engineering & Consulting Inc

Client Sample ID: 0W-735U

General Chemistry

Lot-Sample #...: F8E280143-001 Work Order #...: KNX8D Matrix.....: WATER
Date Sampled...: 05/27/08 11:35 Date Received..: 05/28/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.0	0.10	No Units	SW846 9040	05/28/08	8149223
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	179	5.0	mg/L	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	262	250	mg/L	MCAWW 300.0A	05/29/08	8165345
		Dilution Factor: 1000		Analysis Time..: 11:27		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	37500	2000	mg/L	MCAWW 300.0A	05/29/08	8165346
		Dilution Factor: 10000		Analysis Time..: 11:39		
Fluoride	ND	20.0	mg/L	MCAWW 300.0A	05/29/08	8165347
		Dilution Factor: 200		Analysis Time..: 11:14		
Ion Balance Difference	6.7	0.10	%	SM18 1030F & API	06/23/08	8175543
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	4.0	mg/L	MCAWW 300.0A	05/29/08	8165350
		Dilution Factor: 200		Analysis Time..: 11:14		
Nitrite	ND	200	mg/L	MCAWW 300.0A	05/29/08	8165349
		Dilution Factor: 10000		Analysis Time..: 11:39		
Nitrogen, as Ammonia	2150	200	ug/L	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 4		Analysis Time..: 00:00		
Sulfate	4090	500	mg/L	MCAWW 300.0A	05/29/08	8165348
		Dilution Factor: 1000		Analysis Time..: 11:27		
Total Alkalinity	179	5.0	mg/L	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	40200	500	mg/L	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 100		Analysis Time..: 00:00		

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-809U

TOTAL Metals

Lot-Sample #...: F8E280143-002 Matrix.....: WATER
Date Sampled...: 05/27/08 14:55 Date Received..: 05/28/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8155134						
Calcium	704000 N	100000	ug/L	SW846 6020	06/11-06/24/08	KNX8K1AN
		Dilution Factor: 1000		Analysis Time..: 15:59		
Iron	158 N	100	ug/L	SW846 6020	06/11-06/17/08	KNX8K1AP
		Dilution Factor: 2		Analysis Time..: 02:24		
Potassium	607000 N	100000	ug/L	SW846 6020	06/11-06/21/08	KNX8K1AQ
		Dilution Factor: 1000		Analysis Time..: 22:26		
Magnesium	2040000 N	50000	ug/L	SW846 6020	06/11-06/21/08	KNX8K1AR
		Dilution Factor: 1000		Analysis Time..: 22:26		
Manganese	28.1	4	ug/L	SW846 6020	06/11-06/17/08	KNX8K1AT
		Dilution Factor: 2		Analysis Time..: 02:24		
Sodium	16700000 N	50000	ug/L	SW846 6020	06/11-06/21/08	KNX8K1AU
		Dilution Factor: 1000		Analysis Time..: 22:26		
Silicon	ND N	250000	ug/L	SW846 6020	06/11-06/21/08	KNX8K1AV
		Dilution Factor: 1000		Analysis Time..: 22:26		
Prep Batch #...: 8175113						
Silica	ND	250	ug/L	SW846 6020	06/11-06/21/08	KNX8K1AW
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

MACTEC Engineering & Consulting Inc

Client Sample ID: 0W-809U

General Chemistry

Lot-Sample #...: F8E280143-002 Work Order #...: KNX8K Matrix.....: WATER
Date Sampled...: 05/27/08 14:55 Date Received..: 05/28/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.1	0.10	No Units	SW846 9040	05/28/08	8149223
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	177	5.0	mg/L	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	241 B	250	mg/L	MCAWW 300.0A	05/29/08	8165345
		Dilution Factor: 1000		Analysis Time..: 12:42		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	35900	2000	mg/L	MCAWW 300.0A	05/29/08	8165346
		Dilution Factor: 10000		Analysis Time..: 12:55		
Fluoride	ND	1.0	mg/L	MCAWW 300.0A	05/29/08	8165347
		Dilution Factor: 10		Analysis Time..: 12:16		
Ion Balance Difference	7.4	0.10	%	SM18 1030F & API	06/23/08	8175543
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	4.0	mg/L	MCAWW 300.0A	05/29/08	8165350
		Dilution Factor: 200		Analysis Time..: 12:29		
Nitrite	ND	200	mg/L	MCAWW 300.0A	05/29/08	8165349
		Dilution Factor: 10000		Analysis Time..: 12:55		
Nitrogen, as Ammonia	2210	200	ug/L	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 4		Analysis Time..: 00:00		
Sulfate	4050	500	mg/L	MCAWW 300.0A	05/29/08	8165348
		Dilution Factor: 1000		Analysis Time..: 12:42		
Total Alkalinity	177	5.0	mg/L	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	34800	500	mg/L	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 100		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F8E280143 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F8F030000-134 **Prep Batch #...:** 8155134						
Calcium	ND	100	ug/L	SW846 6020	06/11-06/24/08	KN8W91AA
		Dilution Factor: 1				
		Analysis Time..: 15:38				
Iron	26.0 B	50	ug/L	SW846 6020	06/11-06/17/08	KN8W91AC
		Dilution Factor: 1				
		Analysis Time..: 02:01				
Magnesium	ND	50	ug/L	SW846 6020	06/11-06/21/08	KN8W91AE
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Manganese	ND	2	ug/L	SW846 6020	06/11-06/17/08	KN8W91AF
		Dilution Factor: 1				
		Analysis Time..: 02:01				
Potassium	ND	100	ug/L	SW846 6020	06/11-06/21/08	KN8W91AD
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Silicon	ND	250	ug/L	SW846 6020	06/11-06/21/08	KN8W91AH
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Sodium	ND	50	ug/L	SW846 6020	06/11-06/21/08	KN8W91AG
		Dilution Factor: 1				
		Analysis Time..: 21:52				
MB Lot-Sample #: F8F230000-113 **Prep Batch #...:** 8175113						
Silica	ND	250	ug/L	SW846 6020	06/11-06/21/08	KQEK81AA
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8E280143 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity		Work Order #: KN7R51AA		MB Lot-Sample #:	F8F020000-062	
	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Bromide		Work Order #: KP1JC1AA		MB Lot-Sample #:	F8F130000-345	
	ND	0.25	mg/L	MCAWW 300.0A	05/29/08	8165345
		Dilution Factor: 1				
		Analysis Time..: 09:32				
Carbonate Alkalinity		Work Order #: KN7RT1AA		MB Lot-Sample #:	F8F020000-061	
	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Chloride		Work Order #: KP1JD1AA		MB Lot-Sample #:	F8F130000-346	
	ND	0.20	mg/L	MCAWW 300.0A	05/29/08	8165346
		Dilution Factor: 1				
		Analysis Time..: 09:32				
Fluoride		Work Order #: KP1JE1AA		MB Lot-Sample #:	F8F130000-347	
	ND	0.10	mg/L	MCAWW 300.0A	05/29/08	8165347
		Dilution Factor: 1				
		Analysis Time..: 09:32				
Nitrate		Work Order #: KP1JJ1AA		MB Lot-Sample #:	F8F130000-350	
	ND	0.020	mg/L	MCAWW 300.0A	05/29/08	8165350
		Dilution Factor: 1				
		Analysis Time..: 09:32				
[redacted]						
	ND	0.020	mg/L	MCAWW 300.0A	05/29/08	8165349
		Dilution Factor: 1				
		Analysis Time..: 09:32				
Nitrogen, as Ammonia		Work Order #: KN3VT1AA		MB Lot-Sample #:	F8E290000-453	
	ND	50.0	ug/L	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Sulfate		Work Order #: KP1JF1AA		MB Lot-Sample #:	F8F130000-348	
	ND	0.50	mg/L	MCAWW 300.0A	05/29/08	8165348
		Dilution Factor: 1				
		Analysis Time..: 09:32				

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METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8E280143 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity		Work Order #: KN7RG1AA		MB Lot-Sample #:	F8F020000-059	
	ND	5.0	mg/L	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: KPC5L1AA		MB Lot-Sample #:	F8F040000-338	
	ND	5.0	mg/L	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8E280143 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F8F030000-134 **Prep Batch #...:** 8155134					
Calcium	105	(85 - 115)	SW846 6020	06/11-06/24/08	KN8W91AJ
		Dilution Factor: 1		Analysis Time..: 15:42	
Iron	111	(85 - 115)	SW846 6020	06/11-06/17/08	KN8W91AK
		Dilution Factor: 1		Analysis Time..: 02:05	
Potassium	102	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AL
		Dilution Factor: 1		Analysis Time..: 21:57	
Magnesium	100	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AM
		Dilution Factor: 1		Analysis Time..: 21:57	
Manganese	108	(85 - 115)	SW846 6020	06/11-06/17/08	KN8W91AN
		Dilution Factor: 1		Analysis Time..: 02:05	
Sodium	98	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AP
		Dilution Factor: 1		Analysis Time..: 21:57	
Silicon	105	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AQ
		Dilution Factor: 1		Analysis Time..: 21:57	
LCS Lot-Sample#: F8F230000-113 **Prep Batch #...:** 8175113					
Silica	105 N	(0.0- 0.0)	SW846 6020	06/11-06/21/08	KQEK81AC
		Dilution Factor: 1		Analysis Time..: 00:00	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: F8E280143 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia	WO#:KN3VT1AC-LCS/KN3VT1AD-LCSD					LCS Lot-Sample#: F8E290000-453	
	100	(90 - 110)			MCAWW 350.1	05/30/08	8150453
	99	(90 - 110)	0.77	(0-20)	MCAWW 350.1	05/30/08	8150453

Dilution Factor: 1 Analysis Time..: 00:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)		Work Order #: KN5GJ1AA	LCS Lot-Sample#: F8E280000-223		
	100	(99 - 101)	SW846 9040	05/28/08	8149223
		Dilution Factor: 1	Analysis Time..: 00:00		
Bicarbonate Alkalinity		Work Order #: KN7R51AC	LCS Lot-Sample#: F8F020000-062		
	100	(90 - 110)	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1	Analysis Time..: 00:00		
Bromide		Work Order #: KP1JC1AC	LCS Lot-Sample#: F8F130000-345		
	104	(90 - 110)	MCAWW 300.0A	05/29/08	8165345
		Dilution Factor: 1	Analysis Time..: 09:20		
Carbonate Alkalinity		Work Order #: KN7RT1AC	LCS Lot-Sample#: F8F020000-061		
	100	(90 - 110)	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1	Analysis Time..: 00:00		
Chloride		Work Order #: KP1JD1AC	LCS Lot-Sample#: F8F130000-346		
	97	(90 - 110)	MCAWW 300.0A	05/29/08	8165346
		Dilution Factor: 1	Analysis Time..: 09:20		
Fluoride		Work Order #: KP1JE1AC	LCS Lot-Sample#: F8F130000-347		
	96	(90 - 110)	MCAWW 300.0A	05/29/08	8165347
		Dilution Factor: 1	Analysis Time..: 09:20		
Nitrate		Work Order #: KP1JJ1AC	LCS Lot-Sample#: F8F130000-350		
	104	(90 - 110)	MCAWW 300.0A	05/29/08	8165350
		Dilution Factor: 1	Analysis Time..: 09:20		
Nitrite		Work Order #: KP1JH1AC	LCS Lot-Sample#: F8F130000-349		
	98	(90 - 110)	MCAWW 300.0A	05/29/08	8165349
		Dilution Factor: 1	Analysis Time..: 09:20		
Sulfate		Work Order #: KP1JF1AC	LCS Lot-Sample#: F8F130000-348		
	94	(90 - 110)	MCAWW 300.0A	05/29/08	8165348
		Dilution Factor: 1	Analysis Time..: 09:20		
Total Alkalinity		Work Order #: KN7RG1AC	LCS Lot-Sample#: F8F020000-059		
	100	(90 - 110)	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1	Analysis Time..: 00:00		

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: KPC5L1AC	LCS Lot-Sample#: F8F040000-338		
	100	(86 - 115)	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8E280143 **Matrix.....:** WATER
Date Sampled...: 05/27/08 11:35 **Date Received..:** 05/28/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F8E280143-001 **Prep Batch #...:** 8155134							
Calcium	0 N	(75 - 125)			SW846 6020	06/11-06/24/08	KNX8D1A0
	136 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/24/08	KNX8D1A1
		Dilution Factor: 1000					
		Analysis Time..: 15:52					
Iron	62 N	(75 - 125)			SW846 6020	06/11-06/17/08	KNX8D1A2
	68 N	(75 - 125)	6.1	(0-20)	SW846 6020	06/11-06/17/08	KNX8D1A3
		Dilution Factor: 2					
		Analysis Time..: 02:16					
Magnesium	358 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1A6
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1A7
		Dilution Factor: 1000					
		Analysis Time..: 22:18					
Manganese	79	(75 - 125)			SW846 6020	06/11-06/17/08	KNX8D1A8
	83	(75 - 125)	4.5	(0-20)	SW846 6020	06/11-06/17/08	KNX8D1A9
		Dilution Factor: 2					
		Analysis Time..: 02:16					
Potassium	122 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1A4
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1A5
		Dilution Factor: 1000					
		Analysis Time..: 22:18					
Silicon	182 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1CD
	138 N,*	(75 - 125)	27	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1CE
		Dilution Factor: 1000					
		Analysis Time..: 22:18					
Sodium	3360 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1CA
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1CC
		Dilution Factor: 1000					
		Analysis Time..: 22:18					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Matrix.....:** WATER
Date Sampled...: 05/27/08 11:35 **Date Received..:** 05/28/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #...: KNX8D1CF		MS Lot-Sample #: F8E280143-001	
	122 N	(90 - 110)	MCAWW 300.0A	05/29/08	8165345
		Dilution Factor: 1000	Analysis Time..: 11:27		
Chloride		Work Order #...: KNX8D1CH		MS Lot-Sample #: F8E280143-001	
	89 N	(90 - 110)	MCAWW 300.0A	05/29/08	8165346
		Dilution Factor: 10000	Analysis Time..: 11:39		
Fluoride		Work Order #...: KNX8D1CK		MS Lot-Sample #: F8E280143-001	
	87 N	(90 - 110)	MCAWW 300.0A	05/29/08	8165347
		Dilution Factor: 200	Analysis Time..: 11:14		
Nitrate		Work Order #...: KNX8D1CR		MS Lot-Sample #: F8E280143-001	
	40 N	(90 - 110)	MCAWW 300.0A	05/29/08	8165350
		Dilution Factor: 200	Analysis Time..: 11:14		
Nitrite		Work Order #...: KNX8D1CP		MS Lot-Sample #: F8E280143-001	
	149 N	(90 - 110)	MCAWW 300.0A	05/29/08	8165349
		Dilution Factor: 10000	Analysis Time..: 11:39		
Nitrogen, as Ammonia		Work Order #...: KNW831AP		MS Lot-Sample #: F8E270173-001	
	104	(90 - 110)	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 1	Analysis Time..: 00:00		
Sulfate		Work Order #...: KNX8D1CM		MS Lot-Sample #: F8E280143-001	
	88 N	(90 - 110)	MCAWW 300.0A	05/29/08	8165348
		Dilution Factor: 1000	Analysis Time..: 11:27		
Total Alkalinity		Work Order #...: KN5J21A2		MS Lot-Sample #: F8E300223-003	
	90	(80 - 120)	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KNX8K-SMP KNX8K-DUP **Matrix.....:** WATER

Date Sampled...: 05/27/08 14:55 **Date Received..:** 05/28/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)						SD Lot-Sample #: F8E280143-002		
	7.1	7.1	No Units	0.14	(0-0.0)	SW846 9040	05/28/08	8149223

Dilution Factor: 1 Analysis Time..: 00:00

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KNW83-SMP KNW83-DUP **Matrix.....:** WATER

Date Sampled...: 05/22/08 09:19 **Date Received..:** 05/24/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia						SD Lot-Sample #: F8E270173-001		
	120	140 B	ug/L	19	(0-20)	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 1				Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KN2LJ-SMP KN2LJ-DUP **Matrix.....:** WATER

Date Sampled...: 05/27/08 09:00 **Date Received..:** 05/28/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E290176-002		
	71.0	73.0	mg/L	2.8	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E290176-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		
pH (liquid)						SD Lot-Sample #: F8E290176-002		
	7.6	7.6	No Units	0.0	(0-0.0)	SW846 9040	05/28/08	8149223
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KN2LW-SMP KN2LW-DUP **Matrix.....:** WATER

Date Sampled...: 05/27/08 09:35 **Date Received..:** 05/28/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E290176-003		
	55.0	52.0	mg/L	5.6	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E290176-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KN2NJ-SMP KN2NJ-DUP **Matrix.....:** WATER

Date Sampled...: 05/28/08 08:10 **Date Received..:** 05/29/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E290185-001		
	51.0	50.0	mg/L	2.0	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E290185-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KN46M-SMP KN46M-DUP **Matrix.....:** WATER

Date Sampled...: 05/29/08 09:45 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E300179-001		
	76.0	78.0	mg/L	2.6	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E300179-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KN5J2-SMP KN5J2-DUP **Matrix.....:** WATER

Date Sampled...: 05/29/08 16:10 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E300223-003		
	9.4	9.3	mg/L	1.6	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E300223-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		
Total Alkalinity						SD Lot-Sample #: F8E300223-003		
	189	279	mg/L	38	(0-20)	SM18 2320 B	06/02/08	8154059
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KN6XH-SMP KN6XH-DUP **Matrix.....:** WATER

Date Sampled...: 05/30/08 09:45 **Date Received..:** 05/31/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E310160-003		
	121	120	mg/L	0.83	(0-15)	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1				Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E310160-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1				Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KN5GT-SMP KN5GT-DUP **Matrix.....:** WATER

Date Sampled...: 05/28/08 10:02 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F8E300212-001		
	431	420	mg/L	2.6	(0-15)	MCAWW 160.1	06/04-06/05/08	8156338
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KN5RL-SMP KN5RL-DUP **Matrix.....:** WATER

Date Sampled...: 05/28/08 10:17 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F8E300262-001		
	1690	1870	mg/L	9.9	(0-15)	MCAWW 160.1	06/04-06/05/08	8156338

Dilution Factor: 1 Analysis Time..: 00:00

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E280143 **Work Order #...:** KNX8D-SMP KNX8D-DUP **Matrix.....:** WATER

Date Sampled...: 05/27/08 11:35 **Date Received..:** 05/28/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide						SD Lot-Sample #: F8E280143-001		
	262	205 B	mg/L	24	(0-20)	MCAWW 300.0A	05/29/08	8165345
		Dilution Factor: 1000				Analysis Time..: 11:27		
Chloride						SD Lot-Sample #: F8E280143-001		
	37500	35100	mg/L	6.7	(0-20)	MCAWW 300.0A	05/29/08	8165346
		Dilution Factor: 10000				Analysis Time..: 11:39		
Fluoride						SD Lot-Sample #: F8E280143-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	05/29/08	8165347
		Dilution Factor: 200				Analysis Time..: 11:14		
Sulfate						SD Lot-Sample #: F8E280143-001		
	4090	4120	mg/L	0.77	(0-20)	MCAWW 300.0A	05/29/08	8165348
		Dilution Factor: 1000				Analysis Time..: 11:27		
Nitrite						SD Lot-Sample #: F8E280143-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	05/29/08	8165349
		Dilution Factor: 10000				Analysis Time..: 11:39		
Nitrate						SD Lot-Sample #: F8E280143-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	05/29/08	8165350
		Dilution Factor: 200				Analysis Time..: 11:14		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

F8E280143 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-72
Date Received: 2008-05-28
Analytical Due Date: 2008-06-16
Report Due Date: 2008-06-18
Report Type: W
EDD Code: 00

Project Manager: IV
Project: 6468071950 FPL Turkey Point COL
PO#: 200807151 Report to: Al Tice
Client: 63036 MACTEC Engineering & Consulting Inc
Quote #: 79192 SDG:
#SMPS in LOT: 2

Inform PM of any receiving issues.

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	0W-735U			2008-05-27 / 1135	KNX8D	WATER

SAMPLE COMMENTS:

FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
2	0W-809U			2008-05-27 / 1455	KNX8K	WATER

SAMPLE COMMENTS:

FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F8E280143 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-72
Date Received: 2008-05-28
Analytical Due Date: 2008-06-16
Report Due Date: 2008-06-18
Report Type: W
EDD Code: 00

Project Manager: IV
Project: 6468071950 FPL Turkey Point COL
PO#: 200807151 Report to: Al Tice
Client: 63036 MACTEC Engineering & Consulting Inc
Quote #: 79192 SDG:
#SMPS in LOT: 2

Inform PM of any receiving issues.

XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

CUL 3535

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: MACTEC	Project Manager: Scott Anger	Date: 05-27-08	Chain of Custody Number: 062464
Address: 3301 Atlantic Avenue	Telephone Number (Area Code)/Fax Number: 919-876-0416	Lab Number:	Page 1 of 1
City: Raleigh / State: NC / Zip Code: 27604	Site Contact: Matt Cooke	Lab Contact: Ivan Vania	
Project Name and Location (State): Turkey Point COL	Carrier/Waybill Number: FE 8656 2820 8233		
Contract/Purchase Order/Quote No.: 6468-07-1950			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis (Attach list if more space is needed): 1 L HDPE no pres	1 L HDPE TDS Anions/ Alkalinity/pH	1 L HDPE 125 mL HDPE Metals Cations K#3-28-08	125 mL HDPE H2SO4 NH3/NO2+NO3	Special Instructions/ Conditions of Receipt
OW-7351	05/27/08	1135		X			1	R	1				1	1		2	Cations: calcium
OW-8094	05/27/08	1455		X			1	R	1				1	1		2	Iron, Magnesium
								R 05/27/08									Manganese
																	Potassium, Silicia
																	Sodium 9095(D),
																	pH-EPA SW846 9040B(D) KH 5-27-08
																	TDS-EPA 160.1
																	Cations-EPA 200.7 see note
																	Inorganic Ions MCAWW 300.0A
																	Alkalinity-EPA 310.1
																	Ammonia-EPA 350.1
																	Nitrate Nitrite-EPA 353.1 see note

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Kristel Chick-Smith	05/27/08	1625	1. Received By: [illegible]	5/28/08	0900
2. Relinquished By:	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments: Cations EPA 6020C Nitrate/Nitrite EPA 300.0
Cations and nitrate/nitrate Analysis methods may change pending approval of SDDR, please wait for instructions from MACTEC on these two analysis.

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): - 3535 - F8E280143

Condition Upon Receipt Form

Client: Nadel
Quote No: 79192
COC/RFA No: 0h2964
Initiated By: bn
Date: 5/28/08
Time: 0940

Shipping Information

Shipper Name: FE
Shipping # (s):*
1. 8651 2820 8233
2.
3.
4.
5.
6.
7.
8.
9.
10.

Multiple Packages Y (N)
Sample Temperature (s):**
1. 2
2.
3.
4.
5.
6.
7.
8.
9.
10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N	If N/A- Was pH taken by original TestAmerica lab?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:

Corrective Action:
- ☐ Client Contact Name: _____ Informed by: _____
- ☐ Sample(s) processed "as is"
- ☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 5-29-08

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004, REVISED 08/06/07\\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin004 rev11.doc

LOT# F8e280143 - Rev 1

MACTEC

DOCUMENTATION OF TECHNICAL REVIEW
SUBCONTRACTOR WORK PRODUCT

Project Name: Turkey Point COL Project

Project Number: 6468-07-1950

Project Manager: Scott Auger

Project Principal: Tom McDaniel

The report described below has been prepared by the named subcontractor retained in accordance with the MACTEC QAPD. The work and report have been reviewed by a MACTEC technically qualified person. Comments on the work or report, if any, have been satisfactorily addressed by the subcontractor. The attached report is approved in accordance with section QS-7 of MACTEC's QAPD.

The information and data contained in the attached report are hereby released by MACTEC for project use.

REPORT : **Analytical Report Lot #: F8F060153**

SUBCONTRACTOR: **TestAmerica, Earth City, MO**

DATE OF ACCEPTANCE : 7/23/2008

TECHNICAL REVIEWER: William S. Grimes

PROJECT PRINCIPAL: Tom McDaniel

MACTEC
3301 Atlantic Avenue, Raleigh, NC 27604

MACTEC

Client **Bechtel Power Corp.** Laboratory **TestAmerica Inc.**

MACTEC Project **6468-07-1950** Data Report Number/Date **Lot# F8F060153/ 7-1-08**

LABORATORY DATA REVIEW CHECKLIST

		YES	NO	NOT APPLICABLE
1.	Laboratory analytical data report appears complete (all data results present for all samples submitted for analysis) and there are no apparent transcription errors:	___	✓[1]	___
2.	Samples analyzed within applicable holding times (based on date of sample collection):*	✓		___
3.	Trip blanks, field blanks or laboratory method blanks are free of blank contamination:	___	✓[2]	___
4.	If field duplicate samples collected, calculated results meet Relative Percent Difference guidelines: **	___	___	✓
5.	Surrogate recoveries (organic analyses only) within laboratory reported recovery acceptance ranges:	___	___	✓
6.	If Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples required to meet project objectives, Percent Recoveries (%R) and Relative Percent Difference (RPD) within laboratory reported acceptance ranges:	___	✓[3]	___
7.	Reported detection limits meet project objectives (e.g., are capable of achieving applicable site standards):	✓	___	___
8.	Completed Chain-Of-Custody received noting sample/custody seal condition (with airbill, if appropriate):	✓	___	___
9.	Analytical costs within authorized budget for these services:	___	___	✓

COMMENTS: **[1] Ion balance difference results erroneously flagged with a "B" data qualifier. Results should not be flagged, and can be used. [2] An estimated concentration of chloride was detected in the method blank, at a concentration between the PQL and MDL. Chloride concentrations in site samples were considerably higher, and likely reflect ambient aquifer conditions. [3] MS/MSD recoveries were outside QC limits for several analytes possibly due to matrix interference. QC established based on acceptable LCS recoveries and results for analytes with acceptable recoveries.**

Notes: 1. This checklist is intended for use with the laboratory reporting formats typical of most projects. If "no" is answered to one or more of the above checklist questions 1 through 7, a more detailed Data Validation may be required, and a person knowledgeable in Data Validation protocols should be consulted. This checklist should not be used if the project scope requires Data Validation from the onset.

2. * = Based upon EPA Guidance and the applicable analytical method references. See reverse side of checklist for details.

3. ** = Based upon EPA Guidance. Use these criteria on duplicate and sample results which exceed five times the reported detection limit. See reverse side of checklist for details.

Checked by: William A. Li Date: 7-24-08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 6468071950

FPL Turkey Point COL

Lot #: F8F060153

Al Tice

MACTEC Engineering and Cons.
3301 Atlantic Ave.
Raleigh, NC 27604

TESTAMERICA LABORATORIES, INC.

Ivan Vania
Project Manager

July 1, 2008

Case Narrative
LOT NUMBER: F8F060153

This report contains the analytical results for the two samples received under chain of custody by TestAmerica St. Louis on June 6, 2008. These samples are associated with your FPL Turkey Point COL project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

ICP-MS (SW846-6020)
The MS (MSD) recoveries for batch 8164260 - calcium, potassium, magnesium, sodium, silicon are outside the established QC limits. The analyte concentrations in the original samples are greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8F060153 (1): OW-802U
F8F060153 (2): OW-805U

The MS (MSD) recoveries for batch 8164260 – iron are outside the established QC limits. The RPD is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8F060153 (1): OW-802U
F8F060153 (2): OW-805U

The MS (MSD) recoveries for batch 8164260 - manganese are outside the established QC limits due to matrix interference. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8F060153 (1): OW-802U
F8F060153 (2): OW-805U

Batch 8164260:
The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limits were adjusted for the dilution since no analysis at a lesser dilution was performed.
Affected Samples:
F8F060153 (1): OW-802U
F8F060153 (2): OW-805U

Chloride (MCAWW 300.0A)
Poor matrix spike recovery for Nitrite in batch 8158478 is attributed to matrix interference.
The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries.
Affected Samples:
F8F060153 (1): OW-802U
F8F060153 (2): OW-805U

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F8F060153

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Aqueous	SW846 9040	SW846 9040
Alkalinity, Total	SM18 2320 B	SM18 2320 B
Bicarbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Bromide	MCAWW 300.0A	MCAWW 300.0A
Carbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Ion Balance (%Difference)	SM18 1030F & AP	SM18 1030F & AP
ICP-MS (6020)	SW846 6020	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Nitrogen, Ammonia	MCAWW 350.1	MCAWW 350.1
Sulfate	MCAWW 300.0A	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SM18 "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8F060153

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KPHA3	001	OW-802U	06/05/08	12:35
KPHCH	002	OW-805U	06/05/08	15:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-802U

TOTAL Metals

Lot-Sample #...: F8F060153-001 Matrix.....: WATER
Date Sampled...: 06/05/08 12:35 Date Received..: 06/06/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8164260						
Calcium	579000 N	100000	ug/L	SW846 6020	06/12-06/25/08	KPHA31AN
		Dilution Factor: 1000		Analysis Time..: 17:02		
Iron	ND N	50000	ug/L	SW846 6020	06/12-06/25/08	KPHA31AP
		Dilution Factor: 1000		Analysis Time..: 17:02		
Potassium	586000 N	100000	ug/L	SW846 6020	06/12-06/25/08	KPHA31AQ
		Dilution Factor: 1000		Analysis Time..: 17:02		
Magnesium	1980000 N	50000	ug/L	SW846 6020	06/12-06/25/08	KPHA31AR
		Dilution Factor: 1000		Analysis Time..: 17:02		
Manganese	ND N	2000	ug/L	SW846 6020	06/12-06/25/08	KPHA31AT
		Dilution Factor: 1000		Analysis Time..: 17:02		
Sodium	16400000 N	50000	ug/L	SW846 6020	06/12-06/25/08	KPHA31AU
		Dilution Factor: 1000		Analysis Time..: 17:02		
Silicon	66700 BN	250000	ug/L	SW846 6020	06/12-06/25/08	KPHA31AV
		Dilution Factor: 1000		Analysis Time..: 17:02		
Prep Batch #...: 8175114						
Silica	143000 J	250000	ug/L	SW846 6020	06/12-06/25/08	KPHA31AW
		Dilution Factor: 1000		Analysis Time..: 17:02		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-802U

General Chemistry

Lot-Sample #...: F8F060153-001 Work Order #...: KPHA3 Matrix.....: WATER
Date Sampled...: 06/05/08 12:35 Date Received..: 06/06/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	**7.3**	**0.10**	**No Units**	**SW846 9040**	**06/06/08**	**8161156**
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	**178**	**5.0**	**mg/L**	**MCAWW 310.1**	**06/10/08**	**8161269**
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	**65.1**	**50.0**	**mg/L**	**MCAWW 300.0A**	**06/06/08**	**8158474**
		Dilution Factor: 200		Analysis Time..: 08:16		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/10/08	8161267
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	**31600 J**	**2000**	**mg/L**	**MCAWW 300.0A**	**06/06/08**	**8158475**
		Dilution Factor: 10000		Analysis Time..: 08:40		
Fluoride	ND	20.0	mg/L	MCAWW 300.0A	06/06/08	8158476
		Dilution Factor: 200		Analysis Time..: 08:16		
Ion Balance Difference	**3.0 B**	**0.10**	**%**	**SM18 1030F & API**	**07/01/08**	**8183319**
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	0.20	mg/L	MCAWW 300.0A	06/06/08	8158479
		Dilution Factor: 10		Analysis Time..: 08:04		
Nitrite	ND	200	mg/L	MCAWW 300.0A	06/06/08	8158478
		Dilution Factor: 10000		Analysis Time..: 08:40		
Nitrogen, as Ammonia	**1400**	**200**	**ug/L**	**MCAWW 350.1**	**06/11/08**	**8163468**
		Dilution Factor: 4		Analysis Time..: 00:00		
Sulfate	**3720**	**500**	**mg/L**	**MCAWW 300.0A**	**06/06/08**	**8158477**
		Dilution Factor: 1000		Analysis Time..: 08:28		
Total Alkalinity	**178**	**5.0**	**mg/L**	**SM18 2320 B**	**06/10/08**	**8161265**
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	**53900**	**500**	**mg/L**	**MCAWW 160.1**	**06/11-06/12/08**	**8163486**
		Dilution Factor: 100		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-805U

TOTAL Metals

Lot-Sample #...: F8F060153-002 Matrix.....: WATER
Date Sampled...: 06/05/08 15:00 Date Received..: 06/06/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8164260						
Calcium	447000 N	100000	ug/L	SW846 6020	06/12-06/25/08	KPHCH1AN
		Dilution Factor: 1000		Analysis Time..: 17:26		
Iron	ND N	50000	ug/L	SW846 6020	06/12-06/25/08	KPHCH1AP
		Dilution Factor: 1000		Analysis Time..: 17:26		
Potassium	493000 N	100000	ug/L	SW846 6020	06/12-06/25/08	KPHCH1AQ
		Dilution Factor: 1000		Analysis Time..: 17:26		
Magnesium	1570000 N	50000	ug/L	SW846 6020	06/12-06/25/08	KPHCH1AR
		Dilution Factor: 1000		Analysis Time..: 17:26		
Manganese	ND N	2000	ug/L	SW846 6020	06/12-06/25/08	KPHCH1AT
		Dilution Factor: 1000		Analysis Time..: 17:26		
Sodium	13200000 N	50000	ug/L	SW846 6020	06/12-06/25/08	KPHCH1AU
		Dilution Factor: 1000		Analysis Time..: 17:26		
Silicon	49900 BN	250000	ug/L	SW846 6020	06/12-06/25/08	KPHCH1AV
		Dilution Factor: 1000		Analysis Time..: 17:26		
Prep Batch #...: 8175114						
Silica	107000 J	250000	ug/L	SW846 6020	06/12-06/25/08	KPHCH1AW
		Dilution Factor: 1000		Analysis Time..: 17:26		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

J Estimated result. Result is less than RL.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-805U

General Chemistry

Lot-Sample #...: F8F060153-002 Work Order #...: KPHCH Matrix.....: WATER
Date Sampled...: 06/05/08 15:00 Date Received..: 06/06/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.4	0.10	No Units	SW846 9040	06/06/08	8161156
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	177	5.0	mg/L	MCAWW 310.1	06/10/08	8161269
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	53.6	50.0	mg/L	MCAWW 300.0A	06/06/08	8158474
		Dilution Factor: 200		Analysis Time..: 11:03		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/10/08	8161267
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	27600 J	2000	mg/L	MCAWW 300.0A	06/06/08	8158475
		Dilution Factor: 10000		Analysis Time..: 11:27		
Fluoride	ND	20.0	mg/L	MCAWW 300.0A	06/06/08	8158476
		Dilution Factor: 200		Analysis Time..: 11:03		
Ion Balance Difference	6.9 B	0.10	%	SM18 1030F & API	07/01/08	8183319
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	0.20	mg/L	MCAWW 300.0A	06/06/08	8158479
		Dilution Factor: 10		Analysis Time..: 10:51		
Nitrite	ND	200	mg/L	MCAWW 300.0A	06/06/08	8158478
		Dilution Factor: 10000		Analysis Time..: 11:27		
Nitrogen, as Ammonia	548	50.0	ug/L	MCAWW 350.1	06/11/08	8163468
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	3070	500	mg/L	MCAWW 300.0A	06/06/08	8158477
		Dilution Factor: 1000		Analysis Time..: 11:15		
Total Alkalinity	177	5.0	mg/L	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	45700	500	mg/L	MCAWW 160.1	06/11-06/12/08	8163486
		Dilution Factor: 100		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F8F060153 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F8F120000-260 **Prep Batch #...:** 8164260						
Calcium	ND B	100	ug/L	SW846 6020	06/12-06/25/08	KPRWF1AA
		Dilution Factor: 1				
		Analysis Time..: 16:54				
Iron	ND	50	ug/L	SW846 6020	06/12-06/25/08	KPRWF1AC
		Dilution Factor: 1				
		Analysis Time..: 16:54				
Magnesium	ND	50	ug/L	SW846 6020	06/12-06/25/08	KPRWF1AE
		Dilution Factor: 1				
		Analysis Time..: 16:54				
Manganese	ND	2	ug/L	SW846 6020	06/12-06/25/08	KPRWF1AF
		Dilution Factor: 1				
		Analysis Time..: 16:54				
Potassium	ND	100	ug/L	SW846 6020	06/12-06/25/08	KPRWF1AD
		Dilution Factor: 1				
		Analysis Time..: 16:54				
Silicon	ND	250	ug/L	SW846 6020	06/12-06/25/08	KPRWF1AH
		Dilution Factor: 1				
		Analysis Time..: 16:54				
Sodium	ND	50	ug/L	SW846 6020	06/12-06/25/08	KPRWF1AG
		Dilution Factor: 1				
		Analysis Time..: 16:54				
MB Lot-Sample #: F8F230000-114 **Prep Batch #...:** 8175114						
Silica	ND	250	ug/L	SW846 6020	06/12-06/25/08	KQL7E1AA
		Dilution Factor: 1				
		Analysis Time..: 17:26				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8F060153 **Matrix.....: WATER**

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity		Work Order #: KPLC11AA		MB Lot-Sample #:	F8F090000-269	
	ND	5.0	mg/L	MCAWW 310.1	06/10/08	8161269
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Bromide		Work Order #: KPMF61AA		MB Lot-Sample #:	F8F060000-474	
	ND	0.25	mg/L	MCAWW 300.0A	06/06/08	8158474
		Dilution Factor: 1				
		Analysis Time..: 06:34				
Carbonate Alkalinity		Work Order #: KPLCR1AA		MB Lot-Sample #:	F8F090000-267	
	ND	5.0	mg/L	MCAWW 310.1	06/10/08	8161267
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Chloride		Work Order #: KPMF81AA		MB Lot-Sample #:	F8F060000-475	
	0.041 B	**0.20**	**mg/L**	**MCAWW 300.0A**	**06/06/08**	**8158475**
		Dilution Factor: 1				
		Analysis Time..: 06:34				
Fluoride		Work Order #: KPMGD1AA		MB Lot-Sample #:	F8F060000-476	
	ND	0.10	mg/L	MCAWW 300.0A	06/06/08	8158476
		Dilution Factor: 1				
		Analysis Time..: 06:34				
Nitrate		Work Order #: KPMGH1AA		MB Lot-Sample #:	F8F060000-479	
	ND	0.020	mg/L	MCAWW 300.0A	06/06/08	8158479
		Dilution Factor: 1				
		Analysis Time..: 06:34				
Nitrite		Work Order #: KPMGG1AA		MB Lot-Sample #:	F8F060000-478	
	ND	0.020	mg/L	MCAWW 300.0A	06/06/08	8158478
		Dilution Factor: 1				
		Analysis Time..: 06:34				
Nitrogen, as Ammonia		Work Order #: KPQWM1AA		MB Lot-Sample #:	F8F110000-468	
	ND	50.0	ug/L	MCAWW 350.1	06/11/08	8163468
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Sulfate		Work Order #: KPMGF1AA		MB Lot-Sample #:	F8F060000-477	
	ND	0.50	mg/L	MCAWW 300.0A	06/06/08	8158477
		Dilution Factor: 1				
		Analysis Time..: 06:34				

(Continued on next page)

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8F060153 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity		Work Order #: KPLCP1AA		MB Lot-Sample #:	F8F090000-265	
	ND	5.0	mg/L	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: KPQXJ1AA		MB Lot-Sample #:	F8F110000-486	
	ND	5.0	mg/L	MCAWW 160.1	06/11-06/12/08	8163486
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8F060153 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F8F120000-260 **Prep Batch #...:** 8164260					
Calcium	107	(85 - 115)	SW846 6020	06/12-06/25/08	KPRWF1AJ
		Dilution Factor: 1		Analysis Time..: 16:58	
Iron	105	(85 - 115)	SW846 6020	06/12-06/25/08	KPRWF1AK
		Dilution Factor: 1		Analysis Time..: 16:58	
Potassium	106	(85 - 115)	SW846 6020	06/12-06/25/08	KPRWF1AL
		Dilution Factor: 1		Analysis Time..: 16:58	
Magnesium	105	(85 - 115)	SW846 6020	06/12-06/25/08	KPRWF1AM
		Dilution Factor: 1		Analysis Time..: 16:58	
Manganese	111	(85 - 115)	SW846 6020	06/12-06/25/08	KPRWF1AN
		Dilution Factor: 1		Analysis Time..: 16:58	
Sodium	103	(85 - 115)	SW846 6020	06/12-06/25/08	KPRWF1AP
		Dilution Factor: 1		Analysis Time..: 16:58	
Silicon	111	(85 - 115)	SW846 6020	06/12-06/25/08	KPRWF1AQ
		Dilution Factor: 1		Analysis Time..: 16:58	
LCS Lot-Sample#: F8F230000-114 **Prep Batch #...:** 8175114					
Silica	111 N	(0.0- 0.0)	SW846 6020	06/12-06/25/08	KQL7E1AC
		Dilution Factor: 1		Analysis Time..: 00:00	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: F8F060153 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia	WO#:KPQWM1AC-LCS/KPQWM1AD-LCSD LCS Lot-Sample#: F8F110000-468						
	103	(90 - 110)			MCAWW 350.1	06/11/08	8163468
	96	(90 - 110)	6.1	(0-20)	MCAWW 350.1	06/11/08	8163468

Dilution Factor: 1 Analysis Time..: 00:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F060153 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)		Work Order #: KPK3K1AA	LCS Lot-Sample#: F8F090000-156		
	100	(99 - 101)	SW846 9040	06/06/08	8161156
		Dilution Factor: 1	Analysis Time..: 00:00		
Bicarbonate Alkalinity		Work Order #: KPLC11AC	LCS Lot-Sample#: F8F090000-269		
	101	(90 - 110)	MCAWW 310.1	06/10/08	8161269
		Dilution Factor: 1	Analysis Time..: 00:00		
Bromide		Work Order #: KPMF61AC	LCS Lot-Sample#: F8F060000-474		
	101	(90 - 110)	MCAWW 300.0A	06/06/08	8158474
		Dilution Factor: 1	Analysis Time..: 06:22		
Carbonate Alkalinity		Work Order #: KPLCR1AC	LCS Lot-Sample#: F8F090000-267		
	101	(90 - 110)	MCAWW 310.1	06/10/08	8161267
		Dilution Factor: 1	Analysis Time..: 00:00		
Chloride		Work Order #: KPMF81AC	LCS Lot-Sample#: F8F060000-475		
	99	(90 - 110)	MCAWW 300.0A	06/06/08	8158475
		Dilution Factor: 1	Analysis Time..: 06:22		
Fluoride		Work Order #: KPMGD1AC	LCS Lot-Sample#: F8F060000-476		
	96	(90 - 110)	MCAWW 300.0A	06/06/08	8158476
		Dilution Factor: 1	Analysis Time..: 06:22		
Nitrate		Work Order #: KPMGH1AC	LCS Lot-Sample#: F8F060000-479		
	102	(90 - 110)	MCAWW 300.0A	06/06/08	8158479
		Dilution Factor: 1	Analysis Time..: 06:22		
Nitrite		Work Order #: KPMGG1AC	LCS Lot-Sample#: F8F060000-478		
	100	(90 - 110)	MCAWW 300.0A	06/06/08	8158478
		Dilution Factor: 1	Analysis Time..: 06:22		
Sulfate		Work Order #: KPMGF1AC	LCS Lot-Sample#: F8F060000-477		
	96	(90 - 110)	MCAWW 300.0A	06/06/08	8158477
		Dilution Factor: 1	Analysis Time..: 06:22		
Total Alkalinity		Work Order #: KPLCP1AC	LCS Lot-Sample#: F8F090000-265		
	101	(90 - 110)	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8F060153 **Matrix.....:** WATER
Date Sampled...: 06/05/08 12:35 **Date Received..:** 06/06/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F8F060153-001 **Prep Batch #...:** 8164260							
Calcium	0 N	(75 - 125)			SW846 6020	06/12-06/25/08	KPHA31CF
	122	(75 - 125)	0.0	(0-20)	SW846 6020	06/12-06/25/08	KPHA31CG
		Dilution Factor: 1000					
		Analysis Time..: 17:10					
Iron	0 N	(75 - 125)			SW846 6020	06/12-06/25/08	KPHA31CH
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/12-06/25/08	KPHA31CJ
		Dilution Factor: 1000					
		Analysis Time..: 17:10					
Magnesium	0 N	(75 - 125)			SW846 6020	06/12-06/25/08	KPHA31CM
	9.5 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/12-06/25/08	KPHA31CN
		Dilution Factor: 1000					
		Analysis Time..: 17:10					
Manganese	146 N	(75 - 125)			SW846 6020	06/12-06/25/08	KPHA31CP
	155 N	(75 - 125)	6.1	(0-20)	SW846 6020	06/12-06/25/08	KPHA31CQ
		Dilution Factor: 1000					
		Analysis Time..: 17:10					
Potassium	0 N	(75 - 125)			SW846 6020	06/12-06/25/08	KPHA31CK
	66 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/12-06/25/08	KPHA31CL
		Dilution Factor: 1000					
		Analysis Time..: 17:10					
Silicon	0 N	(75 - 125)			SW846 6020	06/12-06/25/08	KPHA31CU
	0 N,B	(75 - 125)	0.0	(0-20)	SW846 6020	06/12-06/25/08	KPHA31CV
		Dilution Factor: 1000					
		Analysis Time..: 17:10					
Sodium	0 N	(75 - 125)			SW846 6020	06/12-06/25/08	KPHA31CR
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/12-06/25/08	KPHA31CT
		Dilution Factor: 1000					
		Analysis Time..: 17:10					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F060153 **Matrix.....:** WATER
Date Sampled...: 06/05/08 12:35 **Date Received..:** 06/06/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #...: KPHA31A2		MS Lot-Sample #: F8F060153-001	
	94	(90 - 110)	MCAWW 300.0A	06/06/08	8158474
		Dilution Factor: 200	Analysis Time..: 08:16		
Chloride		Work Order #...: KPHA31A4		MS Lot-Sample #: F8F060153-001	
	101	(90 - 110)	MCAWW 300.0A	06/06/08	8158475
		Dilution Factor: 10000	Analysis Time..: 08:40		
Fluoride		Work Order #...: KPHA31A6		MS Lot-Sample #: F8F060153-001	
	90	(90 - 110)	MCAWW 300.0A	06/06/08	8158476
		Dilution Factor: 200	Analysis Time..: 08:16		
Nitrate		Work Order #...: KPHA31CD		MS Lot-Sample #: F8F060153-001	
	100	(90 - 110)	MCAWW 300.0A	06/06/08	8158479
		Dilution Factor: 10	Analysis Time..: 08:04		
Nitrite		Work Order #...: KPHA31CA		MS Lot-Sample #: F8F060153-001	
	143 N	(90 - 110)	MCAWW 300.0A	06/06/08	8158478
		Dilution Factor: 10000	Analysis Time..: 08:40		
Nitrogen, as Ammonia		Work Order #...: KPHCH1A1		MS Lot-Sample #: F8F060153-002	
	106	(90 - 110)	MCAWW 350.1	06/11/08	8163468
		Dilution Factor: 2	Analysis Time..: 00:00		
Sulfate		Work Order #...: KPHA31A8		MS Lot-Sample #: F8F060153-001	
	95	(90 - 110)	MCAWW 300.0A	06/06/08	8158477
		Dilution Factor: 1000	Analysis Time..: 08:28		
Total Alkalinity		Work Order #...: KPF631A0		MS Lot-Sample #: F8F050344-001	
	92	(80 - 120)	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F060153 **Work Order #...:** KPHA3-SMP KPHA3-DUP **Matrix.....:** WATER

Date Sampled...: 06/05/08 12:35 **Date Received..:** 06/06/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide						SD Lot-Sample #: F8F060153-001		
	65.1	66.0	mg/L	1.5	(0-20)	MCAWW 300.0A	06/06/08	8158474
		Dilution Factor: 200				Analysis Time..: 08:16		
Chloride						SD Lot-Sample #: F8F060153-001		
	31600 J	31700	mg/L	0.25	(0-20)	MCAWW 300.0A	06/06/08	8158475
		Dilution Factor: 10000				Analysis Time..: 08:40		
Fluoride						SD Lot-Sample #: F8F060153-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	06/06/08	8158476
		Dilution Factor: 200				Analysis Time..: 08:16		
Sulfate						SD Lot-Sample #: F8F060153-001		
	3720	3690	mg/L	0.64	(0-20)	MCAWW 300.0A	06/06/08	8158477
		Dilution Factor: 1000				Analysis Time..: 08:28		
Nitrite						SD Lot-Sample #: F8F060153-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	06/06/08	8158478
		Dilution Factor: 10000				Analysis Time..: 08:40		
Nitrate						SD Lot-Sample #: F8F060153-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	06/06/08	8158479
		Dilution Factor: 10				Analysis Time..: 08:04		
pH (liquid)						SD Lot-Sample #: F8F060153-001		
	7.3	7.3	No Units	0.41	(0-0.0)	SW846 9040	06/06/08	8161156
		Dilution Factor: 1				Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F060153 **Work Order #...:** KPF63-SMP KPF63-DUP **Matrix.....:** WATER

Date Sampled...: 06/04/08 14:20 **Date Received..:** 06/05/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity						SD Lot-Sample #:	F8F050344-001	
	181	183	mg/L	1.1	(0-20)	SM18 2320 B	06/10/08	8161265
		Dilution Factor: 1				Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F060153 **Work Order #...:** KN9V9-SMP KN9V9-DUP **Matrix.....:** WATER

Date Sampled...: 06/02/08 07:50 **Date Received..:** 06/03/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8F030220-002		
	57.0	56.0	mg/L	1.8	(0-15)	MCAWW 310.1	06/10/08	8161269
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8F030220-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/10/08	8161267
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8F060153 **Work Order #...:** KPHCH-SMP KPHCH-DUP **Matrix.....:** WATER

Date Sampled...: 06/05/08 15:00 **Date Received..:** 06/06/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia						SD Lot-Sample #: F8F060153-002		
	548	578	ug/L	5.4	(0-20)	MCAWW 350.1	06/11/08	8163468

Dilution Factor: 1 Analysis Time..: 00:00

F8F060153 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-134,METS
Date Received: 2008-06-06
Analytical Due Date: 2008-06-20
Report Due Date: 2008-06-23
Report Type: W
EDD Code: 00

Project Manager: IV
Quote #: 79192
SDG:
Project: 6468071950
FPL Turkey Point COL
PO#: 200807151
Report to: Al Tice
Client: 63036 MACTEC Engineering & Consulting Inc
#SMPS in LOT: 2

Inform PM of any receiving issues.

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	OW-802U			2008-06-05 / 1235	KPHA3	WATER

SAMPLE COMMENTS:

FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	OW-805U			2008-06-05 / 1500	KPHCH	WATER

SAMPLE COMMENTS:

FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F8F060153 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-134,METS

Project Manager: IV Quote #: 79192 SDG:

Date Received: 2008-06-06

Project: 6468071950 FPL Turkey Point COL

Analytical Due Date: 2008-06-20

PO#: 200807151 Report to: Al Tice

Report Due Date: 2008-06-23

Client: 63036 MACTEC Engineering & Consulting Inc

Report Type: W

#SMPS in LOT: 2 EDD Code: 00

Inform PM of any receiving issues.

XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

Chain of Custody Record

cwf 3244

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
MACTEC	Scott Anger	06-05-08	062467
Address 3301 Atlantic Avenue	**Telephone Number (Area Code)/Fax Number** 919-876-0416	**Lab Number**	**Page** 1 of 1
City Raleigh **State** NC **Zip Code** 27604	**Site Contact** MATT Cooke	**Lab Contact** Ivan Vania	
Project Name and Location (State) Turkey Point COL	**Carrier/Waybill Number** FE 8656 2694 6642		
Contract/Purchase Order/Quote No. 6550-07-1950			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis (Attach list if more space is needed): 1L pl no pres TDS/Amm/Alk/pH	125mL pl H2SO4 Nitrate/Nitrite	500mL pl HNO3 Cations	250mL pl H2SO4 COD	(FM)	Special Instructions/ Conditions of Receipt
OW-802U	06/05/08	1235		X			1	2	1				1	1	2	3x	250 P, LP	CAtions: Calcium Iron, magnesium manganese
OW-805U	06/05/08	1500		X			1	2	1				1	1	2		4V 06.06.08	Potassium, Silicia Sodium.
																		pH - EPA SW846 9045(D)
																		TDS - EPA 160.1
																		CAtions - EPA 6020C
																		Inorganic Ions mCAWW 300.0 A
																		Alkalinity - EPA 310.1
																		Ammmia - EPA 350.1
																		nitrate nitrite - EPA 300.0

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other Standard

QC Requirements (Specify)

1. Relinquished By Kimmy Chupp-Sowers	Date 06/05/08	Time 1600	1. Received By	Date 06-06-08	Time 0930
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): F8F060153
- 3244 -

Condition Upon Receipt Form

Client: Macdec
Quote No: 79192
COC/RFA No: 062467
Initiated By: SJ
Date: 06.06.08
Time: 0930

Shipping Information

Shipper Name: FedX
Multiple Packages Y (N)

Shipping # (s):*

1.	8656 2694 6642	6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

Sample Temperature (s):**

1.	2°	6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N	If N/A- Was pH taken by original TestAmerica lab?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N	Was Internal COC/Workshare received?

[1]For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:

Corrective Action:

- ☐ Client Contact Name: _____ Informed by: _____
- ☐ Sample(s) processed "as is"
- ☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review: _____ Date: 6-8-8 3244

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004, REVISED 08/06/07\\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin004 rev11.doc

LOT# F8F060153

MACTEC

DOCUMENTATION OF TECHNICAL REVIEW
SUBCONTRACTOR WORK PRODUCT

Project Name: Turkey Point COL Project

Project Number: 6468-07-1950

Project Manager: Scott Auger

Project Principal: Tom McDaniel

The report described below has been prepared by the named subcontractor retained in accordance with the MACTEC QAPD. The work and report have been reviewed by a MACTEC technically qualified person. Comments on the work or report, if any, have been satisfactorily addressed by the subcontractor. The attached report is approved in accordance with section QS-7 of MACTEC's QAPD.

The information and data contained in the attached report are hereby released by MACTEC for project use.

REPORT : **Analytical Report Lot #: F8E300223**

SUBCONTRACTOR: **TestAmerica, Earth City, MO**

DATE OF ACCEPTANCE : 7/23/2008

TECHNICAL REVIEWER: William S. Grimes

PROJECT PRINCIPAL: Tom McDaniel

MACTEC
3301 Atlantic Avenue, Raleigh, NC 27604

MACTEC

Client **Bechtel Power Corp.** Laboratory **TestAmerica Inc.**

MACTEC Project **6468-07-1950** Data Report Number/Date **Lot# F8E300223/ 6-27-08**

LABORATORY DATA REVIEW CHECKLIST

		YES	NO	NOT APPLICABLE
1.	Laboratory analytical data report appears complete (all data results present for all samples submitted for analysis) and there are no apparent transcription errors:	___	✓[1]	___
2.	Samples analyzed within applicable holding times (based on date of sample collection):*	✓		___
3.	Trip blanks, field blanks or laboratory method blanks are free of blank contamination:	___	✓[2]	___
4.	If field duplicate samples collected, calculated results meet Relative Percent Difference guidelines: **	___	___	✓
5.	Surrogate recoveries (organic analyses only) within laboratory reported recovery acceptance ranges:	___	___	✓
6.	If Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples required to meet project objectives, Percent Recoveries (%R) and Relative Percent Difference (RPD) within laboratory reported acceptance ranges:	___	✓[3]	___
7.	Reported detection limits meet project objectives (e.g., are capable of achieving applicable site standards):	✓	___	___
8.	Completed Chain-Of-Custody received noting sample/custody seal condition (with airbill, if appropriate):	✓	___	___
9.	Analytical costs within authorized budget for these services:	___	___	✓

COMMENTS: **[1] Iron results should be flagged indicating method blank contamination. [2] An estimated concentration of iron was detected in the method blank, at a concentration between the PQL and MDL. Iron concentrations in site samples were considerably higher, and likely reflect ambient aquifer conditions. [3] MS/MSD recoveries were outside QC limits for several analytes possibly due to matrix interference. QC established based on acceptable LCS recoveries and results for analytes with acceptable recoveries.**

Notes: 1. This checklist is intended for use with the laboratory reporting formats typical of most projects. If "no" is answered to one or more of the above checklist questions 1 through 7, a more detailed Data Validation may be required, and a person knowledgeable in Data Validation protocols should be consulted. This checklist should not be used if the project scope requires Data Validation from the onset.

2. * = Based upon EPA Guidance and the applicable analytical method references. See reverse side of checklist for details.

3. ** = Based upon EPA Guidance. Use these criteria on duplicate and sample results which exceed five times the reported detection limit. See reverse side of checklist for details.

Checked by: William D. Lin Date: 7-14-08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 6468071950

FPL Turkey Point COL

Lot #: F8E300223

Al Tice
MACTEC Engineering and Cons.
3301 Atlantic Ave.
Raleigh, NC 27604

TESTAMERICA LABORATORIES, INC.

Ivan Vania
Project Manager

June 27, 2008

Case Narrative
LOT NUMBER: F8E300223

This report contains the analytical results for the three samples received under chain of custody by TestAmerica St. Louis on May 30, 2008. These samples are associated with your FPL Turkey Point COL project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

ICP-MS (SW846-6020)
Batch 8155134:
The MS (MSD) recoveries for calcium, potassium, magnesium, and sodium are outside the established QC limits. The analyte concentrations in the original samples are greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8E300223 (1): OW-706U
F8E300223 (2): OW-706L
F8E300223 (3): OW-621U

Batch 8155134:
The MS (MSD) recovery for iron is outside the established QC limits. The RPD is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8E300223 (1): OW-706U
F8E300223 (2): OW-706L
F8E300223 (3): OW-621U

Batch 8155134:
The MS (MSD) recovery for silicon is outside the established QC limits. Matrix interference is physically evident in the sample. The samples are high in salts. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8E300223 (1): OW-706U
F8E300223 (2): OW-706L
F8E300223 (3): OW-621U

Batch 8155134:
The Measured Intensity Mean for lead, as measured during the daily performance check, was low. However, the calibration and the second source checks were all within acceptable QC limits. The samples were reported with this narrative.
Affected Samples:
F8E300223 (1): OW-706U
F8E300223 (2): OW-706L
F8E300223 (3): OW-621U

Batch 8155134:
The samples were analyzed at a dilution due to high concentrations of salts. The reporting limits were adjusted for the dilution.
Affected Samples:
F8E300223 (1): OW-706U
F8E300223 (2): OW-706L
F8E300223 (3): OW-621U

Total Dissolved Solids (MCAWW 160.1)
Batch 8157081:
The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limits were adjusted for the dilution since no analysis at a lesser dilution was performed.
Affected Samples:
F8E300223 (1): OW-706U
F8E300223 (2): OW-706L
F8E300223 (3): OW-621U

Anions (MCAWW 300.0A)
Poor matrix spike recovery for Nitrite in batch 8152136, Ortho Phosphate in batch 8152143, Bromide in batch 8152147, Fluoride in batch 8152149, and Nitrite in batch 8152151 is attributed to matrix interference. The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries.
Affected Samples:
F8E300223 (1): OW-706U
F8E300223 (2): OW-706L
F8E300223 (3): OW-621U

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F8E300223

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Aqueous	SW846 9040	SW846 9040
Alkalinity, Total	SM18 2320 B	SM18 2320 B
Bicarbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Bromide	MCAWW 300.0A	MCAWW 300.0A
Carbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Ion Balance (%Difference)	SM18 1030F & AP	SM18 1030F & AP
ICP-MS (6020)	SW846 6020	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Nitrogen, Ammonia	MCAWW 350.1	MCAWW 350.1
Sulfate	MCAWW 300.0A	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SM18 "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8E300223

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KN5JV	001	OW-706U	05/29/08	11:00
KN5J1	002	OW-706L	05/29/08	12:35
KN5J2	003	OW-621U	05/29/08	16:10

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-706U

TOTAL Metals

Lot-Sample #...: F8E300223-001 **Matrix.....:** WATER
Date Sampled...: 05/29/08 11:00 **Date Received..:** 05/30/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8155134						
Calcium	**725000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/24/08**	**KN5JV1AP**
		Dilution Factor: 1000		Analysis Time..: 16:25		
Iron	**178 N**	**100**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KN5JV1AQ**
		Dilution Factor: 2		Analysis Time..: 02:53		
Potassium	**658000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5JV1AR**
		Dilution Factor: 1000		Analysis Time..: 22:46		
Magnesium	**2150000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5JV1AT**
		Dilution Factor: 1000		Analysis Time..: 22:46		
Manganese	**43.5**	**4**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KN5JV1AU**
		Dilution Factor: 2		Analysis Time..: 02:53		
Sodium	**17500000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5JV1AV**
		Dilution Factor: 1000		Analysis Time..: 22:46		
Silicon	ND N	250000	ug/L	SW846 6020	06/11-06/21/08	KN5JV1AW
		Dilution Factor: 1000		Analysis Time..: 22:46		
Prep Batch #...: 8175113						
Silica	**1840**	**250**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5JV1AX**
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-706U

General Chemistry

Lot-Sample #...: F8E300223-001 **Work Order #...:** KN5JV **Matrix.....:** WATER
Date Sampled...: 05/29/08 11:00 **Date Received..:** 05/30/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	**7.2**	**0.10**	**No Units**	**SW846 9040**	**05/30/08**	**8154272**
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	**10.2**	**5.0**	**mg/L**	**MCAWW 310.1**	**06/02/08**	**8154062**
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	**70.5**	**50.0**	**mg/L**	**MCAWW 300.0A**	**05/30/08**	**8152147**
		Dilution Factor: 200		Analysis Time..: 11:22		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	**33300**	**2000**	**mg/L**	**MCAWW 300.0A**	**05/30/08**	**8152148**
		Dilution Factor: 10000		Analysis Time..: 11:46		
Fluoride	ND	1.0	mg/L	MCAWW 300.0A	05/30/08	8152149
		Dilution Factor: 10		Analysis Time..: 11:09		
Ion Balance Difference	**1.1**	**0.10**	**%**	**SM18 1030F & API**	**06/24/08**	**8176456**
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	4.0	mg/L	MCAWW 300.0A	05/30/08	8152152
		Dilution Factor: 200		Analysis Time..: 11:22		
Nitrite	ND	200	mg/L	MCAWW 300.0A	05/30/08	8152151
		Dilution Factor: 10000		Analysis Time..: 11:46		
Nitrogen, as Ammonia	**2090**	**200**	**ug/L**	**MCAWW 350.1**	**06/02/08**	**8154238**
		Dilution Factor: 4		Analysis Time..: 00:00		
Sulfate	**3850**	**500**	**mg/L**	**MCAWW 300.0A**	**05/30/08**	**8152150**
		Dilution Factor: 1000		Analysis Time..: 11:34		
Total Alkalinity	**204**	**5.0**	**mg/L**	**SM18 2320 B**	**06/02/08**	**8154059**
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	**40500**	**500**	**mg/L**	**MCAWW 160.1**	**06/05-06/06/08**	**8157081**
		Dilution Factor: 100		Analysis Time..: 00:00		

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-706L

TOTAL Metals

Lot-Sample #...: F8E300223-002 **Matrix.....:** WATER
Date Sampled...: 05/29/08 12:35 **Date Received..:** 05/30/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8155134						
Calcium	**413000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/24/08**	**KN5J11AR**
		Dilution Factor: 1000		Analysis Time..: 16:28		
Iron	**531 N**	**100**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KN5J11AT**
		Dilution Factor: 2		Analysis Time..: 02:57		
Potassium	**327000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5J11AU**
		Dilution Factor: 1000		Analysis Time..: 22:59		
Magnesium	**1170000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5J11AV**
		Dilution Factor: 1000		Analysis Time..: 22:59		
Manganese	**8.3**	**4**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KN5J11AW**
		Dilution Factor: 2		Analysis Time..: 02:57		
Sodium	**9440000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5J11AX**
		Dilution Factor: 1000		Analysis Time..: 22:59		
Silicon	ND N	250000	ug/L	SW846 6020	06/11-06/21/08	KN5J11A0
		Dilution Factor: 1000		Analysis Time..: 22:59		
Prep Batch #...: 8175113						
Silica	**7560**	**250**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5J11A1**
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-706L

General Chemistry

Lot-Sample #...: F8E300223-002 **Work Order #...:** KN5J1 **Matrix.....:** WATER
Date Sampled...: 05/29/08 12:35 **Date Received...:** 05/30/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	**7.3**	**0.10**	**No Units**	**SW846 9040**	**05/30/08**	**8154272**
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	**9.6**	**5.0**	**mg/L**	**MCAWW 310.1**	**06/02/08**	**8154062**
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	**37.7 B**	**50.0**	**mg/L**	**MCAWW 300.0A**	**05/31/08**	**8152147**
		Dilution Factor: 200		Analysis Time..: 02:12		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	**19100**	**2000**	**mg/L**	**MCAWW 300.0A**	**05/31/08**	**8152148**
		Dilution Factor: 10000		Analysis Time..: 02:36		
Fluoride	ND	1.0	mg/L	MCAWW 300.0A	05/31/08	8152149
		Dilution Factor: 10		Analysis Time..: 02:00		
Ion Balance Difference	**4.0**	**0.10**	**%**	**SM18 1030F & API**	**06/24/08**	**8176456**
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	4.0	mg/L	MCAWW 300.0A	05/31/08	8152152
		Dilution Factor: 200		Analysis Time..: 02:12		
Nitrite	ND	200	mg/L	MCAWW 300.0A	05/31/08	8152151
		Dilution Factor: 10000		Analysis Time..: 02:36		
Nitrogen, as Ammonia	**611**	**50.0**	**ug/L**	**MCAWW 350.1**	**06/02/08**	**8154238**
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	**2280**	**100**	**mg/L**	**MCAWW 300.0A**	**05/31/08**	**8152150**
		Dilution Factor: 200		Analysis Time..: 02:12		
Total Alkalinity	**191**	**5.0**	**mg/L**	**SM18 2320 B**	**06/02/08**	**8154059**
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	**17400**	**500**	**mg/L**	**MCAWW 160.1**	**06/05-06/06/08**	**8157081**
		Dilution Factor: 100		Analysis Time..: 00:00		

NOTE(S):

RL Reporting Limit

B Estimated result. Result is less than RL.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-621U

TOTAL Metals

Lot-Sample #...: F8E300223-003 **Matrix.....:** WATER
Date Sampled...: 05/29/08 16:10 **Date Received..:** 05/30/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8155134						
Calcium	**492000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/24/08**	**KN5J21AR**
		Dilution Factor: 1000		Analysis Time..: 16:32		
Iron	**453 N**	**100**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KN5J21AT**
		Dilution Factor: 2		Analysis Time..: 03:01		
Potassium	**476000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5J21AU**
		Dilution Factor: 1000		Analysis Time..: 23:03		
Magnesium	**1600000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5J21AV**
		Dilution Factor: 1000		Analysis Time..: 23:03		
Manganese	**36.8**	**4**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KN5J21AW**
		Dilution Factor: 2		Analysis Time..: 03:01		
Sodium	**13100000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5J21AX**
		Dilution Factor: 1000		Analysis Time..: 23:03		
Silicon	ND N	250000	ug/L	SW846 6020	06/11-06/21/08	KN5J21A0
		Dilution Factor: 1000		Analysis Time..: 23:03		
Prep Batch #...: 8175113						
Silica	**637**	**250**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN5J21A1**
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-621U

General Chemistry

Lot-Sample #...: F8E300223-003 **Work Order #...:** KN5J2 **Matrix.....:** WATER
Date Sampled...: 05/29/08 16:10 **Date Received..:** 05/30/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	**7.3**	**0.10**	**No Units**	**SW846 9040**	**05/30/08**	**8154272**
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	**9.4**	**5.0**	**mg/L**	**MCAWW 310.1**	**06/02/08**	**8154062**
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	**50.6**	**50.0**	**mg/L**	**MCAWW 300.0A**	**05/31/08**	**8152147**
		Dilution Factor: 200		Analysis Time..: 03:25		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	**25500**	**2000**	**mg/L**	**MCAWW 300.0A**	**05/31/08**	**8152148**
		Dilution Factor: 10000		Analysis Time..: 03:49		
Fluoride	ND	1.0	mg/L	MCAWW 300.0A	05/31/08	8152149
		Dilution Factor: 10		Analysis Time..: 03:13		
Ion Balance Difference	**2.7**	**0.10**	**%**	**SM18 1030F & API**	**06/24/08**	**8176456**
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	4.0	mg/L	MCAWW 300.0A	05/31/08	8152152
		Dilution Factor: 200		Analysis Time..: 03:25		
Nitrite	ND	200	mg/L	MCAWW 300.0A	05/31/08	8152151
		Dilution Factor: 10000		Analysis Time..: 03:49		
Nitrogen, as Ammonia	**588**	**50.0**	**ug/L**	**MCAWW 350.1**	**06/02/08**	**8154238**
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	**3210**	**100**	**mg/L**	**MCAWW 300.0A**	**05/31/08**	**8152150**
		Dilution Factor: 200		Analysis Time..: 03:25		
Total Alkalinity	**189**	**5.0**	**mg/L**	**SM18 2320 B**	**06/02/08**	**8154059**
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	**19400**	**500**	**mg/L**	**MCAWW 160.1**	**06/05-06/06/08**	**8157081**
		Dilution Factor: 100		Analysis Time..: 00:00		

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F8E300223 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F8F030000-134 **Prep Batch #...:** 8155134						
Calcium	ND	100	ug/L	SW846 6020	06/11-06/24/08	KN8W91AA
		Dilution Factor: 1				
		Analysis Time..: 15:38				
Iron	**26.0 B**	**50**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KN8W91AC**
		Dilution Factor: 1				
		Analysis Time..: 02:01				
Magnesium	ND	50	ug/L	SW846 6020	06/11-06/21/08	KN8W91AE
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Manganese	ND	2	ug/L	SW846 6020	06/11-06/17/08	KN8W91AF
		Dilution Factor: 1				
		Analysis Time..: 02:01				
Potassium	ND	100	ug/L	SW846 6020	06/11-06/21/08	KN8W91AD
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Silicon	ND	250	ug/L	SW846 6020	06/11-06/21/08	KN8W91AH
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Sodium	ND	50	ug/L	SW846 6020	06/11-06/21/08	KN8W91AG
		Dilution Factor: 1				
		Analysis Time..: 21:52				
MB Lot-Sample #: F8F230000-113 **Prep Batch #...:** 8175113						
Silica	ND	250	ug/L	SW846 6020	06/11-06/21/08	KQEK81AA
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8E300223 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity		Work Order #: KN7R51AA		MB Lot-Sample #:	F8F020000-062	
	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Bromide		Work Order #: KPRDH1AA		MB Lot-Sample #:	F8E310000-147	
	ND	0.25	mg/L	MCAWW 300.0A	05/30/08	8152147
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Carbonate Alkalinity		Work Order #: KN7RT1AA		MB Lot-Sample #:	F8F020000-061	
	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Chloride		Work Order #: KPRDJ1AA		MB Lot-Sample #:	F8E310000-148	
	ND	0.20	mg/L	MCAWW 300.0A	05/30/08	8152148
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Fluoride		Work Order #: KPRDK1AA		MB Lot-Sample #:	F8E310000-149	
	ND	0.10	mg/L	MCAWW 300.0A	05/30/08	8152149
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Nitrate		Work Order #: KPRDN1AA		MB Lot-Sample #:	F8E310000-152	
	ND	0.020	mg/L	MCAWW 300.0A	05/30/08	8152152
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Nitrite		Work Order #: KPRDM1AA		MB Lot-Sample #:	F8E310000-151	
	ND	0.020	mg/L	MCAWW 300.0A	05/30/08	8152151
		Dilution Factor: 1				
		Analysis Time..: 02:51				
Nitrogen, as Ammonia		Work Order #: KN7Q91AA		MB Lot-Sample #:	F8F020000-238	
	ND	50.0	ug/L	MCAWW 350.1	06/02/08	8154238
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Sulfate		Work Order #: KPRDL1AA		MB Lot-Sample #:	F8E310000-150	
	ND	0.50	mg/L	MCAWW 300.0A	05/30/08	8152150
		Dilution Factor: 1				
		Analysis Time..: 02:51				

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METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8E300223 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity		Work Order #: KN7RG1AA		MB Lot-Sample #:	F8F020000-059	
	ND	5.0	mg/L	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: KPEAR1AA		MB Lot-Sample #:	F8F050000-081	
	ND	5.0	mg/L	MCAWW 160.1	06/05-06/06/08	8157081
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8E300223 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F8F030000-134 **Prep Batch #...:** 8155134					
Calcium	105	(85 - 115)	SW846 6020	06/11-06/24/08	KN8W91AJ
		Dilution Factor: 1		Analysis Time..: 15:42	
Iron	111	(85 - 115)	SW846 6020	06/11-06/17/08	KN8W91AK
		Dilution Factor: 1		Analysis Time..: 02:05	
Potassium	102	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AL
		Dilution Factor: 1		Analysis Time..: 21:57	
Magnesium	100	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AM
		Dilution Factor: 1		Analysis Time..: 21:57	
Manganese	108	(85 - 115)	SW846 6020	06/11-06/17/08	KN8W91AN
		Dilution Factor: 1		Analysis Time..: 02:05	
Sodium	98	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AP
		Dilution Factor: 1		Analysis Time..: 21:57	
Silicon	105	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AQ
		Dilution Factor: 1		Analysis Time..: 21:57	
LCS Lot-Sample#: F8F230000-113 **Prep Batch #...:** 8175113					
Silica	105 N	(0.0- 0.0)	SW846 6020	06/11-06/21/08	KQEK81AC
		Dilution Factor: 1		Analysis Time..: 00:00	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: F8E300223 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia	WO#:KN7Q91AC-LCS/KN7Q91AD-LCSD					LCS Lot-Sample#: F8F020000-238	
	105	(90 - 110)			MCAWW 350.1	06/02/08	8154238
	108	(90 - 110)	2.1	(0-20)	MCAWW 350.1	06/02/08	8154238

Dilution Factor: 1 Analysis Time..: 00:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)		Work Order #: KN7VC1AA	LCS Lot-Sample#: F8F020000-272		
	100	(99 - 101)	SW846 9040	05/30/08	8154272
		Dilution Factor: 1	Analysis Time..: 00:00		
Bicarbonate Alkalinity		Work Order #: KN7R51AC	LCS Lot-Sample#: F8F020000-062		
	100	(90 - 110)	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1	Analysis Time..: 00:00		
Bromide		Work Order #: KPRDH1AC	LCS Lot-Sample#: F8E310000-147		
	102	(90 - 110)	MCAWW 300.0A	05/30/08	8152147
		Dilution Factor: 1	Analysis Time..: 02:38		
Carbonate Alkalinity		Work Order #: KN7RT1AC	LCS Lot-Sample#: F8F020000-061		
	100	(90 - 110)	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1	Analysis Time..: 00:00		
Chloride		Work Order #: KPRDJ1AC	LCS Lot-Sample#: F8E310000-148		
	94	(90 - 110)	MCAWW 300.0A	05/30/08	8152148
		Dilution Factor: 1	Analysis Time..: 02:38		
Fluoride		Work Order #: KPRDK1AC	LCS Lot-Sample#: F8E310000-149		
	91	(90 - 110)	MCAWW 300.0A	05/30/08	8152149
		Dilution Factor: 1	Analysis Time..: 02:38		
Nitrate		Work Order #: KPRDN1AC	LCS Lot-Sample#: F8E310000-152		
	103	(90 - 110)	MCAWW 300.0A	05/30/08	8152152
		Dilution Factor: 1	Analysis Time..: 02:38		
Nitrite		Work Order #: KPRDM1AC	LCS Lot-Sample#: F8E310000-151		
	100	(90 - 110)	MCAWW 300.0A	05/30/08	8152151
		Dilution Factor: 1	Analysis Time..: 02:38		
Sulfate		Work Order #: KPRDL1AC	LCS Lot-Sample#: F8E310000-150		
	91	(90 - 110)	MCAWW 300.0A	05/30/08	8152150
		Dilution Factor: 1	Analysis Time..: 02:38		
Total Alkalinity		Work Order #: KN7RG1AC	LCS Lot-Sample#: F8F020000-059		
	100	(90 - 110)	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1	Analysis Time..: 00:00		

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: KPEAR1AC	LCS Lot-Sample#: F8F050000-081		
	99	(86 - 115)	MCAWW 160.1	06/05-06/06/08	8157081
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8E300223 **Matrix.....:** WATER
Date Sampled...: 05/27/08 11:35 **Date Received..:** 05/28/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F8E280143-001 **Prep Batch #...:** 8155134							
Calcium	0 N	(75 - 125)			SW846 6020	06/11-06/24/08	KNX8D1A0
	136 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/24/08	KNX8D1A1
		Dilution Factor: 1000					
		Analysis Time..: 15:52					
Iron	62 N	(75 - 125)			SW846 6020	06/11-06/17/08	KNX8D1A2
	68 N	(75 - 125)	6.1	(0-20)	SW846 6020	06/11-06/17/08	KNX8D1A3
		Dilution Factor: 2					
		Analysis Time..: 02:16					
Magnesium	358 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1A6
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1A7
		Dilution Factor: 1000					
		Analysis Time..: 22:18					
Manganese	79	(75 - 125)			SW846 6020	06/11-06/17/08	KNX8D1A8
	83	(75 - 125)	4.5	(0-20)	SW846 6020	06/11-06/17/08	KNX8D1A9
		Dilution Factor: 2					
		Analysis Time..: 02:16					
Potassium	122 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1A4
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1A5
		Dilution Factor: 1000					
		Analysis Time..: 22:18					
Silicon	182 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1CD
	138 N,*	(75 - 125)	27	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1CE
		Dilution Factor: 1000					
		Analysis Time..: 22:18					
Sodium	3360 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1CA
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1CC
		Dilution Factor: 1000					
		Analysis Time..: 22:18					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Matrix.....:** WATER
Date Sampled...: 05/29/08 11:00 **Date Received..:** 05/30/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #...: KN5JV1A3		MS Lot-Sample #: F8E300223-001	
	88 N	(90 - 110)	MCAWW 300.0A	05/31/08	8152147
		Dilution Factor: 200	Analysis Time..: 11:22		
Chloride		Work Order #...: KN5JV1A5		MS Lot-Sample #: F8E300223-001	
	96	(90 - 110)	MCAWW 300.0A	05/31/08	8152148
		Dilution Factor: 10000	Analysis Time..: 11:46		
Fluoride		Work Order #...: KN5JV1A7		MS Lot-Sample #: F8E300223-001	
	0.0	(90 - 110)	MCAWW 300.0A	05/31/08	8152149
		Dilution Factor: 10	Analysis Time..: 11:09		
Nitrate		Work Order #...: KN5JV1CE		MS Lot-Sample #: F8E300223-001	
	109	(90 - 110)	MCAWW 300.0A	05/31/08	8152152
		Dilution Factor: 200	Analysis Time..: 11:22		
Nitrite		Work Order #...: KN5JV1CC		MS Lot-Sample #: F8E300223-001	
	131 N	(90 - 110)	MCAWW 300.0A	05/31/08	8152151
		Dilution Factor: 10000	Analysis Time..: 11:46		
Nitrogen, as Ammonia		Work Order #...: KN46M1HW		MS Lot-Sample #: F8E300179-001	
	95	(90 - 110)	MCAWW 350.1	06/02/08	8154238
		Dilution Factor: 1	Analysis Time..: 00:00		
Nitrogen, as Ammonia		Work Order #...: KN6XH1DT		MS Lot-Sample #: F8E310160-003	
	102	(90 - 110)	MCAWW 350.1	06/02/08	8154238
		Dilution Factor: 1	Analysis Time..: 00:00		
Sulfate		Work Order #...: KN5JV1A9		MS Lot-Sample #: F8E300223-001	
	92	(90 - 110)	MCAWW 300.0A	05/31/08	8152150
		Dilution Factor: 1000	Analysis Time..: 11:34		
Total Alkalinity		Work Order #...: KN5J21A2		MS Lot-Sample #: F8E300223-003	
	90	(80 - 120)	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Work Order #...:** KN5JV-SMP KN5JV-DUP **Matrix.....:** WATER

Date Sampled...: 05/29/08 11:00 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide						SD Lot-Sample #:	F8E300223-001	
	70.5	70.9	mg/L	0.61	(0-20)	MCAWW 300.0A	05/31/08	8152147
		Dilution Factor: 200				Analysis Time..: 11:22		
Chloride						SD Lot-Sample #:	F8E300223-001	
	33300	34700	mg/L	4.2	(0-20)	MCAWW 300.0A	05/31/08	8152148
		Dilution Factor: 10000				Analysis Time..: 11:46		
Fluoride						SD Lot-Sample #:	F8E300223-001	
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	05/30/08	8152149
		Dilution Factor: 10				Analysis Time..: 11:09		
Sulfate						SD Lot-Sample #:	F8E300223-001	
	3850	3720	mg/L	3.2	(0-20)	MCAWW 300.0A	05/31/08	8152150
		Dilution Factor: 1000				Analysis Time..: 11:34		
Nitrite						SD Lot-Sample #:	F8E300223-001	
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	05/31/08	8152151
		Dilution Factor: 10000				Analysis Time..: 11:46		
Nitrate						SD Lot-Sample #:	F8E300223-001	
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	05/31/08	8152152
		Dilution Factor: 200				Analysis Time..: 11:22		
pH (liquid)						SD Lot-Sample #:	F8E300223-001	
	7.2	7.2	No Units	0.0	(0-0.0)	SW846 9040	05/30/08	8154272
		Dilution Factor: 1				Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Work Order #...:** KN2LJ-SMP KN2LJ-DUP **Matrix.....:** WATER

Date Sampled...: 05/27/08 09:00 **Date Received..:** 05/28/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E290176-002		
	71.0	73.0	mg/L	2.8	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E290176-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Work Order #...:** KN2LW-SMP KN2LW-DUP **Matrix.....:** WATER

Date Sampled...: 05/27/08 09:35 **Date Received..:** 05/28/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E290176-003		
	55.0	52.0	mg/L	5.6	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E290176-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Work Order #...:** KN2NJ-SMP KN2NJ-DUP **Matrix.....:** WATER

Date Sampled...: 05/28/08 08:10 **Date Received..:** 05/29/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E290185-001		
	51.0	50.0	mg/L	2.0	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E290185-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Work Order #...:** KN5J2-SMP KN5J2-DUP **Matrix.....:** WATER

Date Sampled...: 05/29/08 16:10 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E300223-003		
	9.4	9.3	mg/L	1.6	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E300223-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		
Total Alkalinity						SD Lot-Sample #: F8E300223-003		
	189	279	mg/L	38	(0-20)	SM18 2320 B	06/02/08	8154059
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Work Order #...:** KN46M-SMP KN46M-DUP **Matrix.....:** WATER

Date Sampled...: 05/29/08 09:45 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F8E300179-001		
	900	770	mg/L	16	(0-15)	MCAWW 160.1	06/05-06/06/08	8157081
			Dilution Factor: 10			Analysis Time..: 00:00		
Bicarbonate Alkalinity						SD Lot-Sample #: F8E300179-001		
	76.0	78.0	mg/L	2.6	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E300179-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		
Nitrogen, as Ammonia						SD Lot-Sample #: F8E300179-001		
	ND	ND	ug/L	0	(0-20)	MCAWW 350.1	06/02/08	8154238
			Dilution Factor: 1			Analysis Time..: 00:00		
pH (liquid)						SD Lot-Sample #: F8E300179-001		
	7.8	7.9	No Units	0.25	(0-0.0)	SW846 9040	05/30/08	8154272
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E300223 **Work Order #...:** KN6XH-SMP KN6XH-DUP **Matrix.....:** WATER

Date Sampled...: 05/30/08 09:45 **Date Received..:** 05/31/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F8E310160-003		
	4780	5240	mg/L	9.2	(0-15)	MCAWW 160.1	06/05-06/06/08	8157081
		Dilution Factor: 10				Analysis Time..: 00:00		
Bicarbonate Alkalinity						SD Lot-Sample #: F8E310160-003		
	121	120	mg/L	0.83	(0-15)	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1				Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E310160-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1				Analysis Time..: 00:00		
Nitrogen, as Ammonia						SD Lot-Sample #: F8E310160-003		
	ND	ND	ug/L	0	(0-20)	MCAWW 350.1	06/02/08	8154238
		Dilution Factor: 1				Analysis Time..: 00:00		

F8E300223 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-100
Date Received: 2008-05-30
Analytical Due Date: 2008-06-20
Report Due Date: 2008-06-20
Report Type: W
EDD Code: 00

Project Manager: IV
Quote #: 79192
SDG:
Project: 6468071950
FPL Turkey Point COL
PO#: 200807151
Report to: Al Tice
Client: 63036 MACTEC Engineering & Consulting Inc
#SMPS in LOT: 0

Inform PM of any receiving issues.

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
1	OW-706U			2008-05-29 / 1100	KN5JV	WATER

SAMPLE COMMENTS:

SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	ZZ	NONE	NONE	WATER, ZZ Code for Invoicing	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
2	OW-706L			2008-05-29 / 1235	KN5J1	WATER

SAMPLE COMMENTS:

CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	ZZ	NONE	NONE	WATER, ZZ Code for Invoicing	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F8E300223 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-100
Date Received: 2008-05-30
Analytical Due Date: 2008-06-20
Report Due Date: 2008-06-20
Report Type: W
EDD Code: 00

Project Manager: IV
Quote #: 79192 SDG:
Project: 6468071950 FPL Turkey Point COL
PO#: 200807151 Report to: Al Tice
Client: 63036 MACTEC Engineering & Consulting Inc
#SMPS in LOT: 0

Inform PM of any receiving issues.

XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
3	OW-621U			2008-05-29 / 1610	KN5J2	WATER

SAMPLE COMMENTS:

MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	ZZ	NONE	NONE	WATER, ZZ Code for Invoicing	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
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XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F8E300223 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-100

Project Manager: IV
Quote #: 79192
SDG:
Date Received: 2008-05-30

Project: 6468071950
FPL Turkey Point COL
Analytical Due Date: 2008-06-20

PO#: 200807151
Report to: Al Tice
Report Due Date: 2008-06-20

Client: 63036 MACTEC Engineering & Consulting Inc
#SMPS in LOT: 0
Report Type: W
EDD Code: 00

Inform PM of any receiving issues.

XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06

LOT# F8E300223

Chain of Custody Record

CLR 3475

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
MACTEC	Scott Anger	05-29-08	062465
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
3301 Atlantic Avenue	919-876-0416		
City / State / Zip Code	**Site Contact / Lab Contact**	**Analysis (Attach list if more space is needed)**	
Raleigh / NC / 27604	Matt Cooke / Ivan Vania		
Project Name and Location (State)	**Carrier/Waybill Number**		
Turkey Point COL	FE 8656 2820 8277		
Contract/Purchase Order/Quote No.			
6468-07-1950			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	1L Plastic, Unpres.	125mL Plastic, HNO3	125mL Plastic, H2SO4	Special Instructions/ Conditions of Receipt
OW-706U	05/29/08	1100		X			1	2	1				1	1	2	CATIONS: Calcium, Iron, Magnesium, Manganese, Potassium, Silicia, Sodium
OW-706L	05/29/08	1235		X			1	2	1				1	1	2	pH-EPA SW846 9045(P)
OW-621U	05/29/08	1610		X			1	2	1				1	1	2	TDS-EPA 160.1
																CATIONS-EPA 6020C
																INORGANICS IONS MCAWW 300.0A
																Alkalinity-EPA 310.1
																Ammonia-EPA 350.1
																nitrate/nitrite-EPA 300.0

HP, 3 x 250 P

PB 5-30-08 (1 unit)

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other Standard

QC Requirements (Specify)

	Relinquished By	Date	Time	Received By	Date	Time
1.	[signature]	05/29/08	1800	[signature]	5-30-08	9:30
2.						
3.						

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): - 3475 - F8E300223

Condition Upon Receipt Form

Client: Maxtec
Quote No: 78192
COC/RFA No: 062465
Initiated By: MB
Date: 5-30-08
Time: 9:30

Shipping Information

Shipper Name: FE
Shipping # (s):*
1. 8656 2820 8277
2.
3.
4.
5.
6.
7.
8.
9.
10.

Multiple Packages Y (N)
Sample Temperature (s):**
1. 2
2.
3.
4.
5.
6.
7.
8.
9.
10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C- If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N	If N/A- Was pH taken by original TestAmerica lab?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N	Was Internal COC/Workshare received?

[1]For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:

Corrective Action:
☐ Client Contact Name: _____ Informed by: _____
☐ Sample(s) processed "as is"
☐ Sample(s) on hold until: _____ If released, notify: _____
Project Management Review: _____ Date: 6-3-8

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004, REVISED 08/06/07\\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin004 rev11.doc

LOT# F8E300223

MACTEC

DOCUMENTATION OF TECHNICAL REVIEW
SUBCONTRACTOR WORK PRODUCT

Project Name: Turkey Point COL Project

Project Number: 6468-07-1950

Project Manager: Scott Auger

Project Principal: Tom McDaniel

The report described below has been prepared by the named subcontractor retained in accordance with the MACTEC QAPD. The work and report have been reviewed by a MACTEC technically qualified person. Comments on the work or report, if any, have been satisfactorily addressed by the subcontractor. The attached report is approved in accordance with section QS-7 of MACTEC's QAPD.

The information and data contained in the attached report are hereby released by MACTEC for project use with the exception of the iron result for sample OW-606L. Iron was detected at a similar concentration in the associated method blank, both concentrations between the method detection limit and quantitation limit. Based on guidance from the US EPA (EPA 540-R-04-004), this result should be considered nondetect at the quantitation limit of 50 µg/L. The iron concentrations reported for the remaining samples in this sample delivery group were significantly greater and likely reflect aquifer conditions. These data should be used with caution.

REPORT : **Analytical Report Lot #: F8E290268**

SUBCONTRACTOR: **TestAmerica, Earth City, MO**

DATE OF ACCEPTANCE : 7/23/2008

TECHNICAL REVIEWER: William S. Grimes

PROJECT PRINCIPAL: Tom McDaniel

MACTEC
3301 Atlantic Avenue, Raleigh, NC 27604

MACTEC

Client **Bechtel Power Corp.** Laboratory **TestAmerica Inc.**

MACTEC Project **6468-07-1950** Data Report Number/Date **Lot# F8E290268/ 6-27-08**

LABORATORY DATA REVIEW CHECKLIST

		YES	NO	NOT APPLICABLE
1.	Laboratory analytical data report appears complete (all data results present for all samples submitted for analysis) and there are no apparent transcription errors:	___	✓[1]	___
2.	Samples analyzed within applicable holding times (based on date of sample collection):*	✓		___
3.	Trip blanks, field blanks or laboratory method blanks are free of blank contamination:	___	✓[2]	___
4.	If field duplicate samples collected, calculated results meet Relative Percent Difference guidelines: **	___	___	✓
5.	Surrogate recoveries (organic analyses only) within laboratory reported recovery acceptance ranges:	___	___	✓
6.	If Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples required to meet project objectives, Percent Recoveries (%R) and Relative Percent Difference (RPD) within laboratory reported acceptance ranges:	___	✓[3]	___
7.	Reported detection limits meet project objectives (e.g., are capable of achieving applicable site standards):	✓	___	___
8.	Completed Chain-Of-Custody received noting sample/custody seal condition (with airbill, if appropriate):	✓	___	___
9.	Analytical costs within authorized budget for these services:	___	___	✓

COMMENTS: [1] **Iron results should be flagged indicating method blank contamination.** [2] **An estimated concentration of iron was detected in the method blank, at a concentration between the PQL and MDL. Iron concentrations in site samples were considerably higher, and likely reflect ambient aquifer conditions with the exception of OW-606L. This result should be qualified as nondetect at the quantitation limit of 50 µg/L.** [3] **MS/MSD recoveries were outside QC limits for several analytes possibly due to matrix interference. QC established based on acceptable LCS recoveries and results for analytes with acceptable recoveries.**

Notes: 1. This checklist is intended for use with the laboratory reporting formats typical of most projects. If "no" is answered to one or more of the above checklist questions 1 through 7, a more detailed Data Validation may be required, and a person knowledgeable in Data Validation protocols should be consulted. This checklist should not be used if the project scope requires Data Validation from the onset.

2. * = Based upon EPA Guidance and the applicable analytical method references. See reverse side of checklist for details.

3. ** = Based upon EPA Guidance. Use these criteria on duplicate and sample results which exceed five times the reported detection limit. See reverse side of checklist for details.

Checked by: William R. Lin Date: 7-14-08

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

PROJECT NO. 6468071950

FPL Turkey Point COL

Lot #: F8E290268

Al Tice

MACTEC Engineering and Cons.
3301 Atlantic Ave.
Raleigh, NC 27604

TESTAMERICA LABORATORIES, INC.

Ivan Vania
Project Manager

June 27, 2008

Case Narrative
LOT NUMBER: F8E290268

This report contains the analytical results for the four samples received under chain of custody by TestAmerica St. Louis on May 29, 2008. These samples are associated with your FPL Turkey Point COL project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise. All radiochemistry results are based upon sample as dried and ground with the exception of tritium, unless requested wet weight by the client.

Observations/Nonconformances
Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

ICP-MS (SW846-6020)
Batch 8155134:
The MS (MSD) recoveries for calcium, potassium, magnesium, and sodium are outside the established QC limits. The analyte concentrations in the original samples are greater than four times the amount spiked, making percent recovery information ineffective. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8E290268 (1): OW-721U
F8E290268 (2): OW-721L
F8E290268 (3): OW-606U
F8E290268 (4): OW-606L

Batch 8155134:
The MS (MSD) recovery for iron is outside the established QC limits. The RPD is within method acceptance criteria indicating possible matrix interference. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8E290268 (1): OW-721U
F8E290268 (2): OW-721L
F8E290268 (3): OW-606U
F8E290268 (4): OW-606L

Batch 8155134:
The MS (MSD) recovery for silicon is outside the established QC limits. Matrix interference is physically evident in the sample. The samples are high in salts. Method performance is demonstrated by acceptable LCS recovery.
Affected Samples:
F8E290268 (1): OW-721U
F8E290268 (2): OW-721L
F8E290268 (3): OW-606U
F8E290268 (4): OW-606L

Batch 8155134:
The Measured Intensity Mean for lead, as measured during the daily performance check, was low. However, the calibration and the second source checks were all within acceptable QC limits. The samples were reported with this narrative.
Affected Samples:
F8E290268 (1): OW-721U
F8E290268 (2): OW-721L
F8E290268 (3): OW-606U
F8E290268 (4): OW-606L

Batch 8155134:
The samples were analyzed at a dilution due to high concentrations of salts. The reporting limits were adjusted for the dilution.
Affected Samples:
F8E290268 (1): OW-721U
F8E290268 (2): OW-721L
F8E290268 (3): OW-606U
F8E290268 (4): OW-606L

Total Dissolved Solids (MCAWW 160.1)
Batch 8156338:
The samples were analyzed at a dilution due to high concentrations of target analytes. The reporting limits were adjusted for the dilution since no analysis at a lesser dilution was performed.
Affected Samples:
F8E290268 (1): OW-721U
F8E290268 (2): OW-721L
F8E290268 (3): OW-606U
F8E290268 (4): OW-606L

Anions (MCAWW 300.0A)
Poor matrix spike recovery for Sulfate in batch 8151365 and Nitrite in batch 8151366 is attributed to matrix interference. The anion matrix spike solution contains all routine anions. Spiking technique, sample preparation and method compliance is demonstrated by the remaining acceptable MS recoveries.
Affected Samples:
F8E290268 (1): OW-721U
F8E290268 (2): OW-721L
F8E290268 (3): OW-606U
F8E290268 (4): OW-606L

There were no other nonconformances or observations noted with any analysis on this lot.

METHODS SUMMARY

F8E290268

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH Aqueous	SW846 9040	SW846 9040
Alkalinity, Total	SM18 2320 B	SM18 2320 B
Bicarbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Bromide	MCAWW 300.0A	MCAWW 300.0A
Carbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Ion Balance (%Difference)	SM18 1030F & AP	SM18 1030F & AP
ICP-MS (6020)	SW846 6020	
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Nitrite as N	MCAWW 300.0A	MCAWW 300.0A
Nitrogen, Ammonia	MCAWW 350.1	MCAWW 350.1
Sulfate	MCAWW 300.0A	MCAWW 300.0A

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SM18 "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

F8E290268

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KN3HJ	001	OW-721U	05/28/08	11:00
KN3JD	002	OW-721L	05/28/08	13:25
KN3JR	003	OW-606U	05/28/08	16:10
KN3JT	004	OW-606L	05/28/08	15:40

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-721U

TOTAL Metals

Lot-Sample #...: F8E290268-001 **Matrix.....:** WATER
Date Sampled...: 05/28/08 11:00 **Date Received..:** 05/29/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8155134						
Calcium	**603000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/24/08**	**KN3HJ1AN**
		Dilution Factor: 1000		Analysis Time..: 16:03		
Iron	329 N	100	ug/L	SW846 6020	06/11-06/17/08	KN3HJ1AP
		Dilution Factor: 2		Analysis Time..: 02:28		
Potassium	**569000 N**	**100000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN3HJ1AQ**
		Dilution Factor: 1000		Analysis Time..: 22:30		
Magnesium	**1890000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN3HJ1AR**
		Dilution Factor: 1000		Analysis Time..: 22:30		
Manganese	**58.1**	**4**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KN3HJ1AT**
		Dilution Factor: 2		Analysis Time..: 02:28		
Sodium	**15400000 N**	**50000**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN3HJ1AU**
		Dilution Factor: 1000		Analysis Time..: 22:30		
Silicon	ND N	250000	ug/L	SW846 6020	06/11-06/21/08	KN3HJ1AV
		Dilution Factor: 1000		Analysis Time..: 22:30		
Prep Batch #...: 8175113						
Silica	**848**	**250**	**ug/L**	**SW846 6020**	**06/11-06/21/08**	**KN3HJ1A0**
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-721U

General Chemistry

Lot-Sample #...: F8E290268-001 Work Order #...: KN3HJ Matrix.....: WATER
Date Sampled...: 05/28/08 11:00 Date Received..: 05/29/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.3	0.10	No Units	SW846 9040	05/29/08	8151296
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	8.2	5.0	mg/L	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	60.1	50.0	mg/L	MCAWW 300.0A	05/30/08	8151362
		Dilution Factor: 200		Analysis Time..: 12:27		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	29900	2000	mg/L	MCAWW 300.0A	05/30/08	8151363
		Dilution Factor: 10000		Analysis Time..: 12:51		
Fluoride	ND	20.0	mg/L	MCAWW 300.0A	05/30/08	8151364
		Dilution Factor: 200		Analysis Time..: 12:27		
Ion Balance Difference	2.8	0.10	%	SM18 1030F & API	06/24/08	8176456
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	0.20	mg/L	MCAWW 300.0A	05/30/08	8151367
		Dilution Factor: 10		Analysis Time..: 12:14		
Nitrite	ND	200	mg/L	MCAWW 300.0A	05/30/08	8151366
		Dilution Factor: 10000		Analysis Time..: 12:51		
Nitrogen, as Ammonia	1680	200	ug/L	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 4		Analysis Time..: 00:00		
Sulfate	3860	100	mg/L	MCAWW 300.0A	05/30/08	8151365
		Dilution Factor: 200		Analysis Time..: 12:27		
Total Alkalinity	164	5.0	mg/L	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	45400	500	mg/L	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 100		Analysis Time..: 00:00		

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-721L

TOTAL Metals

Lot-Sample #...: F8E290268-002 **Matrix.....:** WATER
Date Sampled...: 05/28/08 13:25 **Date Received..:** 05/29/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8155134						
Calcium	667000 N	100000	ug/L	SW846 6020	06/11-06/24/08	KN3JD1AN
		Dilution Factor: 1000		Analysis Time..: 16:06		
Iron	362 N	100	ug/L	SW846 6020	06/11-06/17/08	KN3JD1AP
		Dilution Factor: 2		Analysis Time..: 02:32		
Potassium	587000 N	100000	ug/L	SW846 6020	06/11-06/21/08	KN3JD1AQ
		Dilution Factor: 1000		Analysis Time..: 22:34		
Magnesium	2020000 N	50000	ug/L	SW846 6020	06/11-06/21/08	KN3JD1AR
		Dilution Factor: 1000		Analysis Time..: 22:34		
Manganese	46.2	4	ug/L	SW846 6020	06/11-06/17/08	KN3JD1AT
		Dilution Factor: 2		Analysis Time..: 02:32		
Sodium	16300000 N	50000	ug/L	SW846 6020	06/11-06/21/08	KN3JD1AU
		Dilution Factor: 1000		Analysis Time..: 22:34		
Silicon	ND N	250000	ug/L	SW846 6020	06/11-06/21/08	KN3JD1AV
		Dilution Factor: 1000		Analysis Time..: 22:34		
Prep Batch #...: 8175113						
Silica	3170	250	ug/L	SW846 6020	06/11-06/21/08	KN3JD1A0
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-721L

General Chemistry

Lot-Sample #...: F8E290268-002 Work Order #...: KN3JD Matrix.....: WATER
Date Sampled...: 05/28/08 13:25 Date Received..: 05/29/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.3	0.10	No Units	SW846 9040	05/29/08	8151296
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	9.0	5.0	mg/L	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	64.9	50.0	mg/L	MCAWW 300.0A	05/30/08	8151362
		Dilution Factor: 200		Analysis Time..: 04:30		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	31100	2000	mg/L	MCAWW 300.0A	05/30/08	8151363
		Dilution Factor: 10000		Analysis Time..: 04:54		
Fluoride	ND	20.0	mg/L	MCAWW 300.0A	05/30/08	8151364
		Dilution Factor: 200		Analysis Time..: 04:30		
Ion Balance Difference	1.7	0.10	%	SM18 1030F & API	06/24/08	8176456
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	0.20	mg/L	MCAWW 300.0A	05/30/08	8151367
		Dilution Factor: 10		Analysis Time..: 04:18		
Nitrite	ND	200	mg/L	MCAWW 300.0A	05/30/08	8151366
		Dilution Factor: 10000		Analysis Time..: 04:54		
Nitrogen, as Ammonia	1820	200	ug/L	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 4		Analysis Time..: 00:00		
Sulfate	3990	100	mg/L	MCAWW 300.0A	05/30/08	8151365
		Dilution Factor: 200		Analysis Time..: 04:30		
Total Alkalinity	180	5.0	mg/L	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	54600	500	mg/L	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 100		Analysis Time..: 00:00		

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-606U

TOTAL Metals

Lot-Sample #...: F8E290268-003 **Matrix.....:** WATER
Date Sampled...: 05/28/08 16:10 **Date Received..:** 05/29/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8155134						
Calcium	535000 N	100000	ug/L	SW846 6020	06/11-06/24/08	KN3JR1AN
		Dilution Factor: 1000		Analysis Time..: 16:10		
Iron	318 N	100	ug/L	SW846 6020	06/11-06/17/08	KN3JR1AP
		Dilution Factor: 2		Analysis Time..: 02:36		
Potassium	525000 N	100000	ug/L	SW846 6020	06/11-06/21/08	KN3JR1AQ
		Dilution Factor: 1000		Analysis Time..: 22:38		
Magnesium	1730000 N	50000	ug/L	SW846 6020	06/11-06/21/08	KN3JR1AR
		Dilution Factor: 1000		Analysis Time..: 22:38		
Manganese	35.4	4	ug/L	SW846 6020	06/11-06/17/08	KN3JR1AT
		Dilution Factor: 2		Analysis Time..: 02:36		
Sodium	14400000 N	50000	ug/L	SW846 6020	06/11-06/21/08	KN3JR1AU
		Dilution Factor: 1000		Analysis Time..: 22:38		
Silicon	ND N	250000	ug/L	SW846 6020	06/11-06/21/08	KN3JR1AV
		Dilution Factor: 1000		Analysis Time..: 22:38		
Prep Batch #...: 8175113						
Silica	729	250	ug/L	SW846 6020	06/11-06/21/08	KN3JR1A0
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-606U

General Chemistry

Lot-Sample #...: F8E290268-003 Work Order #...: KN3JR Matrix.....: WATER
Date Sampled...: 05/28/08 16:10 Date Received..: 05/29/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.4	0.10	No Units	SW846 9040	05/29/08	8151296
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	7.8	5.0	mg/L	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	56.6	50.0	mg/L	MCAWW 300.0A	05/30/08	8151362
		Dilution Factor: 200		Analysis Time..: 03:41		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	27900	2000	mg/L	MCAWW 300.0A	05/30/08	8151363
		Dilution Factor: 10000		Analysis Time..: 04:06		
Fluoride	ND	20.0	mg/L	MCAWW 300.0A	05/30/08	8151364
		Dilution Factor: 200		Analysis Time..: 03:41		
Ion Balance Difference	2.7	0.10	%	SM18 1030F & API	06/24/08	8176456
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	0.20	mg/L	MCAWW 300.0A	05/30/08	8151367
		Dilution Factor: 10		Analysis Time..: 03:29		
Nitrite	ND	200	mg/L	MCAWW 300.0A	05/30/08	8151366
		Dilution Factor: 10000		Analysis Time..: 04:06		
Nitrogen, as Ammonia	844	50.0	ug/L	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 1		Analysis Time..: 00:00		
Sulfate	3470	100	mg/L	MCAWW 300.0A	05/30/08	8151365
		Dilution Factor: 200		Analysis Time..: 03:41		
Total Alkalinity	155	5.0	mg/L	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	43100	500	mg/L	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 100		Analysis Time..: 00:00		

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-606L

TOTAL Metals

Lot-Sample #...: F8E290268-004 Matrix.....: WATER
Date Sampled...: 05/28/08 15:40 Date Received..: 05/29/08

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 8155134						
Calcium	632000 N	100000	ug/L	SW846 6020	06/11-06/24/08	KN3JT1AN
		Dilution Factor: 1000		Analysis Time..: 16:21		
Iron	88.2 BN	100	ug/L	SW846 6020	06/11-06/17/08	KN3JT1AP
		Dilution Factor: 2		Analysis Time..: 02:49		
Potassium	549000 N	100000	ug/L	SW846 6020	06/11-06/21/08	KN3JT1AQ
		Dilution Factor: 1000		Analysis Time..: 22:42		
Magnesium	1880000 N	50000	ug/L	SW846 6020	06/11-06/21/08	KN3JT1AR
		Dilution Factor: 1000		Analysis Time..: 22:42		
Manganese	39.1	4	ug/L	SW846 6020	06/11-06/17/08	KN3JT1AT
		Dilution Factor: 2		Analysis Time..: 02:49		
Sodium	15100000 N	50000	ug/L	SW846 6020	06/11-06/21/08	KN3JT1AU
		Dilution Factor: 1000		Analysis Time..: 22:42		
Silicon	ND N	250000	ug/L	SW846 6020	06/11-06/21/08	KN3JT1AV
		Dilution Factor: 1000		Analysis Time..: 22:42		
Prep Batch #...: 8175113						
Silica	2630	250	ug/L	SW846 6020	06/11-06/21/08	KN3JT1A0
		Dilution Factor: 1		Analysis Time..: 00:00		

NOTE(S):

N Spiked analyte recovery is outside stated control limits.

MACTEC Engineering & Consulting Inc

Client Sample ID: OW-606L

General Chemistry

Lot-Sample #...: F8E290268-004 **Work Order #...:** KN3JT **Matrix.....:** WATER
Date Sampled...: 05/28/08 15:40 **Date Received..:** 05/29/08

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	7.3	0.10	No Units	SW846 9040	05/29/08	8151296
		Dilution Factor: 1		Analysis Time..: 00:00		
Bicarbonate Alkalinity	8.2	5.0	mg/L	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1		Analysis Time..: 00:00		
Bromide	62.5	50.0	mg/L	MCAWW 300.0A	05/30/08	8151362
		Dilution Factor: 200		Analysis Time..: 05:43		
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1		Analysis Time..: 00:00		
Chloride	29600	2000	mg/L	MCAWW 300.0A	05/30/08	8151363
		Dilution Factor: 10000		Analysis Time..: 06:07		
Fluoride	ND	20.0	mg/L	MCAWW 300.0A	05/30/08	8151364
		Dilution Factor: 200		Analysis Time..: 05:43		
Ion Balance Difference	3.2	0.10	%	SM18 1030F & API	06/24/08	8176456
		Dilution Factor: 1		Analysis Time..: 00:00		
Nitrate	ND	0.20	mg/L	MCAWW 300.0A	05/30/08	8151367
		Dilution Factor: 10		Analysis Time..: 05:31		
Nitrite	ND	200	mg/L	MCAWW 300.0A	05/30/08	8151366
		Dilution Factor: 10000		Analysis Time..: 06:07		
Nitrogen, as Ammonia	1580	200	ug/L	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 4		Analysis Time..: 00:00		
Sulfate	3860	100	mg/L	MCAWW 300.0A	05/30/08	8151365
		Dilution Factor: 200		Analysis Time..: 05:43		
Total Alkalinity	165	5.0	mg/L	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1		Analysis Time..: 00:00		
Total Dissolved Solids	49100	500	mg/L	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 100		Analysis Time..: 00:00		

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F8E290268 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F8F030000-134 **Prep Batch #...:** 8155134						
Calcium	ND	100	ug/L	SW846 6020	06/11-06/24/08	KN8W91AA
		Dilution Factor: 1				
		Analysis Time..: 15:38				
Iron	**26.0 B**	**50**	**ug/L**	**SW846 6020**	**06/11-06/17/08**	**KN8W91AC**
		Dilution Factor: 1				
		Analysis Time..: 02:01				
Magnesium	ND	50	ug/L	SW846 6020	06/11-06/21/08	KN8W91AE
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Manganese	ND	2	ug/L	SW846 6020	06/11-06/17/08	KN8W91AF
		Dilution Factor: 1				
		Analysis Time..: 02:01				
Potassium	ND	100	ug/L	SW846 6020	06/11-06/21/08	KN8W91AD
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Silicon	ND	250	ug/L	SW846 6020	06/11-06/21/08	KN8W91AH
		Dilution Factor: 1				
		Analysis Time..: 21:52				
Sodium	ND	50	ug/L	SW846 6020	06/11-06/21/08	KN8W91AG
		Dilution Factor: 1				
		Analysis Time..: 21:52				
MB Lot-Sample #: F8F230000-113 **Prep Batch #...:** 8175113						
Silica	ND	250	ug/L	SW846 6020	06/11-06/21/08	KQEK81AA
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8E290268 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity		Work Order #: KN7R51AA		MB Lot-Sample #:	F8F020000-062	
	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Bromide		Work Order #: KPR011AA		MB Lot-Sample #:	F8E300000-362	
	ND	0.25	mg/L	MCAWW 300.0A	05/29/08	8151362
		Dilution Factor: 1				
		Analysis Time..: 06:46				
Carbonate Alkalinity		Work Order #: KN7RT1AA		MB Lot-Sample #:	F8F020000-061	
	ND	5.0	mg/L	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Chloride		Work Order #: KPR071AA		MB Lot-Sample #:	F8E300000-363	
	ND	0.20	mg/L	MCAWW 300.0A	05/29/08	8151363
		Dilution Factor: 1				
		Analysis Time..: 06:46				
Fluoride		Work Order #: KPR091AA		MB Lot-Sample #:	F8E300000-364	
	ND	0.10	mg/L	MCAWW 300.0A	05/29/08	8151364
		Dilution Factor: 1				
		Analysis Time..: 06:46				
Nitrate		Work Order #: KPR1J1AA		MB Lot-Sample #:	F8E300000-367	
	ND	0.020	mg/L	MCAWW 300.0A	05/29/08	8151367
		Dilution Factor: 1				
		Analysis Time..: 06:46				
Nitrite		Work Order #: KPR1F1AA		MB Lot-Sample #:	F8E300000-366	
	ND	0.020	mg/L	MCAWW 300.0A	05/29/08	8151366
		Dilution Factor: 1				
		Analysis Time..: 06:46				
Nitrogen, as Ammonia		Work Order #: KN3VT1AA		MB Lot-Sample #:	F8E290000-453	
	ND	50.0	ug/L	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Sulfate		Work Order #: KPR1D1AA		MB Lot-Sample #:	F8E300000-365	
	ND	0.50	mg/L	MCAWW 300.0A	05/29/08	8151365
		Dilution Factor: 1				
		Analysis Time..: 06:46				

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METHOD BLANK REPORT

General Chemistry

Client Lot #...: F8E290268 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Alkalinity		Work Order #: KN7RG1AA		MB Lot-Sample #:	F8F020000-059	
	ND	5.0	mg/L	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1				
		Analysis Time..: 00:00				
Total Dissolved Solids		Work Order #: KPC5L1AA		MB Lot-Sample #:	F8F040000-338	
	ND	5.0	mg/L	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 1				
		Analysis Time..: 00:00				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8E290268 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F8F030000-134 **Prep Batch #...:** 8155134					
Calcium	105	(85 - 115)	SW846 6020	06/11-06/24/08	KN8W91AJ
		Dilution Factor: 1		Analysis Time..: 15:42	
Iron	111	(85 - 115)	SW846 6020	06/11-06/17/08	KN8W91AK
		Dilution Factor: 1		Analysis Time..: 02:05	
Potassium	102	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AL
		Dilution Factor: 1		Analysis Time..: 21:57	
Magnesium	100	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AM
		Dilution Factor: 1		Analysis Time..: 21:57	
Manganese	108	(85 - 115)	SW846 6020	06/11-06/17/08	KN8W91AN
		Dilution Factor: 1		Analysis Time..: 02:05	
Sodium	98	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AP
		Dilution Factor: 1		Analysis Time..: 21:57	
Silicon	105	(85 - 115)	SW846 6020	06/11-06/21/08	KN8W91AQ
		Dilution Factor: 1		Analysis Time..: 21:57	
LCS Lot-Sample#: F8F230000-113 **Prep Batch #...:** 8175113					
Silica	105 N	(0.0- 0.0)	SW846 6020	06/11-06/21/08	KQEK81AC
		Dilution Factor: 1		Analysis Time..: 00:00	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: F8E290268 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia	WO#:KN3VT1AC-LCS/KN3VT1AD-LCSD					LCS Lot-Sample#: F8E290000-453	
	100	(90 - 110)			MCAWW 350.1	05/30/08	8150453
	99	(90 - 110)	0.77	(0-20)	MCAWW 350.1	05/30/08	8150453

Dilution Factor: 1 Analysis Time..: 00:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)		Work Order #: KN5JA1AA	LCS Lot-Sample#: F8E300000-296		
	100	(99 - 101)	SW846 9040	05/29/08	8151296
		Dilution Factor: 1	Analysis Time..: 00:00		
Bicarbonate Alkalinity		Work Order #: KN7R51AC	LCS Lot-Sample#: F8F020000-062		
	100	(90 - 110)	MCAWW 310.1	06/02/08	8154062
		Dilution Factor: 1	Analysis Time..: 00:00		
Bromide		Work Order #: KPR011AC	LCS Lot-Sample#: F8E300000-362		
	97	(90 - 110)	MCAWW 300.0A	05/29/08	8151362
		Dilution Factor: 1	Analysis Time..: 06:34		
Carbonate Alkalinity		Work Order #: KN7RT1AC	LCS Lot-Sample#: F8F020000-061		
	100	(90 - 110)	MCAWW 310.1	06/02/08	8154061
		Dilution Factor: 1	Analysis Time..: 00:00		
Chloride		Work Order #: KPR071AC	LCS Lot-Sample#: F8E300000-363		
	95	(90 - 110)	MCAWW 300.0A	05/29/08	8151363
		Dilution Factor: 1	Analysis Time..: 06:34		
Fluoride		Work Order #: KPR091AC	LCS Lot-Sample#: F8E300000-364		
	91	(90 - 110)	MCAWW 300.0A	05/29/08	8151364
		Dilution Factor: 1	Analysis Time..: 06:34		
Nitrate		Work Order #: KPR1J1AC	LCS Lot-Sample#: F8E300000-367		
	99	(90 - 110)	MCAWW 300.0A	05/29/08	8151367
		Dilution Factor: 1	Analysis Time..: 06:34		
Nitrite		Work Order #: KPR1F1AC	LCS Lot-Sample#: F8E300000-366		
	100	(90 - 110)	MCAWW 300.0A	05/29/08	8151366
		Dilution Factor: 1	Analysis Time..: 06:34		
Sulfate		Work Order #: KPR1D1AC	LCS Lot-Sample#: F8E300000-365		
	91	(90 - 110)	MCAWW 300.0A	05/29/08	8151365
		Dilution Factor: 1	Analysis Time..: 06:34		
Total Alkalinity		Work Order #: KN7RG1AC	LCS Lot-Sample#: F8F020000-059		
	100	(90 - 110)	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1	Analysis Time..: 00:00		

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids		Work Order #: KPC5L1AC	LCS Lot-Sample#: F8F040000-338		
	100	(86 - 115)	MCAWW 160.1	06/04-06/05/08	8156338
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F8E290268 **Matrix.....:** WATER
Date Sampled...: 05/27/08 11:35 **Date Received..:** 05/28/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F8E280143-001 **Prep Batch #...:** 8155134							
Calcium	0 N	(75 - 125)			SW846 6020	06/11-06/24/08	KNX8D1A0
	136 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/24/08	KNX8D1A1
		Dilution Factor: 1000					
		Analysis Time..: 15:52					
Iron	62 N	(75 - 125)			SW846 6020	06/11-06/17/08	KNX8D1A2
	68 N	(75 - 125)	6.1	(0-20)	SW846 6020	06/11-06/17/08	KNX8D1A3
		Dilution Factor: 2					
		Analysis Time..: 02:16					
Magnesium	358 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1A6
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1A7
		Dilution Factor: 1000					
		Analysis Time..: 22:18					
Manganese	79	(75 - 125)			SW846 6020	06/11-06/17/08	KNX8D1A8
	83	(75 - 125)	4.5	(0-20)	SW846 6020	06/11-06/17/08	KNX8D1A9
		Dilution Factor: 2					
		Analysis Time..: 02:16					
Potassium	122 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1A4
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1A5
		Dilution Factor: 1000					
		Analysis Time..: 22:18					
Silicon	182 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1CD
	138 N,*	(75 - 125)	27	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1CE
		Dilution Factor: 1000					
		Analysis Time..: 22:18					
Sodium	3360 N	(75 - 125)			SW846 6020	06/11-06/21/08	KNX8D1CA
	0 N	(75 - 125)	0.0	(0-20)	SW846 6020	06/11-06/21/08	KNX8D1CC
		Dilution Factor: 1000					
		Analysis Time..: 22:18					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Matrix.....:** WATER
Date Sampled...: 05/28/08 11:00 **Date Received..:** 05/29/08

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide		Work Order #...: KN3HJ1A1		MS Lot-Sample #: F8E290268-001	
	90	(90 - 110)	MCAWW 300.0A	05/30/08	8151362
		Dilution Factor: 200	Analysis Time..: 12:27		
Chloride		Work Order #...: KN3HJ1A3		MS Lot-Sample #: F8E290268-001	
	98	(90 - 110)	MCAWW 300.0A	05/30/08	8151363
		Dilution Factor: 10000	Analysis Time..: 12:51		
Fluoride		Work Order #...: KN3HJ1A5		MS Lot-Sample #: F8E290268-001	
	95	(90 - 110)	MCAWW 300.0A	05/30/08	8151364
		Dilution Factor: 200	Analysis Time..: 12:27		
Nitrate		Work Order #...: KN3HJ1CC		MS Lot-Sample #: F8E290268-001	
	99	(90 - 110)	MCAWW 300.0A	05/30/08	8151367
		Dilution Factor: 10	Analysis Time..: 12:14		
Nitrite		Work Order #...: KN3HJ1A9		MS Lot-Sample #: F8E290268-001	
	120 N	(90 - 110)	MCAWW 300.0A	05/30/08	8151366
		Dilution Factor: 10000	Analysis Time..: 12:51		
Nitrogen, as Ammonia		Work Order #...: KNW831AP		MS Lot-Sample #: F8E270173-001	
	104	(90 - 110)	MCAWW 350.1	05/30/08	8150453
		Dilution Factor: 1	Analysis Time..: 00:00		
Sulfate		Work Order #...: KN3HJ1A7		MS Lot-Sample #: F8E290268-001	
	78 N	(90 - 110)	MCAWW 300.0A	05/30/08	8151365
		Dilution Factor: 200	Analysis Time..: 12:27		
Total Alkalinity		Work Order #...: KN5J21A2		MS Lot-Sample #: F8E300223-003	
	90	(80 - 120)	SM18 2320 B	06/02/08	8154059
		Dilution Factor: 1	Analysis Time..: 00:00		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KNW83-SMP **Matrix.....:** WATER
KNW83-DUP
Date Sampled...: 05/22/08 09:19 **Date Received..:** 05/24/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Nitrogen, as Ammonia						SD Lot-Sample #: F8E270173-001		
	120	140 B	ug/L	19	(0-20)	MCAWW 350.1	05/30/08	8150453

Dilution Factor: 1 Analysis Time..: 00:00

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN3JD-SMP **Matrix.....:** WATER
KN3JD-DUP
Date Sampled...: 05/28/08 13:25 **Date Received..:** 05/29/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)						SD Lot-Sample #: F8E290268-002		
	7.3	7.3	No Units	0.14	(0-0.0)	SW846 9040	05/29/08	8151296

Dilution Factor: 1 Analysis Time..: 00:00

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN3HJ-SMP KN3HJ-DUP **Matrix.....:** WATER

Date Sampled...: 05/28/08 11:00 **Date Received..:** 05/29/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bromide						SD Lot-Sample #: F8E290268-001		
	60.1	62.5	mg/L	3.9	(0-20)	MCAWW 300.0A	05/30/08	8151362
		Dilution Factor: 200				Analysis Time..: 12:27		
Chloride						SD Lot-Sample #: F8E290268-001		
	29900	29700	mg/L	0.65	(0-20)	MCAWW 300.0A	05/30/08	8151363
		Dilution Factor: 10000				Analysis Time..: 12:51		
Fluoride						SD Lot-Sample #: F8E290268-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	05/30/08	8151364
		Dilution Factor: 200				Analysis Time..: 12:27		
Sulfate						SD Lot-Sample #: F8E290268-001		
	3860	3860	mg/L	0.013	(0-20)	MCAWW 300.0A	05/30/08	8151365
		Dilution Factor: 200				Analysis Time..: 12:27		
Nitrite						SD Lot-Sample #: F8E290268-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	05/30/08	8151366
		Dilution Factor: 10000				Analysis Time..: 12:51		
Nitrate						SD Lot-Sample #: F8E290268-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 300.0A	05/30/08	8151367
		Dilution Factor: 10				Analysis Time..: 12:14		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN2LJ-SMP KN2LJ-DUP **Matrix.....:** WATER

Date Sampled...: 05/27/08 09:00 **Date Received..:** 05/28/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E290176-002		
	71.0	73.0	mg/L	2.8	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E290176-002		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN2LW-SMP KN2LW-DUP **Matrix.....:** WATER

Date Sampled...: 05/27/08 09:35 **Date Received..:** 05/28/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E290176-003		
	55.0	52.0	mg/L	5.6	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E290176-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN2NJ-SMP KN2NJ-DUP **Matrix.....:** WATER

Date Sampled...: 05/28/08 08:10 **Date Received..:** 05/29/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E290185-001		
	51.0	50.0	mg/L	2.0	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E290185-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		
pH (liquid)						SD Lot-Sample #: F8E290185-001		
	7.6	7.6	No Units	0.53	(0-0.0)	SW846 9040	05/29/08	8151296
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN46M-SMP **Matrix.....:** WATER
KN46M-DUP
Date Sampled...: 05/29/08 09:45 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E300179-001		
	76.0	78.0	mg/L	2.6	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E300179-001		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN5J2-SMP KN5J2-DUP **Matrix.....:** WATER

Date Sampled...: 05/29/08 16:10 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E300223-003		
	9.4	9.3	mg/L	1.6	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E300223-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		
Total Alkalinity						SD Lot-Sample #: F8E300223-003		
	189	279	mg/L	38	(0-20)	SM18 2320 B	06/02/08	8154059
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN6XH-SMP **Matrix.....:** WATER
KN6XH-DUP
Date Sampled...: 05/30/08 09:45 **Date Received..:** 05/31/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Bicarbonate Alkalinity						SD Lot-Sample #: F8E310160-003		
	121	120	mg/L	0.83	(0-15)	MCAWW 310.1	06/02/08	8154062
			Dilution Factor: 1			Analysis Time..: 00:00		
Carbonate Alkalinity						SD Lot-Sample #: F8E310160-003		
	ND	ND	mg/L	0	(0-20)	MCAWW 310.1	06/02/08	8154061
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN5GT-SMP KN5GT-DUP **Matrix.....:** WATER

Date Sampled...: 05/28/08 10:02 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F8E300212-001		
	431	420	mg/L	2.6	(0-15)	MCAWW 160.1	06/04-06/05/08	8156338
			Dilution Factor: 1			Analysis Time..: 00:00		

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F8E290268 **Work Order #...:** KN5RL-SMP KN5RL-DUP **Matrix.....:** WATER

Date Sampled...: 05/28/08 10:17 **Date Received..:** 05/30/08

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Dissolved Solids						SD Lot-Sample #: F8E300262-001		
	1690	1870	mg/L	9.9	(0-15)	MCAWW 160.1	06/04-06/05/08	8156338
			Dilution Factor: 1			Analysis Time..: 00:00		

F8E290268 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-90,METS
Date Received: 2008-05-29
Analytical Due Date: 2008-06-19
Report Due Date: 2008-06-19
Report Type: W
EDD Code: 00

Project Manager: IV
Quote #: 79192 SDG:
Project: 6468071950 FPL Turkey Point COL
PO#: 200807151 Report to: Al Tice
Client: 63036 MACTEC Engineering & Consulting Inc
#SMPS in LOT: 4

Inform PM of any receiving issues.

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
1	OW-721U			2008-05-28 / 1100	KN3HJ	WATER

SAMPLE COMMENTS:

FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	I
2	OW-721L			2008-05-28 / 1325	KN3JD	WATER

SAMPLE COMMENTS:

MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

F8E290268 CLIENT ANALYSIS SUMMARY

Storage Loc: 1-90,METS

Project Manager: IV Quote #: 79192 SDG:

Date Received: 2008-05-29

Project: 6468071950 FPL Turkey Point COL

Analytical Due Date: 2008-06-19

PO#: 200807151 Report to: Al Tice

Report Due Date: 2008-06-19

Client: 63036 MACTEC Engineering & Consulting Inc

Report Type: W

#SMPS in LOT: 4 EDD Code: 00

Inform PM of any receiving issues.

XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER	
3	OW-606U			2008-05-28 / 1610	KN3JR	WATER

SAMPLE COMMENTS:

FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06	
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06	

SAMPLE #	CLIENT SAMPLE ID	Site ID	Client Matrix	DATE/TIME SAMPLED	WORKORDER

F8E290268

CLIENT ANALYSIS SUMMARY

Storage Loc: 1-90,METS

Project Manager: IV
Quote #: 79192
SDG:
Date Received: 2008-05-29

Project: 6468071950
FPL Turkey Point COL
Analytical Due Date: 2008-06-19

PO#: 200807151
Report to: Al Tice
Report Due Date: 2008-06-19

Client: 63036 MACTEC Engineering & Consulting Inc
#SMPS In LOT: 4
Report Type: W
EDD Code: 00

Inform PM of any receiving issues.

4 OW-606L 2008-05-28 / 1540 KN3JT WATER

SAMPLE COMMENTS:

MN	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
SI	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
SA	MH	SW846	6020	WATER, Silica by calculation	0X	CALCULATION ONLY	9Q	ORG FLAGS FOR INORG; STANDARD	PROT: A	WRK LOC	06		
NA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
KX	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
CA	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
FE	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
MG	MH	SW846	6020	WATER, 6020, Metals	GJ	METALS, TOTAL - 2% HCL	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	AK	MCAW W	160.1	WATER, 160.1, Solids, Filterable "TDS"	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	C8	MCAW W	300.0A	WATER, 300.0A, Fluoride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	C9	MCAW W	300.0A	WATER, 300.0A, Nitrate as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	CB	MCAW W	310.1	WATER, 310.1, Alkalinity, Carbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	CX	MCAW W	300.0A	WATER, 300.0A, Chloride	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	CY	MCAW W	300.0A	WATER, 300.0A, Sulfate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	FJ	SW846	9040	WATER, 9040C, pH	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	GM	MCAW W	300.0A	WATER, 300.0A, Bromide	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	GO	MCAW W	300.0A	WATER, 300.0A, Nitrite as N	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	LV	SM18	2320 B	WATER, 2320 B, Alkalinity, Total	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	SL	SM18	1030F & API	WATER, 1030F & API, Ion Balance	0X	CALCULATION ONLY	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	UX	MCAW W	310.1	WATER, 310.1, Alkalinity, Bicarbonate	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		
XX	VM	MCAW W	350.1	WATER, 350.1, Nitrogen, Ammonia	88	NO SAMPLE PREPARATION PERFORMED / DIRECT	01	STANDARD TEST SET	PROT: A	WRK LOC	06		

Chain of Custody Record

cor 3468

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
MACTEC	Scott Auger	05-28-08	062463
Address 3301 Atlantic Avenue	**Telephone Number (Area Code)/Fax Number** 919-876-0416	**Lab Number**	**Page** 1 of 1
City Raleigh **State** NC **Zip Code** 27604	**Site Contact** Matt Cooke	**Lab Contact** Ivan Vania	
Project Name and Location (State) Turkey Point COL	**Carrier/Waybill Number** FE		
Contract/Purchase Order/Quote No. 64468-07-1950			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil.	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed): Hg-1631 (Low Level) HNO3/BrCl	1,2,3-TCP-8260B HCl/MeOH	1,2,3-TCP-8260B NaOH	Special Instructions/ Conditions of Receipt
OW-721U	05/28/08	1100		X			1	2	1				1	1	2	34 250P (JM)
OW-721L	05/28/08	1325		X			1	2	1				1	1	2	
OW-606U	05/28/08	1610		X			1	2	1				1	1	2	
OW-606L	05/28/08	1540		X			1	2	1				1	1	2	↓

Special Instructions/ Conditions of Receipt

Cations: Calcium Iron, magnesium manganese potassium silicon Sodium.
pH-EPA SW846 9045(D)
TDS-EPA 160.1
~~Cations-EPA 200.7~~ See note 1,2,3 5-28-08
Inorganic Ions MCAWW-300.0A
Alkalinity-EPA 310.1
Ammonia-EPA 350.1
~~Nitrate Nitrite-EPA 353.1~~
EPA 300.0 See note KJS 5-28-08
Cations EPA 6020C

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other Standard

QC Requirements (Specify)

	Date	Time
1. Relinquished By [signature]	05/28/08	1630
2. Relinquished By		
3. Relinquished By		
1. Received By [signature]	05-29-08	09:05
2. Received By		
3. Received By		

Comments: ~~Cations + nitrate/nitrite methods may change pending approval of SDDR, please wait for instructions~~ From MACTEC Cations EPA 6020C Nitrate/nitrite SPA 300.0 KJS 5-28-08

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): - 3468 - F8E290268

Condition Upon Receipt Form

Client: Mactec
Quote No: 79192
COC/RFA No: 062463
Initiated By:
Date: 05.29.08
Time: 0980

Shipping Information

Shipper Name: FedX
Shipping # (s):*
1. 8636 2820 8660
2.
3.
4.
5.
6.
7.
8.
9.
10.

Multiple Packages Y (N)
Sample Temperature (s):**
1. 3
2.
3.
4.
5.
6.
7.
8.
9.
10.

*Numbered shipping lines correspond to Numbered Sample Temp lines

**Sample must be received at 4°C ± 2°C. If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1.	(Y) N	Are there custody seals present on the cooler?	8.	Y (N)	Are there custody seals present on bottles?
2.	Y (N) N/A	Do custody seals on cooler appear to be tampered with?	9.	Y N (N/A)	Do custody seals on bottles appear to be tampered with?
3.	(Y) N	Were contents of cooler frisked after opening, but before unpacking?	10.	(Y) N N/A	Was sample received with proper pH[1]? (If not, make note below)
4.	(Y) N	Sample received with Chain of Custody?	11.	Y N	If N/A- Was pH taken by original TestAmerica lab?
5.	(Y) N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	(Y) N	Sample received in proper containers?
6.	Y (N)	Was sample received broken?	13.	Y N (N/A)	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7.	(Y) N	Is sample volume sufficient for analysis?	14.	Y N	Was Internal COC/Workshare received?

[1] For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes:

Corrective Action:
☐ Client Contact Name: _____ Informed by: _____
☐ Sample(s) processed "as is"
☐ Sample(s) on hold until: _____ If released, notify: _____
Project Management Review: _____ Date: 6-3-08

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

ADMIN-0004, REVISED 08/06/07\\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin004 rev11.doc

LOT# F8E290268

Slug Test Data Forms

Appendix G
Summary Table of Input Values for Hydraulic Conductivity Test Analyses
Turkey Point COL Project
MACTEC Project No. 6488-07-1950

WELL ID	Test Date: Background	Test Date: Falling Head	Test Date: Rising Head	Test Method	Borehole Depth (ft bgs[1])	Static H2O (ft TOC[2])	Riser (ft ags)	Static H2O (ft bgs)	Water Column Height (feet)	Formation Depth	Borehole Length vs Formation Extent	Saturated Thickness[3] (feet, bgs)	Maximum Displacement (feet): Falling Head	Maximum Displacement (feet): Rising Head	Top of Well Screen[4] (feet bgs)	Well Screen Length[4] (feet)	Radius of Well Casing (feet)	Radius of Screen (feet)	Radius of Probe (feet)	Probe Serial Number	Notes
OW-606 U	5/20/2008		5/20/2008	pneumatic	30.17	3.48	3.2	0.28	29.89	24.00	6.17	29.89		2.792	15	15.17	0.083	0.30	0.03	118478	
			5/20/2008	pneumatic	30.17	3.48	3.2	0.28	29.89	24.00	6.17	29.89		3.394						118478	Test 2
OW-606 L	5/18/2008	5/18/2008	5/18/2008	manual slug	109.00	3.24	2.8	0.44	108.56	116.00	-7.00	92	1.013	1.817	92.8	17.2	0.083	0.29	0.03	118478	
	5/20/2008		5/20/2008	pneumatic	109.00	3.07	2.8	0.27	108.73	116.00	-7.00	92		4.388						118478	
OW-621 U	5/20/2008		5/20/2008	pneumatic	30.00	5.74	3.3	2.44	27.56	26.00	4.00	27.56		10.561	14.4	15.6	0.083	0.30	0.03	118478	
OW-621 L	5/17/2008	5/17/2008	5/17/2008	manual slug	110.00	4.13	3.0	1.13	108.87	114.50	-4.50	88.5	19.286	3.011	95	15	0.083	0.30	0.03	103345	
			5/17/2008	manual slug	110.00	4.13	3.0	1.13	108.87	114.50	-4.50	88.5		2.103						103345	Test 2
	5/20/2008		5/20/2008	pneumatic	110.00	4.71	3.0	1.71	108.29	114.50	-4.50	88.5		12.053						118478	
OW-636 U	5/21/2008		5/21/2008	pneumatic	29.80	4.35	3.4	0.95	28.85	26.00	3.80	28.85		9.553	12.8	17	0.083	0.25	0.03	118478	
			5/21/2008	pneumatic	29.80	4.35	3.4	0.95	28.85	26.00	3.80	28.85		7.909						118478	
OW-636 L	5/21/2008		5/21/2008	pneumatic	111.00	2.74	3.4	-0.66	111.66	114.00	-3.00	88		8.321	93.5	17.5	0.083	0.25	0.03	118478	
			5/21/2008	pneumatic	111.00	2.74	3.4	-0.66	111.66	114.00	-3.00	88		5.913						118478	Test 2
OW-706 U	5/16/2008	5/16/2008	5/16/2008	manual slug	29.00	3.74	3.2	0.54	28.46	31.20	-2.20	30.66	0.941	0.96	13.4	15.6	0.083	0.25	0.03	103345	
	5/20/2008		5/20/2008	pneumatic	29.00	3.74	3.2	0.54	28.46	31.20	-2.20	30.66		4.189						118478	Test 2
OW-706 L	5/16/2008	5/16/2008	5/16/2008	manual slug	112.00	1.50	3.2	-1.70	113.70	114.00	-2.00	82.8	1.19	2.693	96.9	15.1	0.083	0.25	0.03	103345	
OW-721 U	5/15/2008	5/15/2008	5/15/2008	manual slug	26.00	4.35	3.1	1.25	24.75	24.00	2.00	24.75	3.338	1.444	9.9	16.1	0.083	0.25	0.03	103345	
	5/20/2008		5/20/2008	pneumatic	26.00	4.73	3.1	1.63	24.37	24.00	2.00	24.37		10.884						118478	
OW-721 L	5/15/2008	5/15/2008	5/15/2008	manual slug	109.00	2.17	3.2	-1.03	110.03	114.00	-5.00	90	2.451	5.904	92	17	0.083	0.25	0.03	103345	
	5/20/2008		5/20/2008	pneumatic	109.00	1.97	3.2	-1.23	110.23	114.00	-5.00	90		9.341						118478	
OW-735 U	5/15/2008	5/15/2008	5/15/2008	manual slug	28.00	4.85	3.3	1.55	26.45	26.00	2.00	26.45	0.553	1.519	12	16	0.083	0.25	0.03	103345	
	5/20/2008		5/20/2008	pneumatic	28.00	4.95	3.3	1.65	26.35	26.00	2.00	26.35		10.051						118478	
OW-735L	5/15/2008	5/15/2008	5/15/2008	manual slug	110.00	2.97	3.4	-0.43	110.43	113.00	-3.00	87	3.004	5.779	92.3	17.7	0.083	0.25	0.03	103345	
OW-802 U	5/20/2008	6/6/2008	5/20/2008	pneumatic	27.00	4.60	3.4	1.20	25.80	27.00	0.00	25.80		7.799	10	17	0.083	0.25	0.03	118478	
OW-802 L	5/20/2008	6/6/2008	5/20/2008	pneumatic	110.00	3.06	3.3	-0.24	110.24	115.00	-5.00	88		12.796	93	17	0.083	0.21	0.03	118478	
OW-805 U	6/6/2008	6/6/2008	6/6/2008	pneumatic	30.00	3.00	2.8	0.20	29.80	32.50	-2.50	32.30		3.886	13	17	0.083	0.25	0.03	118478	
OW-805 L	6/6/2008	6/6/2008	6/6/2008	pneumatic	97.00	3.19	3.7	-0.51	97.51	100.00	-3.00	67.5		10.511	80	17	0.083	0.21	0.03	118478	
OW-809 U	5/15/2008	5/15/2008	5/15/2008	manual slug	27.00	4.68	3.2	1.48	25.52	25.00	2.00	25.52	6.358	3.175	12.6	14.4	0.083	0.25	0.03	118478	
	5/20/2008	5/20/2008	5/20/2008	pneumatic	27.00	4.72	3.2	1.52	25.48	25.00	2.00	25.48		11.016						118478	
OW-809 L	5/15/2008	5/15/2008	5/15/2008	manual slug	110.00	3.26	3.3	-0.04	110.04	113.00	-3.00	88	11.287	2.64	91	19	0.083	0.25	0.03	103345	
OW-812 U	5/20/2008		5/20/2008	pneumatic	27.00	4.55	3.0	1.55	25.45	27.00	0.00	25.45		11.684	11	16	0.083	0.25	0.03	118478	
OW-812 L	5/20/2008		5/20/2008	pneumatic	109.00	3.01	3.3	-0.29	109.29	113.00	-4.00	86		10.477	94	15	0.083	0.25	0.03	118478	

Note:
Anisotropy ratio (Kv/Kh) is assumed to be 1

[1] Measured in feet below ground surface (bgs).

[2] Measured in feet below the top of the well casing (TOC).

[3] Saturated thickness values determined as:
1) water column height for all U wells that fully penetrate the Miami Formation
2) Water column height plus the depth from the bottom of the borehole to the base of the Miami Formation for all U wells that do not fully penetrate the Miami Formation
3) Thickness of Thompson Formation for all L wells

[4] Well screen dimensions based on direction from Bechtel to use borehole annulus

Prepared by: CHB Date: 6/20/08

Checked by: WSL Date: 6-20-08

MACTEC Engineering and Consulting, Inc.
Raleigh, NC

Checked by: CHB Date: 6-20-09

MACTEC

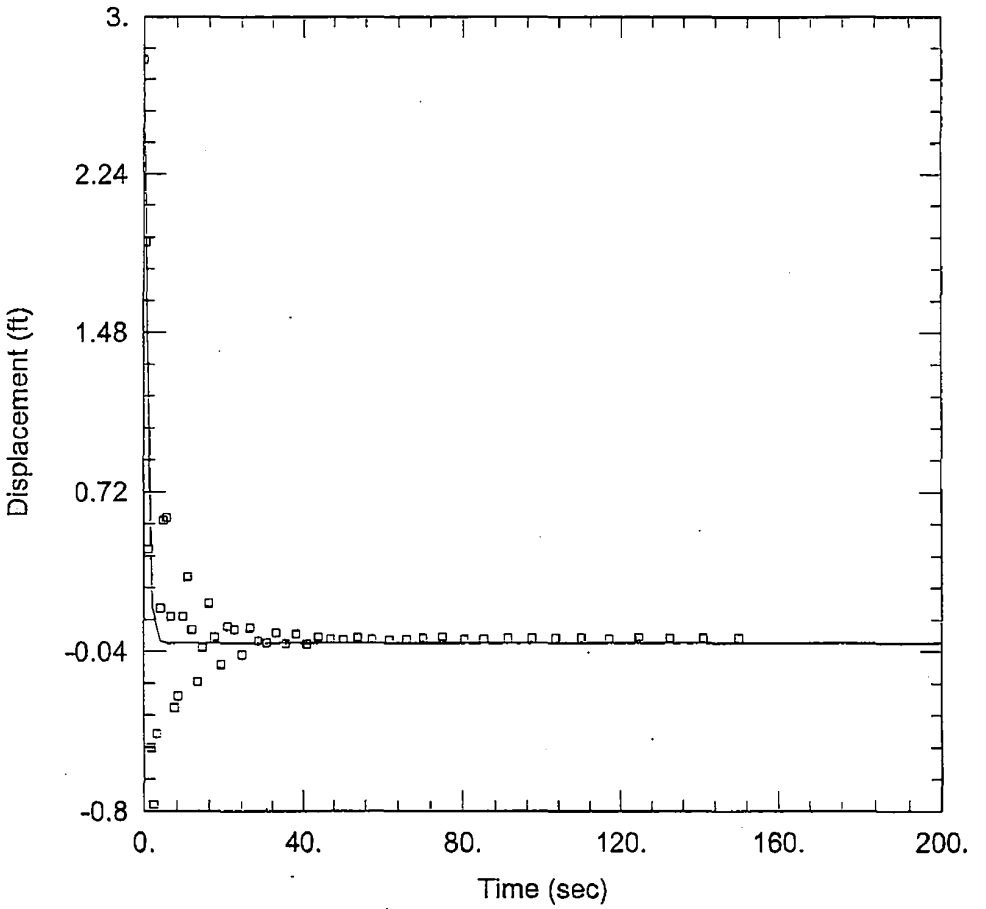
SLUG TEST REPORT

Project Name: TPCoL	6468-07-1950 Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-606U	MACTEC Rep: Kim Charles-Smith	Date: 05/20/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 2.97' Fmmgs.		
Static Water Level	3.48' feet From TOC		
Total Well Depth	31.91' feet From TOC		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	mini Troll Transducer probe calibrated 4/29/08, CAP 4/29/09 SN: 118478 level Troll @ 700 Winsitu		
Slug Data			
Length	used pneumatic slug to perform test.		
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-606UBG	NA	OW-606UR
Start Time	11:49:55		12:01:33
End Time	11:54:59		12:04:17
Notes	OW-606UR 12:06:45 12:07:47		

Rev 0

Prepared by: EAB Date: 6-20-08
Checked by: LWSL Date: 6-20-08



OW-606 U RISING HEAD 5/20/08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 U
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 29.89 ft

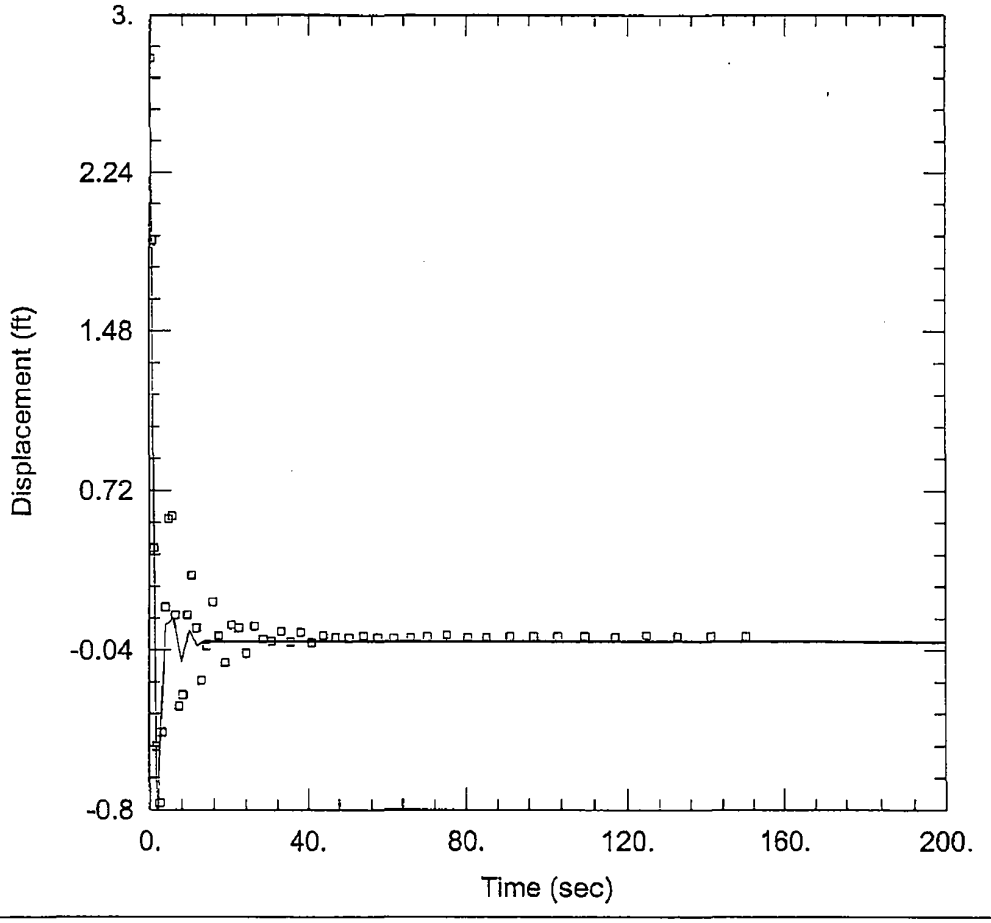
WELL DATA (OW-606 U)

Initial Displacement: 2.792 ft
Total Well Penetration Depth: 30.17 ft
Casing Radius: 0.083 ft
Static Water Column Height: 29.89 ft
Screen Length: 15.17 ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Unconfined
Kr = 97.98 ft/day
Kz/Kr = 1.
Solution Method: KGS Model
Ss = 4.167E-12 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-606 U RISING HEAD 5/20/08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 U
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 29.89 ft
Anisotropy Ratio (Kz/Kr): 1.

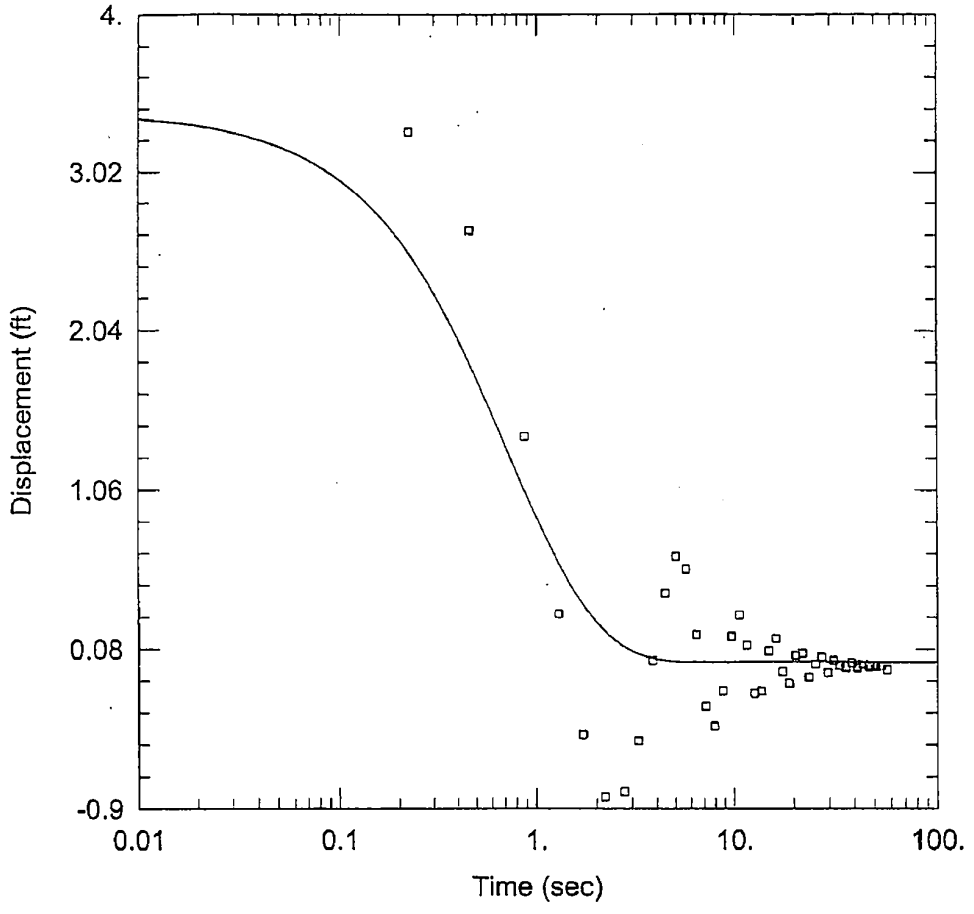
WELL DATA (OW-606 U)

Initial Displacement: 2.792 ft
Total Well Penetration Depth: 30.17 ft
Casing Radius: 0.083 ft
Static Water Column Height: 29.89 ft
Screen Length: 15.17 ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Unconfined
K = 134.8 ft/day
Solution Method: Springer-Gelhar
Le = 17.69 ft

Prepared by: CTB Date: 6-20-08
Checked by: MSH Date: 6-20-08



OW-606 U RISING HEAD 5/20/08 TEST 2

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 U
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 29.89 ft

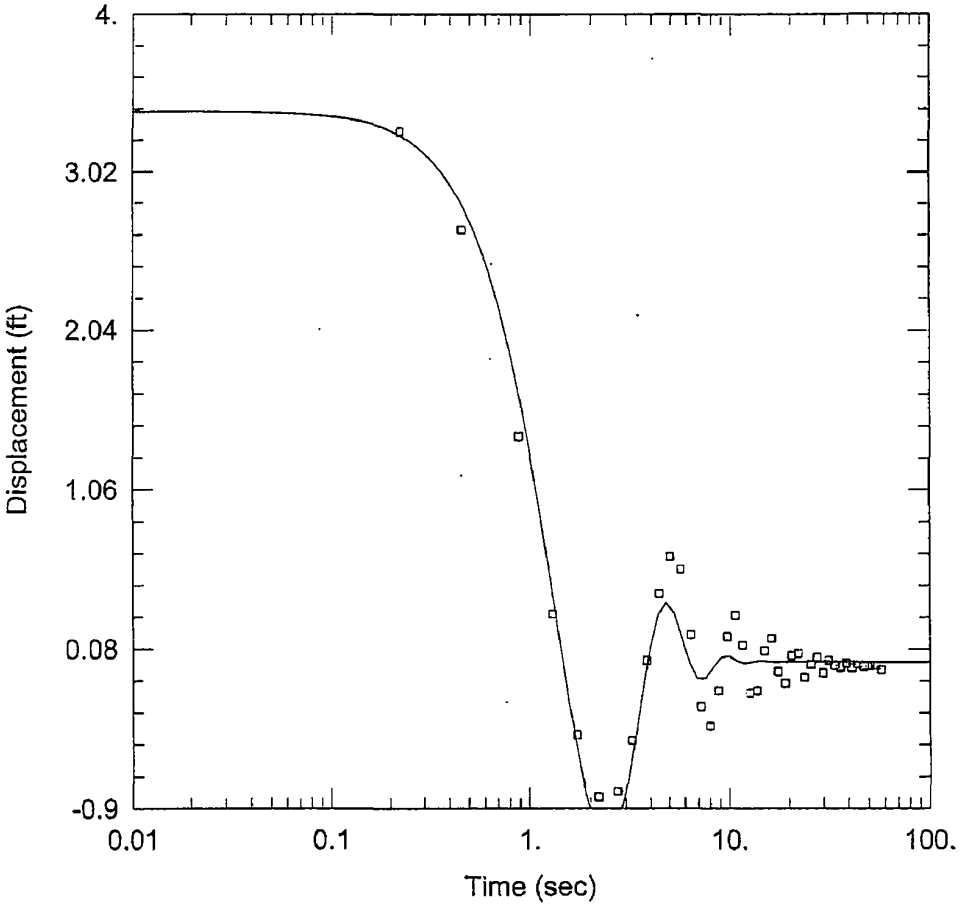
WELL DATA (OW-606 U)

Initial Displacement: 3.394 ft
Total Well Penetration Depth: 30.17 ft
Casing Radius: 0.083 ft
Static Water Column Height: 29.89 ft
Screen Length: 15.17 ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model
Kr = 92.02 ft/day
Kz/Kr = 1.
Ss = 4.167E-12 ft^{-1}

Prepared by: CKB Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-606 U RISING HEAD 5/20/08 TEST 2

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 U
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 29.89 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-606 U)

Initial Displacement: 3.394 ft
Total Well Penetration Depth: 30.17 ft
Casing Radius: 0.083 ft
Static Water Column Height: 29.89 ft
Screen Length: 15.17 ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar
K = 123.1 ft/day
Le = 16.66 ft

Checked by: CHB Date: 6/30/08

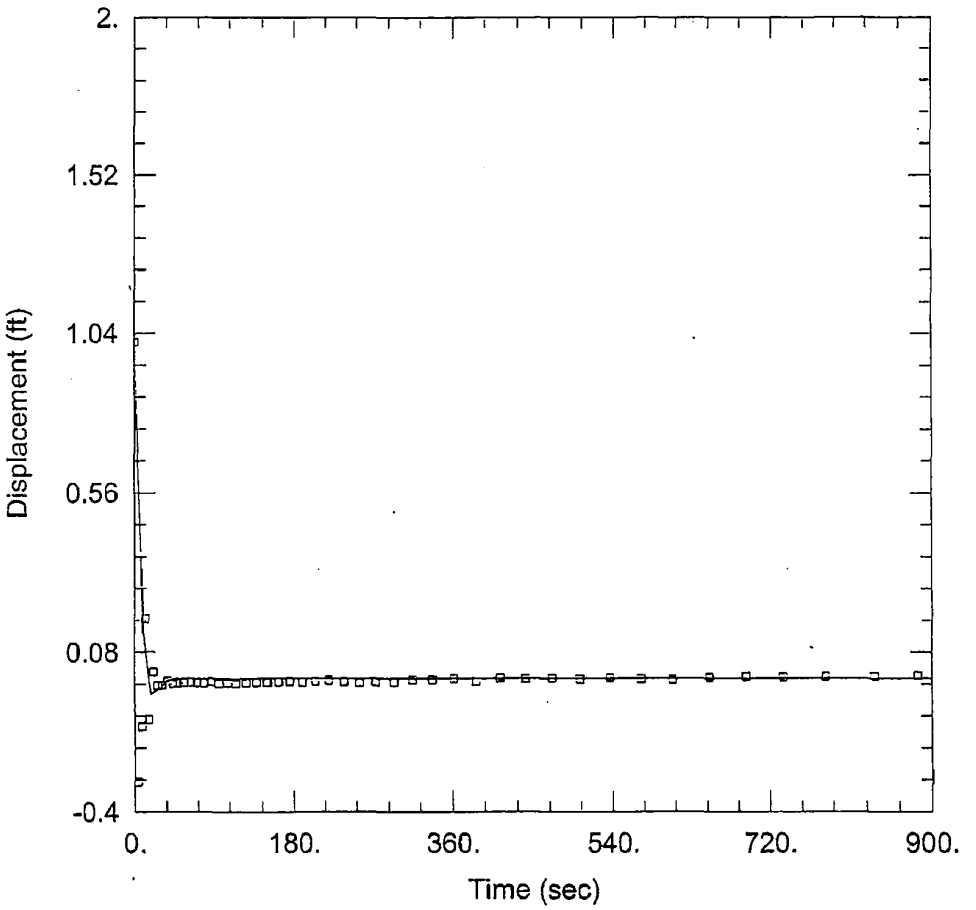
MACTEC

SLUG TEST REPORT

Project Name: TPCL	Project Number:	Page [of]	
Client: Bechtel	Contractor: MACTEC		
Location: OW-606L	MACTEC Rep: Kim Clarke-Smith	Date: 05/18/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.14' above g.s. KMS 5-18-08		
Static Water Level	3.24' feet From TOC		
Total Well Depth	111.31' feet From TOC		
Static Water Column Height (H)	108.27' feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.088 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (rsp)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	Mini Troll Transducer Calibrated 4/29/08, Exp. 4/29/09.		
Probe Serial Number			
Sn: 103345			
Slug Data Slug #2			
Length	65.438 inches		
weight	8.811 lbs.		
Diameter	1.162 inches		
Slug Test File	Background	Falling	Rising
File Name	OW-606LBG	OW-606LF	OW-606LR
Start Time	08:13:29	08:31:14	08:48:16
End Time	08:21:54	08:45:20	09:06:04
Notes	Extended top of casing to 5.16' above g.s. to run tests.		

Rev 0

Prepared by: CHG Date: 6-20-08
Checked by: WH Date: 6-20-08



OW-606 L FALLING HEAD TEST 5-18-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 L
Test Date: 5-18-08

AQUIFER DATA

Saturated Thickness: 92. ft
Anisotropy Ratio (Kz/Kr): 1.

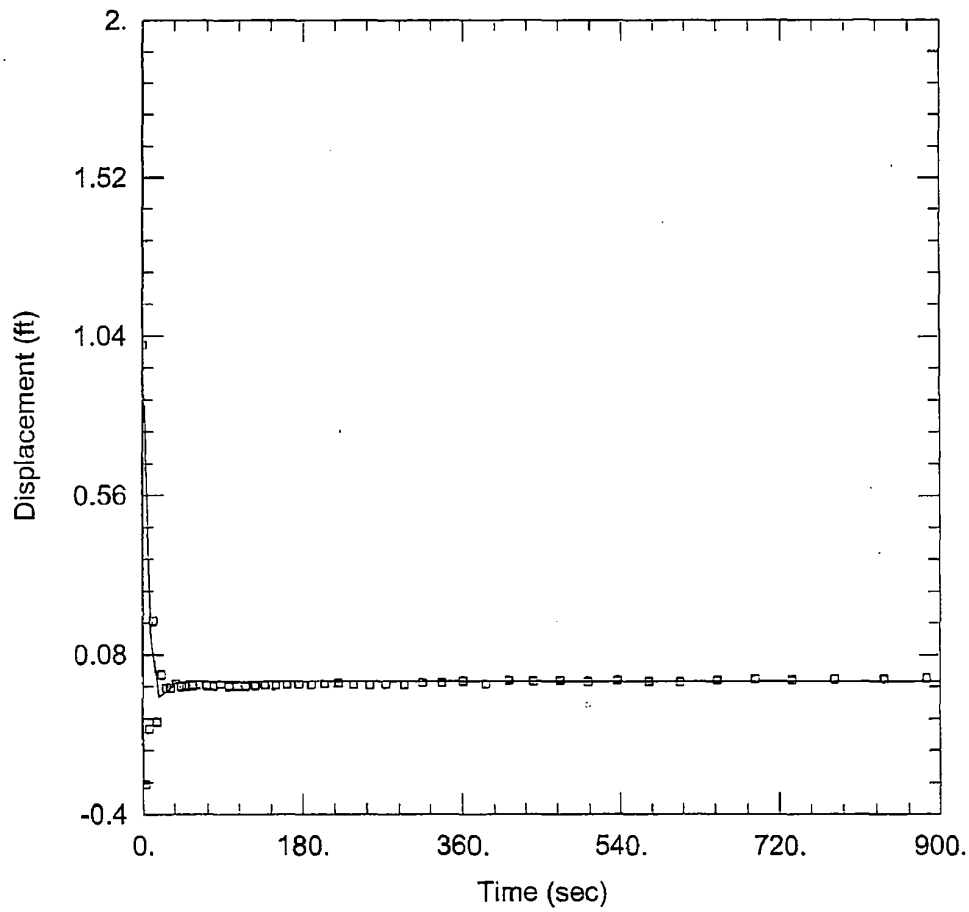
WELL DATA (OW-606 L)

Initial Displacement: 1.013 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.6 ft
Screen Length: 16.2 ft
Well Radius: 0.29 ft

SOLUTION

Aquifer Model: Confined
K = 119.9 ft/day
Solution Method: Butler
Le = 86.28 ft

Prepared by: CHS Date: 6-20-08
Checked by: WSC Date: 6-20-08



OW-606 L FALLING HEAD TEST 5-18-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 L
Test Date: 5-18-08

AQUIFER DATA

Saturated Thickness: 92. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-606 L)

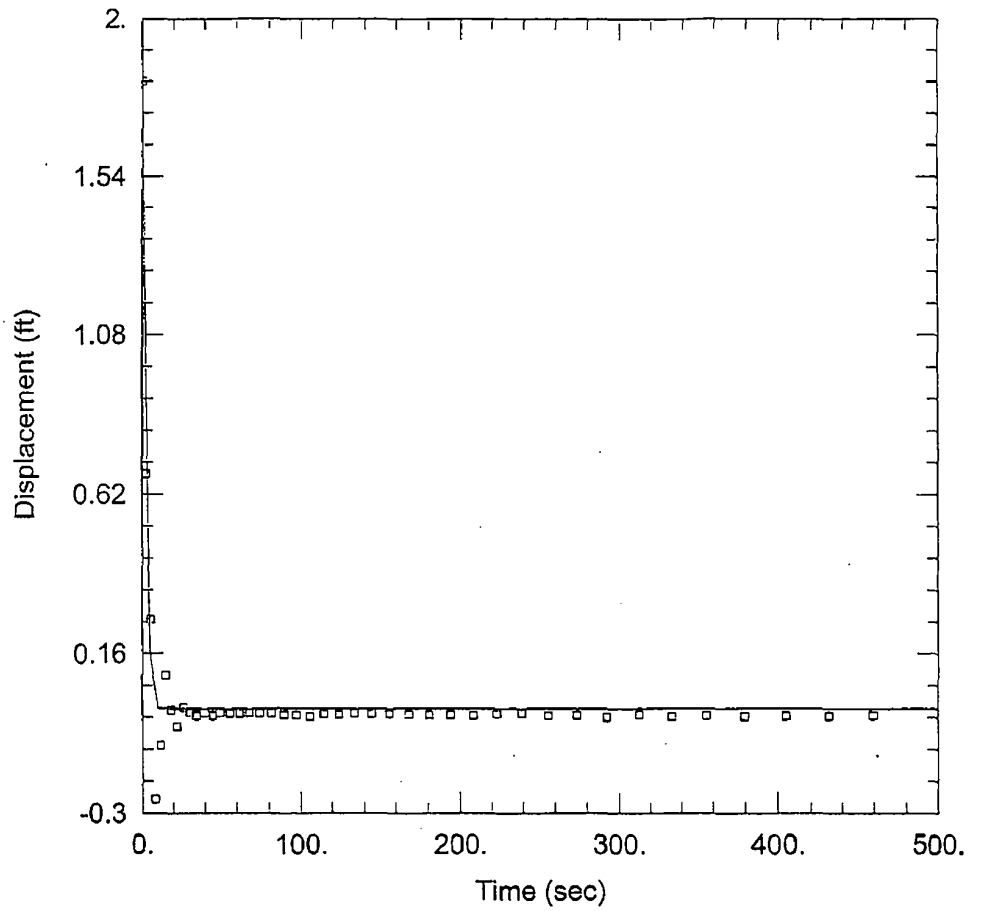
Initial Displacement: 1.013 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.6 ft
Screen Length: 16.2 ft
Well Radius: 0.29 ft

SOLUTION

Aquifer Model: Confined
Solution Method: McElwee-Zenner

K = 117.8 ft/day
A = 0.
ß = -22.15 ft
v(0) = 0. ft/day

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date: 6-[illegible]-08



OW-606 L RISING HEAD TEST 5-18-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 L
Test Date: 5-18-08

AQUIFER DATA

Saturated Thickness: 92. ft
Anisotropy Ratio (Kz/Kr): 1.

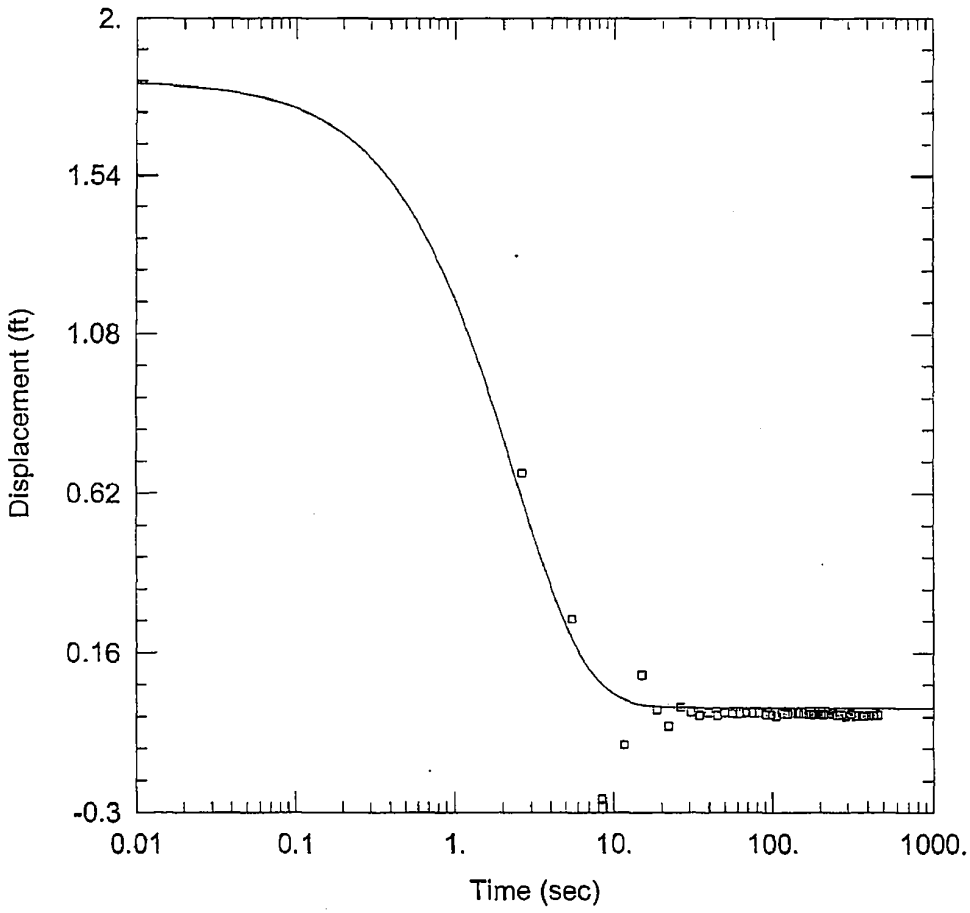
WELL DATA (OW-606 L)

Initial Displacement: 1.817 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.6 ft
Screen Length: 16.2 ft
Well Radius: 0.29 ft

SOLUTION

Aquifer Model: Confined
K = 30.16 ft/day
Solution Method: Butler
Le = 58.94 ft

Prepared by: CMB Date: 6-20-08
Checked by: LaSc Date: 6-26-08



OW-606 L RISING HEAD TEST 5-18-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 L
Test Date: 5-18-08

AQUIFER DATA

Saturated Thickness: 92. ft

WELL DATA (OW-606 L)

Initial Displacement: 1.817 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.6 ft
Screen Length: 16.2 ft
Well Radius: 0.29 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model
Kr = 35.04 ft/day
Kz/Kr = 1.
Ss = 1.087E-12 ft^{-1}

Checked by: CHB Date: 6-20-08

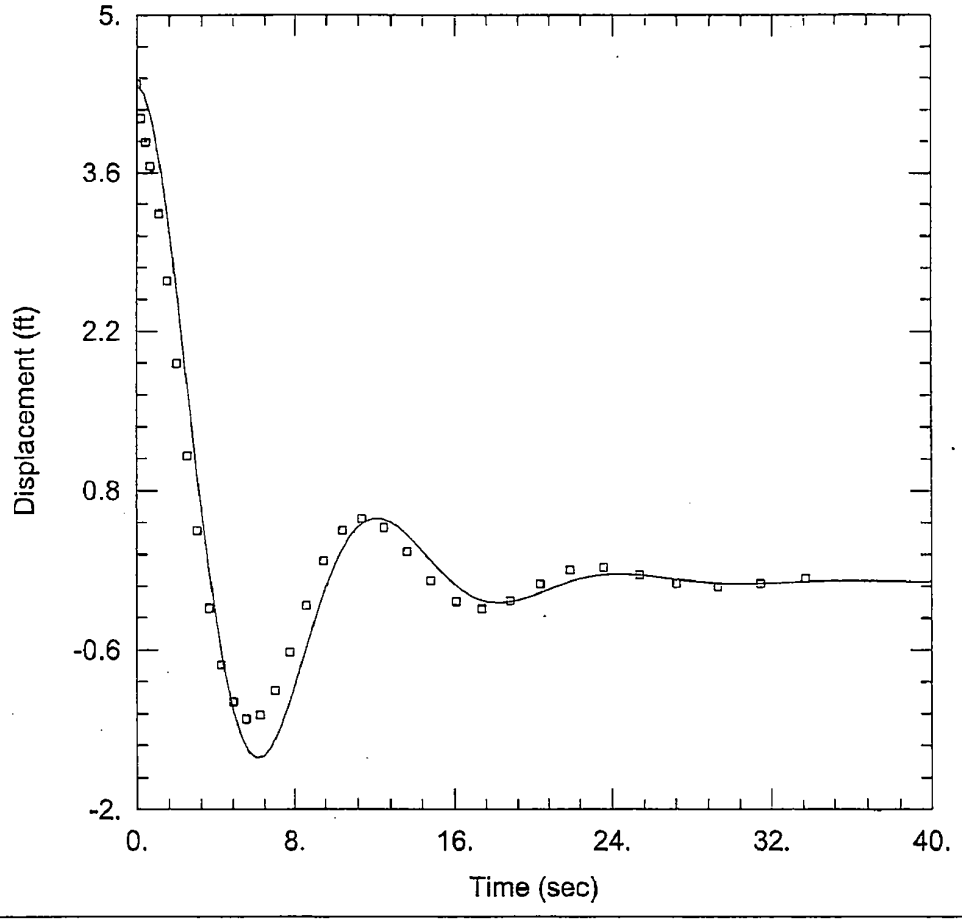
MACTEC

SLUG TEST REPORT

Project Name: TPCOL	Project Number: 4468-07-1950	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-606L	MACTEC Rep: Kim Charles-Smith	Date: 05/20/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.14'		
Static Water Level	3.07' feet		
Total Well Depth	111.31' feet		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (rsq)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Mini Troll Transducer probe calibrated 4/29/08, Exp 4/29/09 SN: 118478 level Troll @ 700 Winsitu		
Slug Data	USED pneumatic Slug to perform test.		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-606L BG	NA	OW-606L R
Start Time	12:16:04		12:25:30
End Time	12:17:59		12:26:09
Notes			

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-606 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 L
Test Date: 5-18-08

AQUIFER DATA

Saturated Thickness: 92. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-606 L)

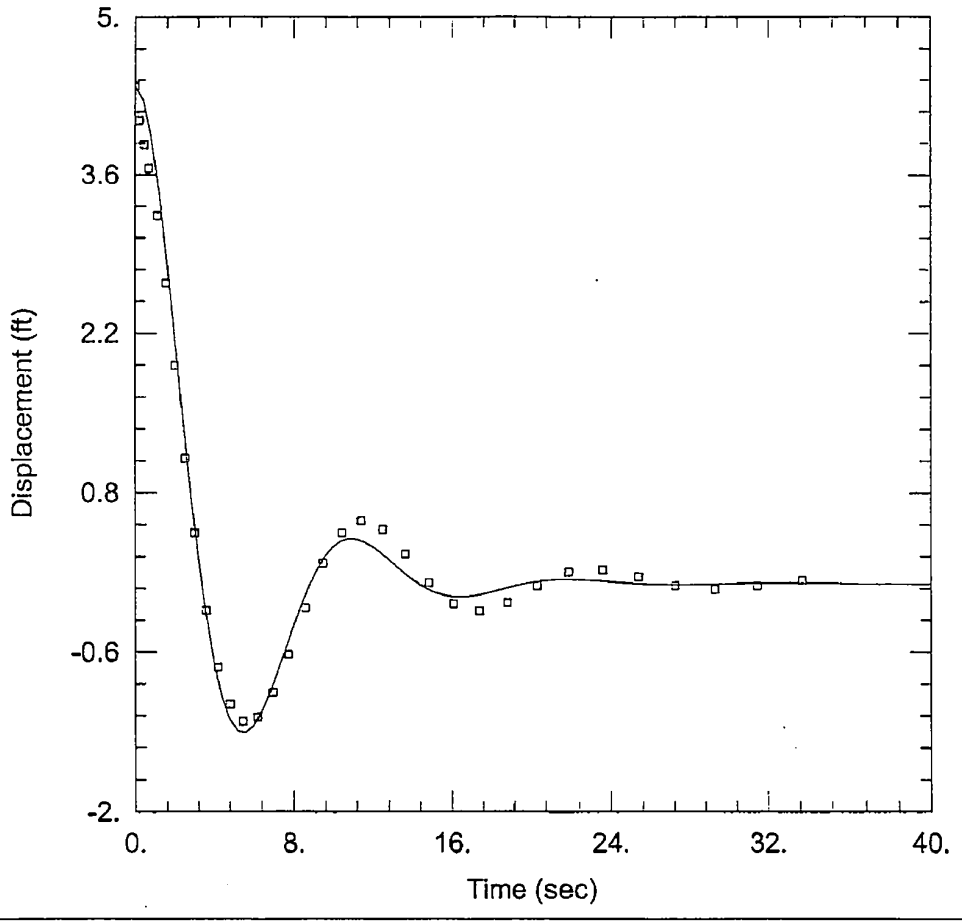
Initial Displacement: 4.388 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.7 ft
Screen Length: 16.2 ft
Well Radius: 0.29 ft

SOLUTION

Aquifer Model: Confined
Solution Method: McElwee-Zenner

K = 66.13 ft/day
A = 0.
ß = 2.736E-317 ft
v(0) = 0. ft/day

Prepared by: CHB Date: 6-20-08
Checked by: WSB Date: 6-20-08



OW-606 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-606 L
Test Date: 5-18-08

AQUIFER DATA

Saturated Thickness: 92. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-606 L)

Initial Displacement: 4.388 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.7 ft
Screen Length: 16.2 ft
Well Radius: 0.29 ft

SOLUTION

Aquifer Model: Confined
K = 67.4 ft/day
Solution Method: Butler
Le = 85.16 ft

Checked by: CHB Date: 6-20-08

MACTEC

SLUG TEST REPORT

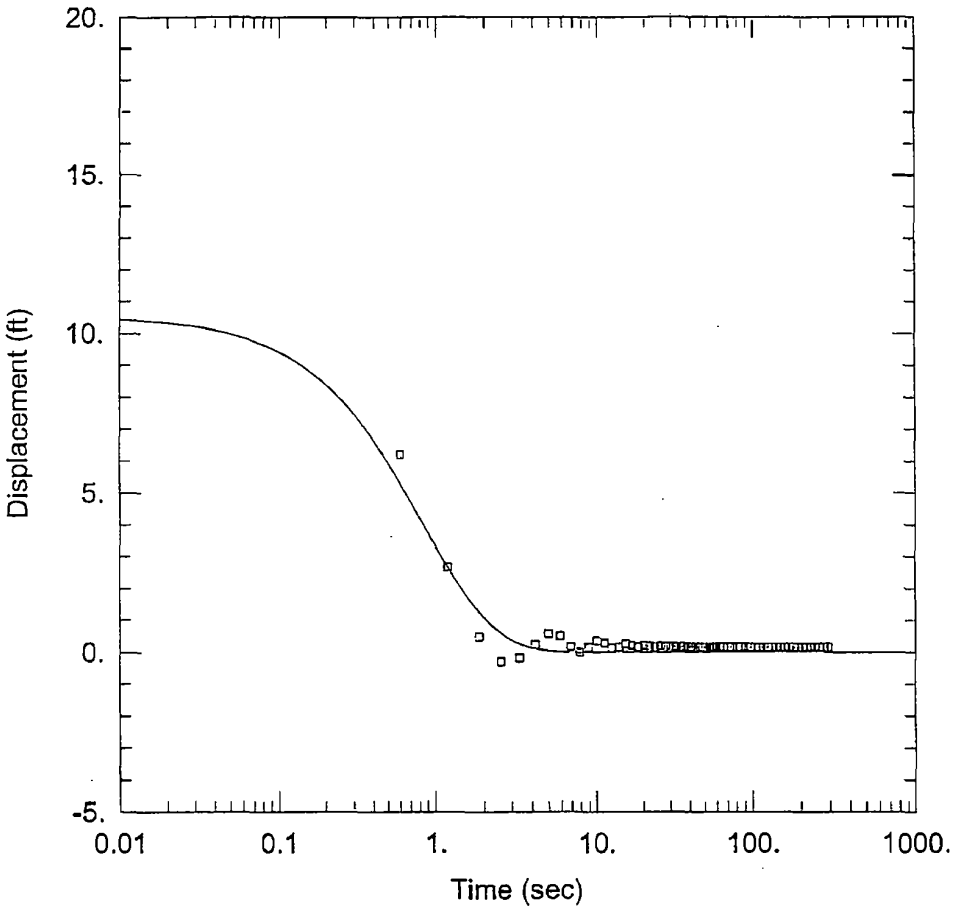
Project Name: TPCOL	6468-07-1950 Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-621U	MACTEC Rep: Kim Charles-Smith	Date: 05/20/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.77' from GS.		
Static Water Level	5.74' feet From TOC		
Total Well Depth	32.36' feet From TOC		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Mini Troll Transducer probe Cal 4/29/08, Exp 4/29/09. SN: 118478 Level Troll® 700 Winsitu		
Slug Data	Used pneumatic slug to perform Slug test.		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-621UBG	NA	OW-621UR
Start Time	14:55:02		15:01:55
End Time	14:56:38		15:06:56

Notes

Rev D

Prepared by: CHB Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-621 U RISING HEAD TEST

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 U
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 27.56 ft

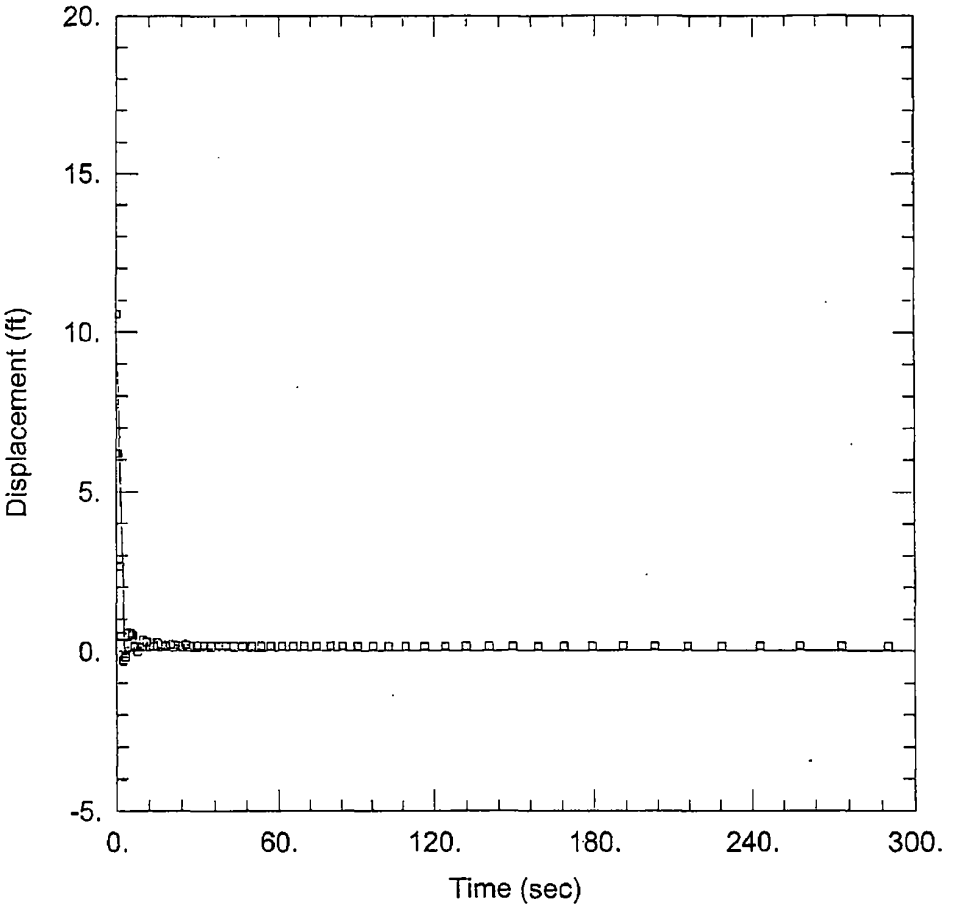
WELL DATA (OW-621 U)

Initial Displacement: 10.56 ft
Total Well Penetration Depth: 30. ft
Casing Radius: 0.083 ft
Static Water Column Height: 27.56 ft
Screen Length: 15.6 ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model
Kr = 94.35 ft/day
Kz/Kr = 1.
Ss = 3.846E-12 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: WSH Date: 6-20-08



OW-621 U RISING HEAD TEST

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 U
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 27.56 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-621 U)

Initial Displacement: 10.56 ft
Total Well Penetration Depth: 30. ft
Casing Radius: 0.083 ft
Static Water Column Height: 27.56 ft
Screen Length: 15.6 ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Unconfined
K = 68.89 ft/day
Solution Method: Springer-Gelhar
Le = 7.075 ft

Checked by: DHB Date: 6-20-08

MACTEC

SLUG TEST REPORT

Project Name: TPCOL	Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-621L	MACTEC Rep: Kim Chalo-Smith	Date: 05/17/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.27' from g.s.		
Static Water Level	4.13' feet From TOC		
Total Well Depth	111.55' feet From TOC		
Static Water Column Height (H)	107.42' feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (rep)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	Mini Troll Transducer Calibrated: 4/29/08 Exp. 4/29/09		
Probe Serial Number	SN: 103345		
Slug Data Slug #2			
Length	65.438 inches		
weight	8.811 lbs.		
Diameter	1.662 inches		
Slug Test File	Background	Falling	Rising
File Name	OW-621L BG	OW-621L F	OW-621L R
Start Time	13:08:51	13:19:05	13:34:46
End Time	13:15:32	13:31:41	13:43:41

Notes

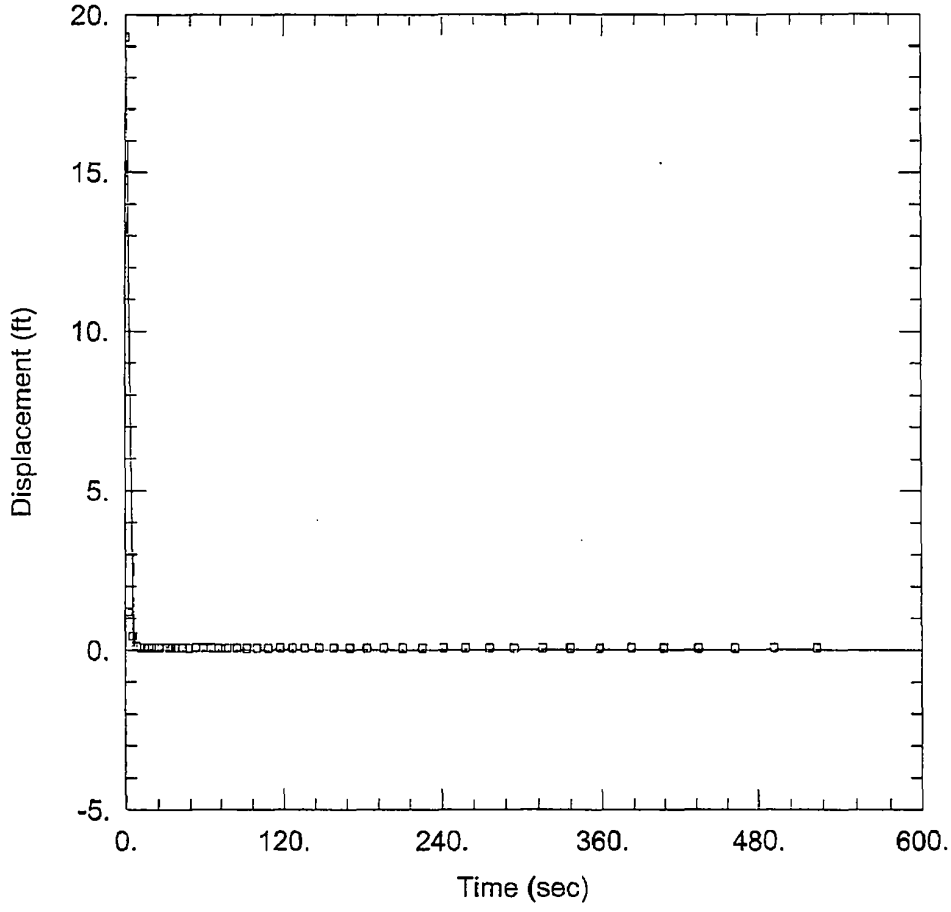
KH 5-17-08

Put Slug in well and re-run OW-621L R BG

OW-621L BG	OW-621L R (Re-test)
13:49:25	14:03:14
13:59:51	14:20:02

Rev 0

Prepared by: CKB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-621 L FALLING HEAD TEST 5-17-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 L
Test Date: 5-17-08

AQUIFER DATA

Saturated Thickness: 88.5 ft
Anisotropy Ratio (Kz/Kr): 1.

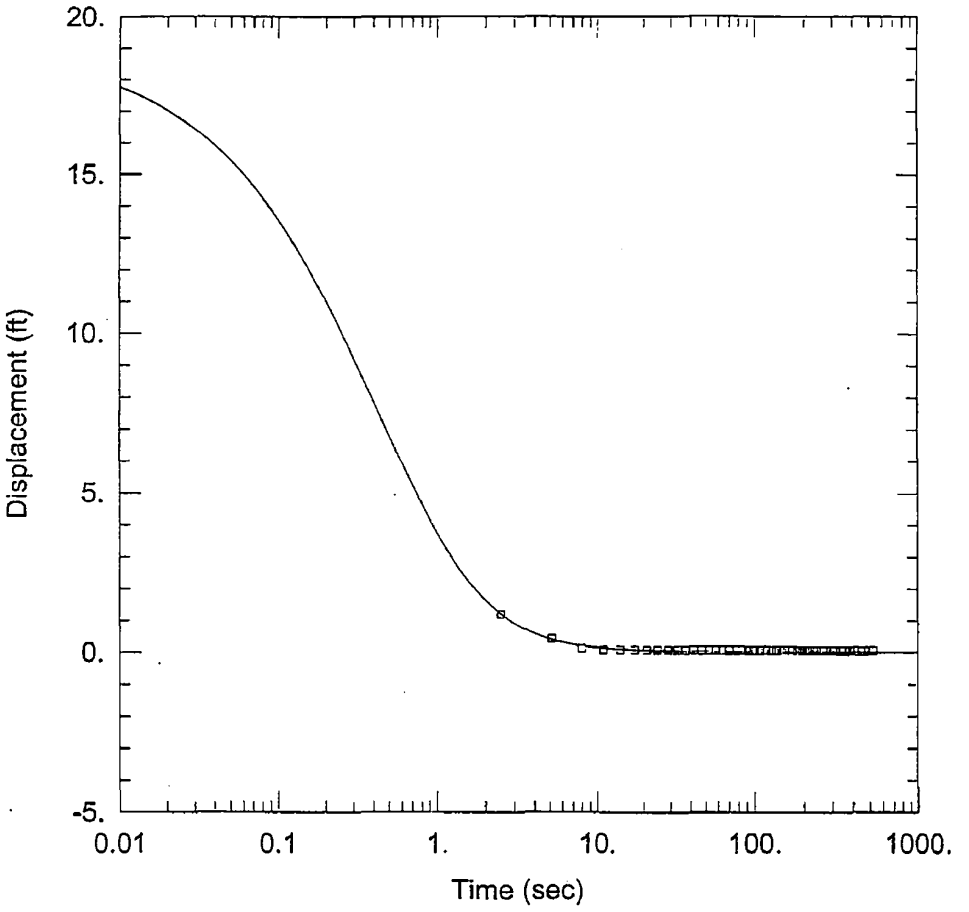
WELL DATA (OW-621 L)

Initial Displacement: 19.29 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.9 ft
Screen Length: 15. ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Confined
K = 91.59 ft/day
Solution Method: Butler
Le = 0.1 ft

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-621 L FALLING HEAD TEST 5-17-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 L
Test Date: 5-17-08

AQUIFER DATA

Saturated Thickness: 88.5 ft

WELL DATA (OW-621 L)

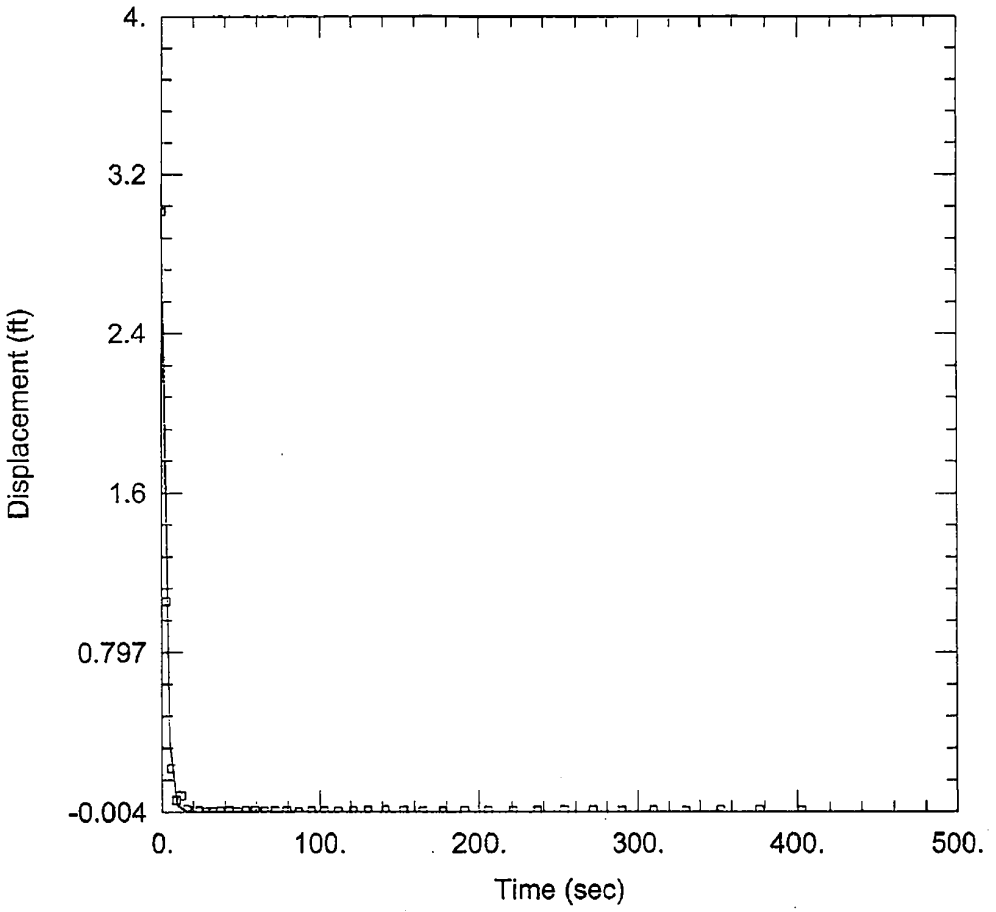
Initial Displacement: 19.29 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.9 ft
Screen Length: 15. ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model

Kr = 71.28 ft/day
Kz/Kr = 1.
Ss = 0.0001716 ft^{-1}

Prepared by: CAB Date: 6-20-08
Checked by: LWS Date: 6-20-08



OW-621 L RISING HEAD TEST 5-17-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 L
Test Date: 5-17-08

AQUIFER DATA

Saturated Thickness: 88.5 ft
Anisotropy Ratio (Kz/Kr): 1.

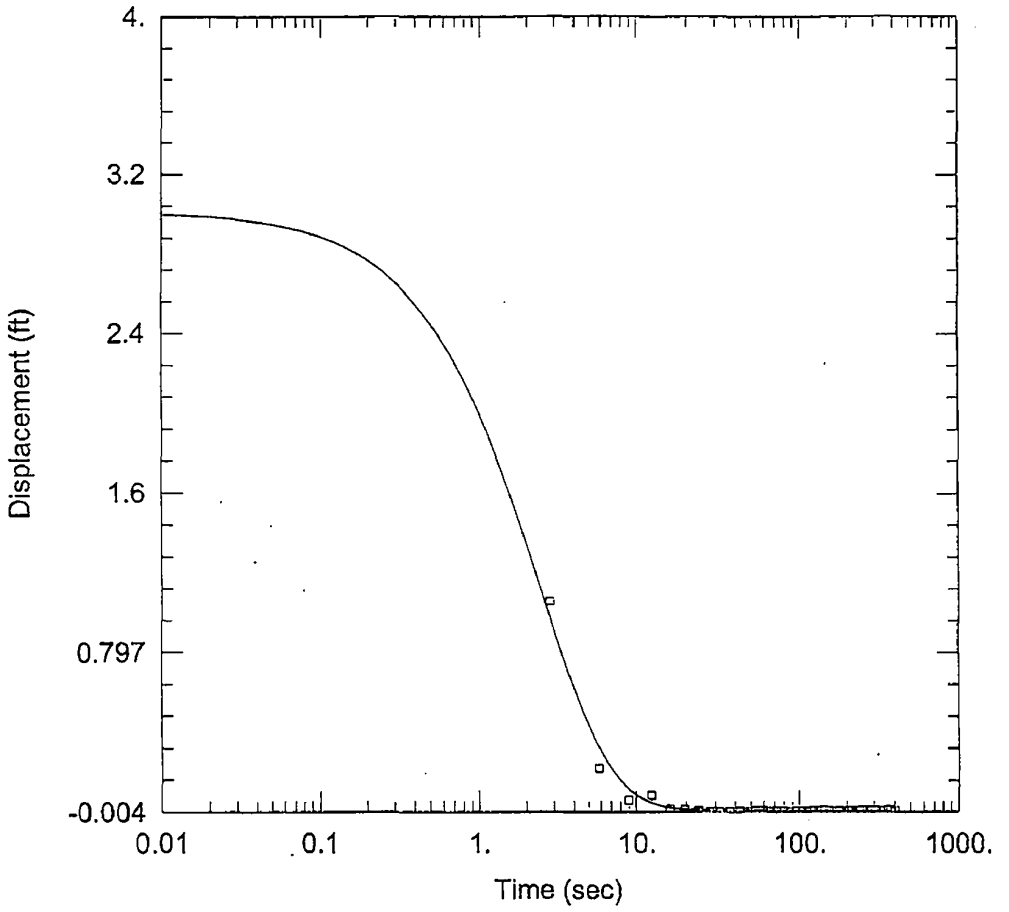
WELL DATA (OW-621 L)

Initial Displacement: 3.011 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.9 ft
Screen Length: 15. ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Confined
K = 31.07 ft/day
Solution Method: Butler
Le = 41.67 ft

Prepared by: CHR Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-621 L RISING HEAD TEST 5-17-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 L
Test Date: 5-17-08

AQUIFER DATA

Saturated Thickness: 88.5 ft

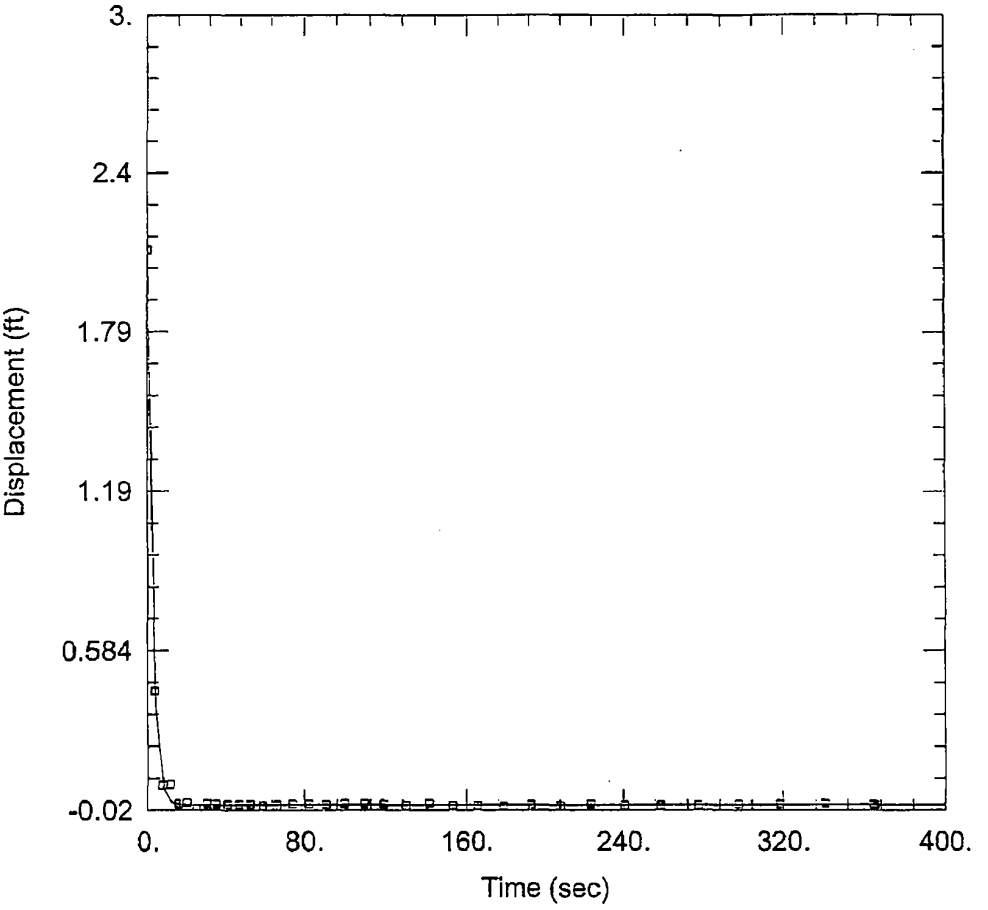
WELL DATA (OW-621 L)

Initial Displacement: 3.011 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.9 ft
Screen Length: 15. ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model
Kr = 33.31 ft/day
Kz/Kr = 1.
Ss = 1.13E-12 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: CSY Date: 6-30-08



OW-621 L RISING HEAD TEST # 2 5-17-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 L
Test Date: 5-17-08

AQUIFER DATA

Saturated Thickness: 88.5 ft
Anisotropy Ratio (Kz/Kr): 1.

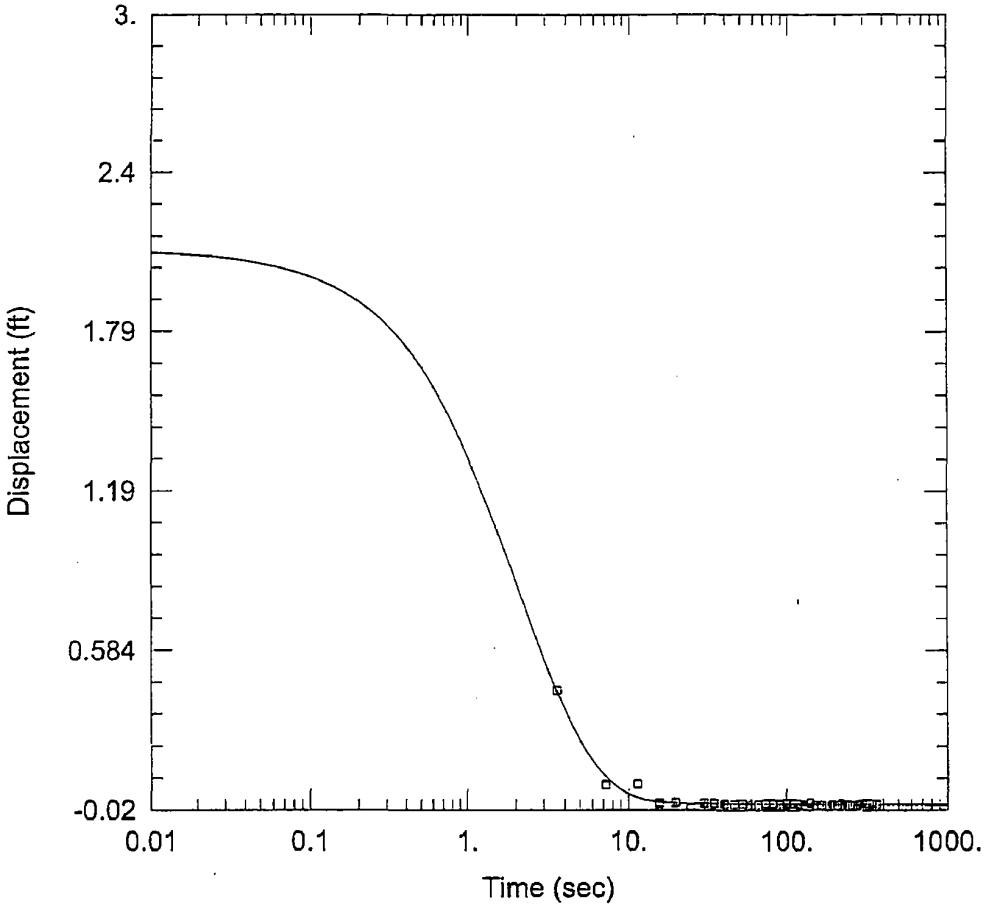
WELL DATA (OW-621 L)

Initial Displacement: 2.103 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.9 ft
Screen Length: 15. ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Confined
K = 35.72 ft/day
Solution Method: Butler
Le = 0.1 ft

Prepared by: CKB Date: 6-20-08
Checked by: LWL Date: 6-20-08



OW-621 L RISING HEAD TEST # 2 5-17-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 L
Test Date: 5-17-08

AQUIFER DATA

Saturated Thickness: 88.5 ft

WELL DATA (OW-621 L)

Initial Displacement: 2.103 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.9 ft
Screen Length: 15. ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model
Kr = 30.4 ft/day
Kz/Kr = 1.
Ss = 5.781E-8 ft^{-1}

Checked by: DHB Date: 6-20-08

MACTEC

SLUG TEST REPORT

Project Name: TPCOL	644608-07-1950 Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-621L	MACTEC Rep: Kim Chrds-Smith	Date: 05/20/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final stickup = 3.27'		
Static Water Level	4.71' feet From TOC		
Total Well Depth	111.55' feet From TOC		
Static Water Column Height (H)	feet		

	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA		

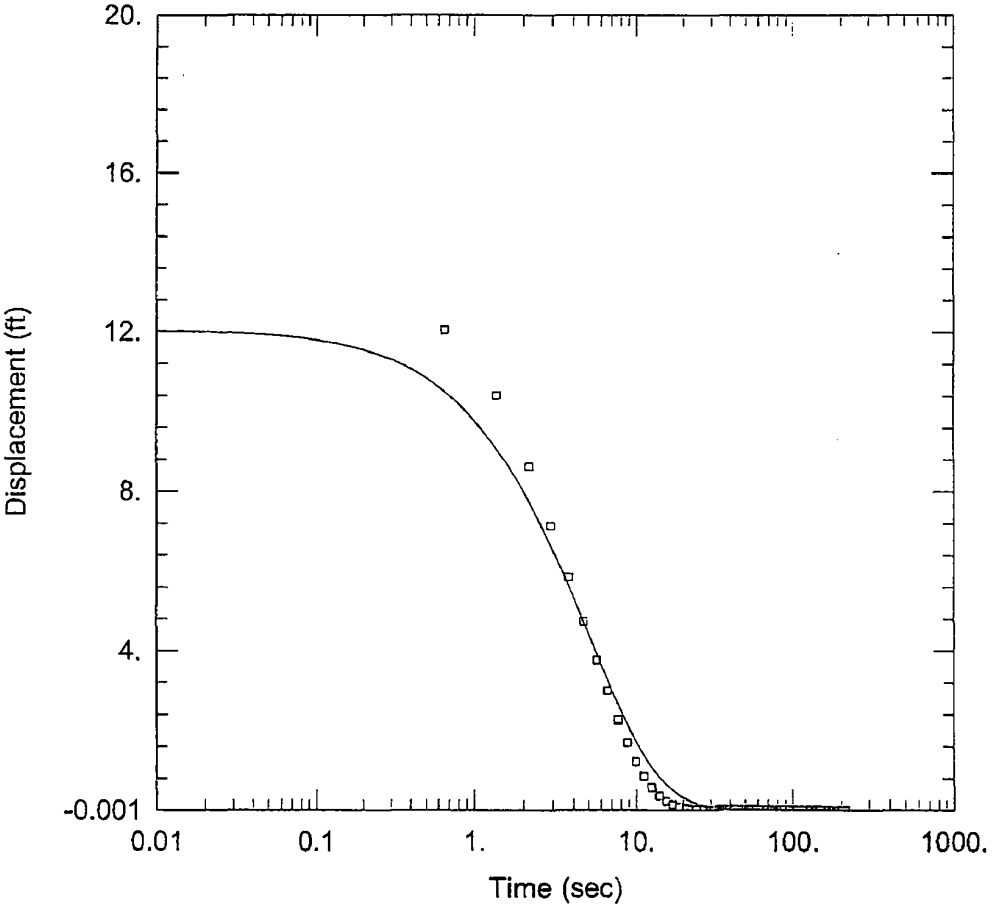
Saturated Thickness (b)	feet
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1
Depth to Top of Well Screen (d)	
Length of Well Screen (L)	10' feet
Radius of Well Casing (rc)	0.083 feet
Radius of Screen (rw)	0.083 feet
Radius of Probe (req)	
Radius of Boring (rsk) Skin Effect	0.083 feet
Probe Serial Number	Mini Troll Transducer probe calibrated 4/29/08, Exp 4/29/09. SN: 118478 Level Troll @ 700 WinSitu
Slug Data	Used pneumatic slug to perform test.
Length	
weight	
Diameter	

Slug Test File	Background	Falling	Rising
File Name	OW-621L BG	NA	OW-621L R
Start Time	15:14:40		15:22:48
End Time	15:17:33		15:26:44

Notes

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: LG Date: 6-20-08



OW-621 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 L
Test Date: 5-17-08

AQUIFER DATA

Saturated Thickness: 88.5 ft

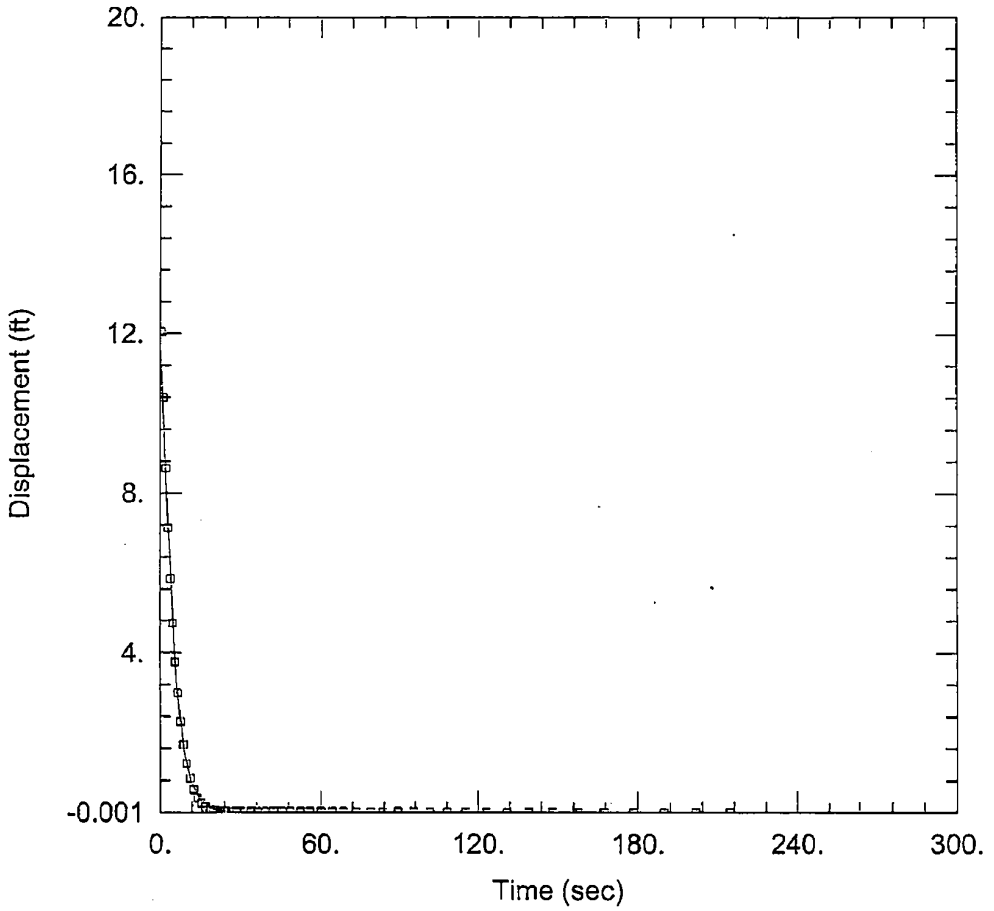
WELL DATA (OW-621 L)

Initial Displacement: 12.05 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.3 ft
Screen Length: 15. ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model
Kr = 16.66 ft/day
Kz/Kr = 1.
Ss = 1.13E-12 ft^{-1}

Prepared by: CKB Date: 6-20-08
Checked by: Lwse Date: 6-20-08



OW-621 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-621 L
Test Date: 5-17-08

AQUIFER DATA

Saturated Thickness: 88.5 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-621 L)

Initial Displacement: 12.05 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 108.3 ft
Screen Length: 15. ft
Well Radius: 0.3 ft

SOLUTION

Aquifer Model: Confined
K = 16.65 ft/day
Solution Method: Butler
Le = 117.9 ft

Checked by: CHB Date: 6-20-08

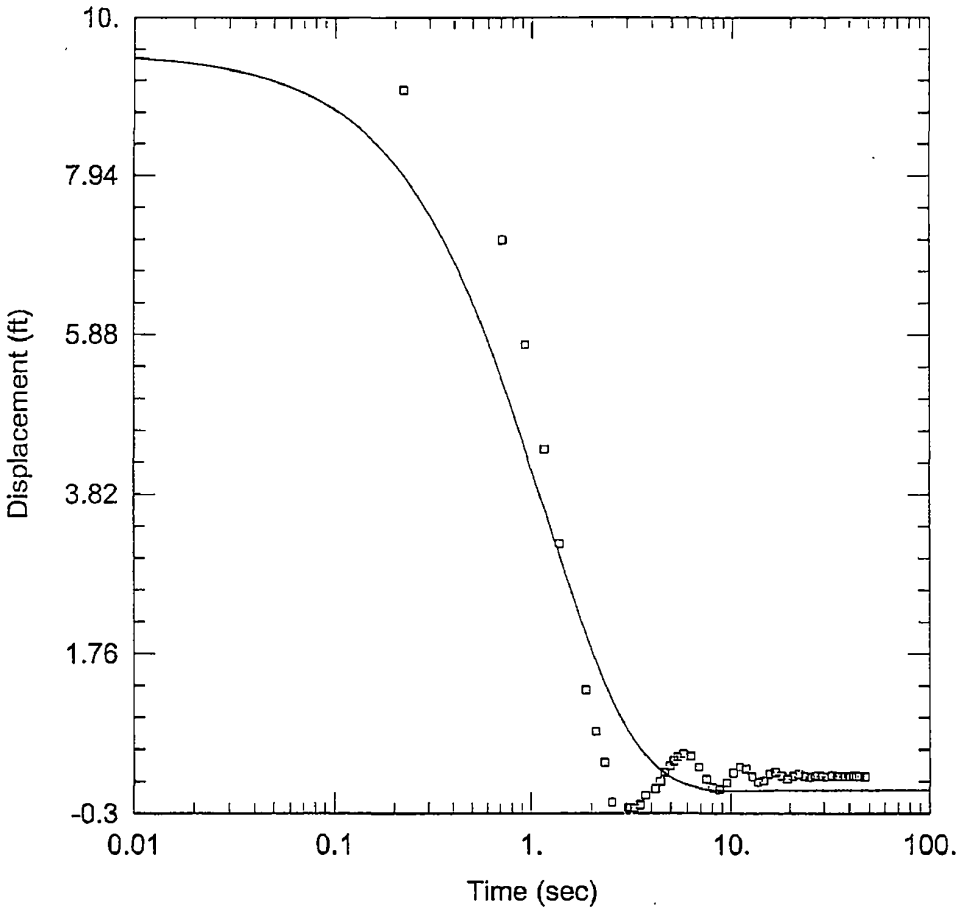
MACTEC

SLUG TEST REPORT

Project Name: PCOL	Project Number: 6168-07-1858	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-636 U	MACTEC Rep: CHB	Date: 5/21/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data			
Static Water Level	4.35 feet		
Total Well Depth	31.35 feet		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA	NA	
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)	0.75 inch		
Radius of Boring (rsk) Skin Effect	0.083 feet		
	Level troll @ 700 calibrated 4/29/08 Exp 4/29/09		
Probe Serial Number SN:	118478 Winsitu		
Slug Data	pneumatic Slug		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-636 UB6	NA	OW-636 UR OW-636 UR Test 2
Start Time			
End Time			
Notes	OW-636 UB6 OW-636 UR Test 12:05:37 12:10:35 12:06:27 12:11:13		

Rev 0

Prepared by: CHP Date: 6-20-08
Checked by: [illegible] Date: 6-[illegible]-08



OW-636 U RISING HEAD TEST 5-21-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-636 U
Test Date: 5-21-08

AQUIFER DATA

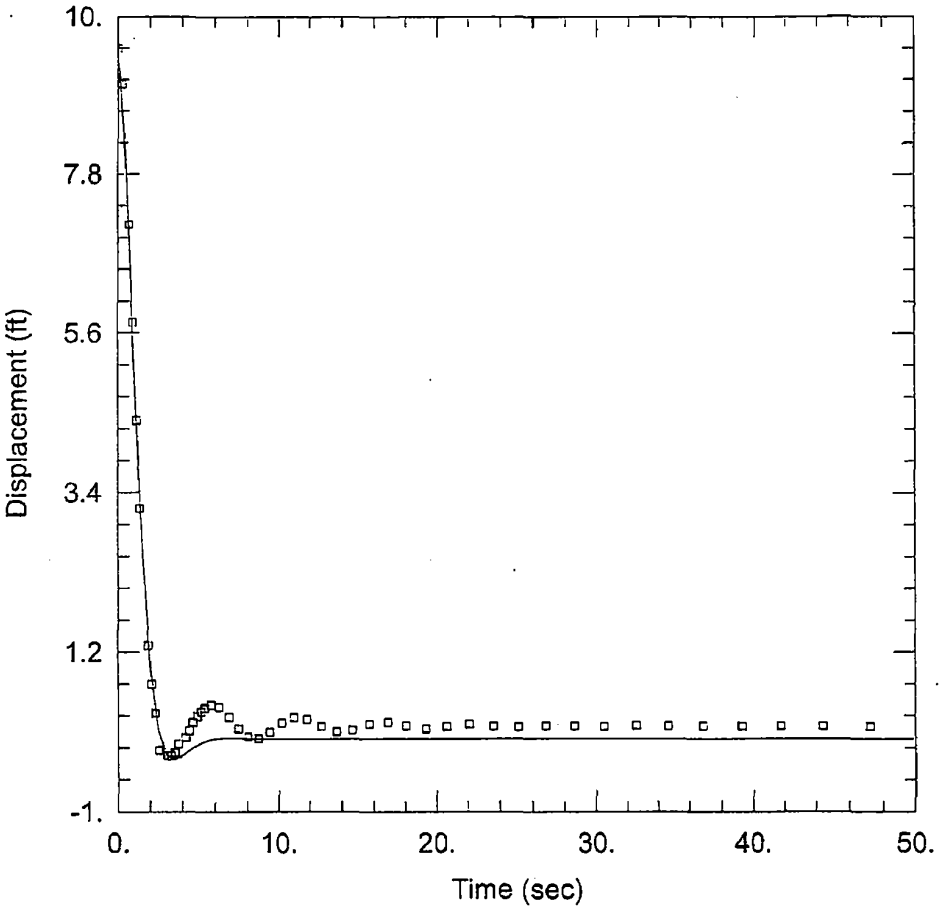
Saturated Thickness: 28.85 ft

WELL DATA (OW-636 U)

Initial Displacement: 9.553 ft
Total Well Penetration Depth: 29.8 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.85 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model
Kr = 57.27 ft/day
Kz/Kr = 1.
Ss = 3.846E-12 ft^{-1}



OW-636 U RISING HEAD TEST 5-21-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-636 U
Test Date: 5-21-08

AQUIFER DATA

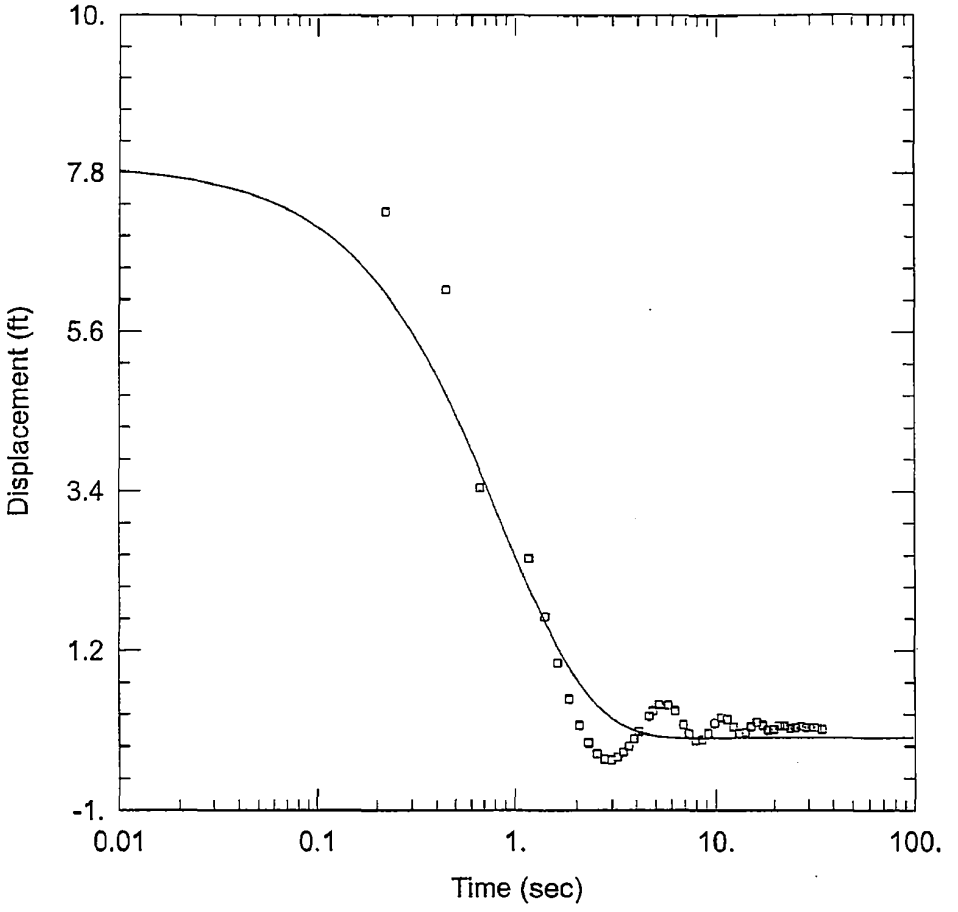
Saturated Thickness: 28.85 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-636 U)

Initial Displacement: 9.553 ft
Total Well Penetration Depth: 29.8 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.85 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 50.64 ft/day
Solution Method: Springer-Gelhar
Le = 17.14 ft



OW-636 U RISING HEAD TEST # 2 5-21-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-636 U
Test Date: 5-21-08

AQUIFER DATA

Saturated Thickness: 28.85 ft

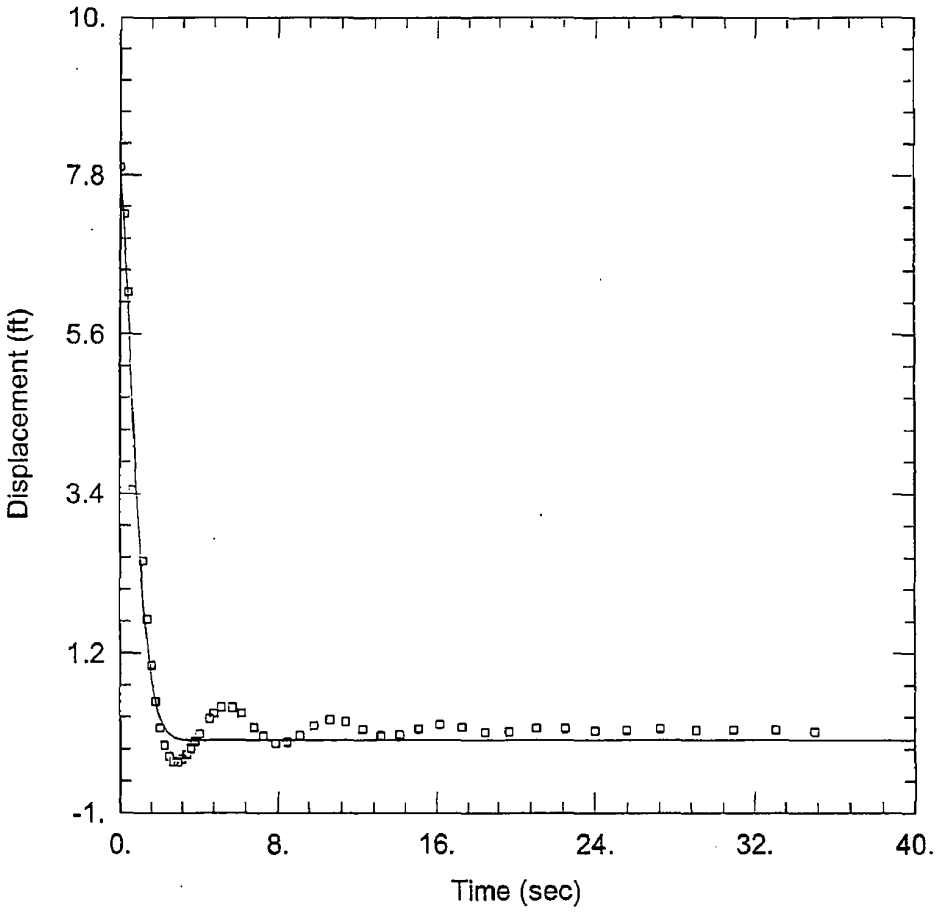
WELL DATA (OW-636 U)

Initial Displacement: 7.909 ft
Total Well Penetration Depth: 29.8 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.85 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Kr = 79.27 ft/day
Kz/Kr = 1.
Solution Method: KGS Model
Ss = 3.846E-12 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-636 U RISING HEAD TEST # 2 5-21-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-636 U
Test Date: 5-21-08

AQUIFER DATA

Saturated Thickness: 28.85 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-636 U)

Initial Displacement: 7.909 ft
Total Well Penetration Depth: 29.8 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.85 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 64.33 ft/day
Solution Method: Springer-Gelhar
Le = 6.95 ft

Checked by: CHB Date: 6-20-08

MACTEC

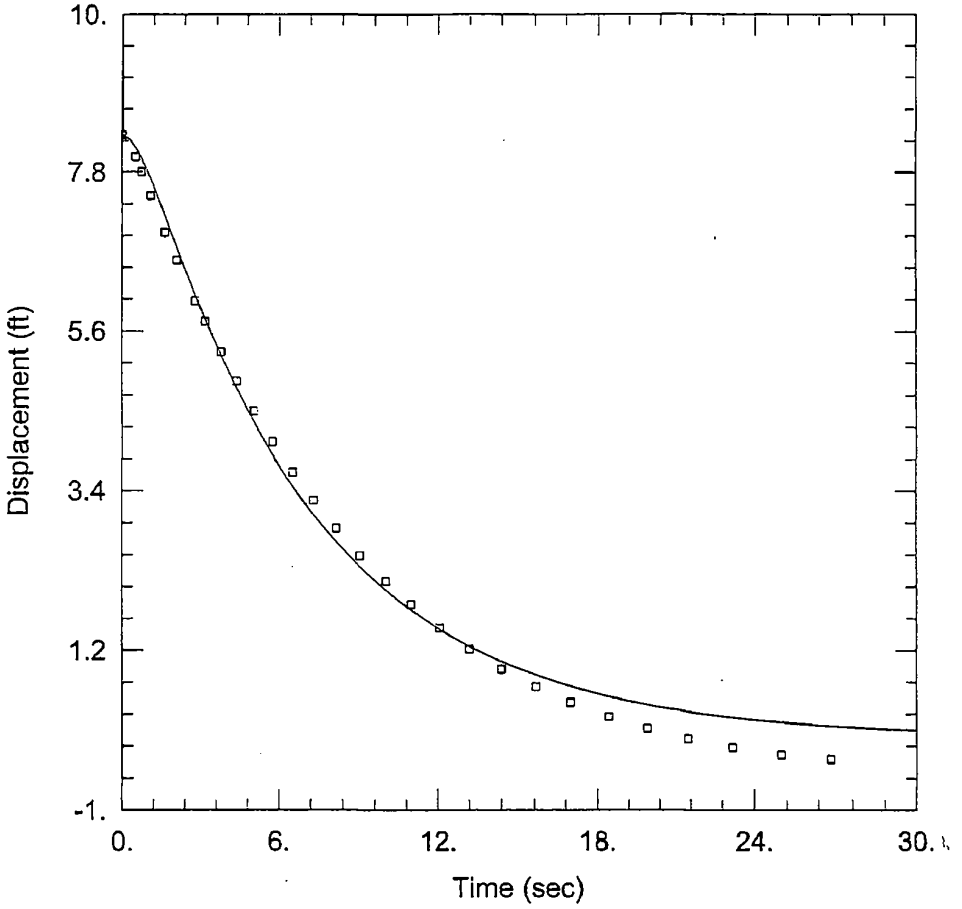
SLUG TEST REPORT

Project Name: TP COL	Project Number: 6468-07-1809	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-636 L	MACTEC Rep: CHB	Date: 5/21/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data			
Static Water Level	2.74 feet		
Total Well Depth	111.75 feet		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA	NA	
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	feet		
Radius of Well Casing (rc)	10' 0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Mini Troll © 700 calibrated 4/29/08, exp 4/29/09 Sn: 118478 Winsitu		
Slug Data	pneumatic slug		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-636 L BG	NA	OW-636a L R OW-636 2 R Test 2
Start Time	12:23:14		
End Time	12:29:22		
Notes	OW-636L R 12:32:42 12:33:15 OW-636L R Test 12:38:53 12:42:14		

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: WSC Date: 6-2008



OW-636 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-636 L
Test Date: 5-21-08

AQUIFER DATA

Saturated Thickness: 88. ft
Anisotropy Ratio (Kz/Kr): 1.

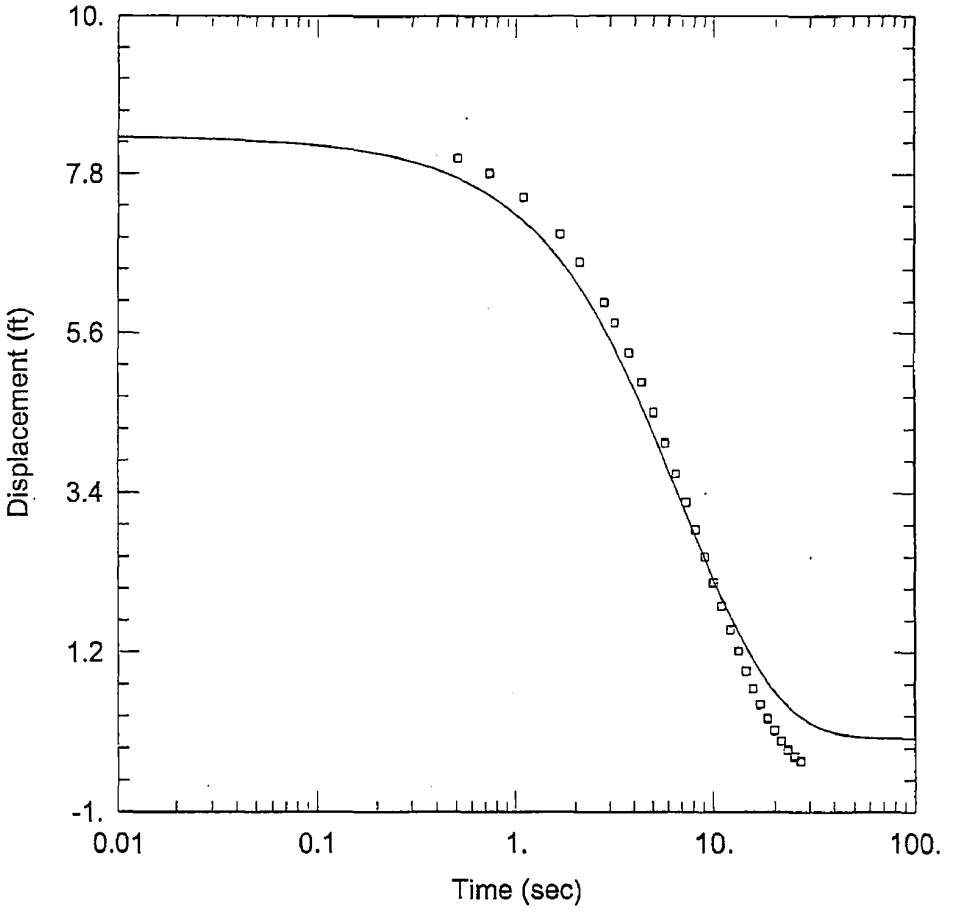
WELL DATA (OW-621 L)

Initial Displacement: 8.321 ft
Total Well Penetration Depth: 111. ft
Casing Radius: 0.083 ft
Static Water Column Height: 111.7 ft
Screen Length: 17.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 10.08 ft/day
Solution Method: Butler
Le = 158.1 ft

Prepared by: CHB Date: 6-20-08
Checked by: WSP Date: 6-20-08



OW-636 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-636 L
Test Date: 5-21-08

AQUIFER DATA

Saturated Thickness: 88. ft

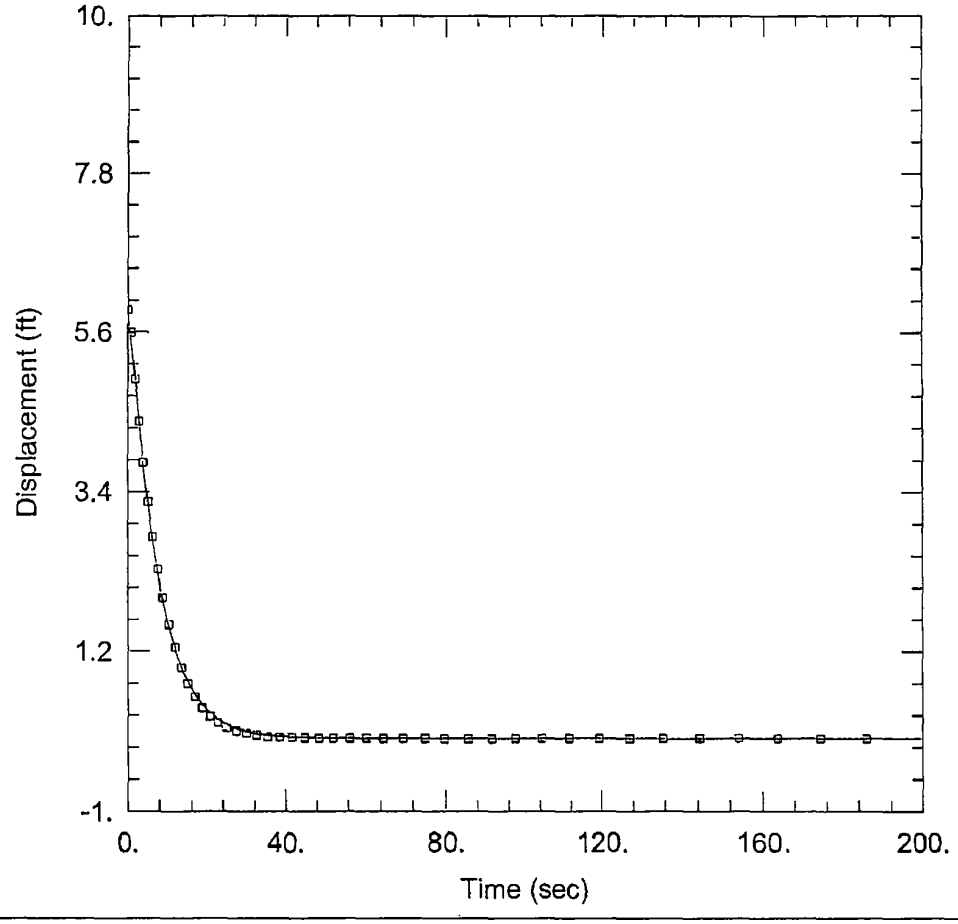
WELL DATA (OW-636 L)

Initial Displacement: 8.321 ft
Total Well Penetration Depth: 111. ft
Casing Radius: 0.083 ft
Static Water Column Height: 111.7 ft
Screen Length: 17.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model
Kr = 10.58 ft/day
Kz/Kr = 1.
Ss = 1.13E-12 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-636 L RISING HEAD TEST # 2 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-636 L
Test Date: 5-21-08

AQUIFER DATA

Saturated Thickness: 88. ft
Anisotropy Ratio (Kz/Kr): 1.

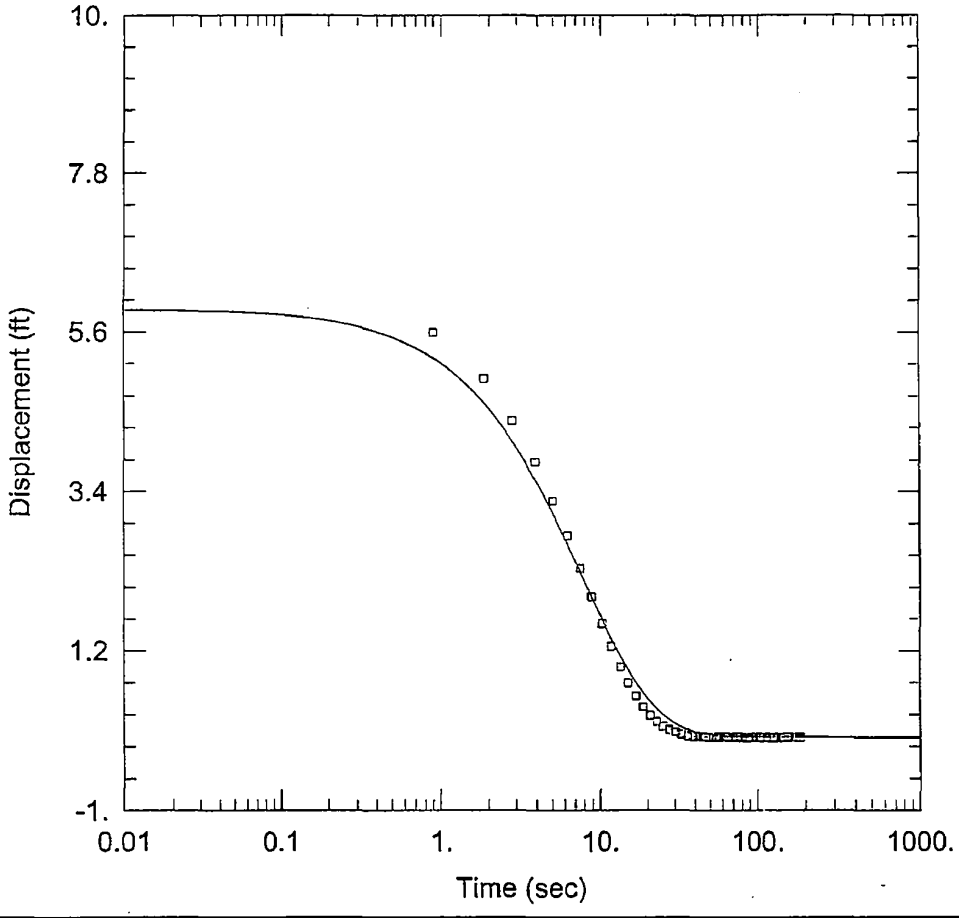
WELL DATA (OW-621 L)

Initial Displacement: 5.913 ft
Total Well Penetration Depth: 111. ft
Casing Radius: 0.083 ft
Static Water Column Height: 111.7 ft
Screen Length: 17.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 9.425 ft/day
Solution Method: Butler
Le = 166.7 ft

Prepared by: CHR Date: 6-20-08
Checked by: WSC Date: 6-20-08



OW-636 L RISING HEAD TEST # 2 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-636 L
Test Date: 5-21-08

AQUIFER DATA

Saturated Thickness: 88. ft

WELL DATA (OW-636 L)

Initial Displacement: 5.913 ft
Total Well Penetration Depth: 111. ft
Casing Radius: 0.083 ft
Static Water Column Height: 111.7 ft
Screen Length: 17.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model
Kr = 10.01 ft/day
Kz/Kr = 1.
Ss = 1.13E-12 ft^{-1}

Checked by: CHB Date: 6-20-08

MACTEC

SLUG TEST REPORT

Project Name: TPCL	Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-706U	MACTEC Rep: Kim Clarke-Smith	Date: 05/16/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Stickup 3.61' from gs. Final		
Static Water Level	3.74' feet From TOC		
Total Well Depth	31.72' feet From TOC		
Static Water Column Height (H)	27.97' feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (reg)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	Mini Troll Transducer probe calibrated 4/29/08		
Probe Serial Number	Exp. 4/29/09.		
SN: 103345			
Slug Data Slug #2			
Length	65.438 inches		
weight	8.811 lbs.		
Diameter	1.662 inches		
Slug Test File	Background	Falling (RK 5/16/08)	Rising
File Name	OW-706UBG	OW-706UF RK 5/16/08	OW-706UR
Start Time	15:21:06	15:41:27 5/16/08	15:45:39
End Time	15:27:24	15:42:21 5/16/08	15:59:11

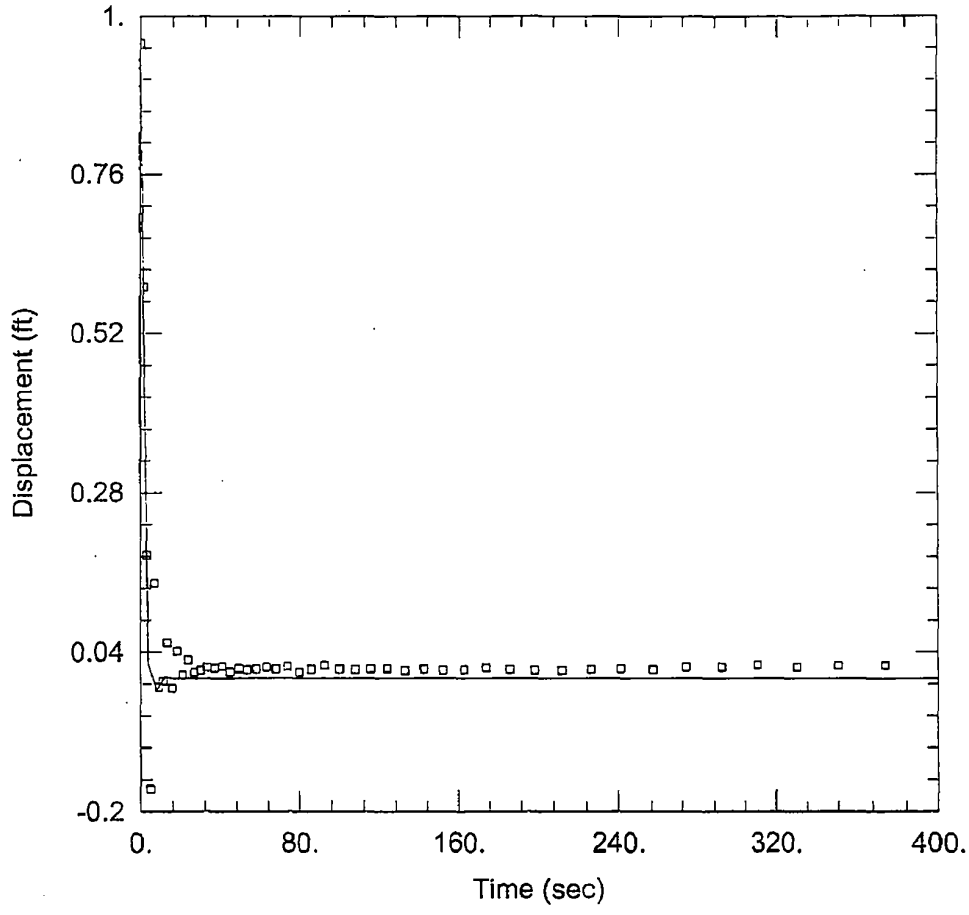
Notes: Ran 1st test Water came out of TOC, ran second test set with extention on TOC.

* Extended Casing to 5.58' above g.s. to. Run OW-706UB RK 5-16-08 Ear 16:33:34 Data Set

OW-706UBG	OW-706UF	OW-706UR
16:33:34	16:41:27	5/16/08 RK 16:57:23
16:39:31	16:53:55	17:02:05

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: LWS Date: 6-20-08



OW-706 U RISING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 U
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 30.66 ft
Anisotropy Ratio (Kz/Kr): 1.

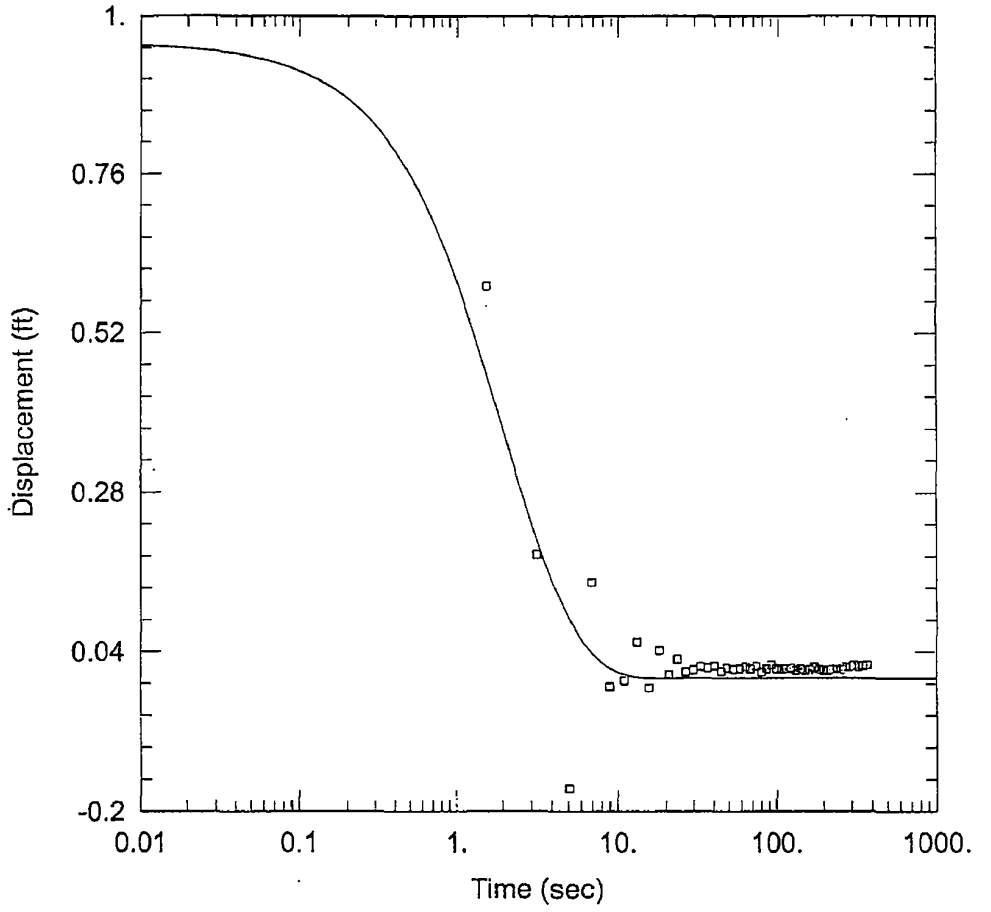
WELL DATA (OW-706 U)

Initial Displacement: 0.96 ft
Total Well Penetration Depth: 28.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.46 ft
Screen Length: 15.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 30.27 ft/day
Solution Method: Springer-Gelhar
Le = 56.23 ft

Prepared by: CHB Date: 6-20-08
Checked by: WSK Date: 6-20-08



OW-706 U RISING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 U
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 30.66 ft

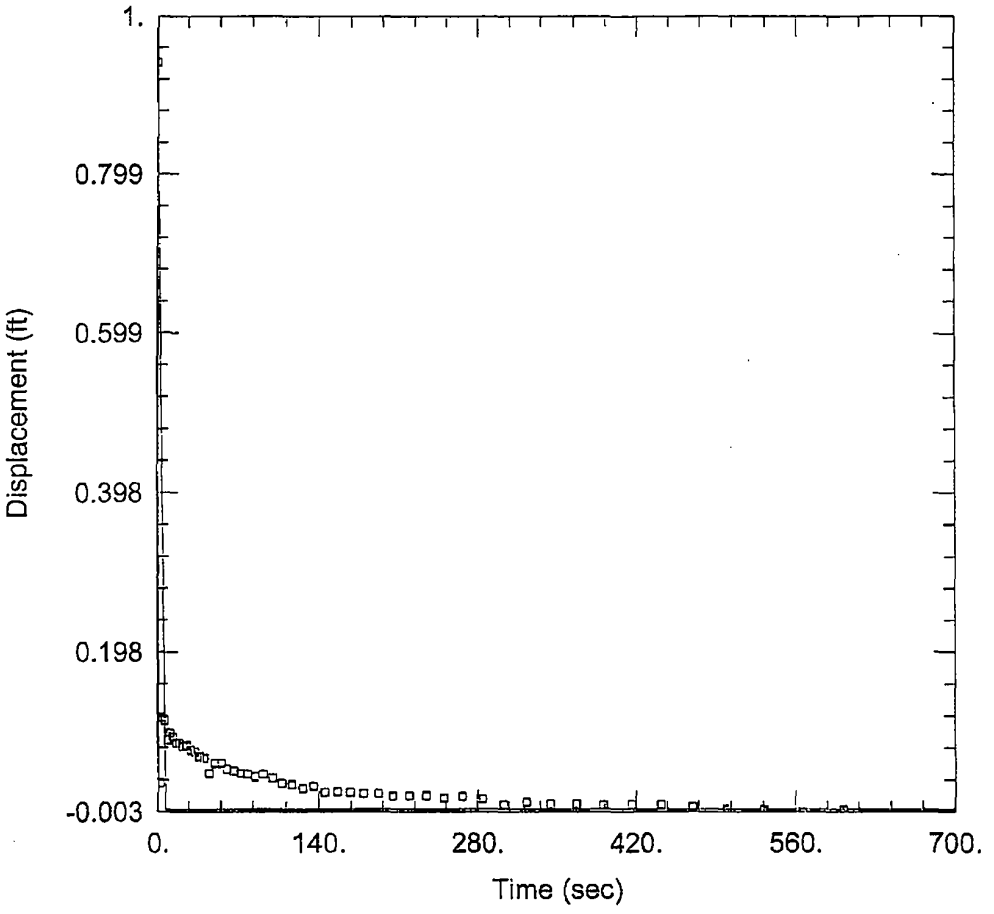
WELL DATA (OW-706 U)

Initial Displacement: 0.96 ft
Total Well Penetration Depth: 28.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.46 ft
Screen Length: 15.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model
Kr = 31.19 ft/day
Kz/Kr = 1.
Ss = 3.205E-12 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date 6-20-08



OW-706 U FALLING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 U
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 30.66 ft
Anisotropy Ratio (Kz/Kr): 1.

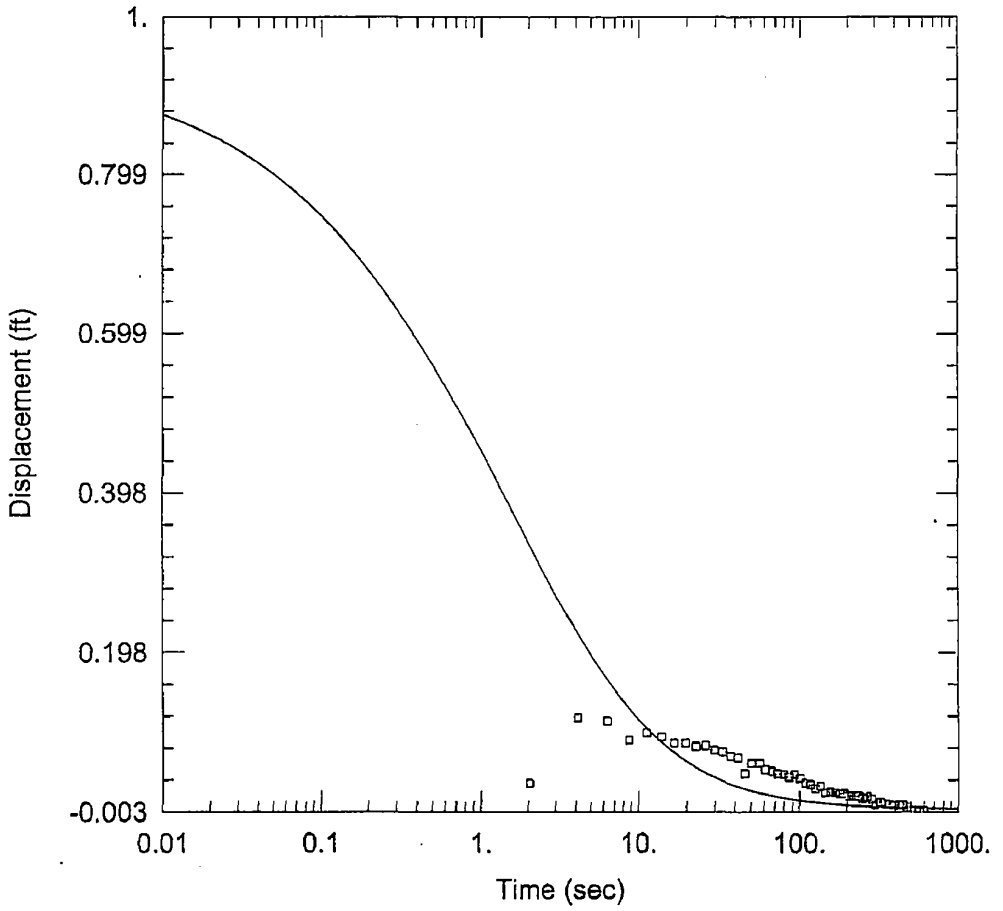
WELL DATA (OW-706 U)

Initial Displacement: 0.941 ft
Total Well Penetration Depth: 28.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.46 ft
Screen Length: 15.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 83.78 ft/day
Solution Method: Springer-Gelhar
Le = 0.1 ft

Prepared by: CHB Date: 6-30-08
Checked by: WSL Date: 6-30-08



OW-706 U FALLING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 U
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 30.66 ft

WELL DATA (OW-706 U)

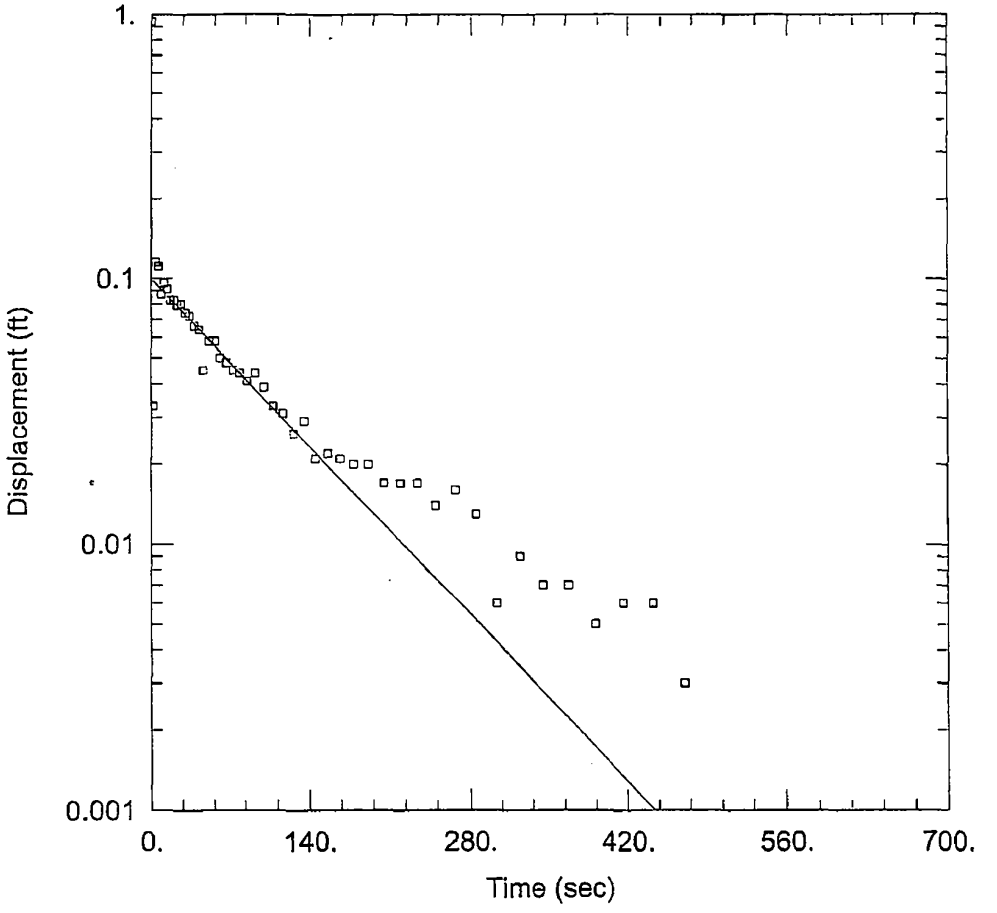
Initial Displacement: 0.941 ft
Total Well Penetration Depth: 28.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.46 ft
Screen Length: 15.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 6.423 ft/day
Kz/Kr = 1.
Ss = 0.003205 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-706 U FALLING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 U
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 30.66 ft
Anisotropy Ratio (Kz/Kr): 1.

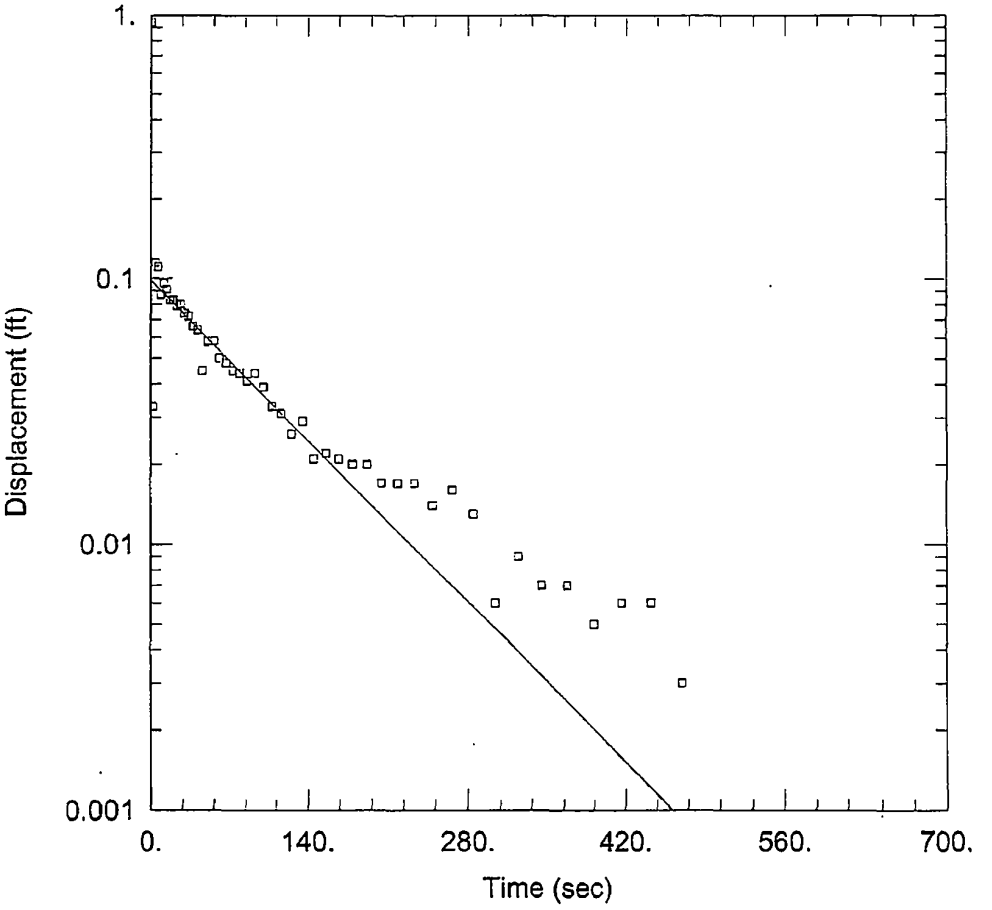
WELL DATA (OW-706 U)

Initial Displacement: 0.941 ft
Total Well Penetration Depth: 28.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.46 ft
Screen Length: 15.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Hvorslev
K = 0.7146 ft/day
y0 = 0.09968 ft

Prepared by: CHS Date: 6-20-08
Checked by: WSP Date: 6-20-08



OW-706 U FALLING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 U
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 30.66 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-706 U)

Initial Displacement: 0.941 ft
Total Well Penetration Depth: 28.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.46 ft
Screen Length: 15.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.5455 ft/day
y0 = 0.09865 ft

Checked by: CHB Date: 6-20-08

MACTEC

SLUG TEST REPORT

Project Name: TPCOL	Project Number: 6468-07-950	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-706U	MACTEC Rep: Kim Charles-Smith	Date: 05/20/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.61' From G.S.		
Static Water Level	3.74' feet From TOC		
Total Well Depth	31.72' feet From TOC		
Static Water Column Height (H)	feet		

	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		

Saturated Thickness (b)	feet
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1
Depth to Top of Well Screen (d)	
Length of Well Screen (L)	10' feet
Radius of Well Casing (rc)	0.083 feet
Radius of Screen (rw)	0.083 feet
Radius of Probe (rsc)	
Radius of Boring (rsk) Skin Effect	0.083 feet
Probe Serial Number	mini Troll Transducer probe calibrated 7/29/08, Exp: 7/29/09 SN: 118478 Level Troll @ 700 WinSitu
Slug Data	used pneumatic slug to perform test
Length	
weight	
Diameter	

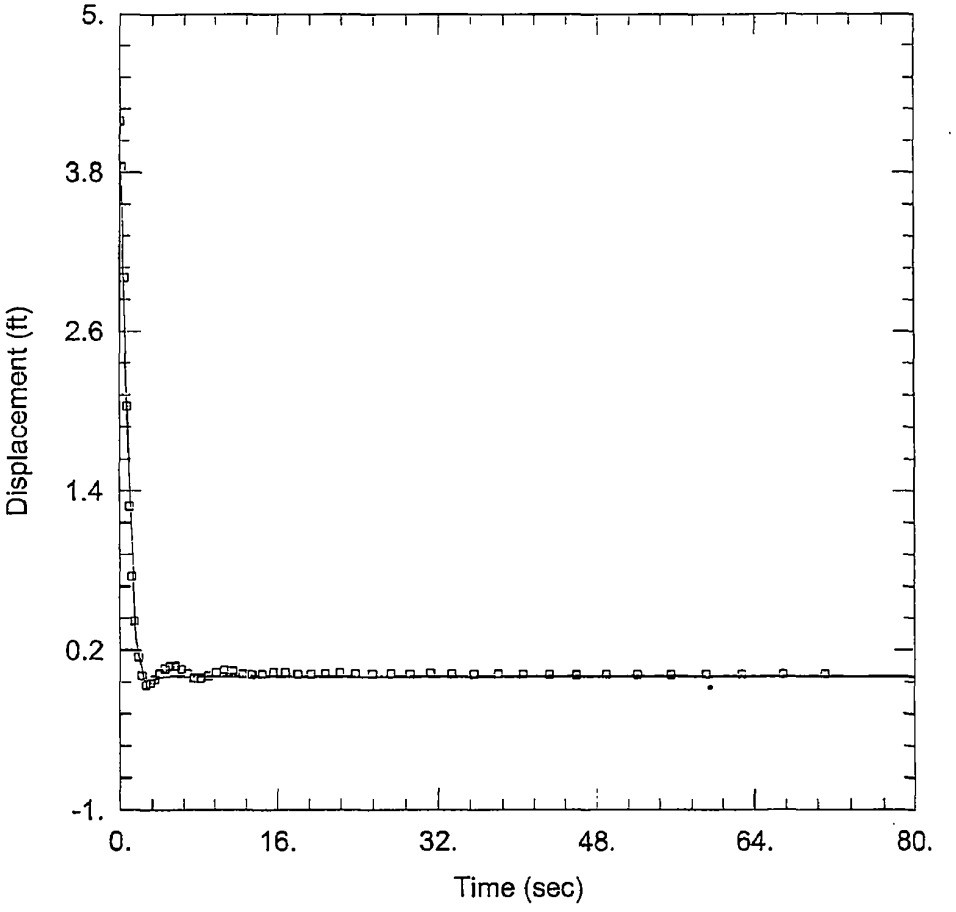
Slug Test File	Background	Falling	Rising
File Name	OW-706UBG	NA	OW-706UR
Start Time	09:55:26		10:00:13
End Time	09:56:33		10:01:29

Notes

OW-706UR
10:03:40
10:04:36

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: WSC Date: 6-20-08



OW-706 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 U
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 30.66 ft
Anisotropy Ratio (Kz/Kr): 1.

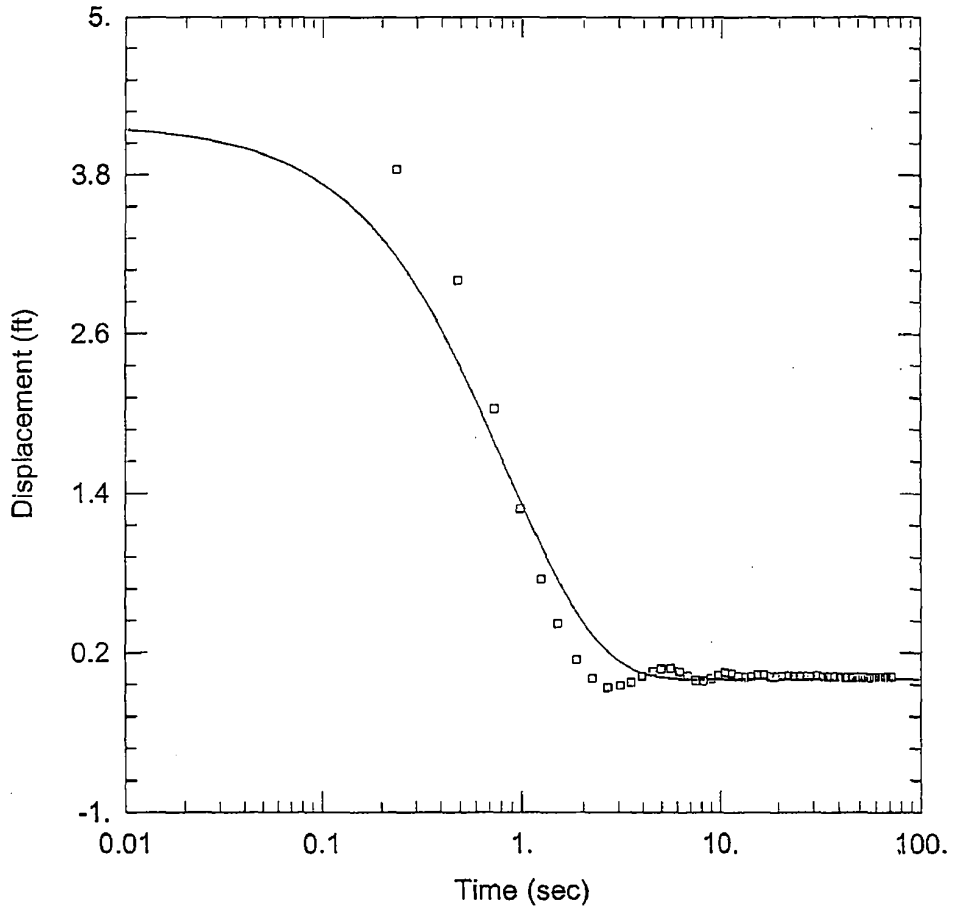
WELL DATA (OW-706 U)

Initial Displacement: 4.189 ft
Total Well Penetration Depth: 28.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.46 ft
Screen Length: 15.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 70.18 ft/day
Solution Method: Springer-Gelhar
Le = 7.303 ft

Prepared by: CHB Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-706 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 U
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 30.66 ft

WELL DATA (OW-706 U)

Initial Displacement: 4.189 ft
Total Well Penetration Depth: 28.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.46 ft
Screen Length: 15.5 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 76.09 ft/day
Kz/Kr = 1.
Ss = 3.205E-12 ft^{-1}

Checked by: CHB Date: 6-20-08

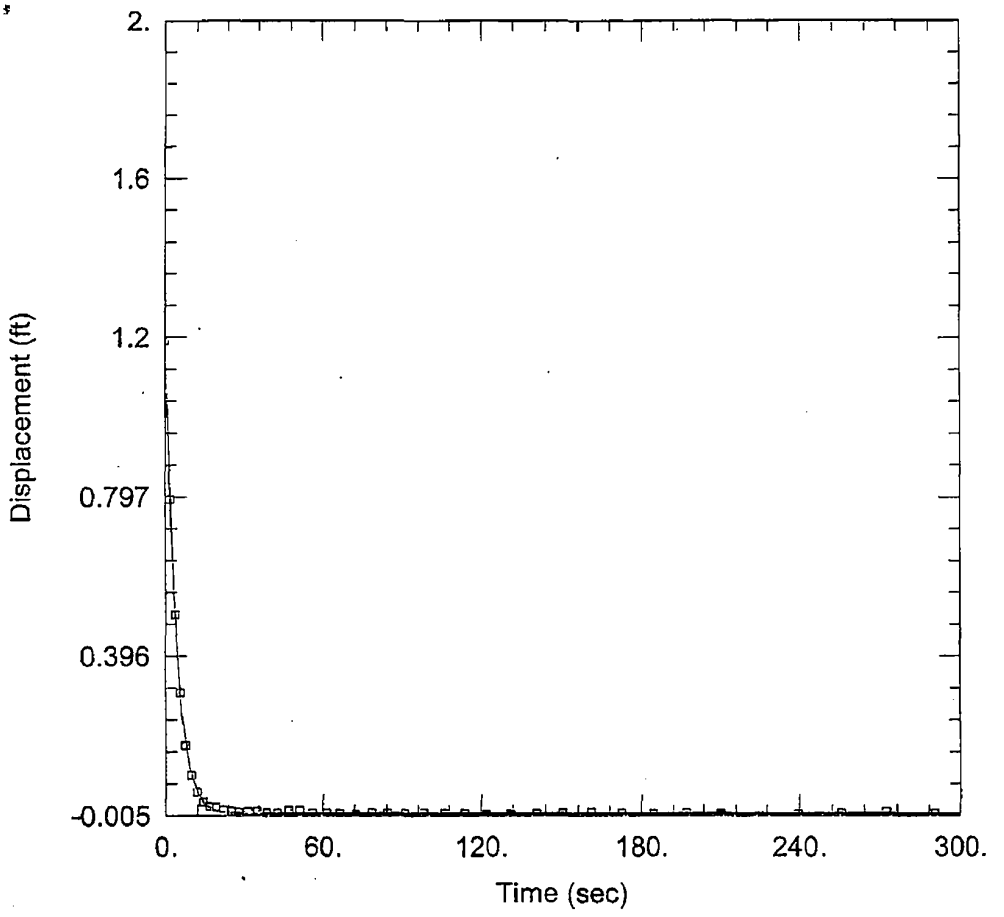
MACTEC

SLUG TEST REPORT

Project Name: TP COL	Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-706L	MACTEC Rep: Kim Chalos-Smith	Date: 05/16/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.74' From QS.		
Static Water Level	1.50' feet From TOC		
Total Well Depth	114.56' feet From TOC		
Static Water Column Height (H)	116.8' feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10.0' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	Transducer Mini Troll Calibrated 4/29/08. BG 4/29/09		
Probe Serial Number Sn:	103345		
~~SKHS~~ 05/16/08			
Slug Data Slug #2			
Length	65.438 inches		
weight	8.811 lbs.		
Diameter	1.662 inches		
Slug Test File	Background	Falling	Rising
File Name	OW-706LBG	OW-706LF	OW-706LR
Start Time	13:53:29	14:11:28	14:40:40
End Time	14:00:40	14:37:41	14:58:09
Notes			

Rev 0



OW-706 L FALLING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 L
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 82.8 ft
Anisotropy Ratio (Kz/Kr): 1.

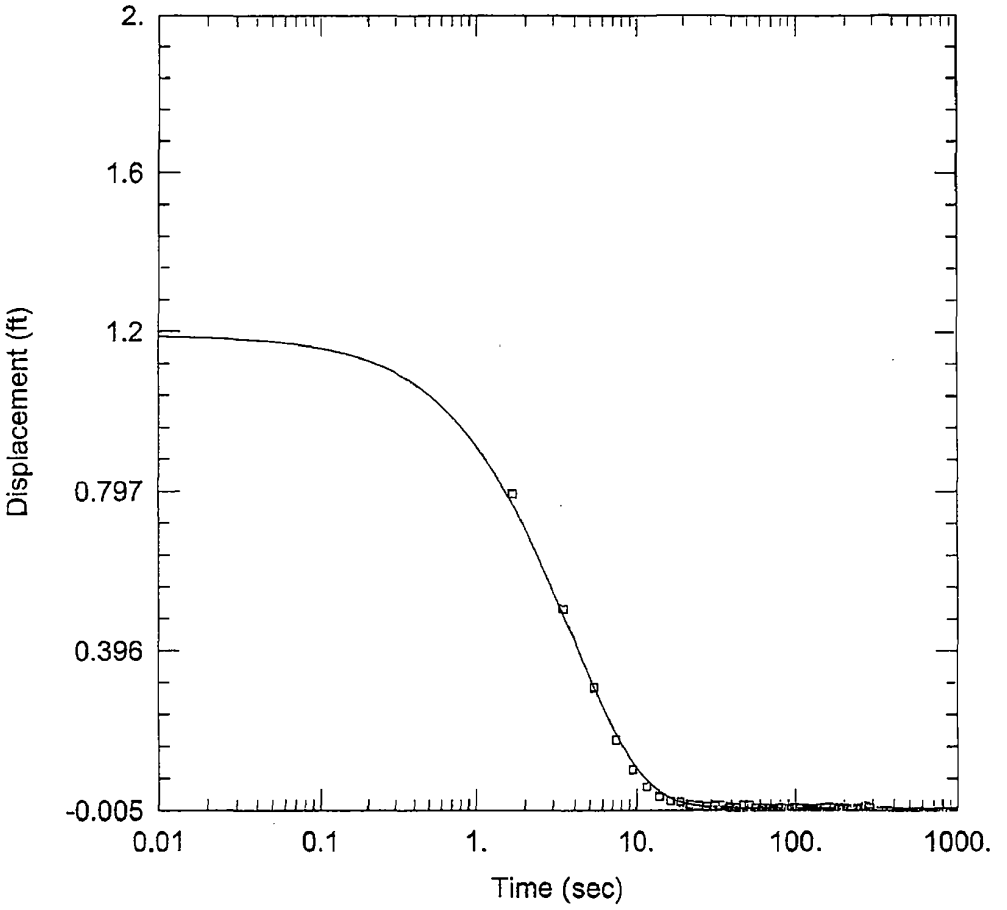
WELL DATA (OW-706 L)

Initial Displacement: 1.19 ft
Total Well Penetration Depth: 112. ft
Casing Radius: 0.083 ft
Static Water Column Height: 113.7 ft
Screen Length: 15.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 21.2 ft/day
Solution Method: Butler
Le = 17.46 ft

Prepared by: CHB Date: 6-20-08
Checked by: WSL Date: 6-30-08



OW-706 L FALLING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 L
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 82.8 ft

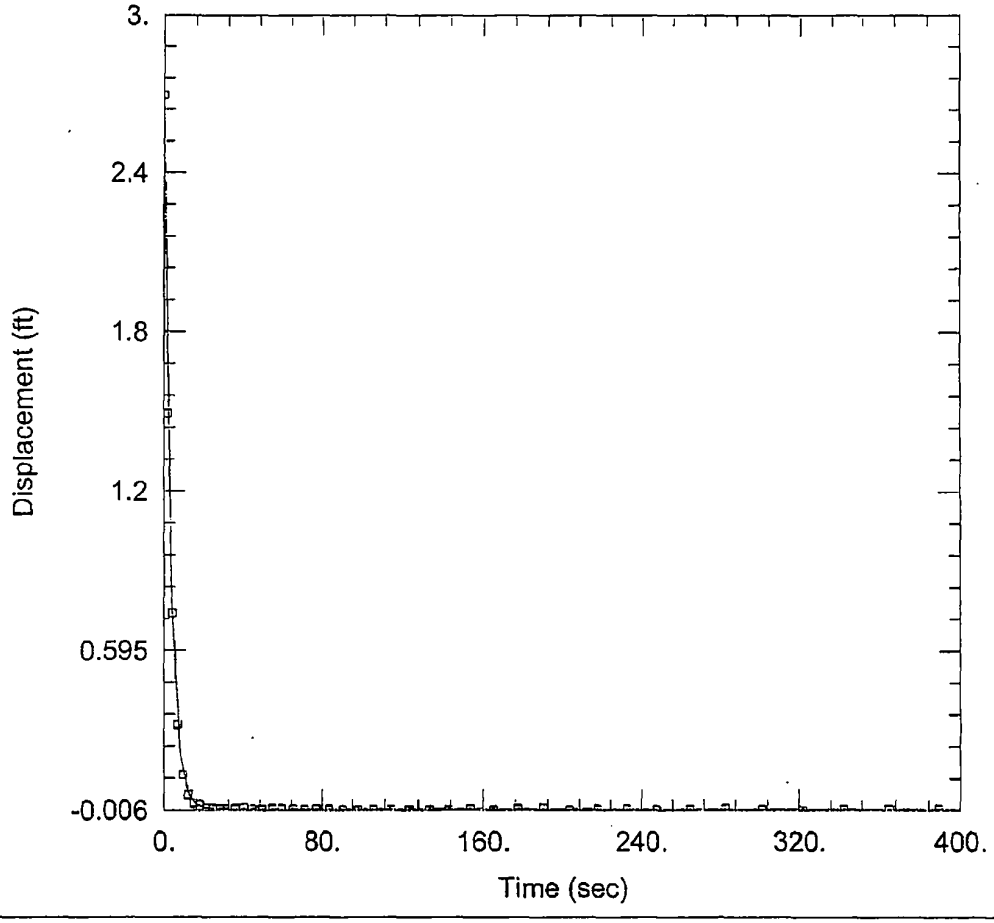
WELL DATA (OW-706 L)

Initial Displacement: 1.19 ft
Total Well Penetration Depth: 112. ft
Casing Radius: 0.083 ft
Static Water Column Height: 113.7 ft
Screen Length: 15.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Kr = 21.97 ft/day
Kz/Kr = 1.
Solution Method: KGS Model
Ss = 1.208E-12 ft^{-1}

Prepared by: CHS Date: 6-2008
Checked by: [illegible] Date: 6-[illegible]



OW-706 L RISING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 L
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 82.8 ft
Anisotropy Ratio (Kz/Kr): 1.

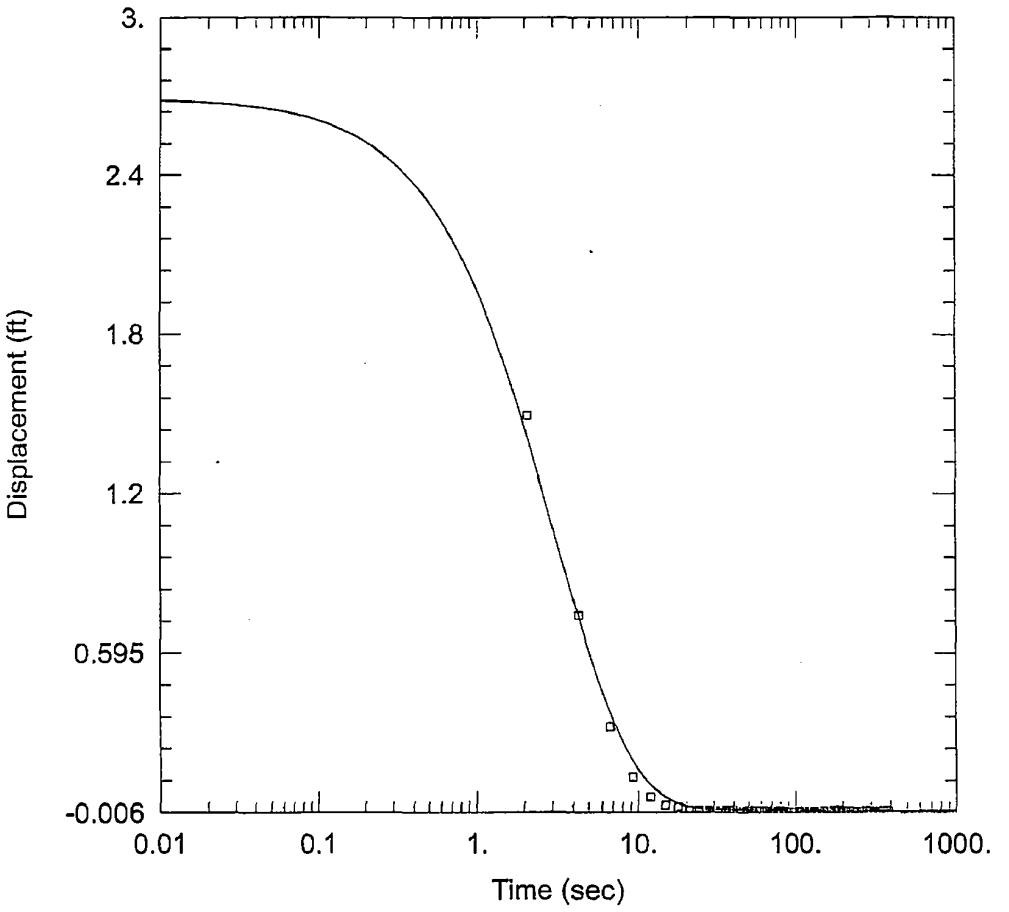
WELL DATA (OW-706 L)

Initial Displacement: 2.693 ft
Total Well Penetration Depth: 112. ft
Casing Radius: 0.083 ft
Static Water Column Height: 113.7 ft
Screen Length: 15.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 25.09 ft/day
Solution Method: Butler
Le = 29.71 ft

Prepared by: [illegible] Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-706 L RISING HEAD TEST 5-16-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-706 L
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 82.8 ft

WELL DATA (OW-706 L)

Initial Displacement: 2.693 ft
Total Well Penetration Depth: 112. ft
Casing Radius: 0.083 ft
Static Water Column Height: 113.7 ft
Screen Length: 15.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Kr = 26.07 ft/day
Kz/Kr = 1.
Solution Method: KGS Model
Ss = 1.208E-12 ft^{-1}

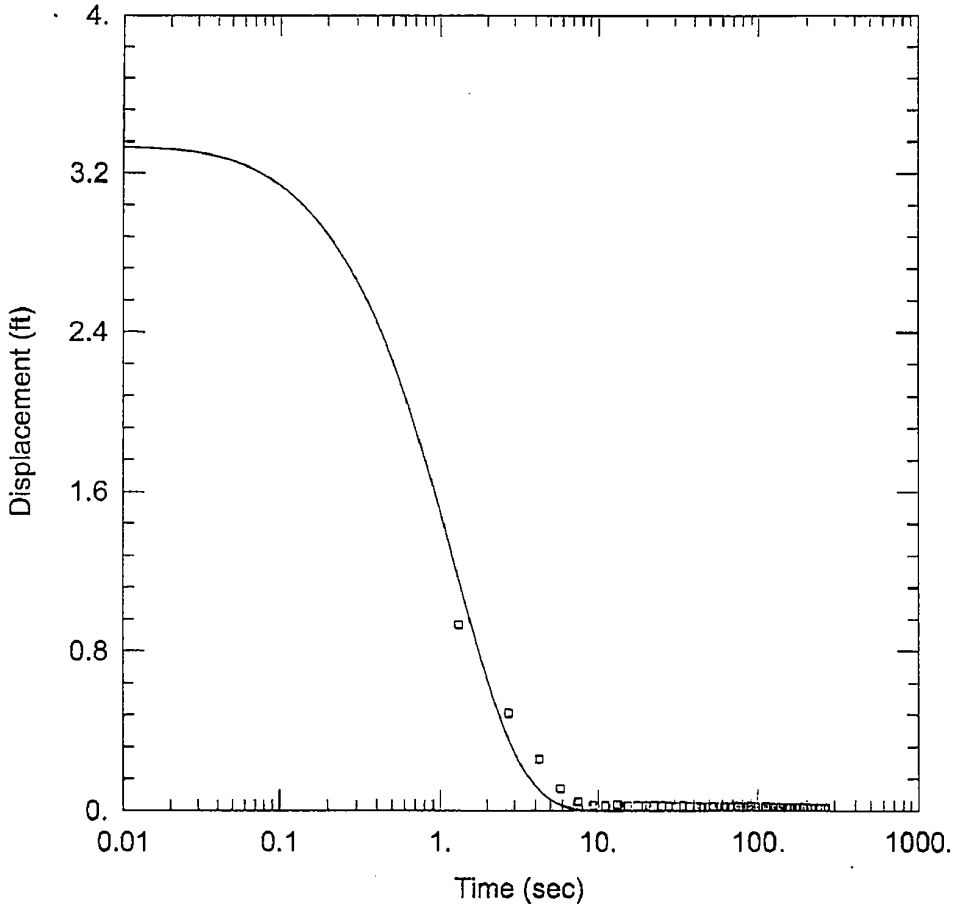
Checked by: CHB Date: 6-20-08

MACTEC

SLUG TEST REPORT

Project Name: TPCOL	Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-721U	MACTEC Rep: Kim Chaka Smith	Date: 05/15/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Stickup = 3.65' from g.s.		
Static Water Level	4.35' feet From TOC		
Total Well Depth	28.0' feet From TOC		
Static Water Column Height (H) 23.65'	~~20.0'~~ feet KM 5-15-08		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10.0' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	Transducer mini Troll Calibrated 4/29/08, Exp. 4/29/09		
Probe Serial Number Sn: 103345			
Slug Data Slug #2			
Length	65.438 inches		
weight	8.811 lbs.		
Diameter	1.662 inches		
Slug Test File	Background	Falling	Rising
File Name	OW-721UBG	OW-721UF	OW-721UR
Start Time	17:00:35	17:11:11	17:22:12 (5/15/08)
End Time	17:07:40	17:15:55	07:17:00 (5/16/08)
Notes	Extended TOC to 5.65' above g.s. Ran Background and Falling head tests from stick in well overnight per Chris Bruce. Ran Rising head test. Started OW-721UR on 05/16/08 at 5/16/08 07:19:00.		

Rev 0



OW-721 U FALLING HEAD 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 U
Test Date: 5-15-08

AQUIFER DATA

Saturated Thickness: 24.75 ft
Anisotropy Ratio (Kz/Kr): 1.

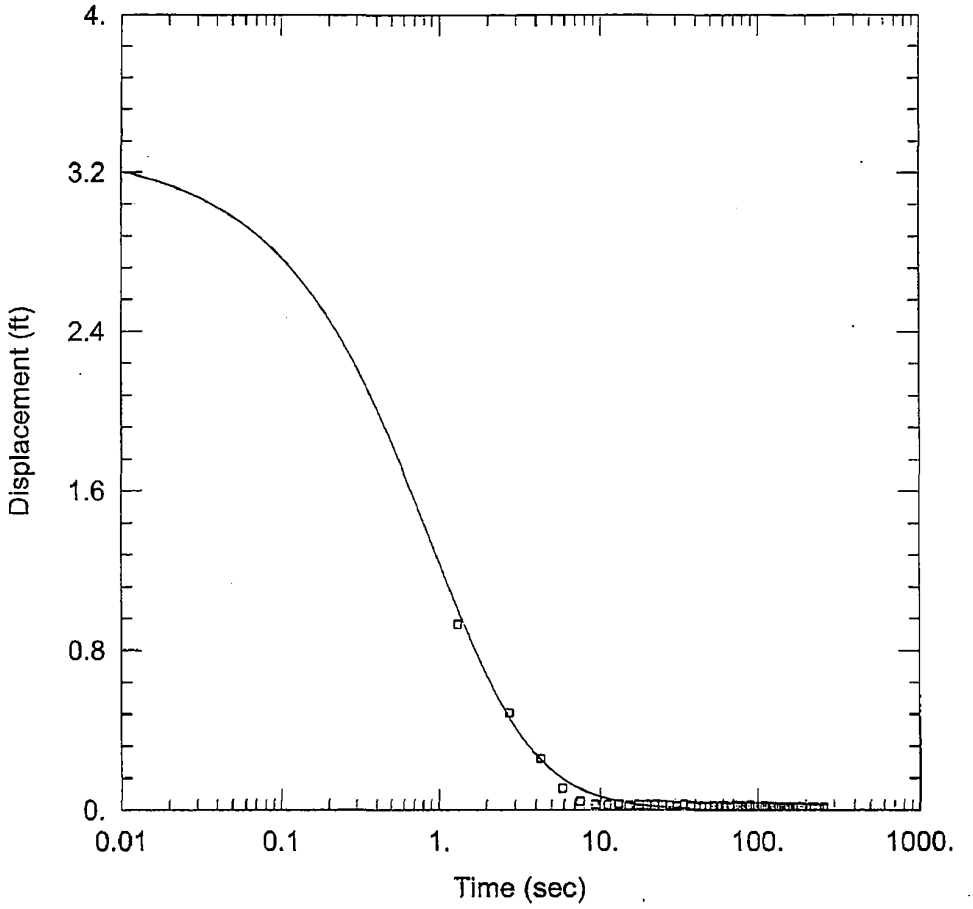
WELL DATA (OW-721 U)

Initial Displacement: 3.338 ft
Total Well Penetration Depth: 26. ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.75 ft
Screen Length: 16.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 45.5 ft/day
Solution Method: Springer-Gelhar
Le = 1. ft

Prepared by: CHB Date: 6-20-08
Checked by: WSR Date: 6-20-08



OW-721 U FALLING HEAD 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 U
Test Date: 5-15-08

AQUIFER DATA

Saturated Thickness: 24.75 ft

WELL DATA (OW-721 U)

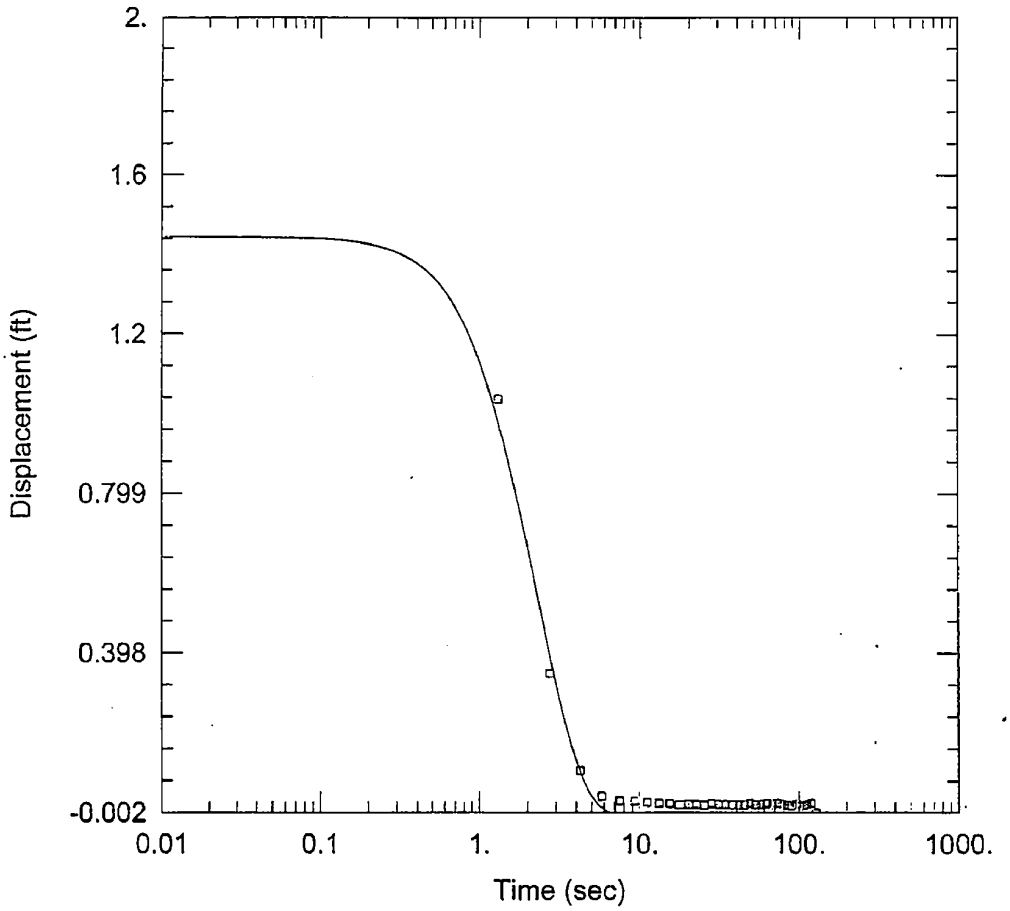
Initial Displacement: 3.338 ft
Total Well Penetration Depth: 26. ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.75 ft
Screen Length: 16.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 45.5 ft/day
Kz/Kr = 1.
Ss = 9.486E-5 ft^{-1}

Prepared by: CHS Date 6-20-08
Checked by: CWJ Date 6-20-08



OW-721 U RISING HEAD 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 U
Test Date: 5-15-08

AQUIFER DATA

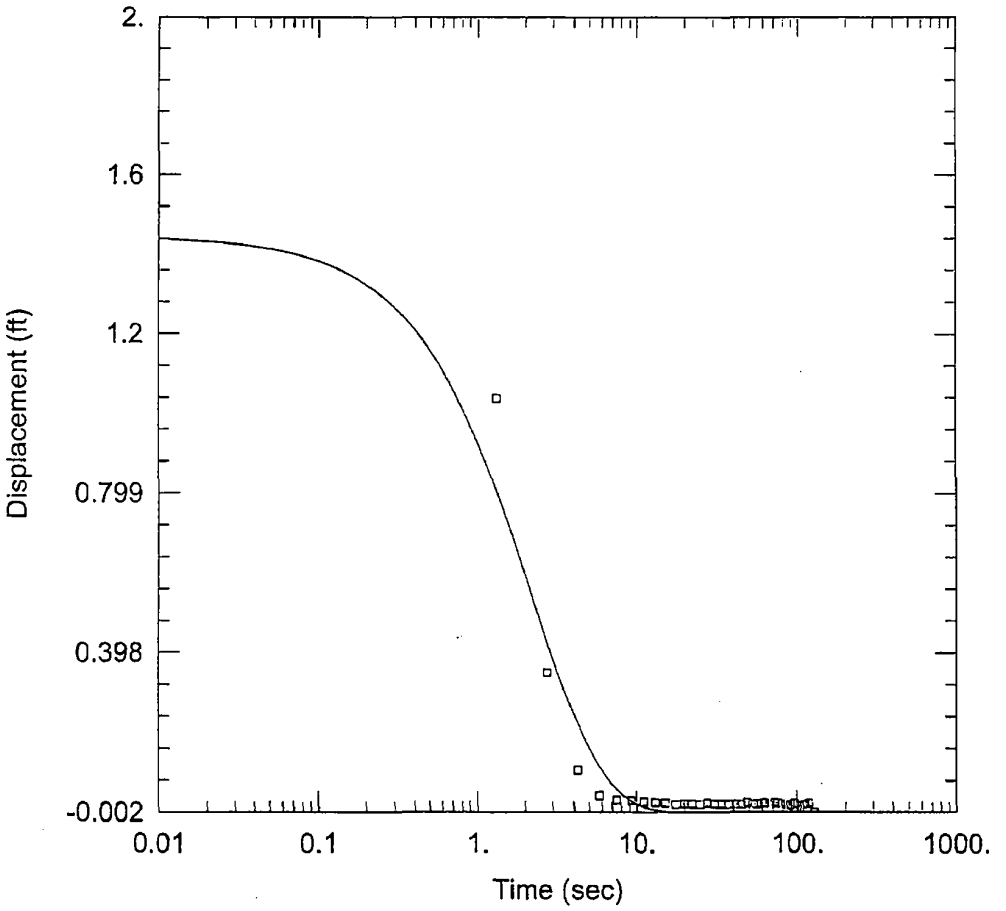
Saturated Thickness: 24.75 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-721 U)

Initial Displacement: 1.444 ft
Total Well Penetration Depth: 26. ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.75 ft
Screen Length: 16.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 27.03 ft/day
Solution Method: Springer-Gelhar
Le = 46.33 ft



OW-721 U RISING HEAD 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 U
Test Date: 5-15-08

AQUIFER DATA

Saturated Thickness: 24.75 ft

WELL DATA (OW-721 U)

Initial Displacement: 1.444 ft
Total Well Penetration Depth: 26. ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.75 ft
Screen Length: 16.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 32.46 ft/day
Kz/Kr = 1.
Ss = 4.167E-12 ft^{-1}

Checked by: CHS Date: 6-20-08

MACTEC

SLUG TEST REPORT

Project Name: TPCOL	Project Number: 6468-07-1150	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-721U	MACTEC Rep: Kim Charles-Smith	Date: 05/20/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.65' From G.S.		
Static Water Level	4.73' feet From TOC		
Total Well Depth	28.0' feet From TOC		
Static Water Column Height (H)	feet		

	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		

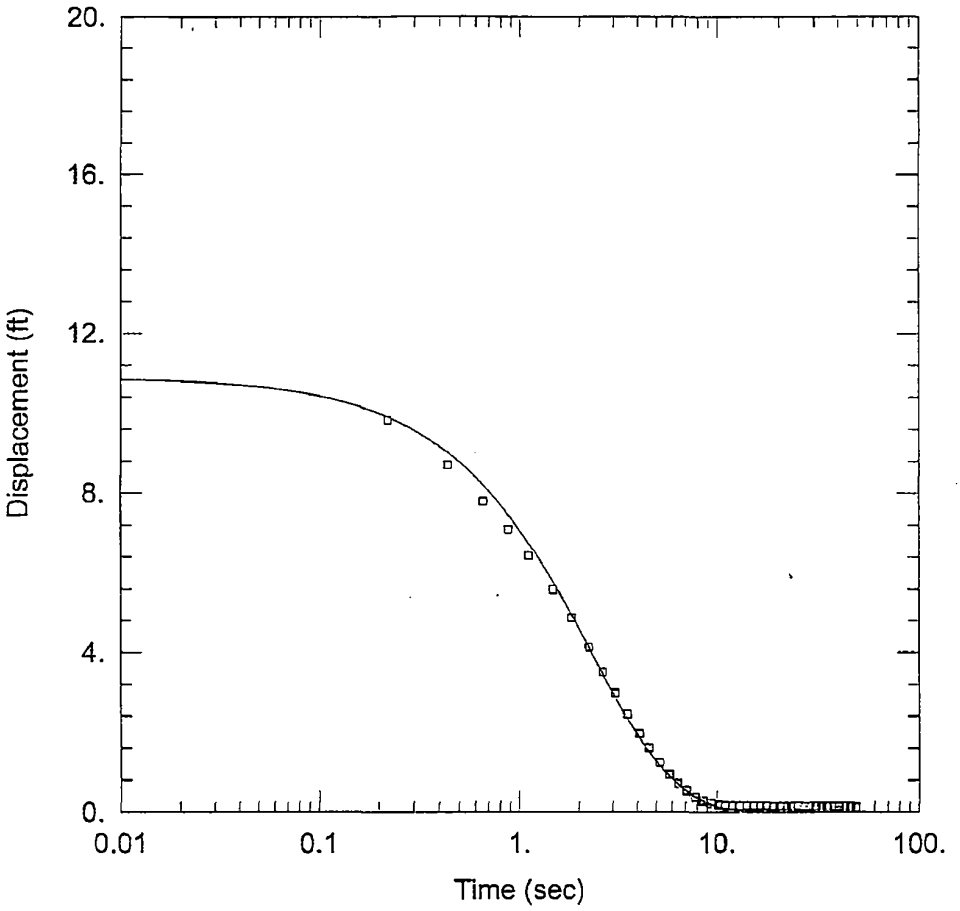
Saturated Thickness (b)	feet
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1
Depth to Top of Well Screen (d)	
Length of Well Screen (L)	10' feet
Radius of Well Casing (rc)	0.083 feet
Radius of Screen (rw)	0.083 feet
Radius of Probe (req)	
Radius of Boring (rsk) Skin Effect	0.083 feet
Probe Serial Number	Mini Troll Transducer probe Calibrated 4/29/08 Exp 4/29/09 SN: 118478 Level Troll® 700 Winsitu
Slug Data	Used pneumatic Slug to perform test.
Length	
weight	
Diameter	

Slug Test File	Background	Falling	Rising
File Name	OW-721UBG	NA	OW-721UR
Start Time	10:33:19		10:42:03
End Time	10:34:46		10:42:56

Notes

Rev 0

Prepared by: CHS Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-721 U RISING HEAD 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 U
Test Date: 5-20-08

AQUIFER DATA

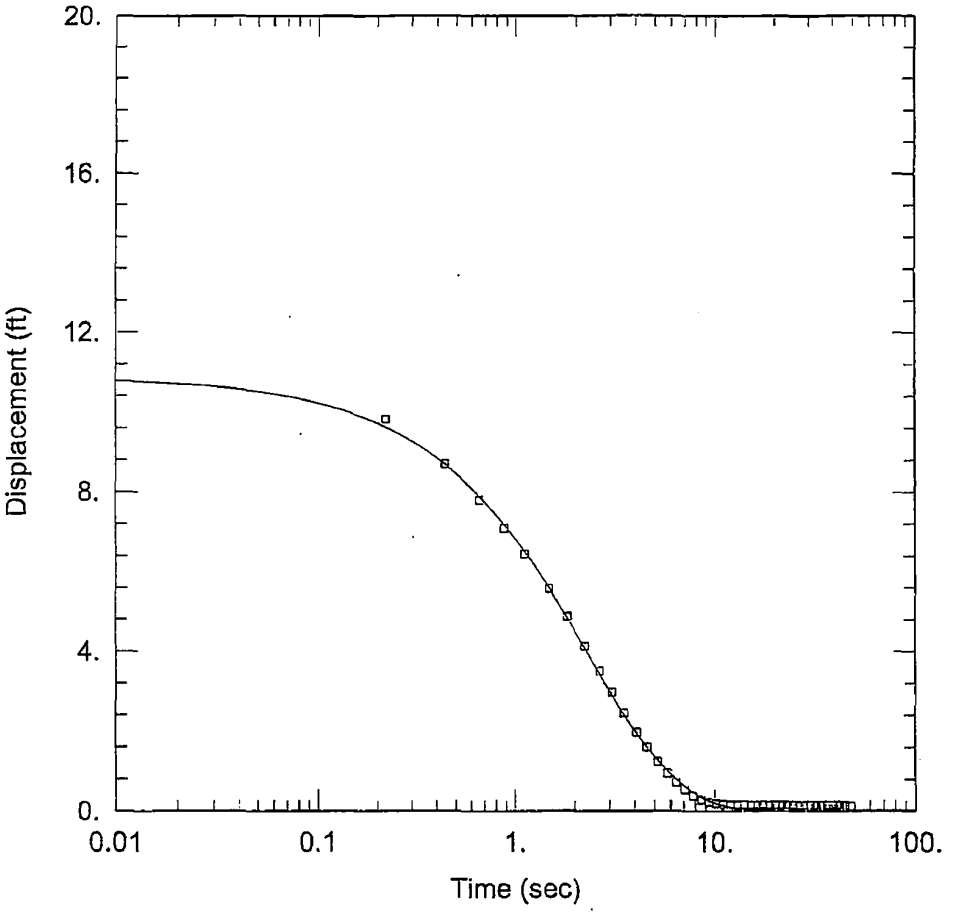
Saturated Thickness: 24.37 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-721 U)

Initial Displacement: 10.88 ft
Total Well Penetration Depth: 26. ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.37 ft
Screen Length: 16.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 24.39 ft/day
Solution Method: Springer-Gelhar
Le = 0.1 ft



OW-721 U RISING HEAD 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 U
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 24.37 ft

WELL DATA (OW-721 U)

Initial Displacement: 10.88 ft
Total Well Penetration Depth: 26. ft
Casing Radius: 0.083 ft
Static Water Column Height: 24.37 ft
Screen Length: 16.1 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 32.47 ft/day
Kz/Kr = 1.
Ss = 2.056E-6 ft^{-1}

Checked by: CHB Date: 6-20-08

MACTEC

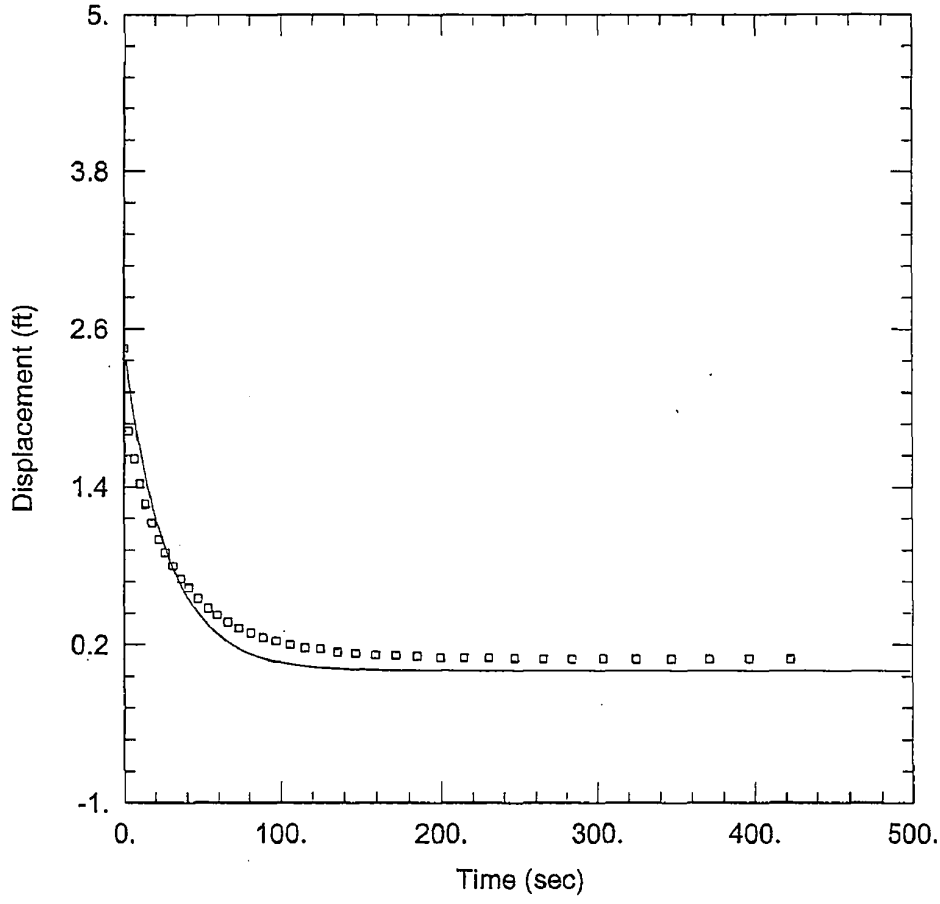
SLUG TEST REPORT

Project Name: TPCoL	Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-721L	MACTEC Rep: Kim Charles-Smith	Date: 05.15.08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final stickup = 3.68' from 9.5		
Static Water Level	2.17' feet From ToC		
Total Well Depth	107.62' feet From ToC		
Static Water Column Height (H)	102.43' feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10.0' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	Mini Troll Transducer Calibrated 4/29/08, Exp. 4/29/09		
Probe Serial Number			
Sn. 103345			
Slug Data Size #2			
Length	65.438 inches		
weight	8.811 lbs.		
Diameter	1.662 inches		
Slug Test File	Background	Falling	Rising
File Name	OW-721L BG	OW-721L F	OW-721L R
Start Time	15:53:52 KJ 5-15-08	16:02:43	16:21:32
End Time	16:00:33	16:18:56	16:37:20
Notes	~~Extended ToC to 5.63' above 9.5.~~ 5.63' KJ 5/15/08. ~~to run slug test.~~		

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-721 L FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 L
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 90. ft
Anisotropy Ratio (Kz/Kr): 1.

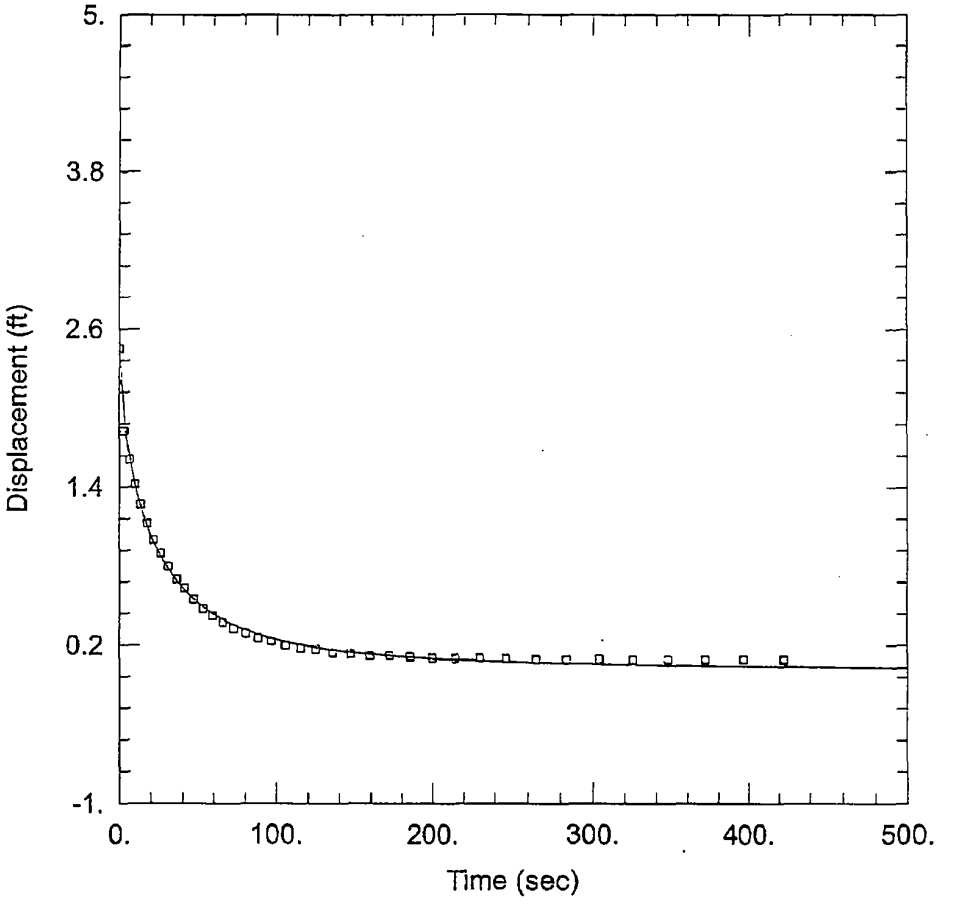
WELL DATA (OW-721 L)

Initial Displacement: 2.451 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110. ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 2.726 ft/day
Solution Method: Butler
Le = 0.1 ft

Prepared by: CAB Date: 6-20-08
Checked by: WE Date: 6-20-08



OW-721 L FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 L
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 90. ft

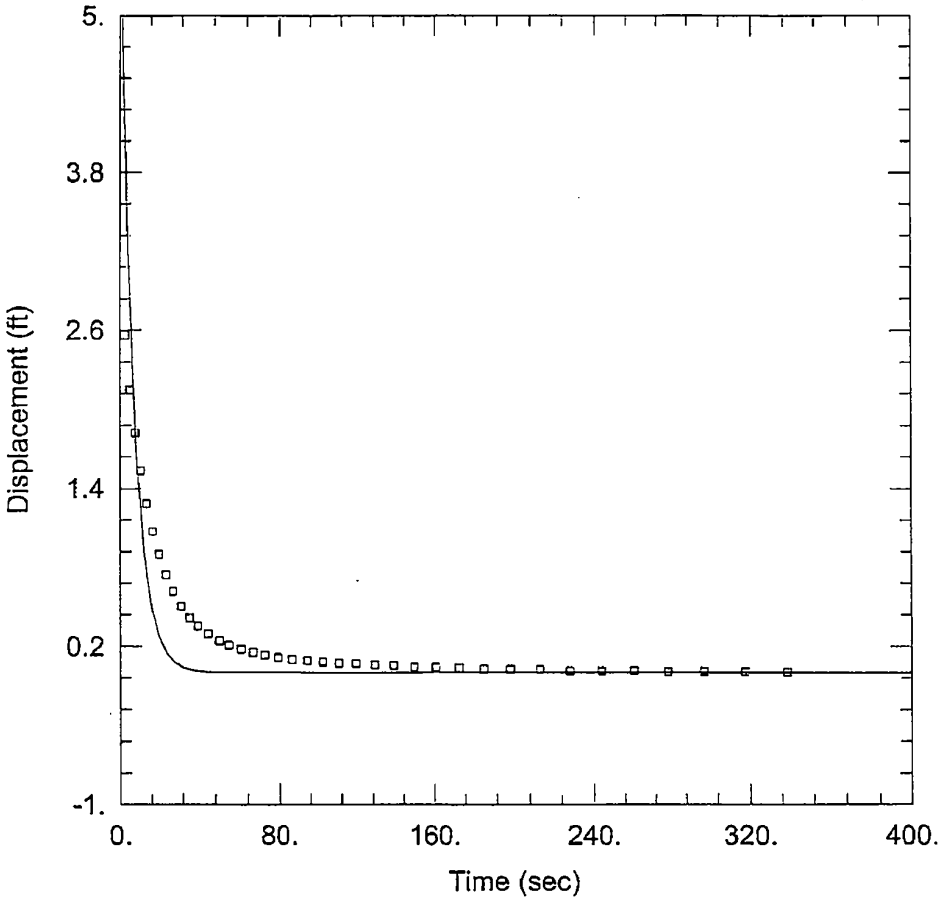
WELL DATA (OW-721 L)

Initial Displacement: 2.451 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110. ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Kr = 1.13 ft/day
Kz/Kr = 1.
Solution Method: KGS Model
Ss = 0.0002728 ft^{-1}

Prepared by: CKB Date: 6-2008
Checked by: DSL Date: 6-10-08



OW-721 L RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 L
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 90. ft
Anisotropy Ratio (Kz/Kr): 1.

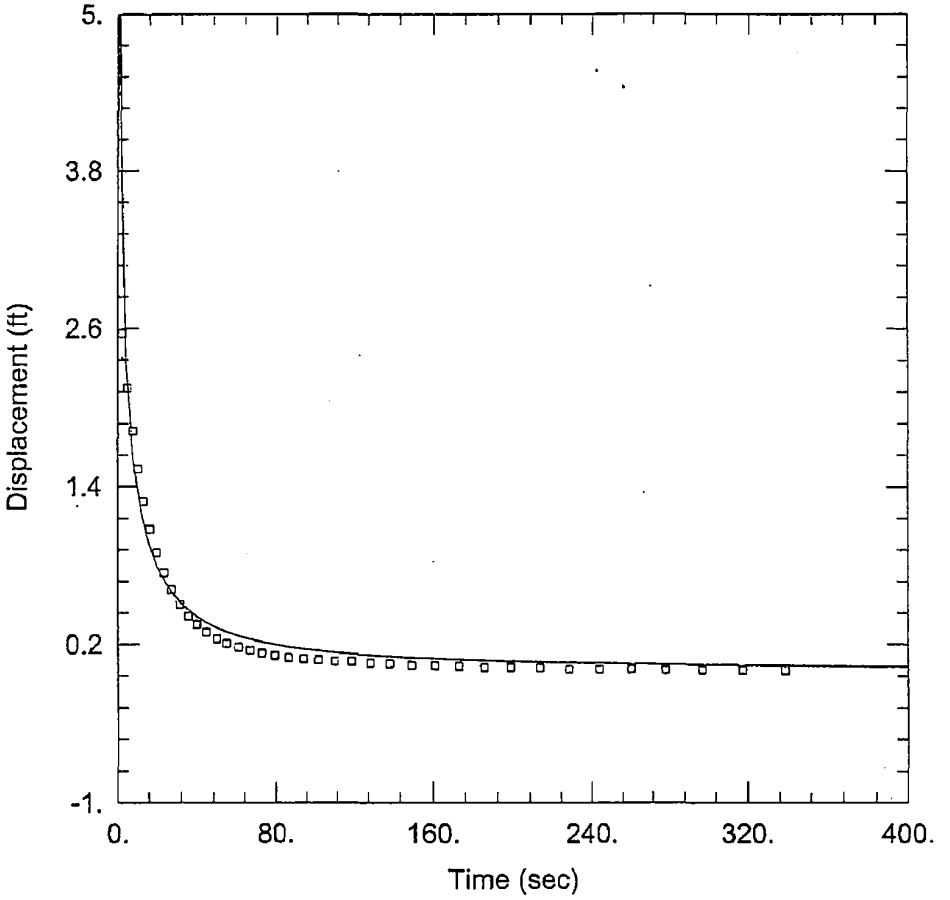
WELL DATA (OW-721 L)

Initial Displacement: 5.904 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110. ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 11.59 ft/day
Solution Method: Butler
Le = 0.1 ft

Prepared by: CHG Date: 6-20-08
Checked by: WSH Date: 6-20-08



OW-721 L RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 L
Test Date: 5-16-08

AQUIFER DATA

Saturated Thickness: 90. ft

WELL DATA (OW-721 L)

Initial Displacement: 5.904 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110. ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Kr = 2.91 ft/day
Kz/Kr = 1.
Solution Method: KGS Model
Ss = 0.001921 ft^{-1}

Checked by: CHB Date: 6-20-08

MACTEC

SLUG TEST REPORT

Project Name: TPCOL	Project Number: 6468-07-4950	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-721L	MACTEC Rep: Kim Chalos-Smith	Date: 05/20/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.68' From G.S.		
Static Water Level	1.97' feet From TOC		
Total Well Depth	107.62' feet From TOC		
Static Water Column Height (H)	feet		

	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		

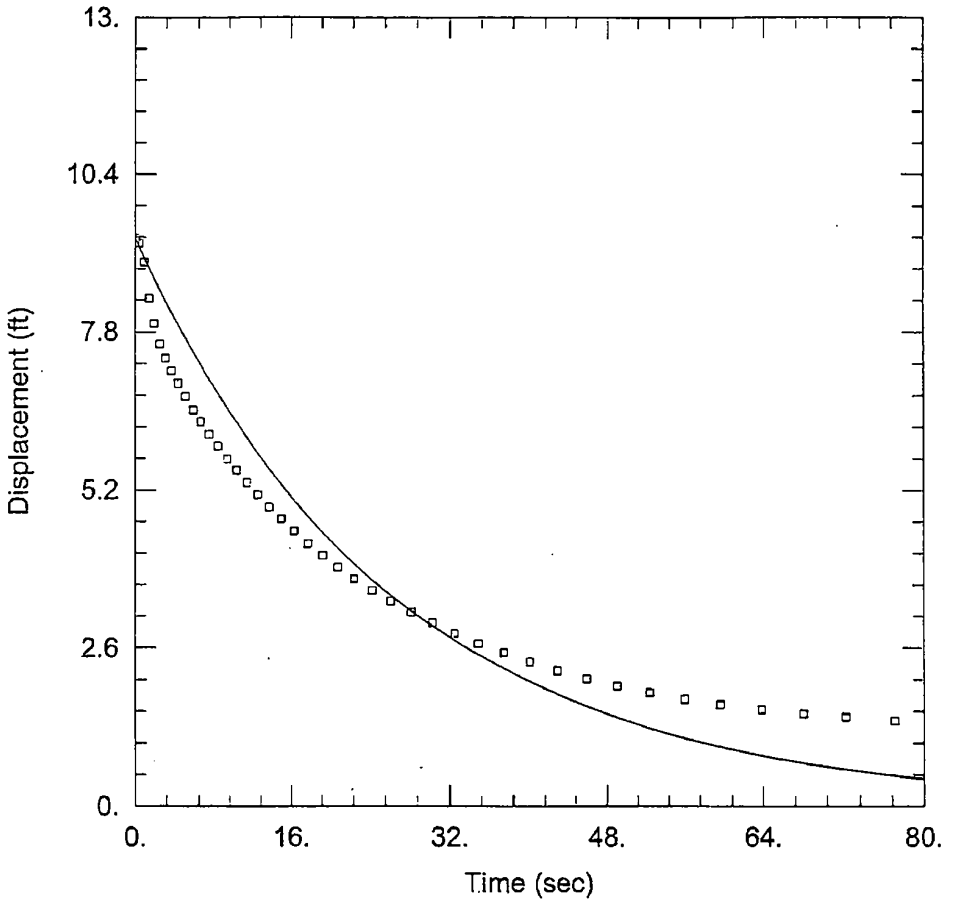
Saturated Thickness (b)	feet
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1
Depth to Top of Well Screen (d)	
Length of Well Screen (L)	10' feet
Radius of Well Casing (rc)	0.083 feet
Radius of Screen (rw)	0.083 feet
Radius of Probe (req)	
Radius of Boring (rsk) Skin Effect	0.083 feet
Probe Serial Number	Mini Troll Transducer probe calibrated 4/29/08, Exp 4/29/09 SN: 118478 level Troll® 700 WinSitu
Slug Data	used pneumatic slug to perform test.
Length	
weight	
Diameter	

Slug Test File	Background	Falling	Rising
File Name	OW-721L BG	NA	OW-721LR
Start Time	10:56:02		11:08:52
End Time	11:04:43		11:10:18

Notes

Rev 0

Prepared by: CMB Date: 6-2008
Checked by: WJC Date: 6-10-08



OW-721 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 L
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 90. ft
Anisotropy Ratio (Kz/Kr): 1.

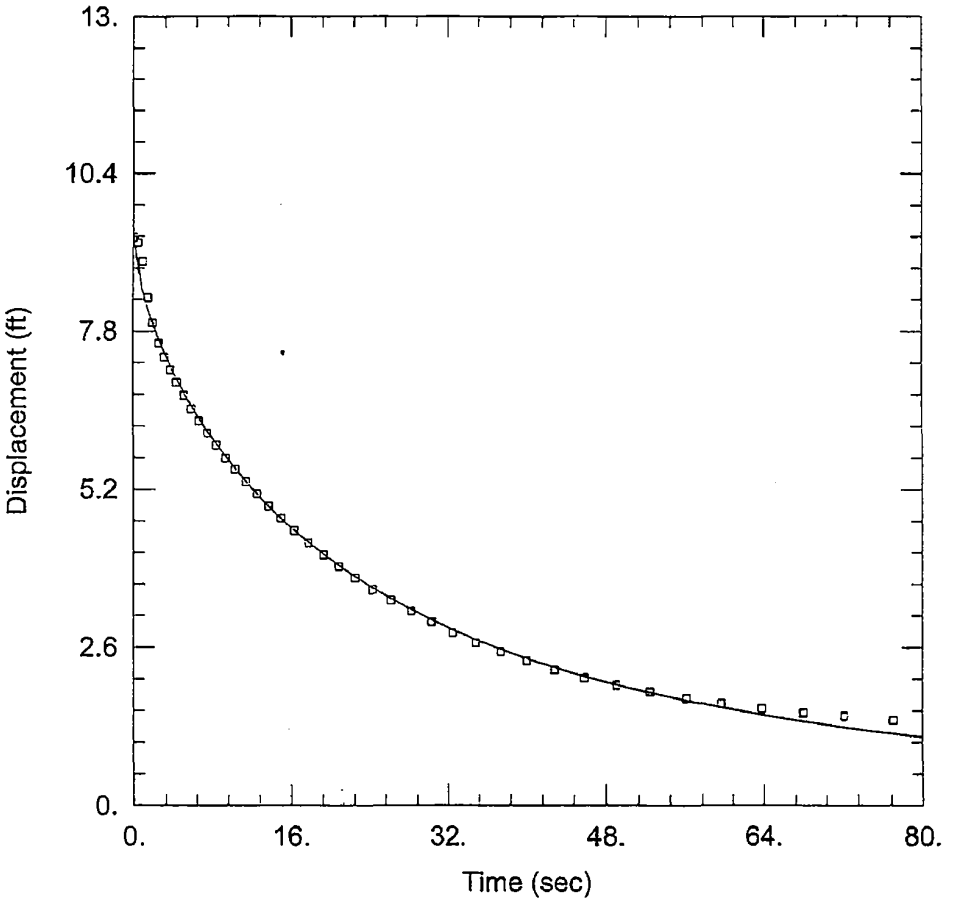
WELL DATA (OW-721 L)

Initial Displacement: 9.341 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110.2 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Butler
K = 2.839 ft/day
Le = 0.1 ft

Prepared by: CHS Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-721 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-721 L
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 90. ft

WELL DATA (OW-721 L)

Initial Displacement: 9.341 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110.2 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model
Kr = 1.325 ft/day
Kz/Kr = 1.
Ss = 0.0001285 ft^{-1}

Checked by: CHS Date: 6-20-08

MACTEC

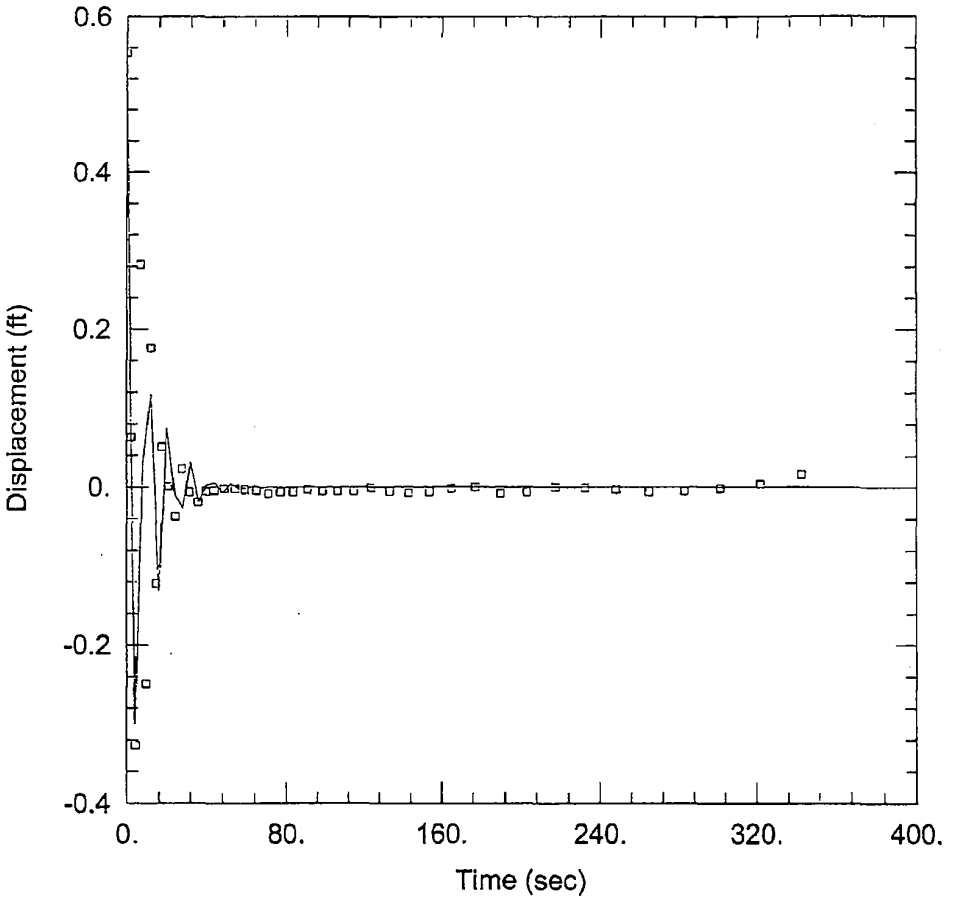
SLUG TEST REPORT

Project Name: TPCOL	Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-735U (KB 5-15-08)	MACTEC Rep: Kim Charles-Smith	Date: 5/15/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Stickup = 3.27'		
Static Water Level	4.85' feet From TOC		
Total Well Depth	30.19' feet From TOC		
Static Water Column Height (H) 28.34'	25.34' feet Kf. 5/15/08		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	Mini Troll Transducer probe Calibrated 4/29/08. Exp. 4/29/09.		
Probe Serial Number SN: 103345			
Slug Data #2			
Length	65.438 inch		
weight	8.811 lbs.		
Diameter	1.662 inch		
Slug Test File	Background	Falling	Rising
File Name	OW-735UBG	OW-735UF	OW-735UR
Start Time	10:16:12	~~09:16:41~~ (KB 5-15-08) 10:29:28	~~09:36:56~~ 10:51:38
End Time	10:25:07	10:49:16	11:00:25
Notes	~~Adjust extension to Top of casing total Stickup = 5.28'~~		

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-735 U FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-735 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 26.45 ft
Anisotropy Ratio (Kz/Kr): 1.

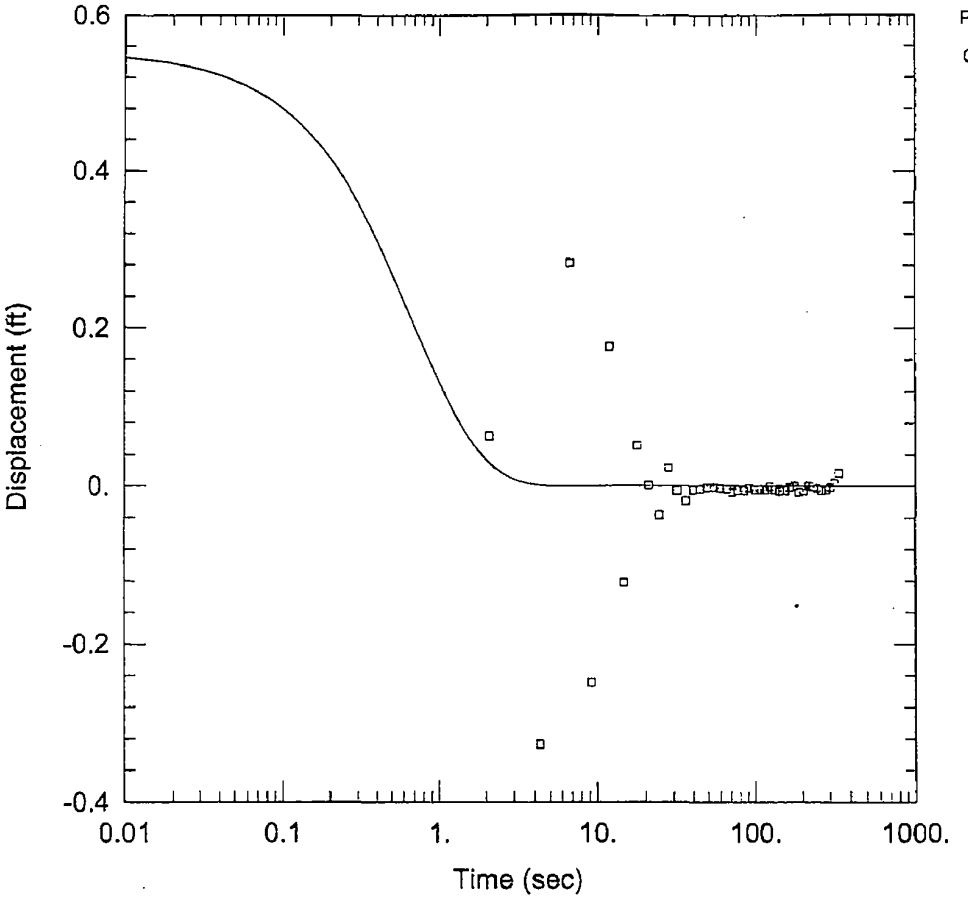
WELL DATA (OW-735 U)

Initial Displacement: 0.553 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.083 ft
Static Water Column Height: 26.45 ft
Screen Length: 16. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar
K = 319.2 ft/day
Le = 33.28 ft

Prepared by: CHB Date: 6-20-08
Checked by: WSV Date: 6-20-08



OW-735 U FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-735 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 26.45 ft

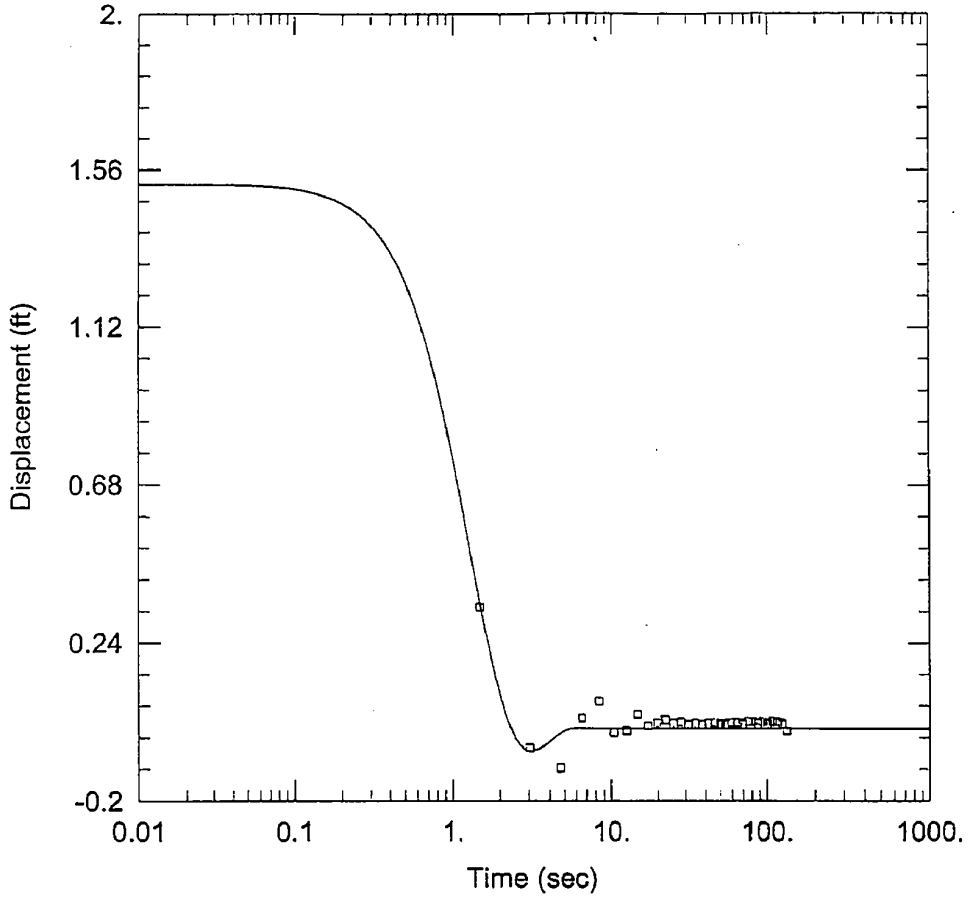
WELL DATA (OW-735 U)

Initial Displacement: 0.553 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.083 ft
Static Water Column Height: 26.45 ft
Screen Length: 16. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Kr = 109.5 ft/day
Kz/Kr = 1.
Solution Method: KGS Model
Ss = 3.846E-12 ft^{-1}

Prepared by: CAB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-735 U RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-735 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 26.45 ft
Anisotropy Ratio (Kz/Kr): 1.

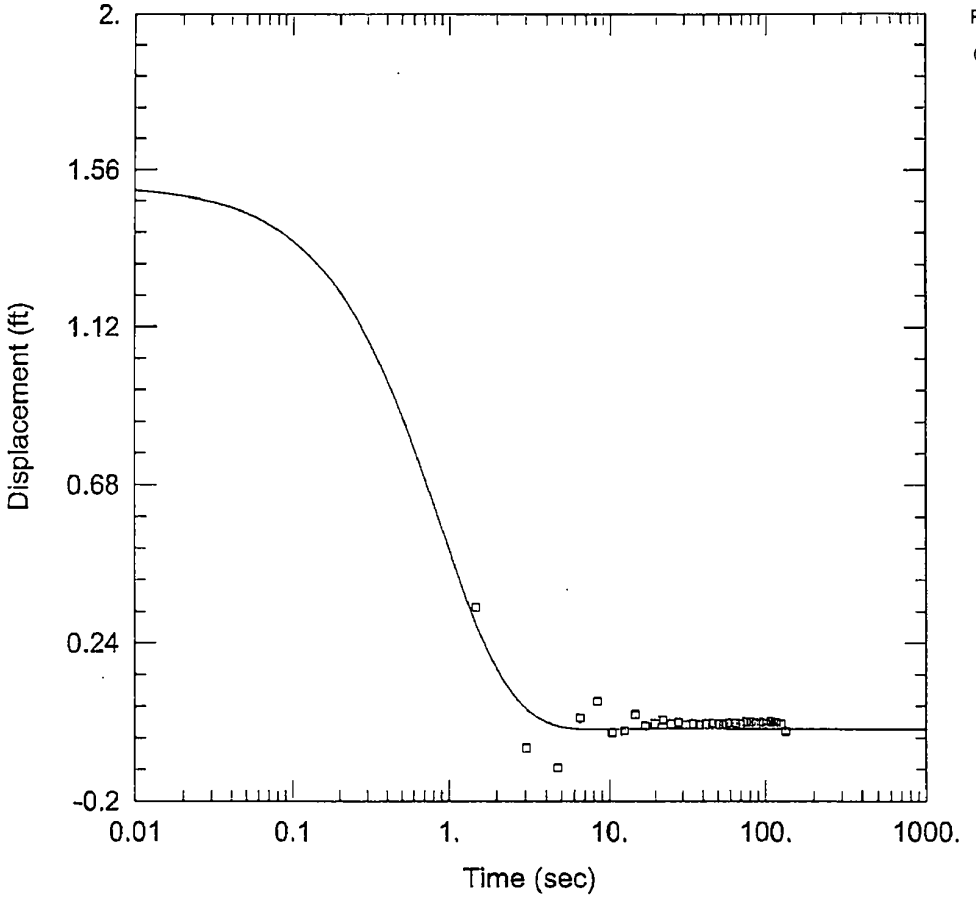
WELL DATA (OW-735 U)

Initial Displacement: 1.519 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.083 ft
Static Water Column Height: 26.45 ft
Screen Length: 16. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 58.21 ft/day
Solution Method: Springer-Gelhar
Le = 15.64 ft

Prepared by: CHG Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-735 U RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-735 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 26.45 ft

WELL DATA (OW-735 U)

Initial Displacement: 1.519 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.083 ft
Static Water Column Height: 26.45 ft
Screen Length: 16. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 84.68 ft/day
Kz/Kr = 1.
Ss = 3.846E-12 ft^{-1}

Checked by: CHB Date: 6-20-08

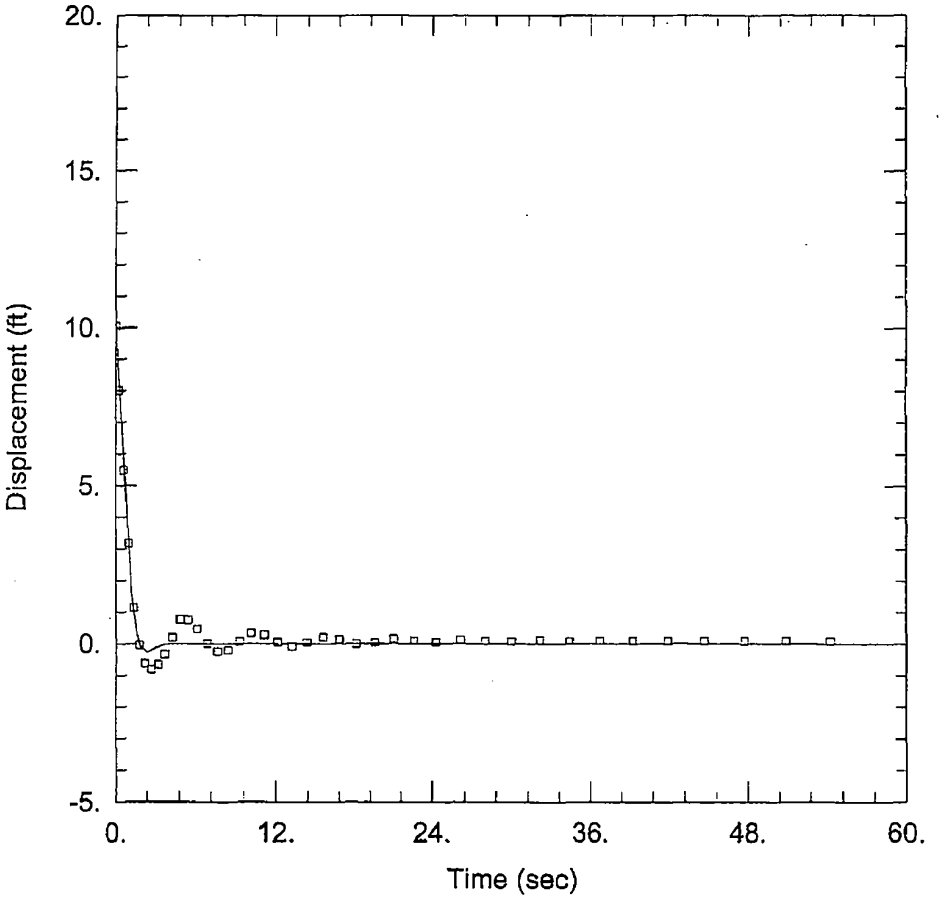
MACTEC

SLUG TEST REPORT

Project Name: TPCOL	Project Number: 6468-07-1950	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: 5-20-08 KK TPCOL OW-735U	MACTEC Rep: Kim Charles-Smith	Date: 05/20/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final stickup = 3.27'		
Static Water Level	4.95' feet From Toc		
Total Well Depth	30.19' feet From Toc		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	mini Troll Transducer probe calibrated 4/29/08 EAP 4/29/09		
Probe Serial Number	SN: 118478 level Troll® 700		
	WinSitu		
Slug Data	used pneumatic slug to perform test.		
Length	SN: 118478 KK 05-20-08		
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-735UBG	NA	OW-735UR
Start Time	08:32:51		08:44:59
End Time	08:37:09		08:49:27
Notes	OW-735UR OW-735UR OW-735UR		
	08:53:57 08:59:20 09:03:23		
	08:57:33 09:00:15 09:04:20		

Rev 0

Prepared by: CHB Date: 1-20-08
Checked by: WSG Date: 6-30-08



OW-735 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-735 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 26.35 ft
Anisotropy Ratio (Kz/Kr): 1.

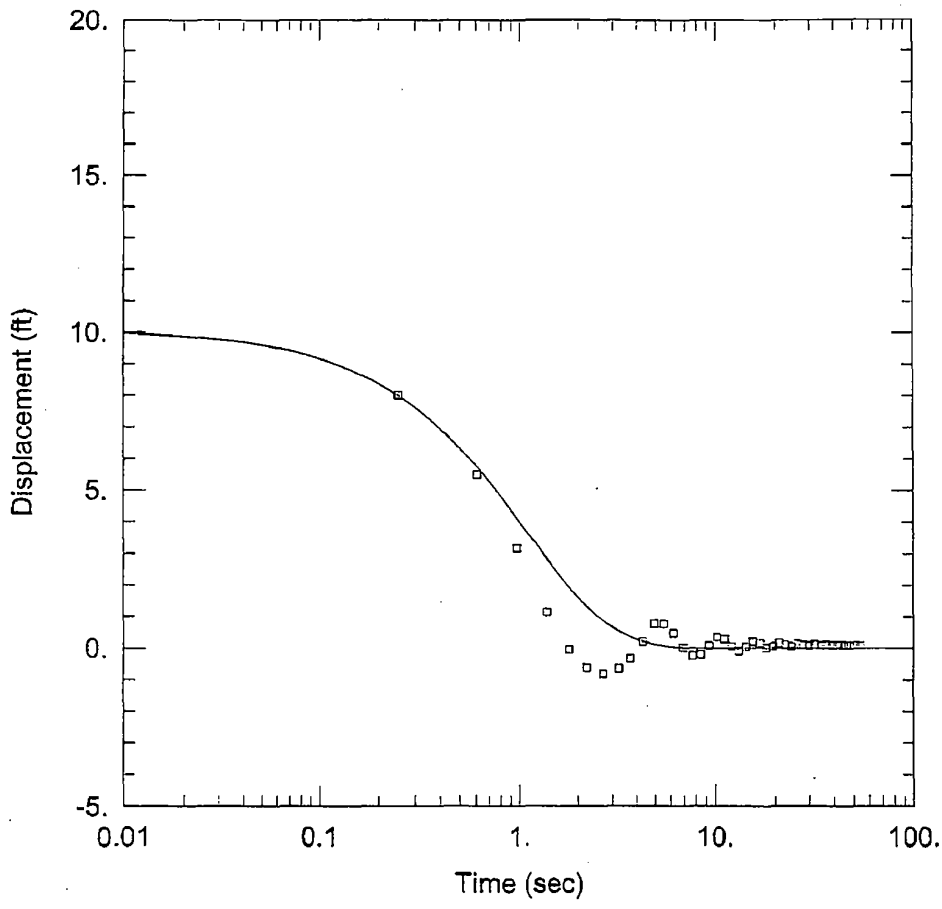
WELL DATA (OW-735 U)

Initial Displacement: 10.05 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.083 ft
Static Water Column Height: 26.35 ft
Screen Length: 16. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 80.18 ft/day
Solution Method: Springer-Gelhar
Le = 7.402 ft

Prepared by: CWS Date: 6-20-08
Checked by: WSC Date: 6-20-08



OW-735 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-735 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 26.35 ft

WELL DATA (OW-735 U)

Initial Displacement: 10.05 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.083 ft
Static Water Column Height: 26.35 ft
Screen Length: 16. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 70.7 ft/day
Kz/Kr = 1.
Ss = 2.291E-10 ft^{-1}

Checked by: CtB Date: 6-20-08

MACTEC

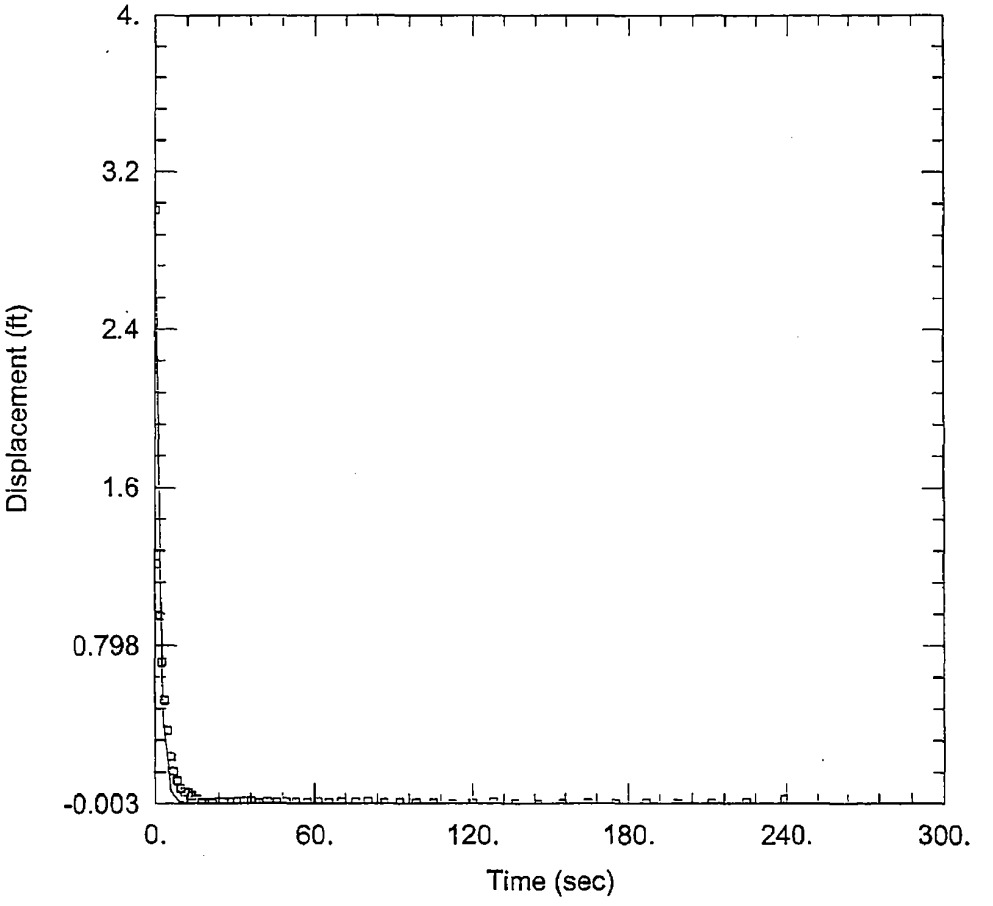
SLUG TEST REPORT

Project Name: TPCoL	Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-735L	MACTEC Rep: Kevin Charles Smith	Date: 05/13/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.58'		
Static Water Level	2.97' feet From TOC		
Total Well Depth 111.68'	~~108.1~~ 105.13 feet from ~~T.O.C~~ TOC KH 5-13-08		
Static Water Column Height (H) 108.71'	105.13' feet KH		
	Background 5-13-08	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)	96.9'		
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (rep)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number SN:	Probe Calibrated 4/29/08 Exp. 4/29/09 103345 Mini Troll Transducer		
Slug Data #2			
Length	65.438 inches		
weight	8.811 lbs.		
Diameter	1.662 inches		
Slug Test File	Background	Falling	Rising
File Name	OW-735L BG	OW-735L F	OW-735L R
Start Time	16:48:56	17:02:43	17:13:33
End Time	16:58:22	17:06:57	17:15:55
Notes	~~Extended casing to 5.158' above ground~~ ~~Run on Faget 15~~ KH 5/13/08		

Rev 0

Prepared by: CHG Date: 6-20-08
Checked by: WSC Date: 6-20-08



OW-735 L FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-735 L
Test Date: 5-15-08

AQUIFER DATA

Saturated Thickness: 87. ft
Anisotropy Ratio (Kz/Kr): 1.

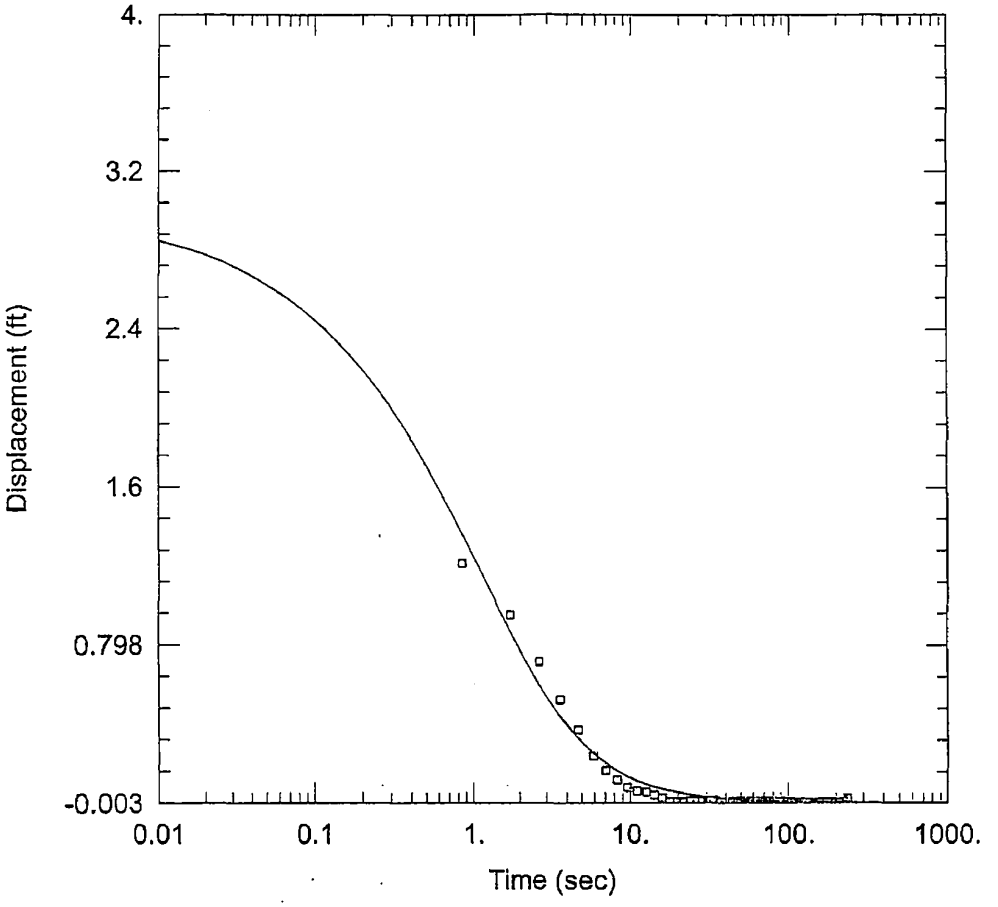
WELL DATA (OW-735 L)

Initial Displacement: 3.004 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110.4 ft
Screen Length: 17.7 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 49.09 ft/day
Solution Method: Butler
Le = 0.1 ft

Prepared by: CKF Date: 6-20-08
Checked by: LWSC Date: 6-20-08



OW-735 L FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-735 L
Test Date: 5-15-08

AQUIFER DATA

Saturated Thickness: 87. ft

WELL DATA (OW-735 L)

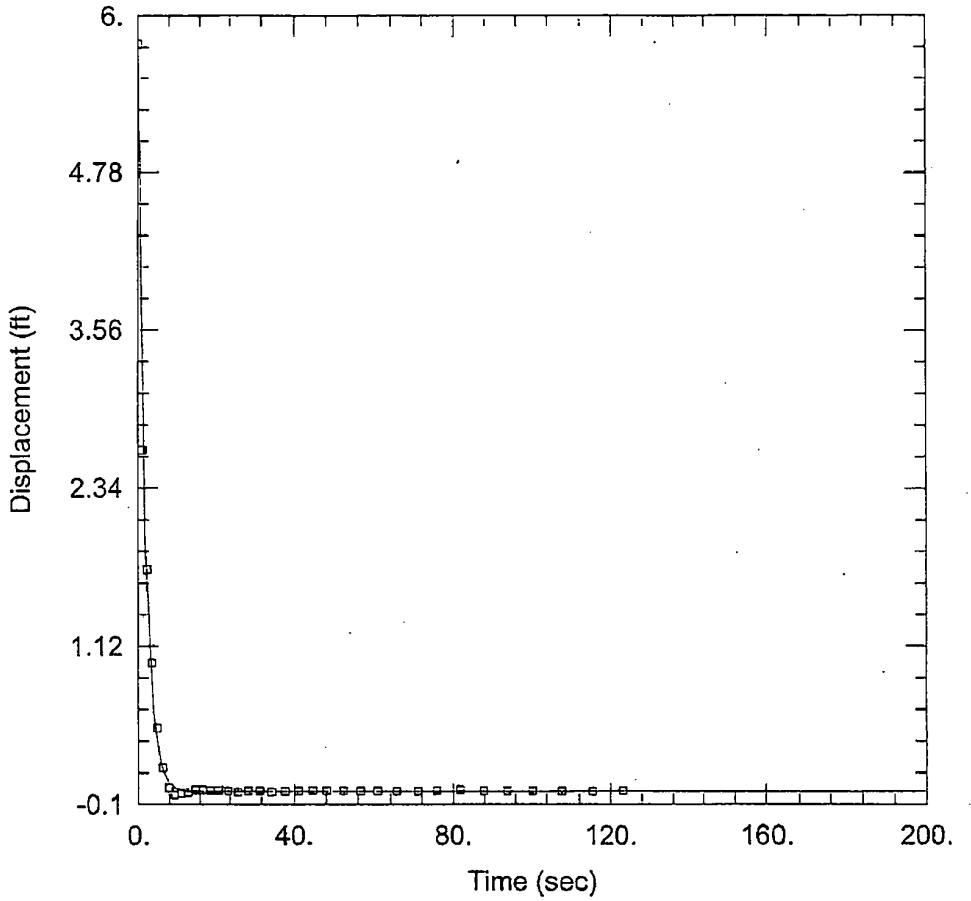
Initial Displacement: 3.004 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110.4 ft
Screen Length: 17.7 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model

Kr = 20.57 ft/day
Kz/Kr = 1.
Ss = 0.0003506 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-735 L RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-735 L
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 87. ft
Anisotropy Ratio (Kz/Kr): 1.

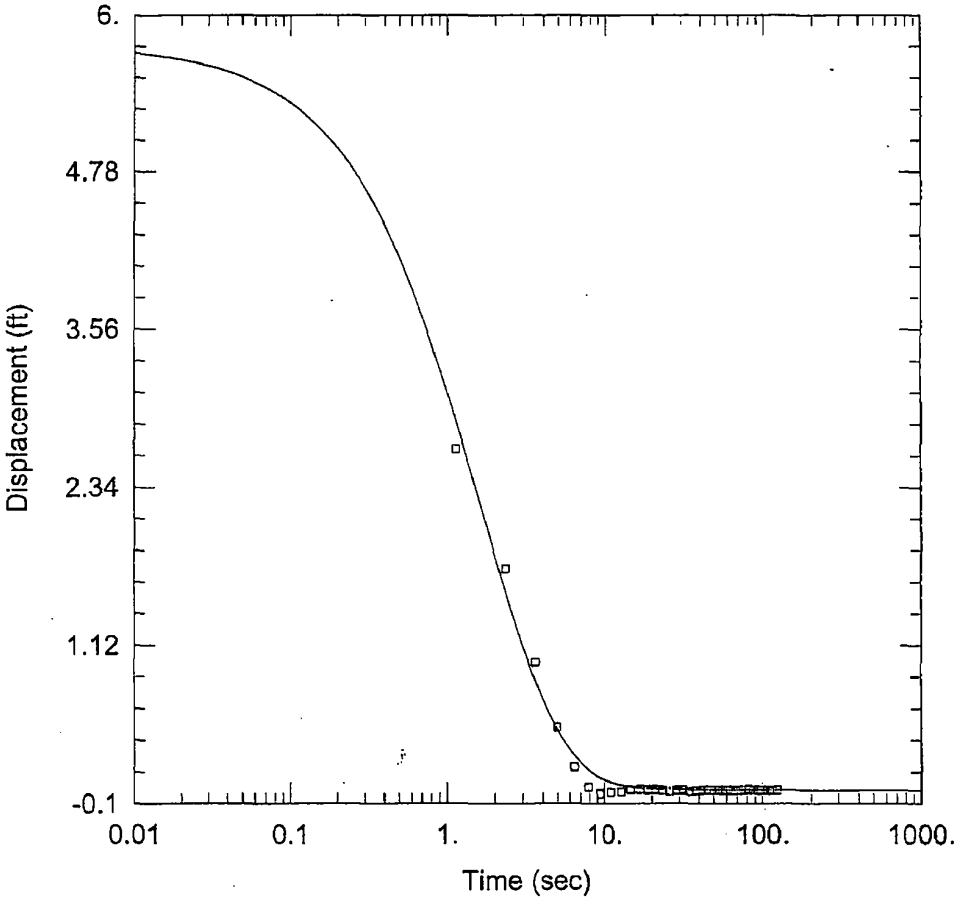
WELL DATA (OW-735 L)

Initial Displacement: 5.779 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110.4 ft
Screen Length: 17.7 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 42.01 ft/day
Solution Method: Butler
Le = 0.1 ft

Prepared by: CHB Date: 6-20-08
Checked by: CMS Date: 6-20-08



OW-735 L RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: Turkey Point
Client: BECHTEL
Project: 6468-07-1950
Location: Turkey Point
Test Well: OW-735 L
Test Date: 5-20-08

AQUIFER DATA

Saturated Thickness: 87. ft

WELL DATA (OW-735 L)

Initial Displacement: 5.779 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110.4 ft
Screen Length: 17.7 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model
Kr = 32.05 ft/day
Kz/Kr = 1.
Ss = 2.446E-6 ft^{-1}

Checked by: CHS Date: 6-20-08

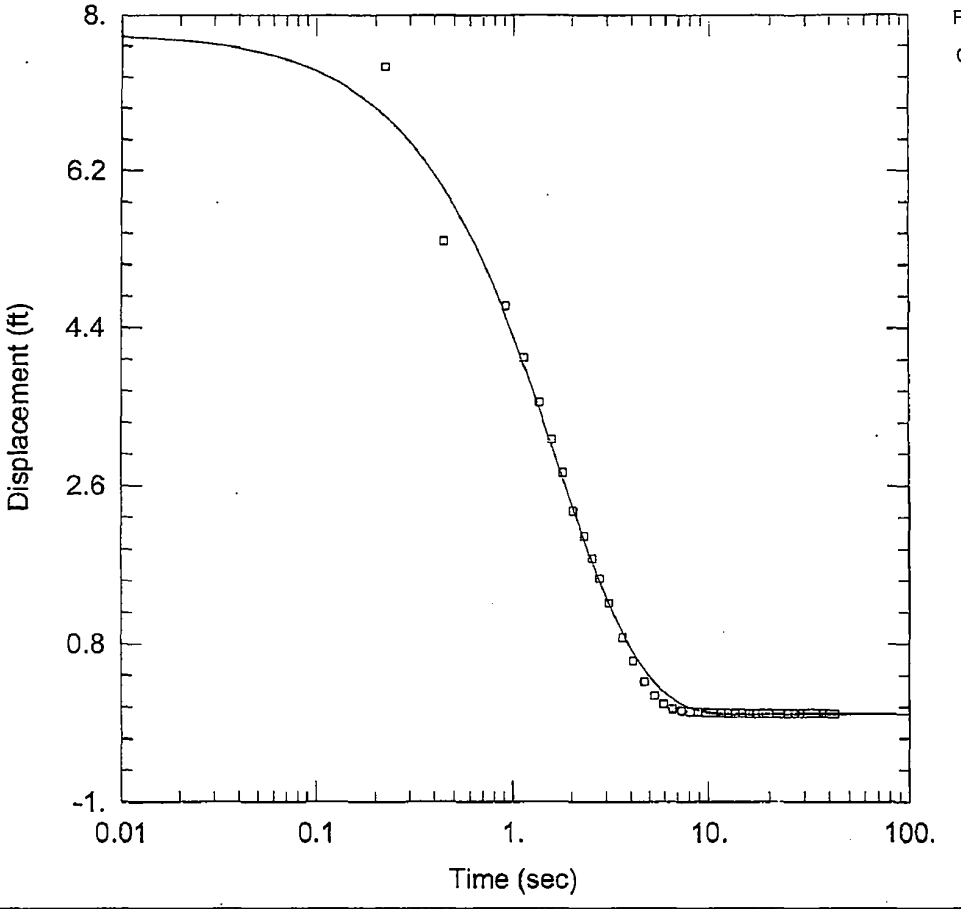
MACTEC

SLUG TEST REPORT

Project Name: TPCOL	6400-07-1950 Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-802U	MACTEC Rep: Kim Chacks-Smith	Date: 05/20/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final stickup From g.s. = 3.53'		
Static Water Level	4.60' feet From TOC		
Total Well Depth	29.11' feet From TOC		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (rep)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Mini Troll Transducer probe calibrated 4/29/08. Expires 4/29/09. Level troll® 700 SN: 118478 Winsitu		
Slug Data	USED pneumatic Slug to perform test		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-802UBG	NA	OW-802UR
Start Time	16:31:44		16:36:39
End Time	16:33:1618		16:37:26
Notes	KM 5-20-08		

Rev 0

Prepared by: CAB Date: 6-20-08
Checked by: LAS Date: 6-20-08



OW-802 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-802 U
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 25.8 ft

WELL DATA (OW-802 U)

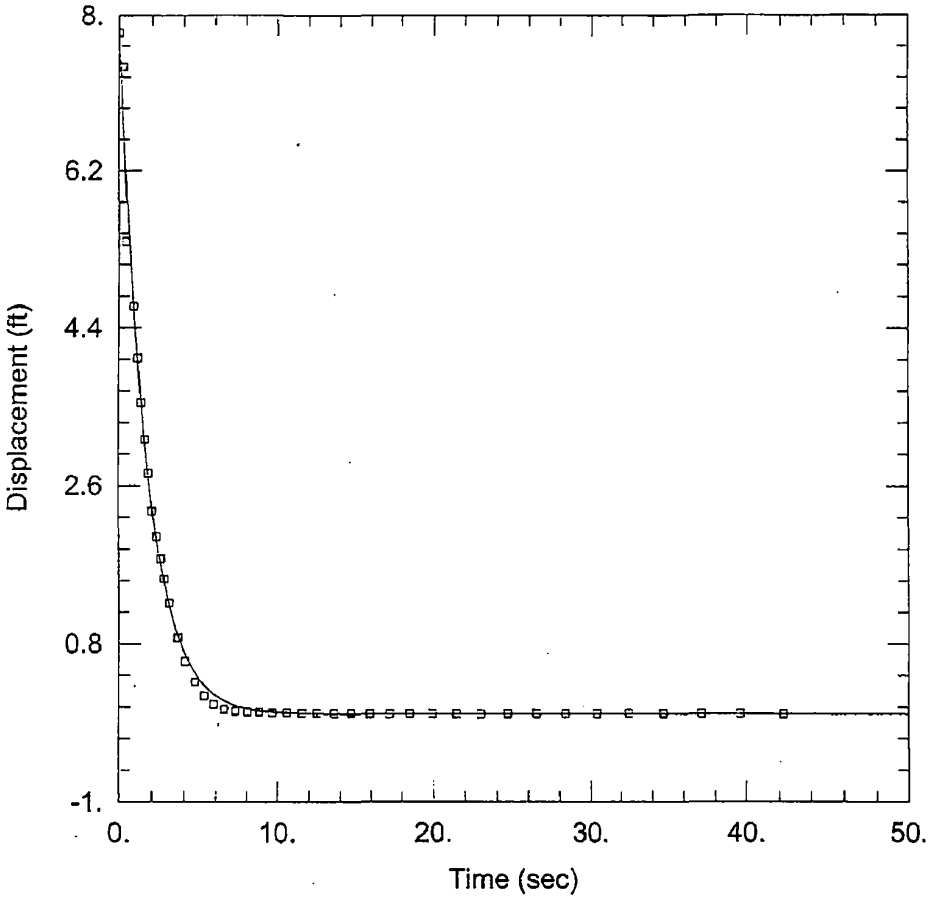
Initial Displacement: 7.799 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.8 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 41.06 ft/day
Kz/Kr = 1.
Ss = 3.704E-12 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: WSS Date: 6-20-08



OW-802 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-802 U
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 25.8 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-802 U)

Initial Displacement: 7.799 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.8 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 31.9 ft/day
Solution Method: Springer-Gelhar
Le = 1.8 ft

Checked by: CHB Date: 6-20-08

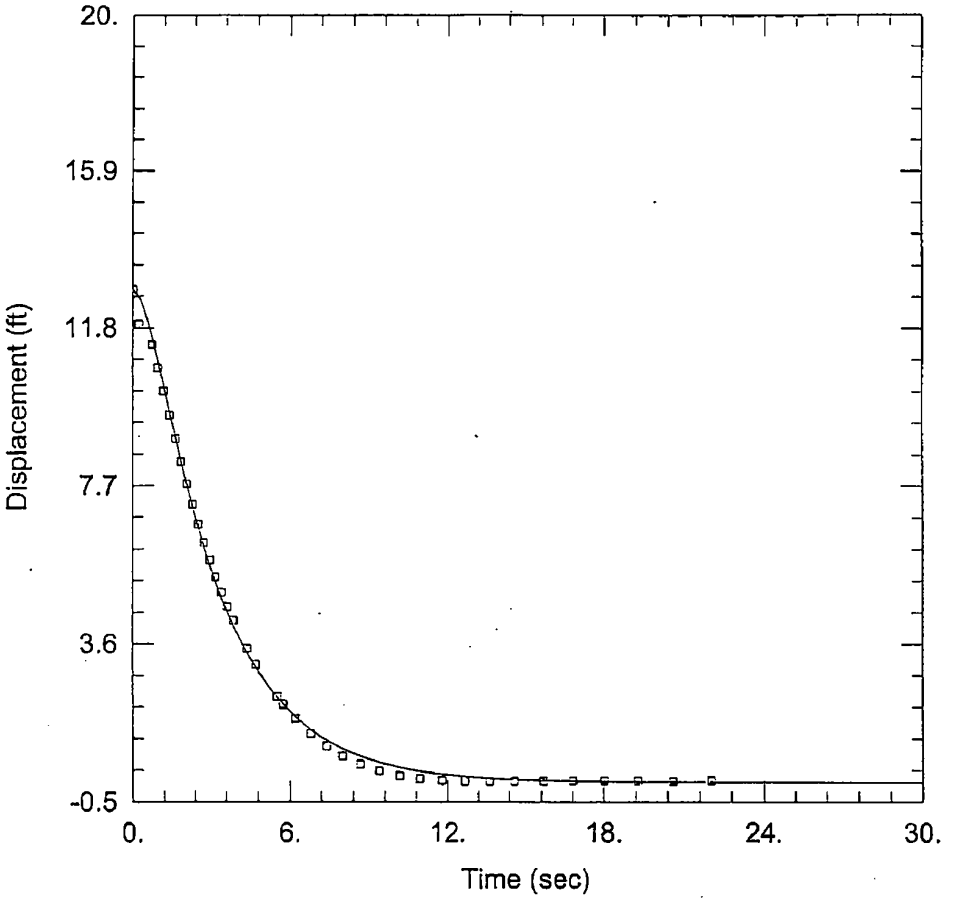
MACTEC

SLUG TEST REPORT

Project Name: TPCA	Project Number: 6468-07-1950	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-802L	MACTEC Rep: Kim Charles Smith	Date: 05/20/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final stickup = 3.45'		
Static Water Level	3.06' feet From TOC		
Total Well Depth	112.35' feet From TOC		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Mini Troll Transducer calibrated 4/29/08, Exp 4/29/09 SN: 118478 Level Troll® 700 WinSitu		
Slug Data	Used pneumatic slug to perform test.		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	~~OW-802L BG~~ MW 8-20-08	NA	OW-802LR
Start Time			17:15:09
End Time			17:15:45
Notes			

Prepared by: CHB Date: 6-20-08
Checked by: WSL Date: 6-30-08



OW-802 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-802 L
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 88. ft
Anisotropy Ratio (Kz/Kr): 1.

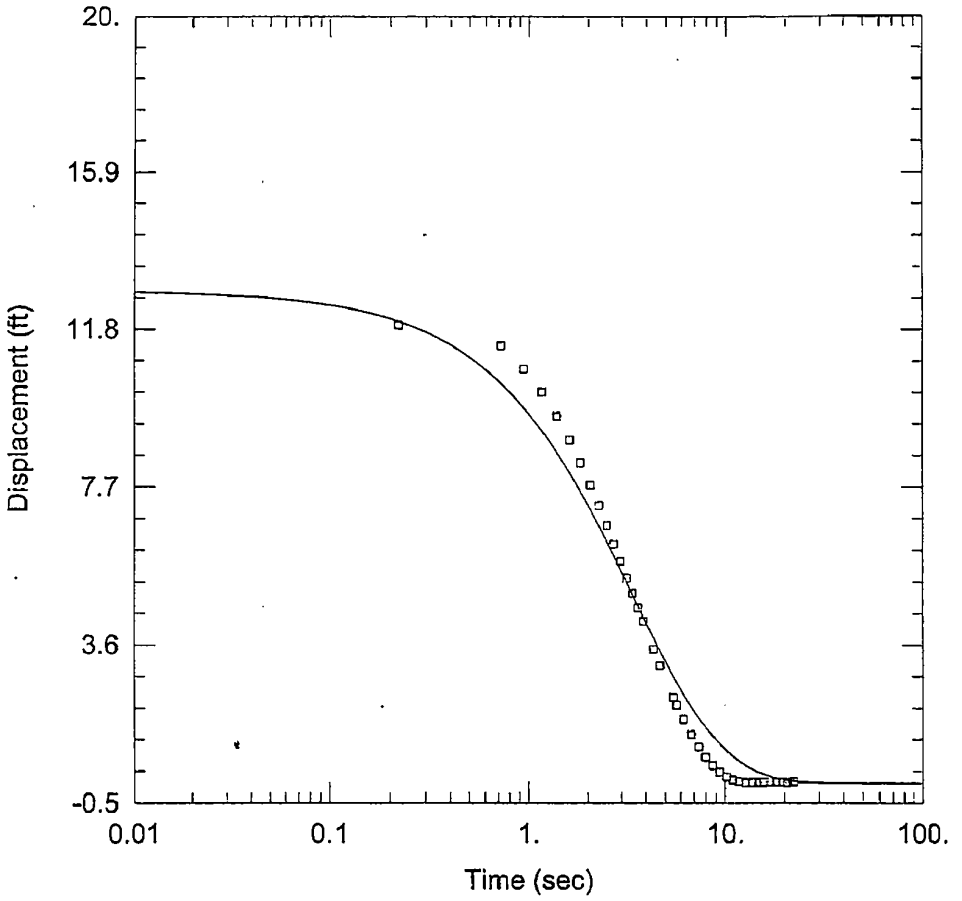
WELL DATA (OW-802 L)

Initial Displacement: 12.8 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110.2 ft
Screen Length: 17. ft
Well Radius: 0.21 ft

SOLUTION

Aquifer Model: Confined
K = 23.28 ft/day
Solution Method: Butler
Le = 58.98 ft

Prepared by: CHG Date: 6-20-08
Checked by: WSC Date: 6-20-08



OW-802 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-802 L
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 88. ft

WELL DATA (OW-802 L)

Initial Displacement: 12.8 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110.2 ft
Screen Length: 17. ft
Well Radius: 0.21 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model

Kr = 30.99 ft/day
Kz/Kr = 1.
Ss = 1.26E-20 ft^{-1}

Checked by: CHB Date: 6-20-08

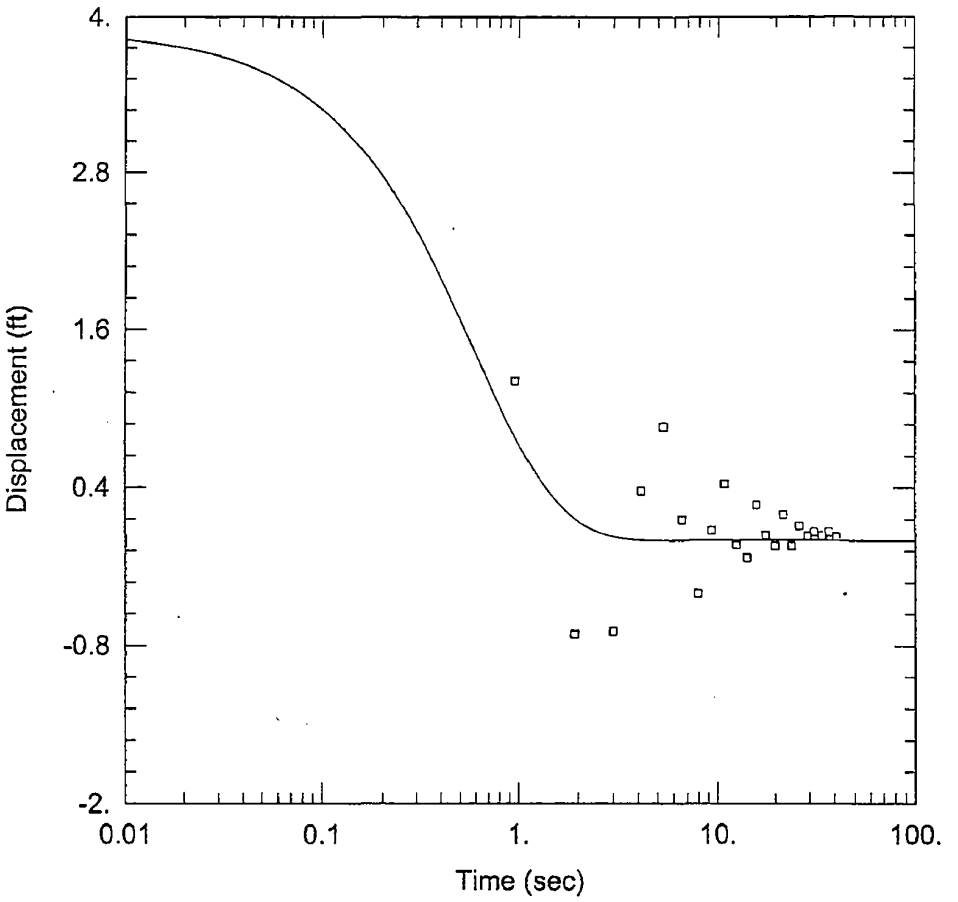
MACTEC

SLUG TEST REPORT

Project Name: Tukey Point COL	6468071950	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC	OW-805U	
Location: Homestead, FL	MACTEC Rep: Kim Chart-Smith	Date: 06.06.08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Stickup = 3.1' From g.s.		
Static Water Level	3.00' feet From ToC		
Total Well Depth	33.85' feet From ToC		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet 15-28 Surficial		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1 13 Tof Surf		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10 feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	mini Troll Transducer probe Calibrated 4/29/08		
Probe Serial Number	Expires 4/29/09 level troll (R) 700		
	Sn: 119478 WinSITU		
Slug Data	Used Pneumatic Slug to Perform test		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-805UBG	NA	OW-805UR
Start Time	03:35:15		03:48:34
End Time	03:37:21		03:50:05
Notes	2nd Rising Test OW-805UR		
	03:54	03:54:32	
	KJS 6-6-08	03:55:29	

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-805 U RISING HEAD TEST 6-06-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-805 U
Test Date: 6/06/2008

AQUIFER DATA

Saturated Thickness: 32.3 ft

WELL DATA (0W-805 U)

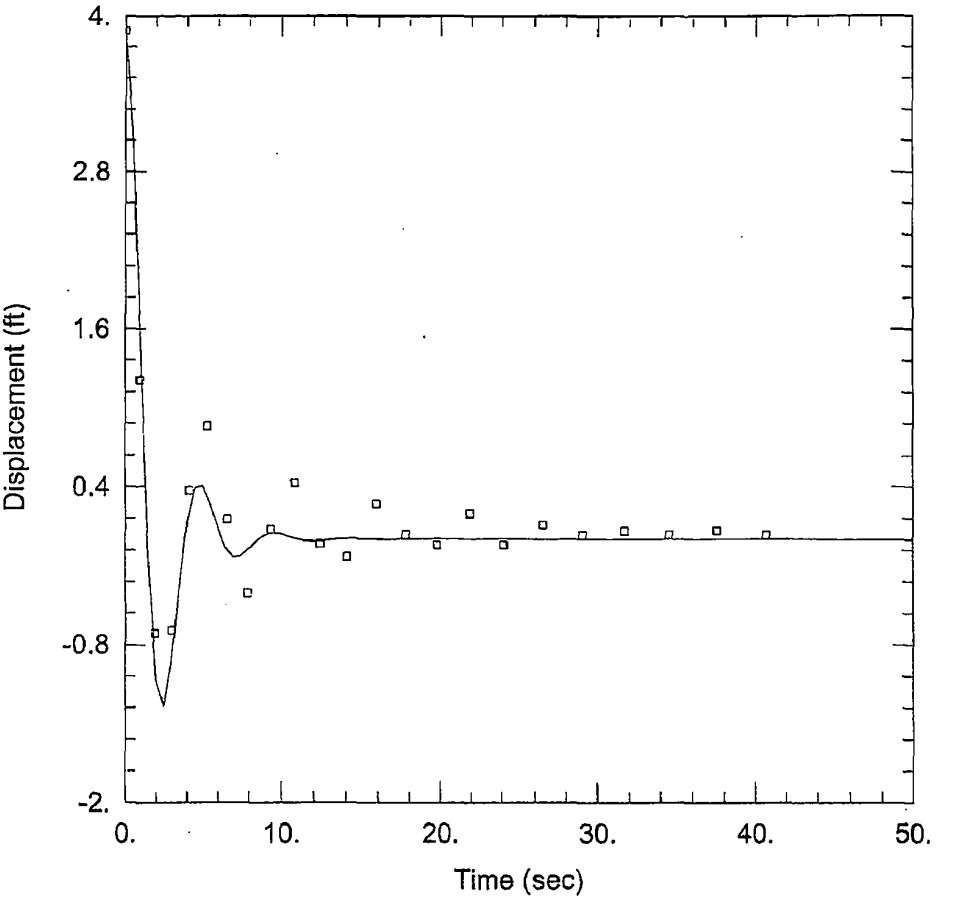
Initial Displacement: 3.886 ft
Total Well Penetration Depth: 30. ft
Casing Radius: 0.083 ft
Static Water Column Height: 29.8 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 101.7 ft/day
Kz/Kr = 1.
Ss = 3.077E-12 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: WSV Date: 6-20-08



OW-805 U RISING HEAD TEST 6-06-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-805 U
Test Date: 6/06/2008

AQUIFER DATA

Saturated Thickness: 32.3 ft
Anisotropy Ratio (Kz/Kr): 1.

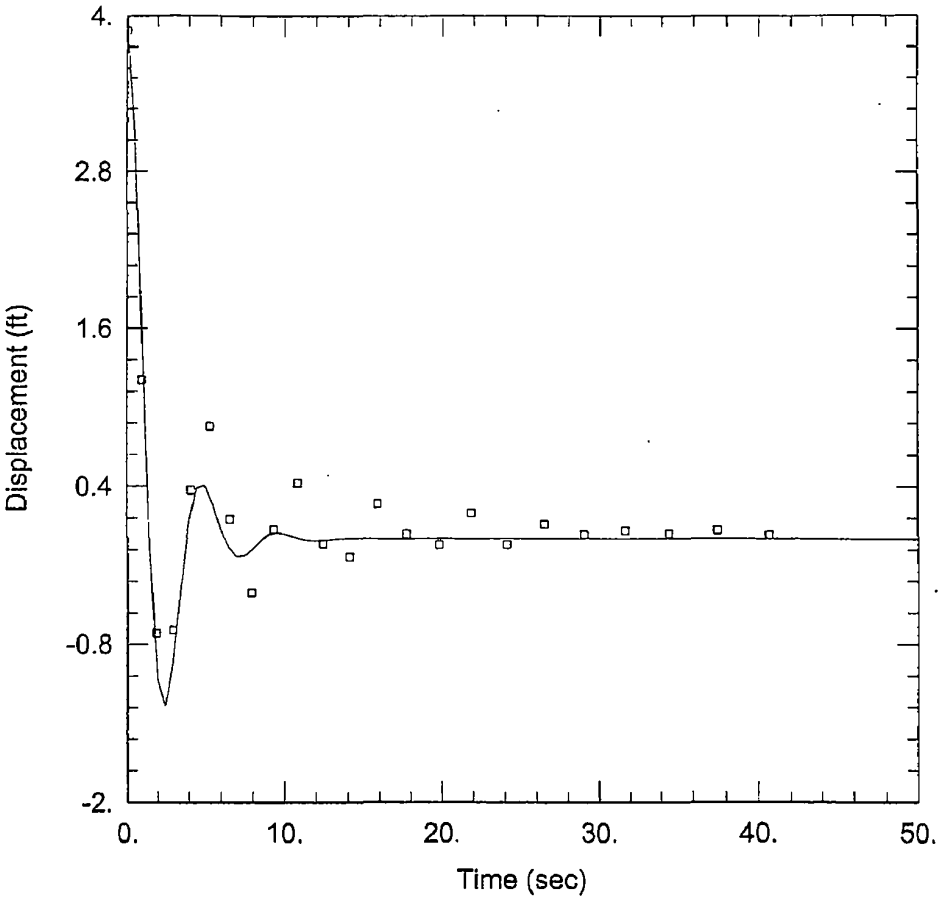
WELL DATA (0W-805 U)

Initial Displacement: 3.886 ft
Total Well Penetration Depth: 30. ft
Casing Radius: 0.083 ft
Static Water Column Height: 29.8 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Butler
K = 136.4 ft/day
Le = 16.61 ft

Prepared by: CHS Date: 6-20-08
Checked by: WSH Date: 6-20-08



OW-805 U RISING HEAD TEST 6-06-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-805 U
Test Date: 6/06/2008

AQUIFER DATA

Saturated Thickness: 32.3 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (0W-805 U)

Initial Displacement: 3.886 ft
Total Well Penetration Depth: 30. ft
Casing Radius: 0.083 ft
Static Water Column Height: 29.8 ft
Screen Length: 17. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar
K = 107.1 ft/day
Le = 16.61 ft

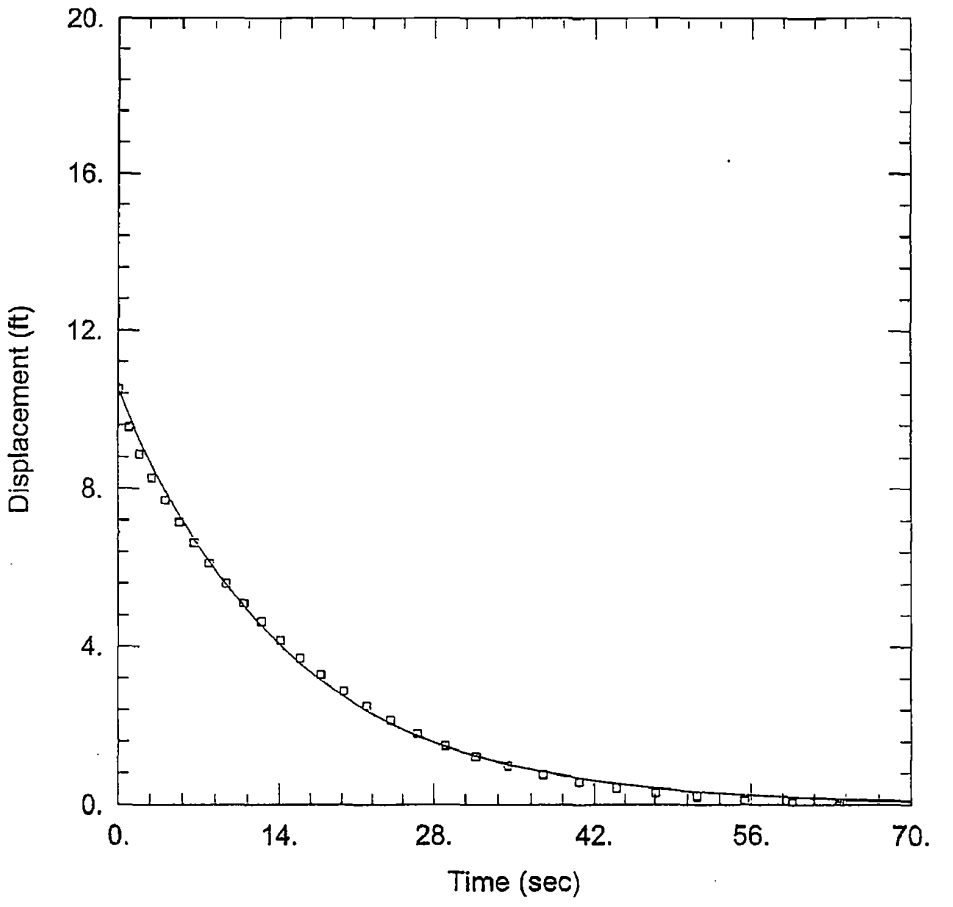
Checked by: CHB Date: 6-20-08

MACTEC

SLUG TEST REPORT

Project Name: Tukey Point COL	6468071950	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC	OW-805L	
Location: Homestead, FL	MACTEC Rep: Kim Charbsmith	Date: 06/06/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Stickup = 2.91 From g.s.		
Static Water Level	3.19' feet From TOC		
Total Well Depth	97.9' feet From TOC		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA		
Saturated Thickness (b)	feet	Sand 80 - 97.9	
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1	85'-95'	
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10 feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Mini Troll Transducer probe Calibrated 4/29/08. Expires 4/29/09. Level troll @ 700 SN: 119478 WinSitu		
Slug Data	Used pneumatic Slug to perform test		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	KK 6-6-08 Rising ~~805LR~~
File Name	~~OW-805LR~~ KK 6-6-08 OW-805L	NA	OW-805L
Start Time KK 6-6-08	~~03:35:15~~		04:16:39
End Time KK 6-6-08	~~03:57:21~~		04:17:43
Notes	04:09:39 ~~04:10:42~~ 2nd OW-805LR 04:24:09 04:25:29		
Rev 0			

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-805 L RISING HEAD TEST 6-06-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-805 L
Test Date: 6/06/2008

AQUIFER DATA

Saturated Thickness: 67.5 ft
Anisotropy Ratio (Kz/Kr): 1.

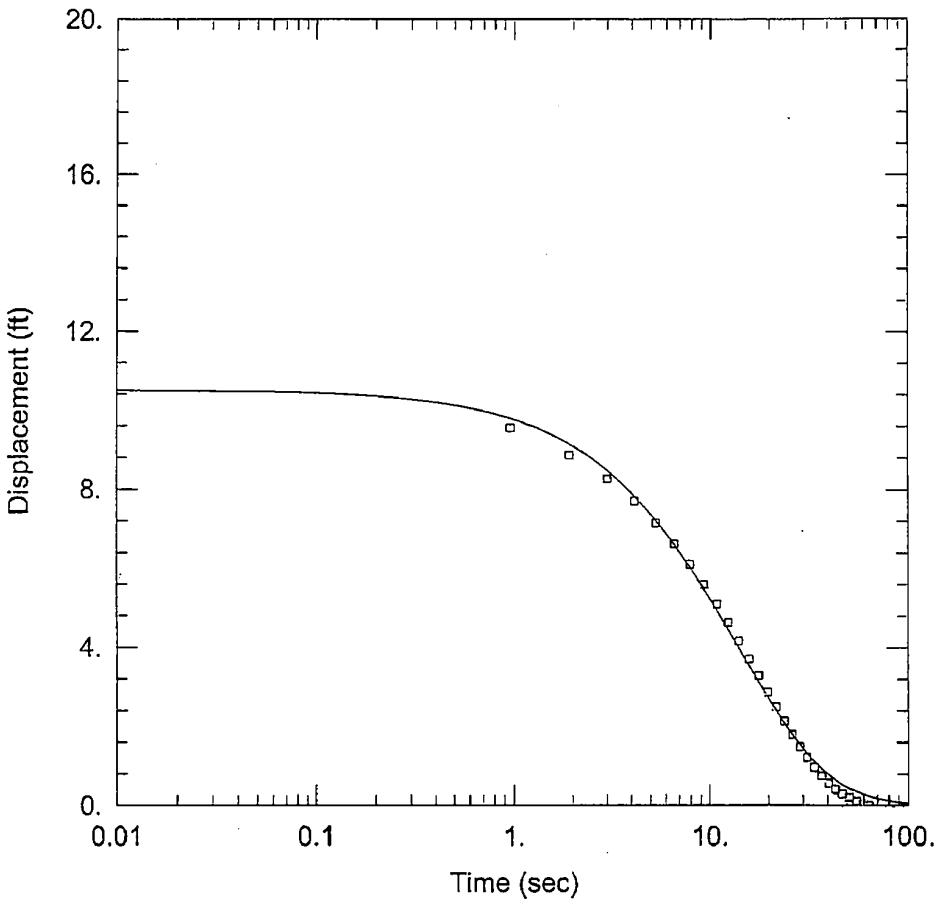
WELL DATA (OW-805 L)

Initial Displacement: 10.51 ft
Total Well Penetration Depth: 97. ft
Casing Radius: 0.083 ft
Static Water Column Height: 97.51 ft
Screen Length: 17. ft
Well Radius: 0.21 ft

SOLUTION

Aquifer Model: Confined
K = 5.269 ft/day
Solution Method: Butler
Le = 0.1 ft

Prepared by: CHS Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-805 L RISING HEAD TEST 6-06-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-805 L
Test Date: 6/06/2008

AQUIFER DATA

Saturated Thickness: 67.5 ft

WELL DATA (OW-805 L)

Initial Displacement: 10.51 ft
Total Well Penetration Depth: 97. ft
Casing Radius: 0.083 ft
Static Water Column Height: 97.51 ft
Screen Length: 17. ft
Well Radius: 0.21 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model

Kr = 5.936 ft/day
Kz/Kr = 1.
Ss = 1.481E-12 ft^{-1}

Checked by: CHB Date: 6-20-08

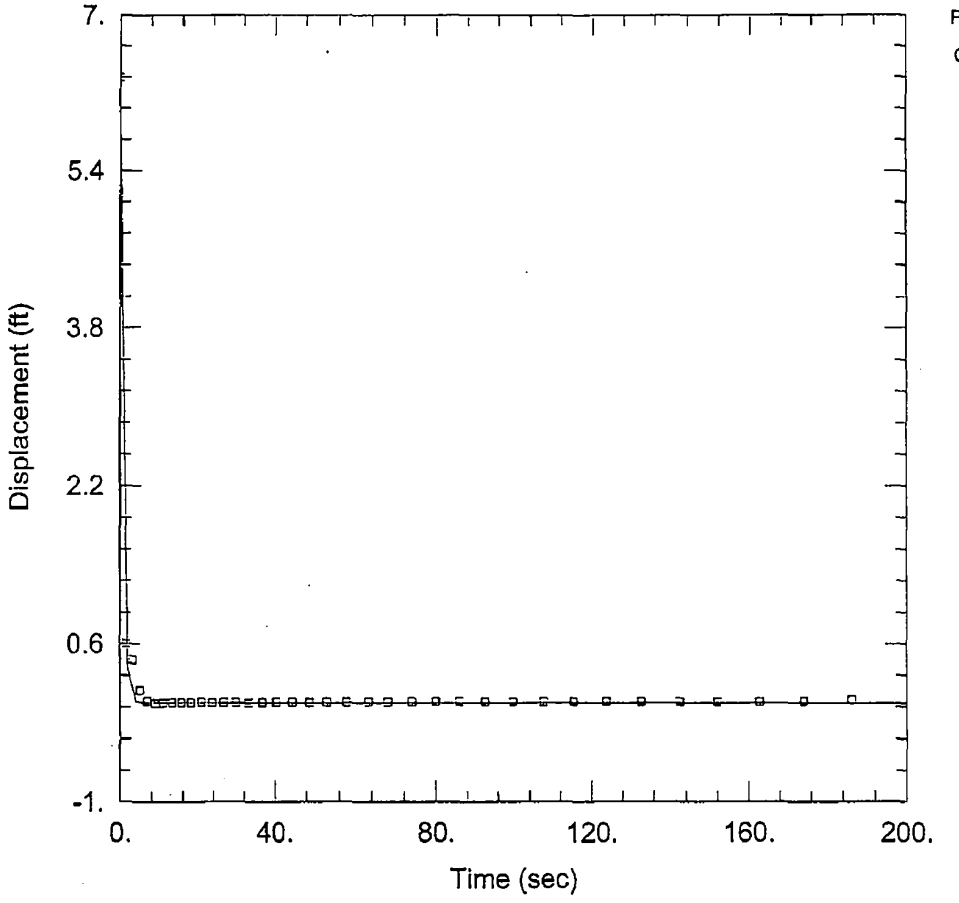
MACTEC

SLUG TEST REPORT

Project Name: TP COL	Project Number:	Page 1 of	
Client: Bechtel	Contractor: MACTEC		
Location: OW-809U	MACTEC Rep: Kim Clarke-Smith	Date: 05/15/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Fine Stickup = 3.83'		
Static Water Level	4.68' feet From TOC		
Total Well Depth	29.71' feet From TOC		
Static Water Column Height (H)	25.03' feet From S.S.		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
	Mini Troll transducer calibrated 4/29/08, Exp 4/29/09.		
Probe Serial Number Sn: 103345			
Slug Data Slug #2			
Length	65.438 inches		
weight	8.811 lbs.		
Diameter	1.662 inches		
Slug Test File	Background	Falling	Rising
File Name	OW-809UBG	OW-809UF	OW-809UR
Start Time	13:22:17	13:38:04	13:59:56
End Time	13:34:53	13:48:40	14:10:44
Notes	No Solution (SEP on TOC		
	Ref Rep. OW-809UF @ 14:13:16 hrs.		

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: WSC Date: 6-20-08



OW-809 U FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 25.52 ft
Anisotropy Ratio (Kz/Kr): 1.

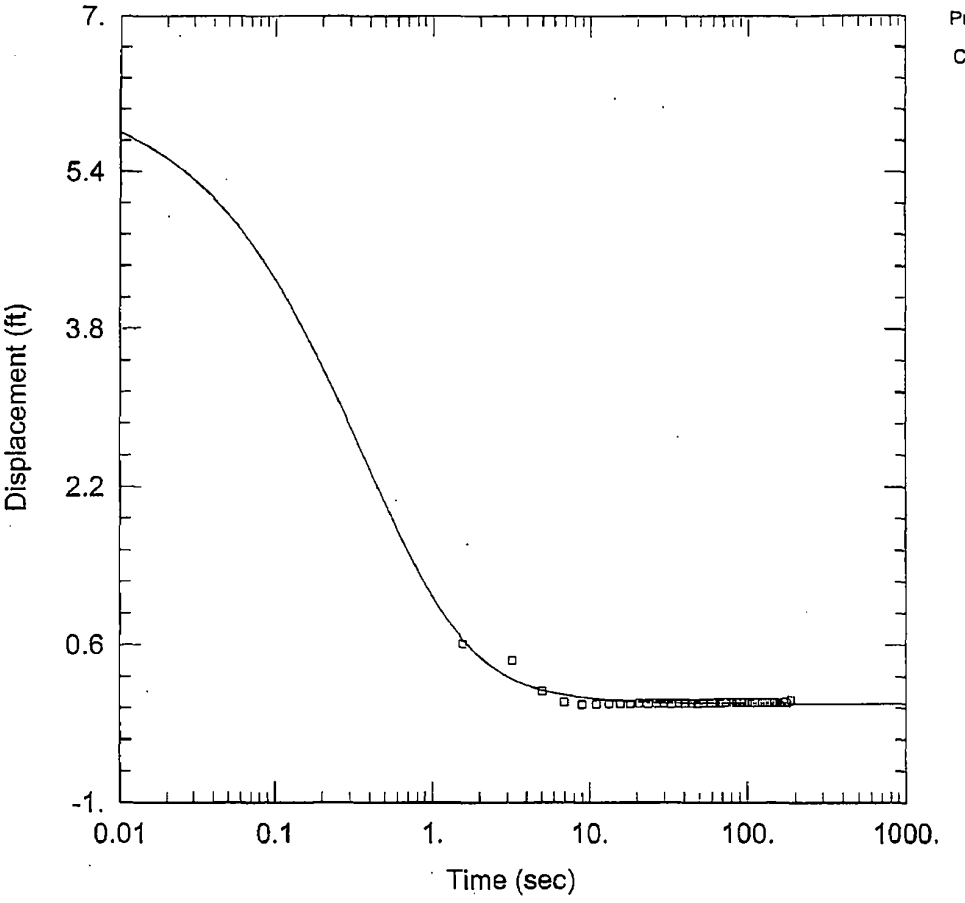
WELL DATA (OW-809 U)

Initial Displacement: 6.358 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.52 ft
Screen Length: 14.4 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar
K = 91.2 ft/day
Le = 0.1 ft

Prepared by: CHB Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-809 U FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 25.52 ft

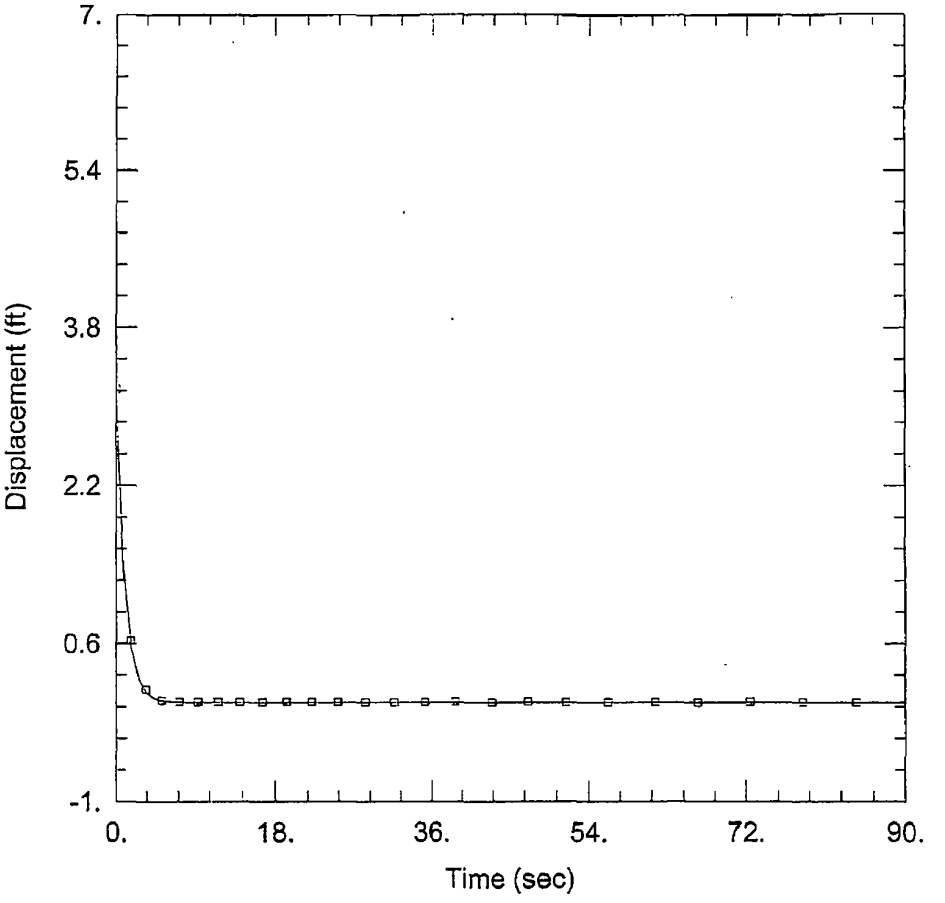
WELL DATA (OW-809 U)

Initial Displacement: 6.358 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.52 ft
Screen Length: 14.4 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model
Kr = 102.9 ft/day
Kz/Kr = 1.
Ss = 0.0003374 ft^{-1}

Prepared by: CAB Date: 6-20-08
Checked by: WS Date: 6-20-08



OW-809 U RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 25.52 ft
Anisotropy Ratio (Kz/Kr): 1.

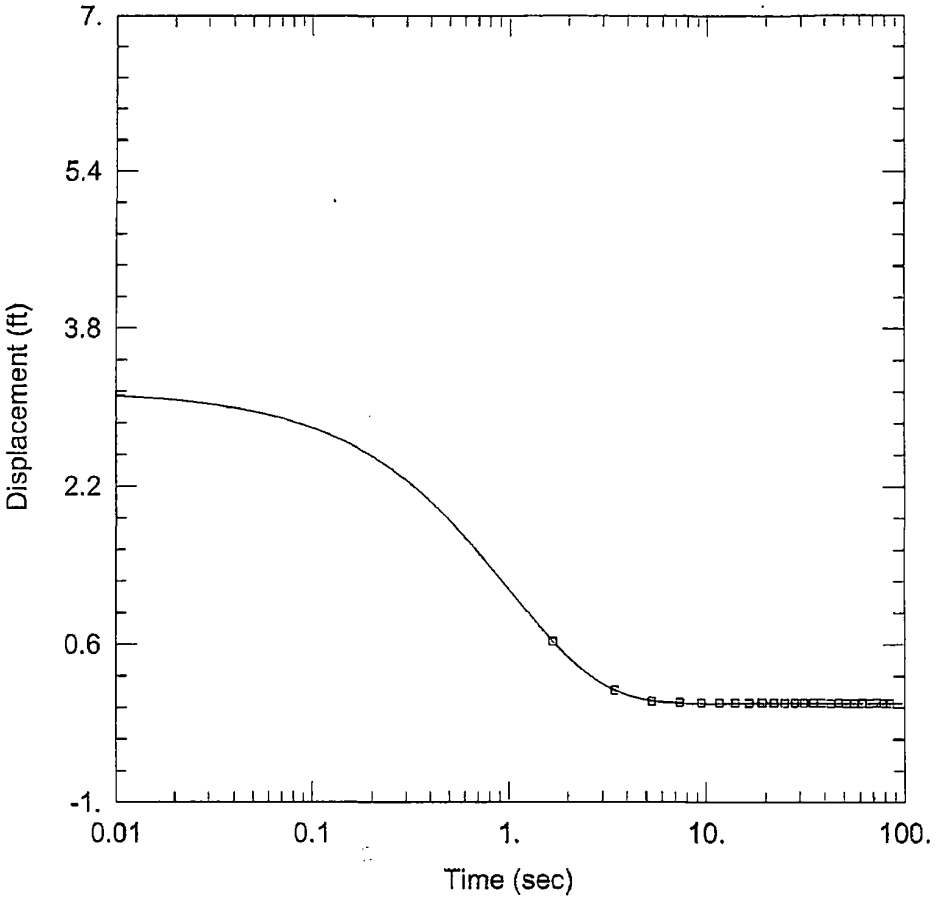
WELL DATA (OW-809 U)

Initial Displacement: 3.175 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.52 ft
Screen Length: 14.4 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 60.67 ft/day
Solution Method: Springer-Gelhar
Le = 0.1 ft

Prepared by: CHG Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-809 U RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 U
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 25.52 ft

WELL DATA (OW-809 U)

Initial Displacement: 3.175 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.52 ft
Screen Length: 14.4 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 82.32 ft/day
Kz/Kr = 1.
Ss = 2.789E-6 ft^{-1}

Checked by: CHB Date: 6-20-08

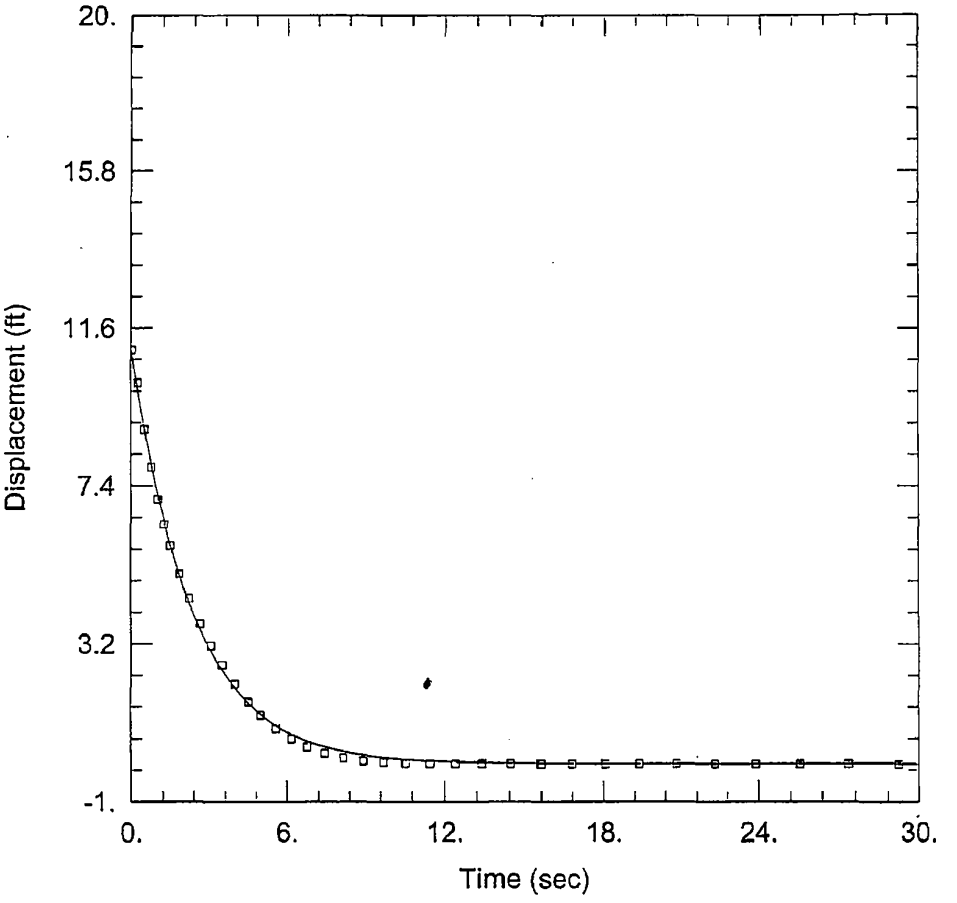
MACTEC

SLUG TEST REPORT

Project Name: TPCoL	Project Number: 6468-07-4150	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-809U	MACTEC Rep: Kim Charles-Smith	Date: 05/20/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.83'		
Static Water Level	4.72' feet From TOC		
Total Well Depth	29.71' feet From TOC		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Mini Troll Transducer probe calibrated 4/29/08, Exp 4/29/09 SN: 118478 level Troll @ TOC		
Slug Data	Winsitu used Pneumatic Slug to perform test		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-809UBG	NA	OW-809UR
Start Time	09:24:23		09:33:23
End Time	09:27:32		09:33:54
Notes			

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: WG Date: 6-20-08



OW-809 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 U
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 25.48 ft
Anisotropy Ratio (Kz/Kr): 1.

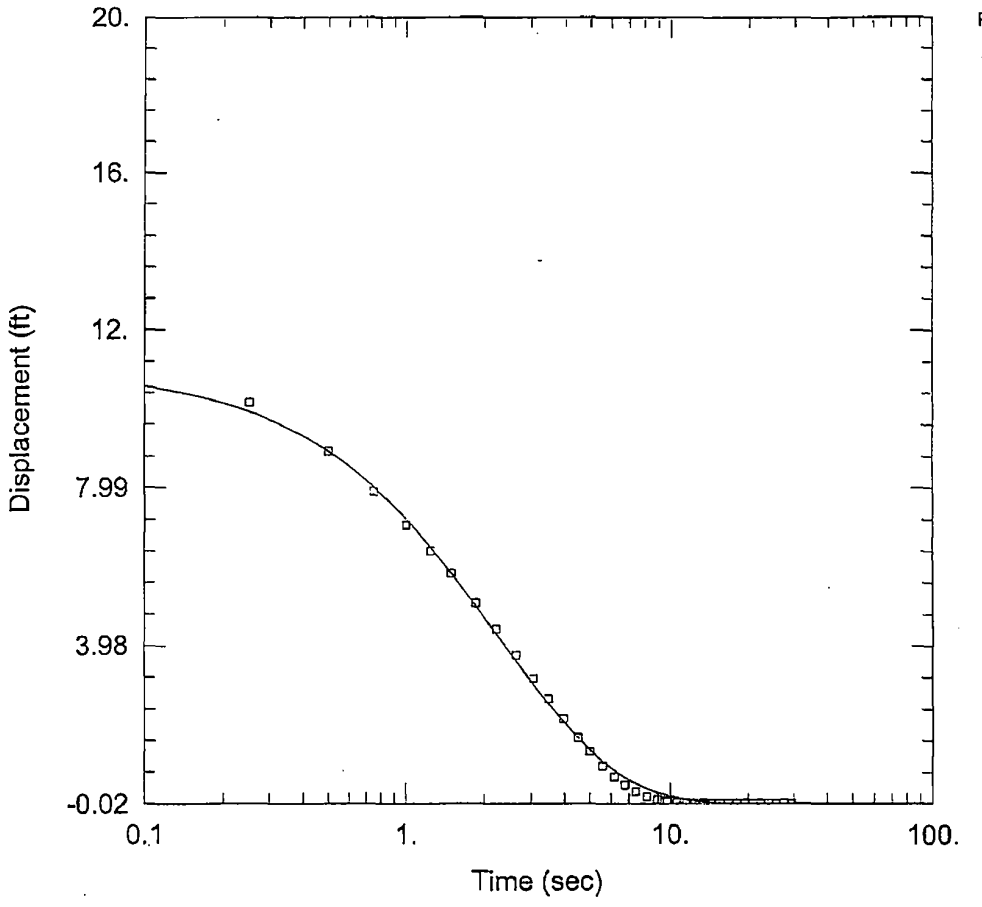
WELL DATA (OW-809 U)

Initial Displacement: 11.02 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.48 ft
Screen Length: 14.4 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar
K = 26.86 ft/day
Le = 1.028 ft

Prepared by: CHB Date: 6-20-08
Checked by: WL Date: 6-20-08



OW-809 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 U
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 25.48 ft

WELL DATA (OW-809 U)

Initial Displacement: 11.02 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.48 ft
Screen Length: 14.4 ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 35.94 ft/day
Kz/Kr = 1.
Ss = 4.032E-19 ft^{-1}

Checked by CWB Date: 6-20-08

MACTEC

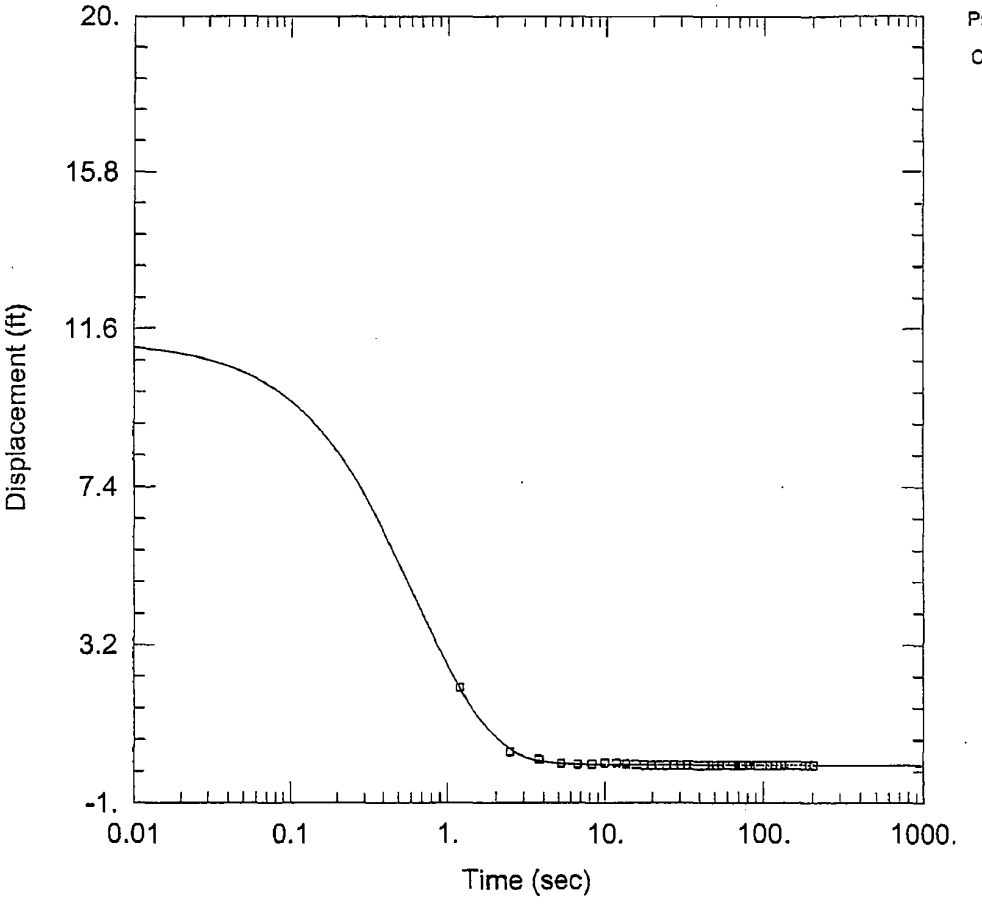
SLUG TEST REPORT

Project Name: TPCOL	Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-809L	MACTEC Rep: Kim Chalo-Smith	Date: 05/15/08	

UNITS			
Length	Feet		
Time	Minutes		
Well Data	Final Stickup = 3.75'		
Static Water Level	3.26 feet From TOC		
Total Well Depth	109.92 feet From TOC		
Static Water Column Height (H) 106.66	105.68 feet From 9.5		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (req)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Mini Troll Probe Calibrated 4/29/08. Exp. 4/29/09 Transducer		
Sn: 103345			
Slug Data Slug #2			
Length	65.438 inches		
weight	8.811 lbs.		
Diameter	1.662 inches		
Slug Test File	Background	Falling	Rising
File Name	OW-809BG	OW-809LF	OW-809LR
Start Time	12:36:37	12:46:05	12:59:45
End Time	12:42:56	12:56:41	13:13:03
Notes	Extended TOC TO 5.81' above 9.5.		

Rev 0

Prepared by: CHS Date: 6-20-08
Checked by: WSC Date: 6-20-08



OW-809 L FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 L
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 88. ft

WELL DATA (OW-809 L)

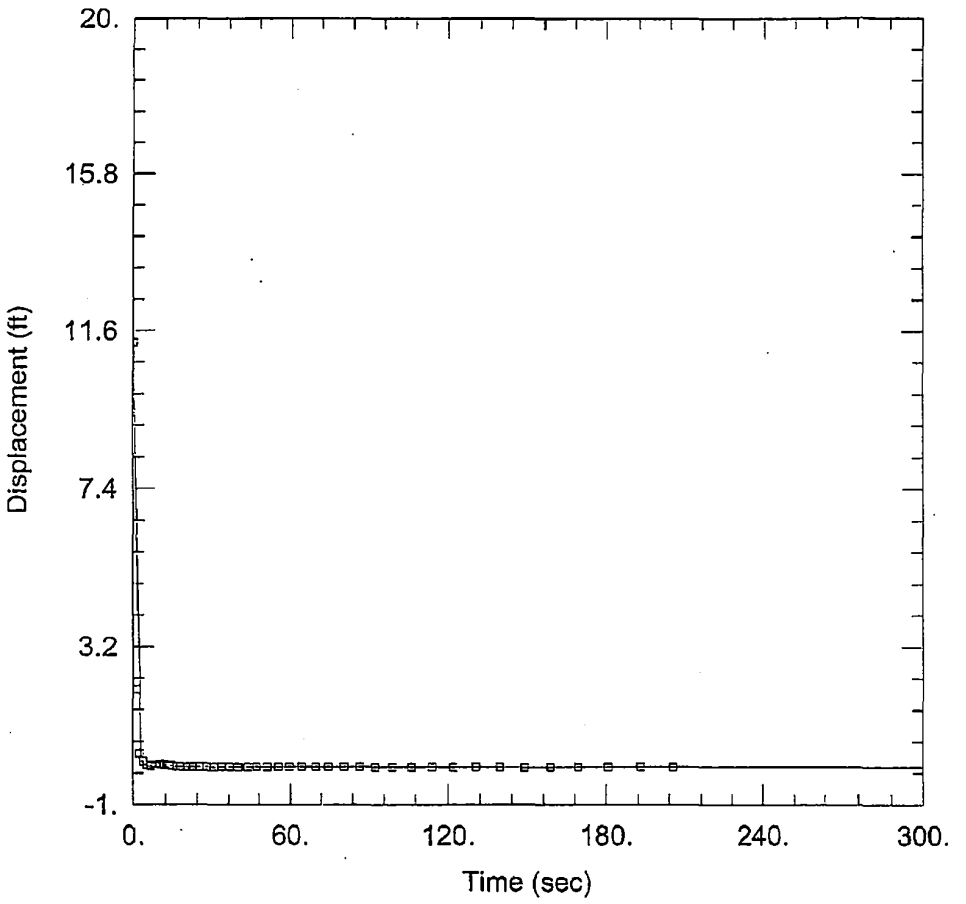
Initial Displacement: 11.29 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110. ft
Screen Length: 19. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model

Kr = 108.6 ft/day
Kz/Kr = 1.
Ss = 4.263E-12 ft^{-1}

Prepared by: CHB Date: 6-20-08
Checked by: GWG Date: 6-20-08



OW-809 L FALLING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 L
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 88. ft
Anisotropy Ratio (Kz/Kr): 1.

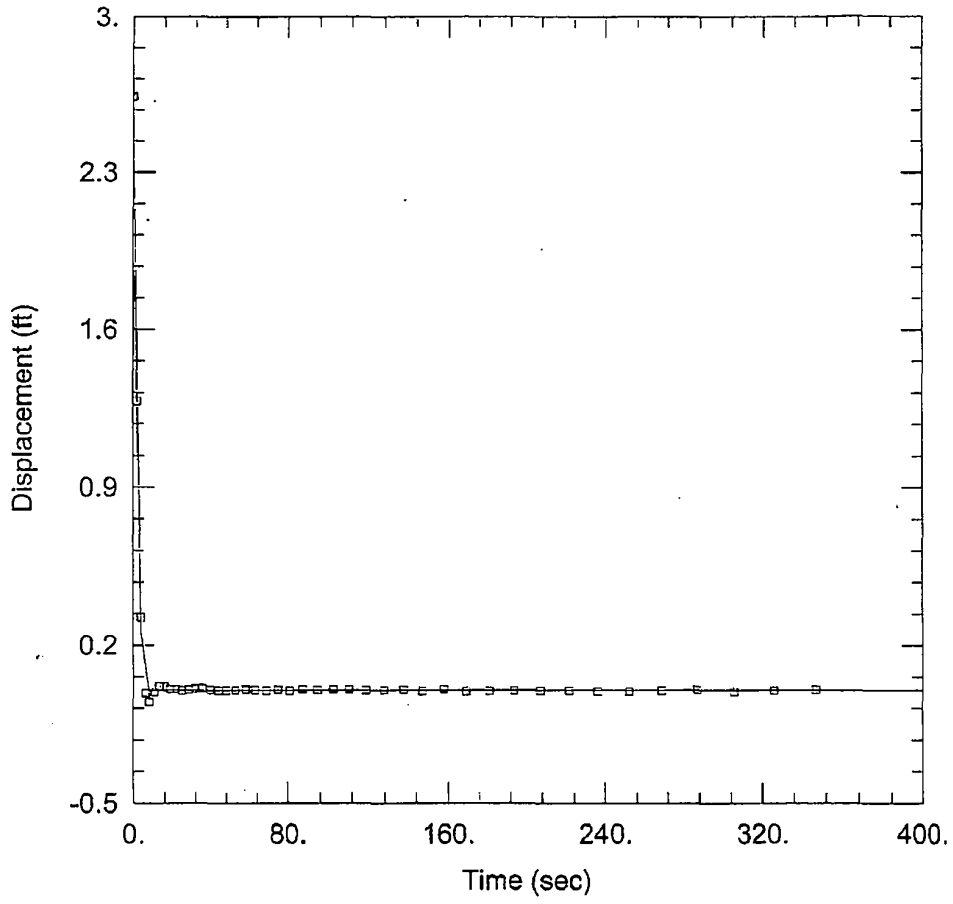
WELL DATA (OW-809 L)

Initial Displacement: 11.29 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110. ft
Screen Length: 19. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 103.7 ft/day
Solution Method: Butler
Le = 0.1 ft

Prepared by: CHP Date: 6-20-08
Checked by: [illegible] Date: 6-20-08



OW-809 L RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 L
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 88. ft
Anisotropy Ratio (Kz/Kr): 1.

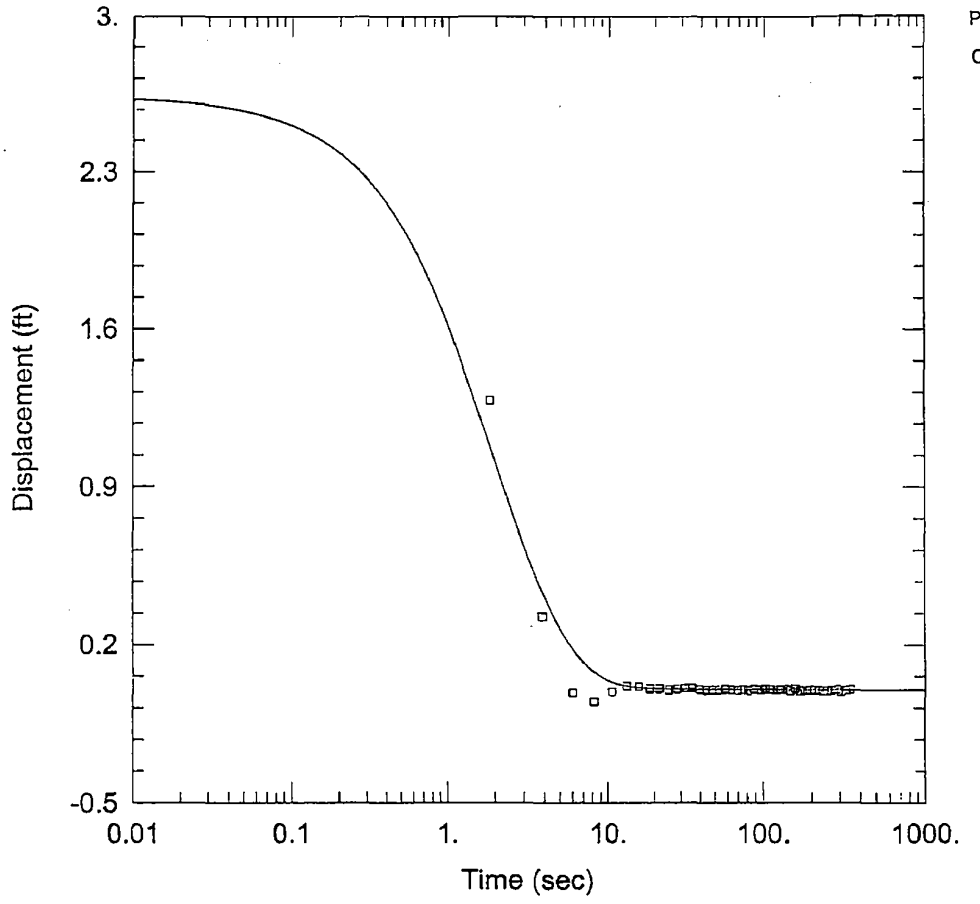
WELL DATA (OW-809 L)

Initial Displacement: 2.64 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110. ft
Screen Length: 19. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 33.43 ft/day
Solution Method: Butler
Le = 42.49 ft

Prepared by: CHB Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-809 L RISING HEAD TEST 5-15-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-809 L
Test Date: 5/15/2008

AQUIFER DATA

Saturated Thickness: 88. ft

WELL DATA (OW-809 L)

Initial Displacement: 2.64 ft
Total Well Penetration Depth: 110. ft
Casing Radius: 0.083 ft
Static Water Column Height: 110. ft
Screen Length: 19. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model

Kr = 36.57 ft/day
Kz/Kr = 1.
Ss = 1.136E-12 ft^{-1}

Checked by: CAB Date: 6-20-08

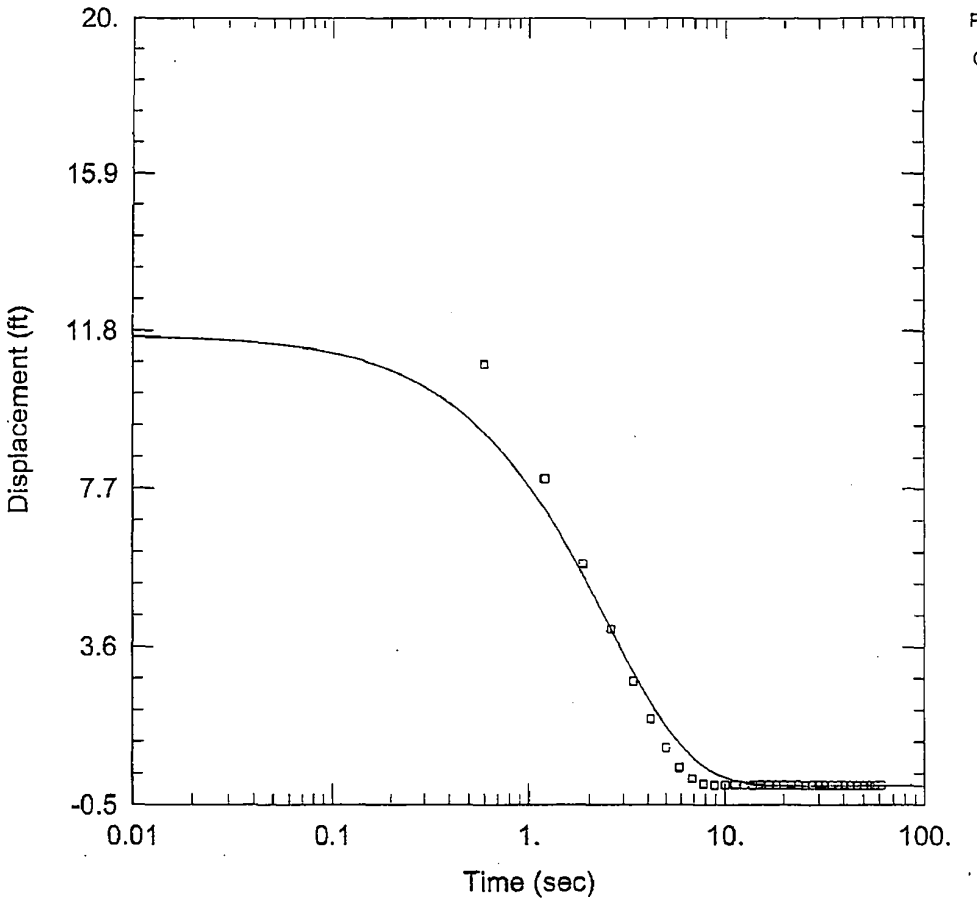
MACTEC

SLUG TEST REPORT

Project Name: TPCOL	6408-07-1950 Project Number:	Page	of
Client: Bechtel	Contractor: MACTEC		
Location: OW-812U	MACTEC Rep: Kim Charles-Smith	Date: 05/2008	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Full Stickup = 3.15' From S.S.		
Static Water Level	4.55' feet From TOC		
Total Well Depth	30.30' feet From TOC		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_0)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10' feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (reg)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Mini troll transducer probe calibrated 4/29/08, SRP 4/29/08 SN: 118478 level Troll @ 700 Winsitu		
Slug Data	Used pneumatic slug to perform test.		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-812UBG	NA	OW-812UR
Start Time	16:05:53		16:13:19
End Time	16:08:21		16:14:31
Notes			

Rev 0

Prepared by: C+B Date: 6-20-08
Checked by: [illegible] Date: 6-26-08



OW-812 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-812 U
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 25.45 ft

WELL DATA (OW-812 U)

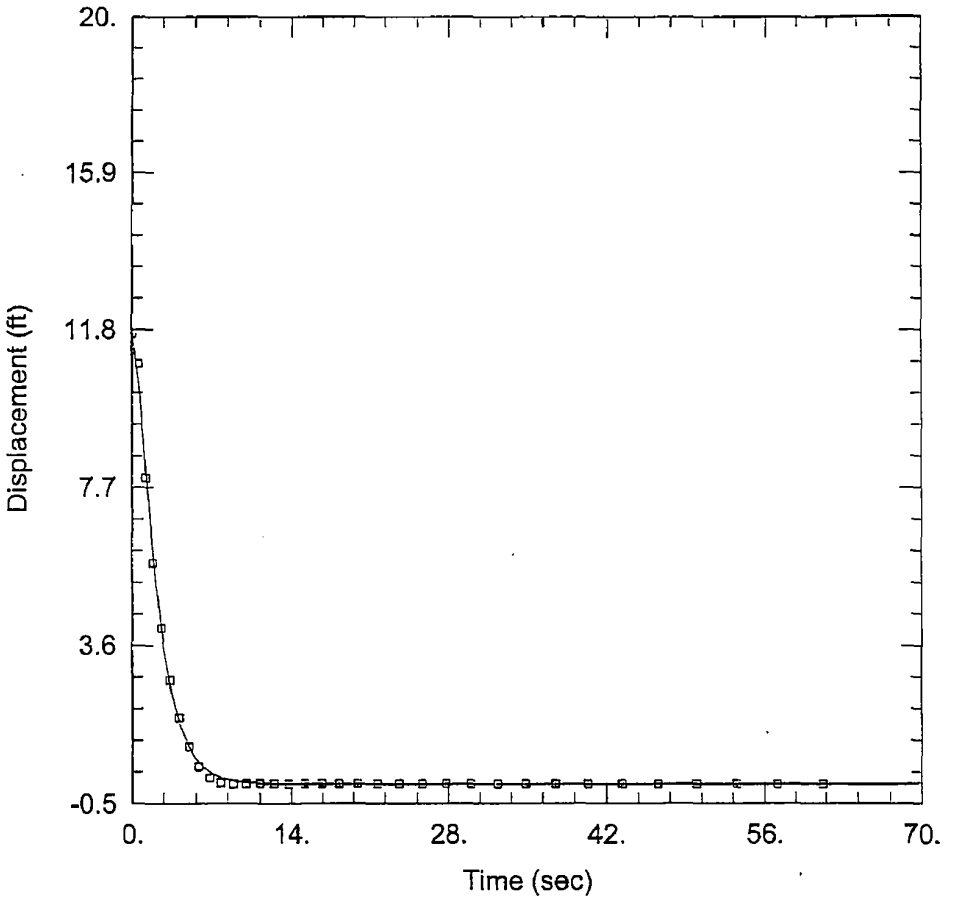
Initial Displacement: 11.68 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.45 ft
Screen Length: 16. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 31.24 ft/day
Kz/Kr = 1.
Ss = 3.704E-20 ft^{-1}

Prepared by: CHG Date: 6-20-08
Checked by: WSL Date: 6-20-08



OW-812 U RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-812 U
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 25.45 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (OW-812 U)

Initial Displacement: 11.68 ft
Total Well Penetration Depth: 27. ft
Casing Radius: 0.083 ft
Static Water Column Height: 25.45 ft
Screen Length: 16. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
K = 24.49 ft/day
Solution Method: Springer-Gelhar
Le = 36.28 ft

Checked by: CHS Date: 6-20-08

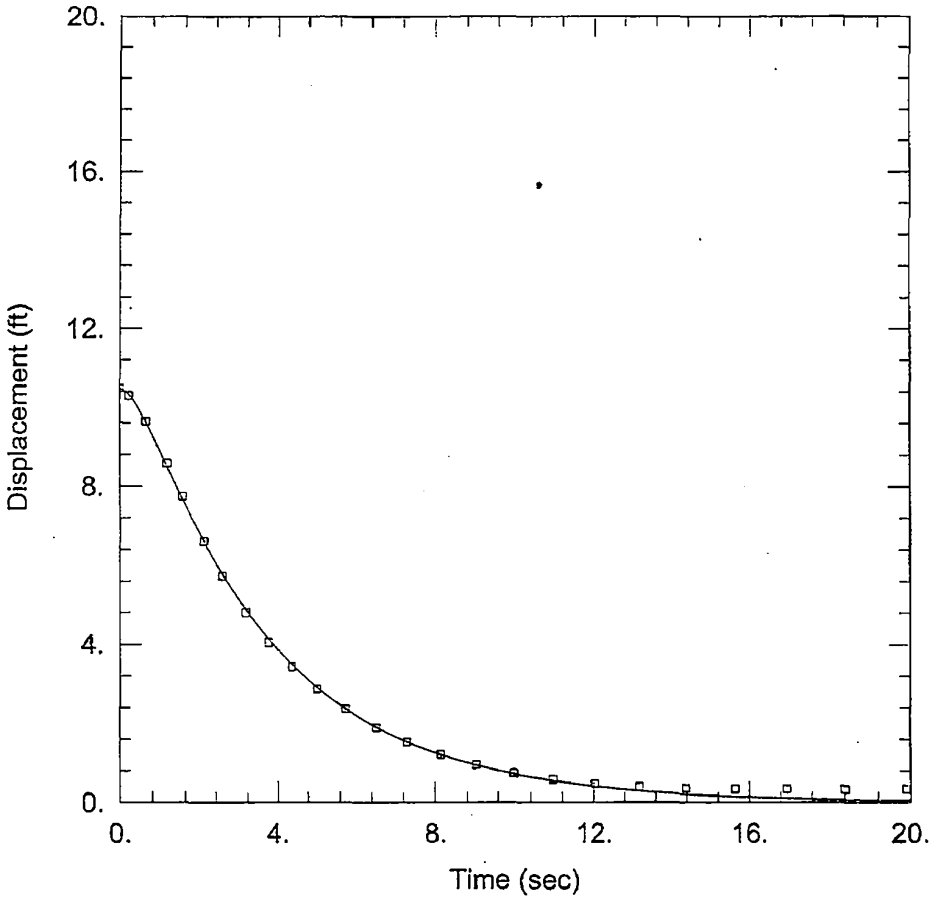
MACTEC

SLUG TEST REPORT

Project Name: TPCOL	6468-07-1950 Project Number:	Page 1 of 1	
Client: Bechtel	Contractor: MACTEC		
Location: OW-812L	MACTEC Rep: Kim Chrisman-Smith	Date: 05/29/08	
UNITS			
Length	Feet		
Time	Minutes		
Well Data	Kim Stickup from G.S. = 3.33'		
Static Water Level	3.01' feet		
Total Well Depth	111.75' feet		
Static Water Column Height (H)	feet		
	Background	Falling Head	Rising Head
Observed Initial Displacement (H_o)	NA		
Saturated Thickness (b)	feet		
Conductivity Anisotropy (Kv/Kh)	Assume 1 to 1		
Depth to Top of Well Screen (d)			
Length of Well Screen (L)	10 feet		
Radius of Well Casing (rc)	0.083 feet		
Radius of Screen (rw)	0.083 feet		
Radius of Probe (rsq)			
Radius of Boring (rsk) Skin Effect	0.083 feet		
Probe Serial Number	Transducer Mini-troll probe Calibrated 4/29/08, exp 4/29/09 Sn: 118478 Level Troll® 700 WinSitu		
Slug Data	USED pneumatic slug to perform test		
Length			
weight			
Diameter			
Slug Test File	Background	Falling	Rising
File Name	OW-812LBG	NA	OW-812LR
Start Time	15:52:14		15:58:28
End Time	15:55:13		15:58:52
Notes			

Rev 0

Prepared by: CHB Date: 6-20-08
Checked by: WS Date: 6-20-08



OW-812 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-812 L
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 86. ft
Anisotropy Ratio (Kz/Kr): 1.

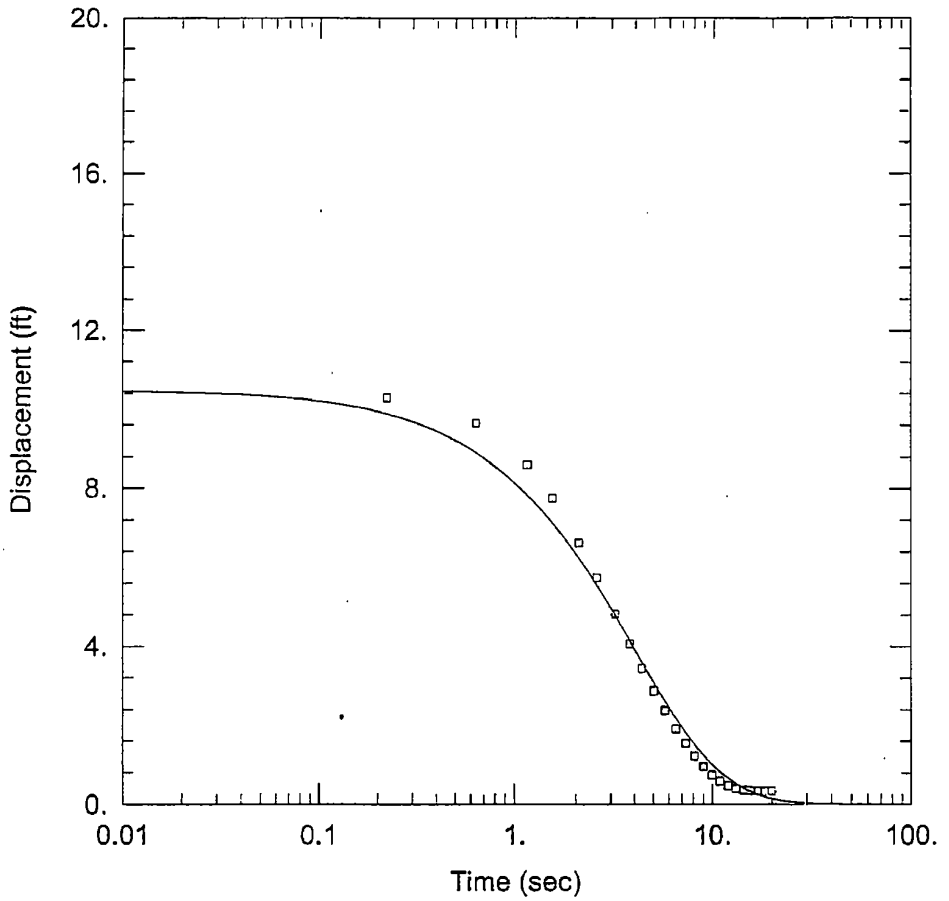
WELL DATA (OW-812 L)

Initial Displacement: 10.48 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 109.3 ft
Screen Length: 15. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
K = 21.01 ft/day
Solution Method: Butler
Le = 47.1 ft

Prepared by: CHB Date: 6-20-08
Checked by: WSC Date: 6-20-08



OW-812 L RISING HEAD TEST 5-20-08

PROJECT INFORMATION

Company: MACTEC
Client: Bechtel
Project: 6468-07-1950
Location: Turkey Point COL
Test Well: OW-812 L
Test Date: 5/20/2008

AQUIFER DATA

Saturated Thickness: 86. ft

WELL DATA (OW-812 L)

Initial Displacement: 10.48 ft
Total Well Penetration Depth: 109. ft
Casing Radius: 0.083 ft
Static Water Column Height: 109.3 ft
Screen Length: 15. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model
Kr = 21.2 ft/day
Kz/Kr = 1.
Ss = 1.163E-12 ft^{-1}