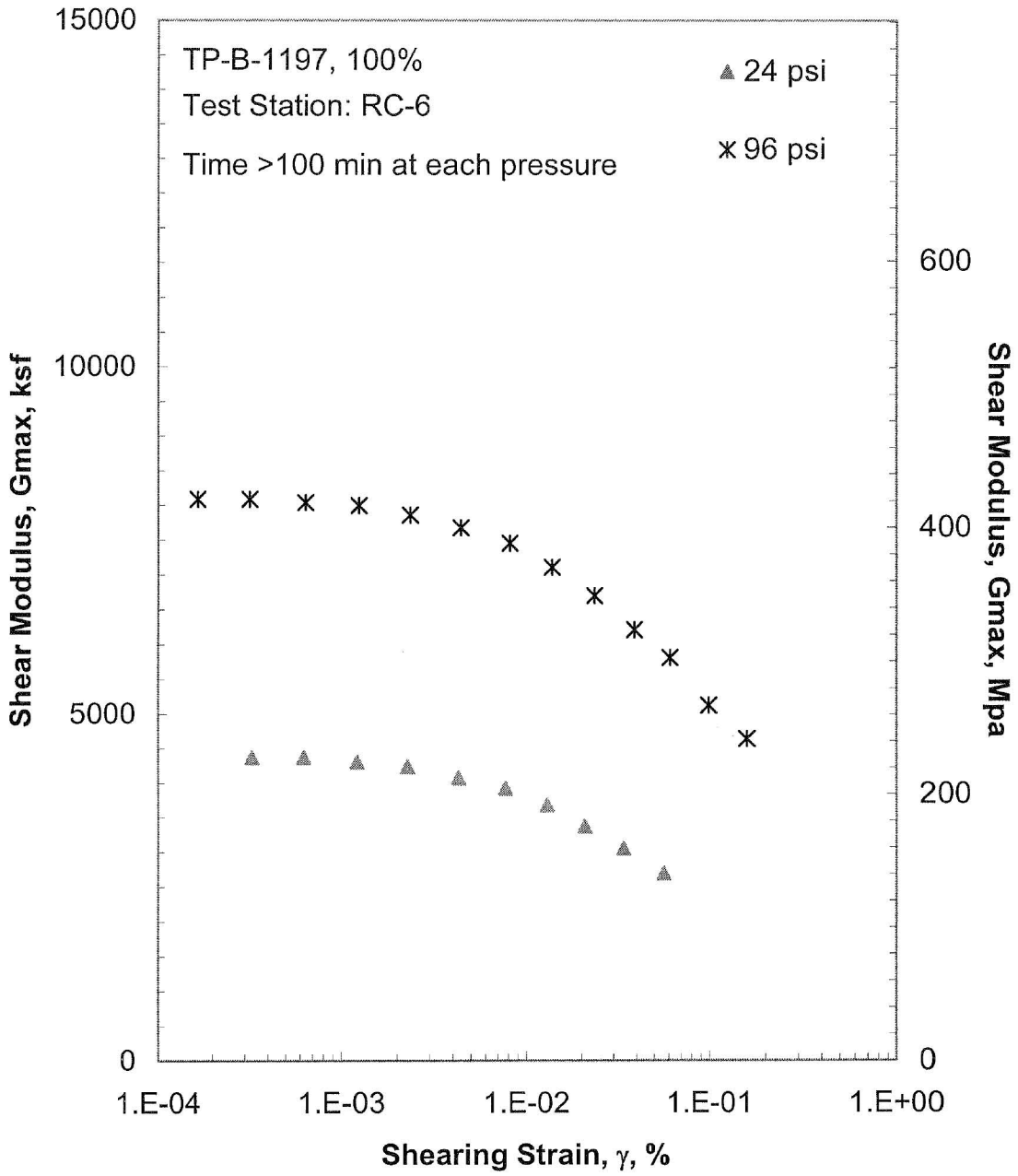

Figure Q.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

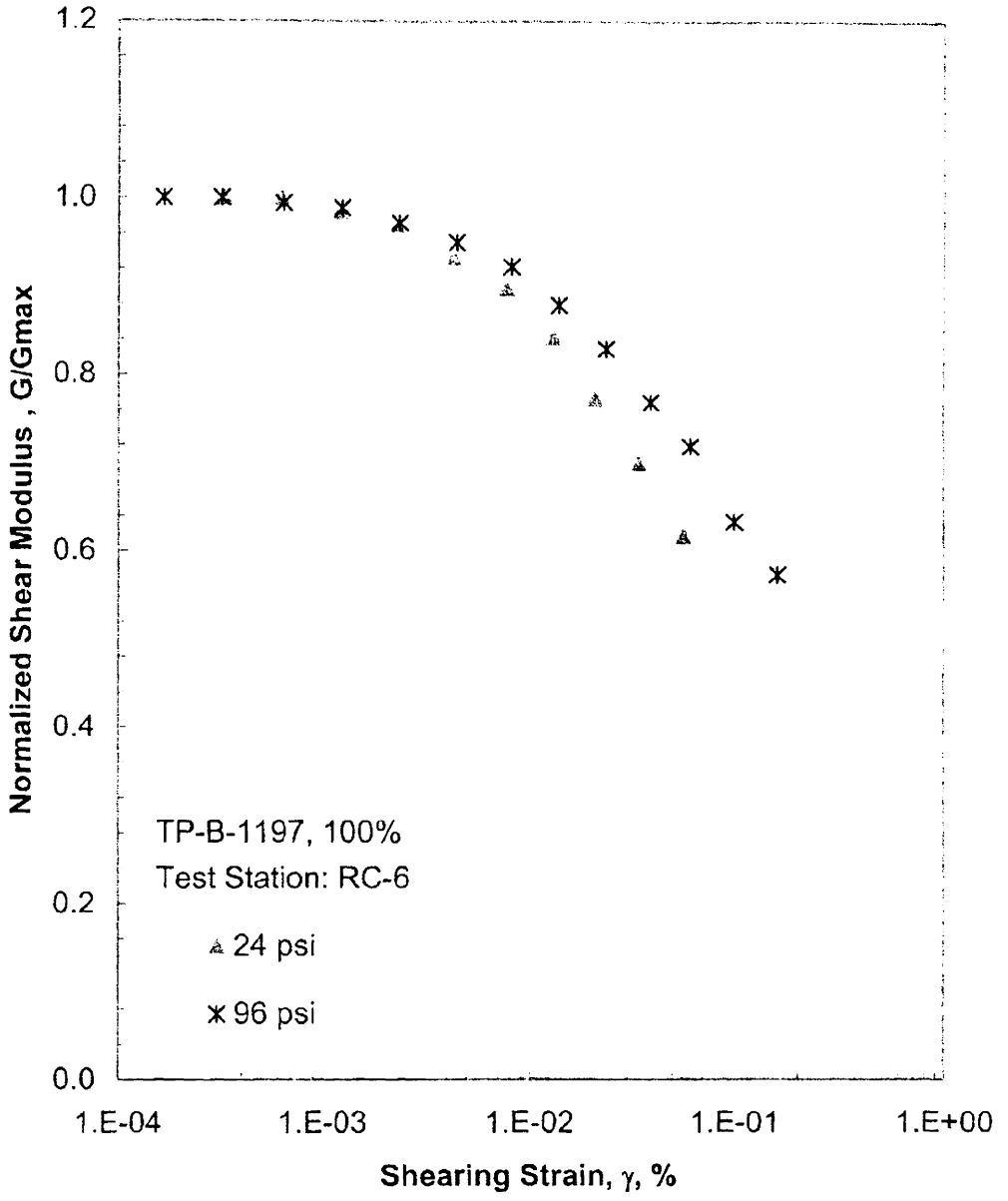

Figure Q.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

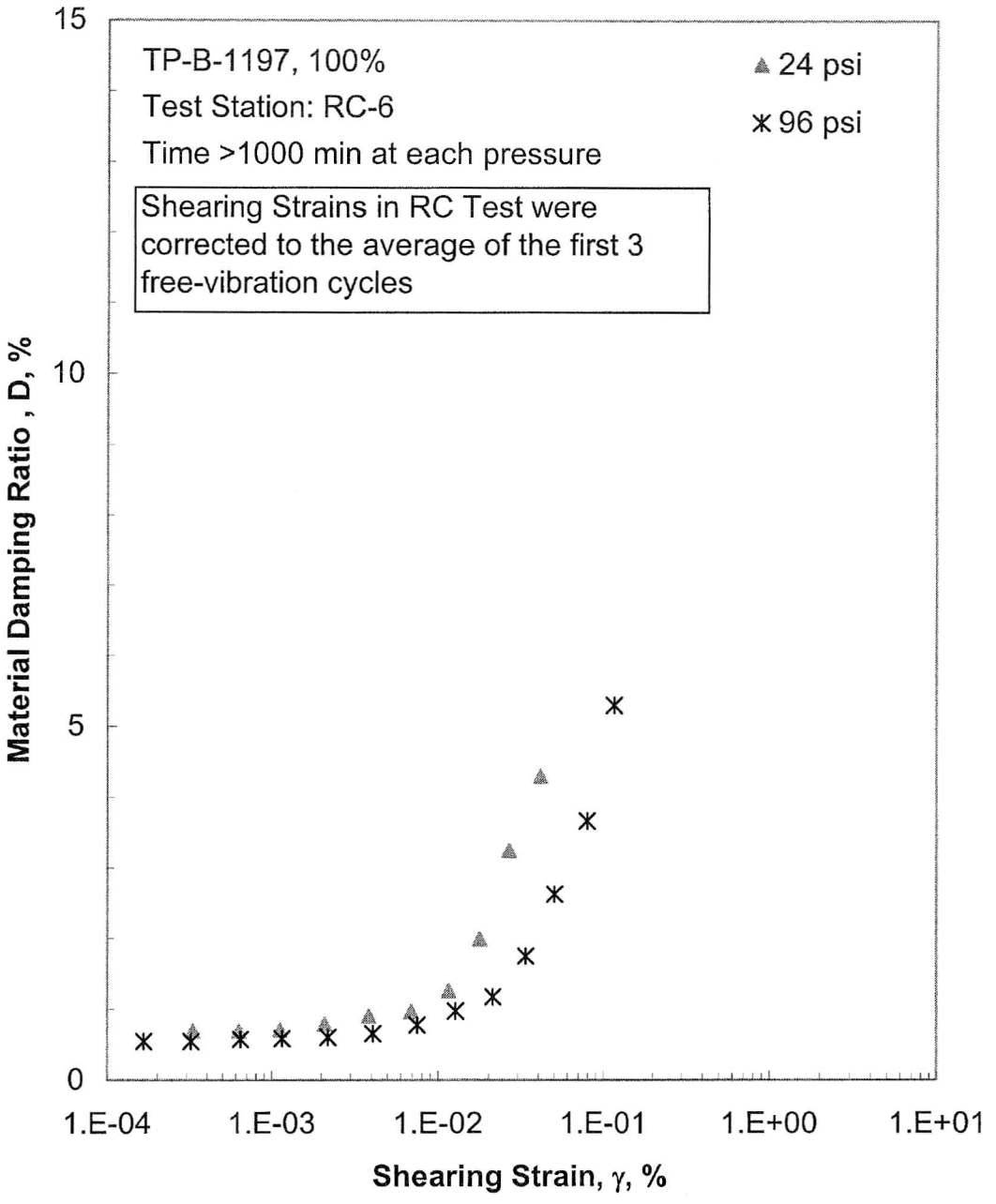

Figure Q.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

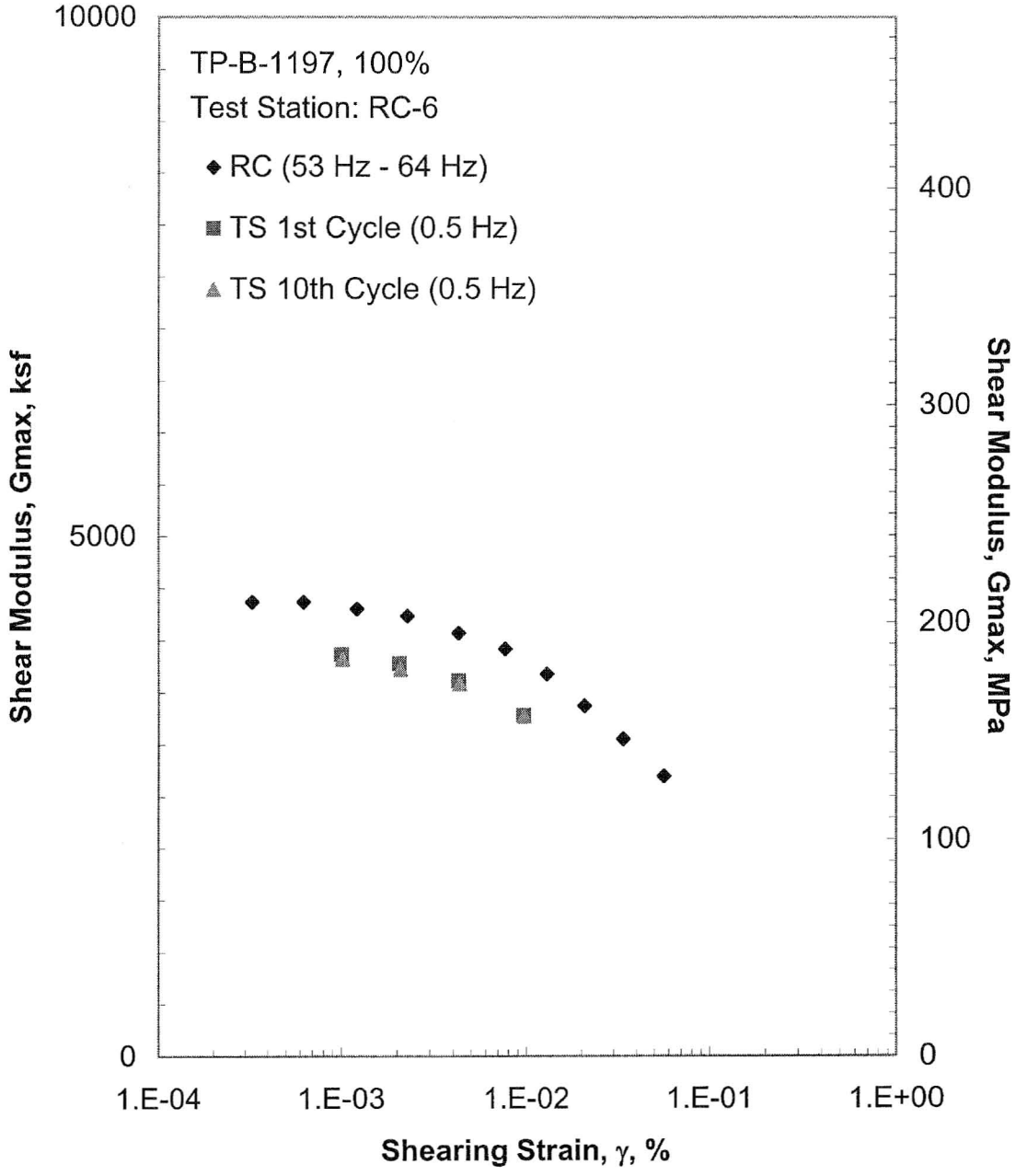

Figure Q.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 24 psi from the Combined RCTS Tests

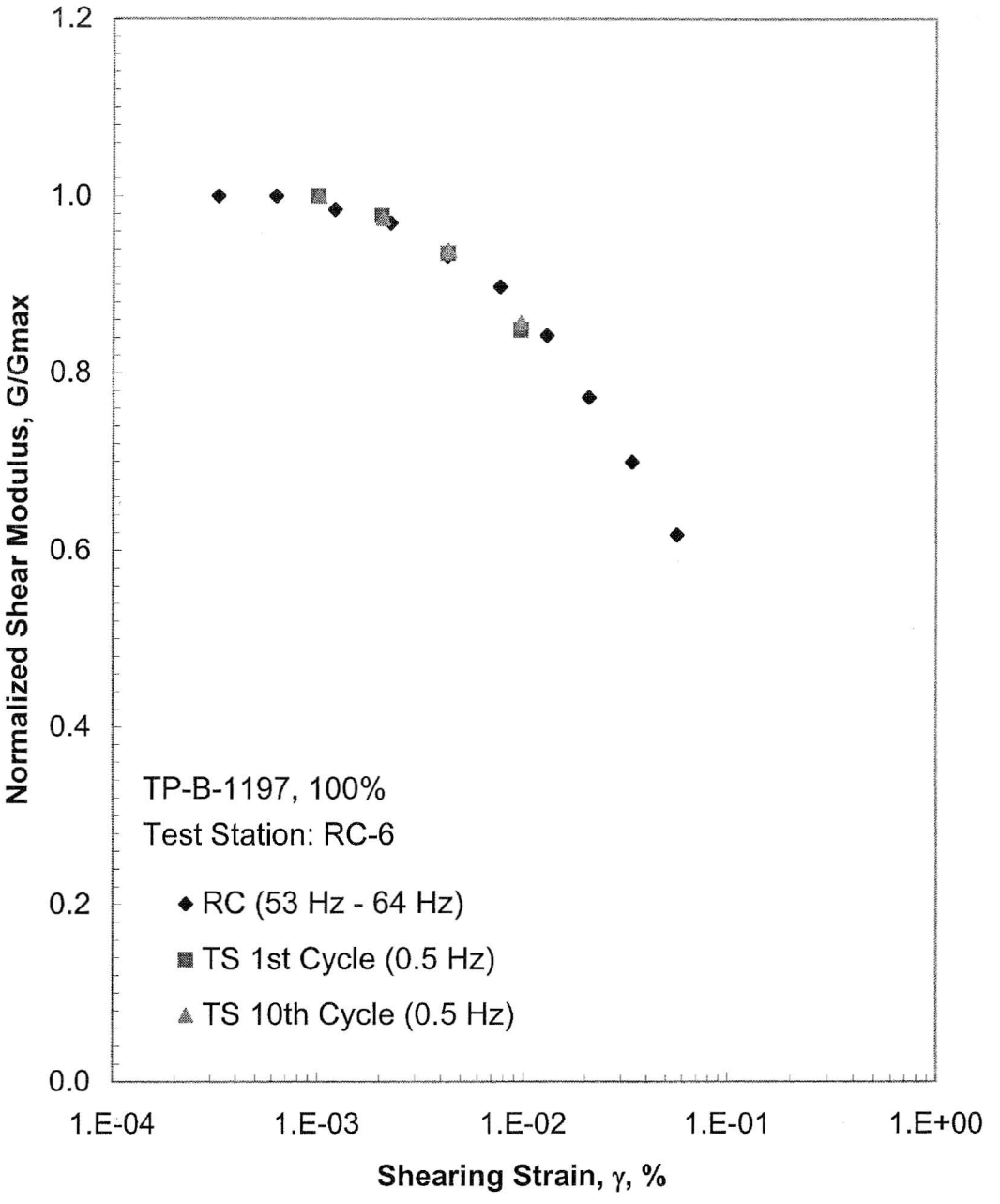

Figure Q.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 24 psi from the Combined RCTS Tests

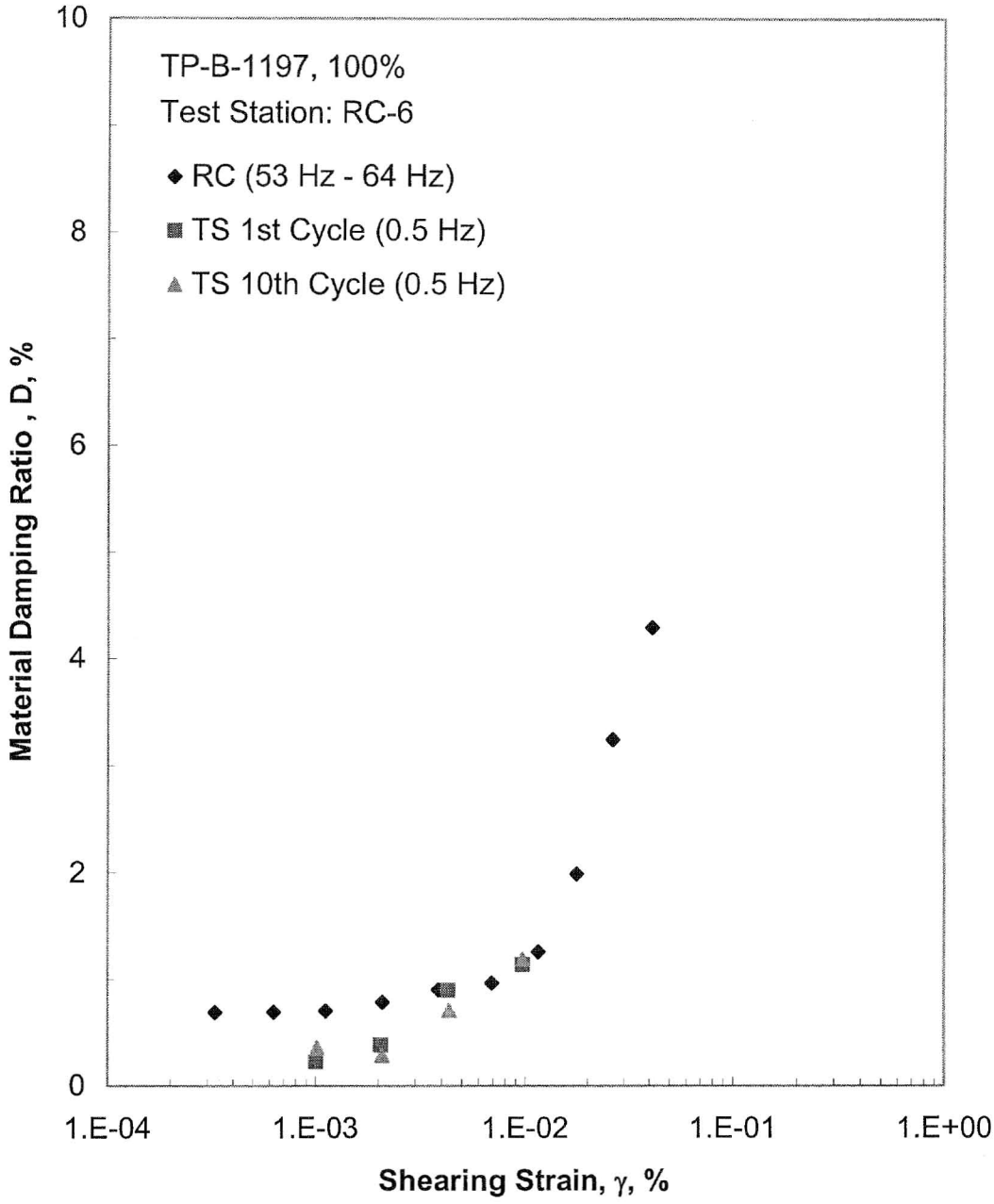

Figure Q.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 24 psi from the Combined RCTS Tests

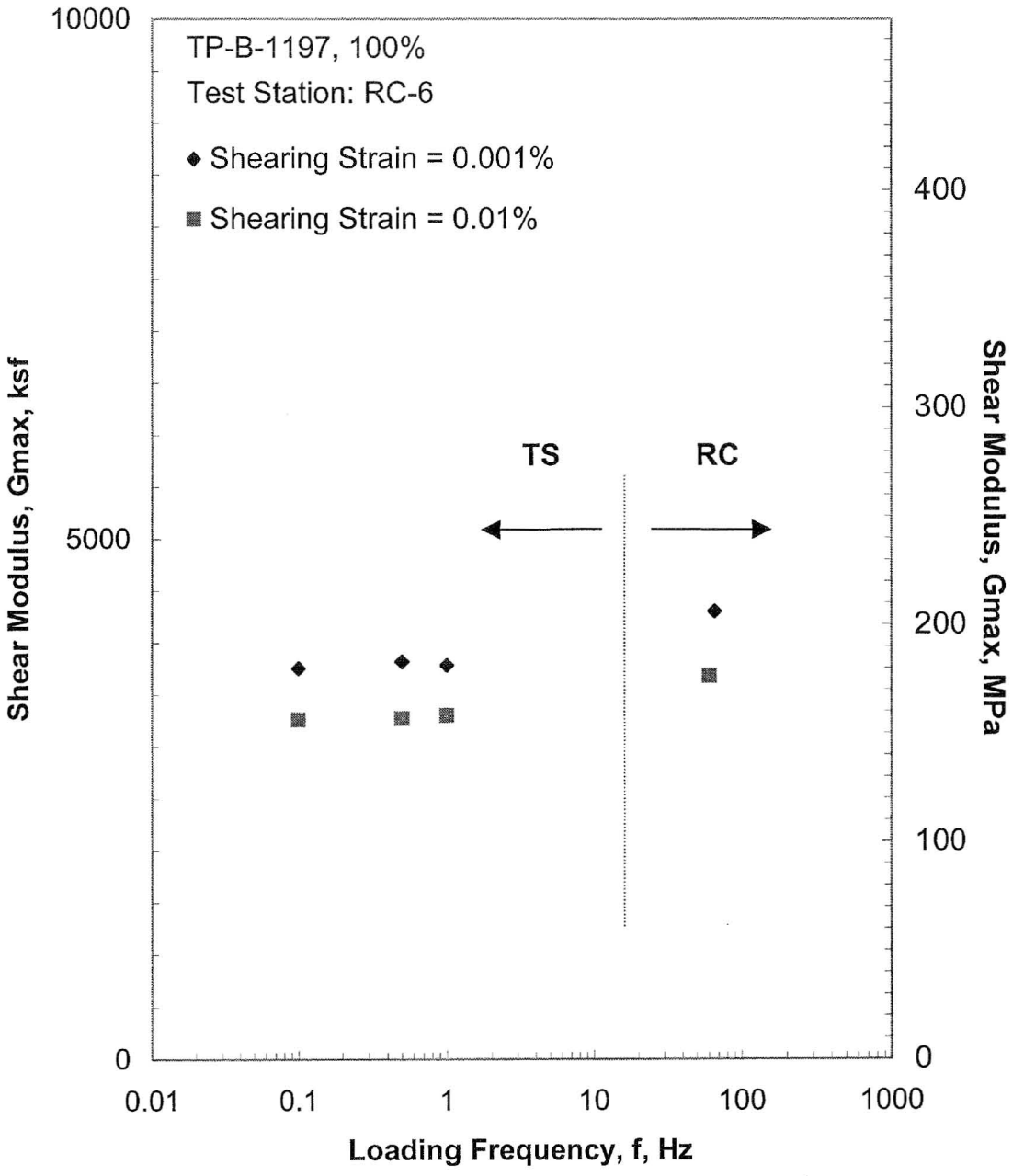

Figure Q.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 24 psi from the Combined RCTS Tests

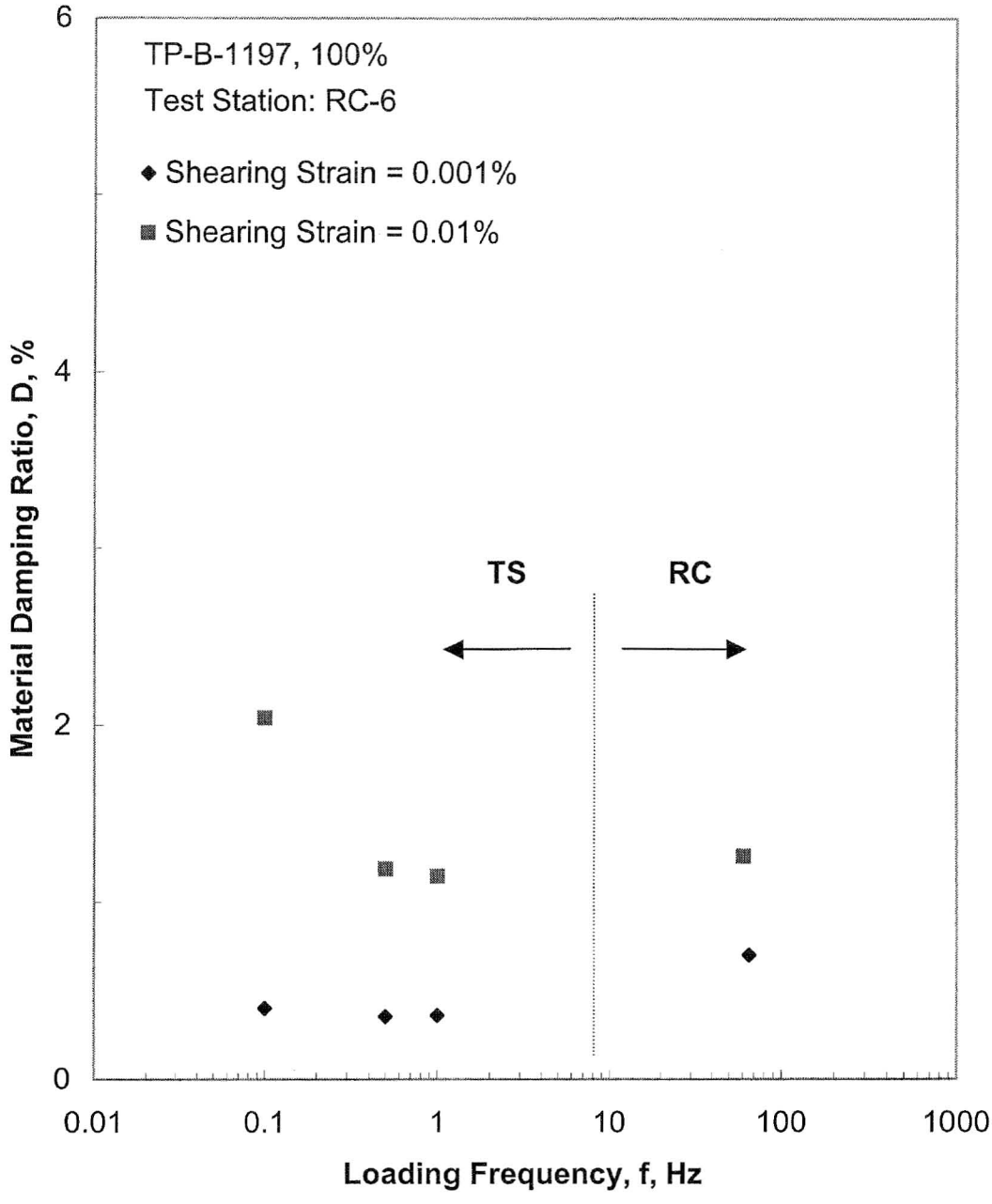

Figure Q.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 24 psi from the Combined RCTS Tests

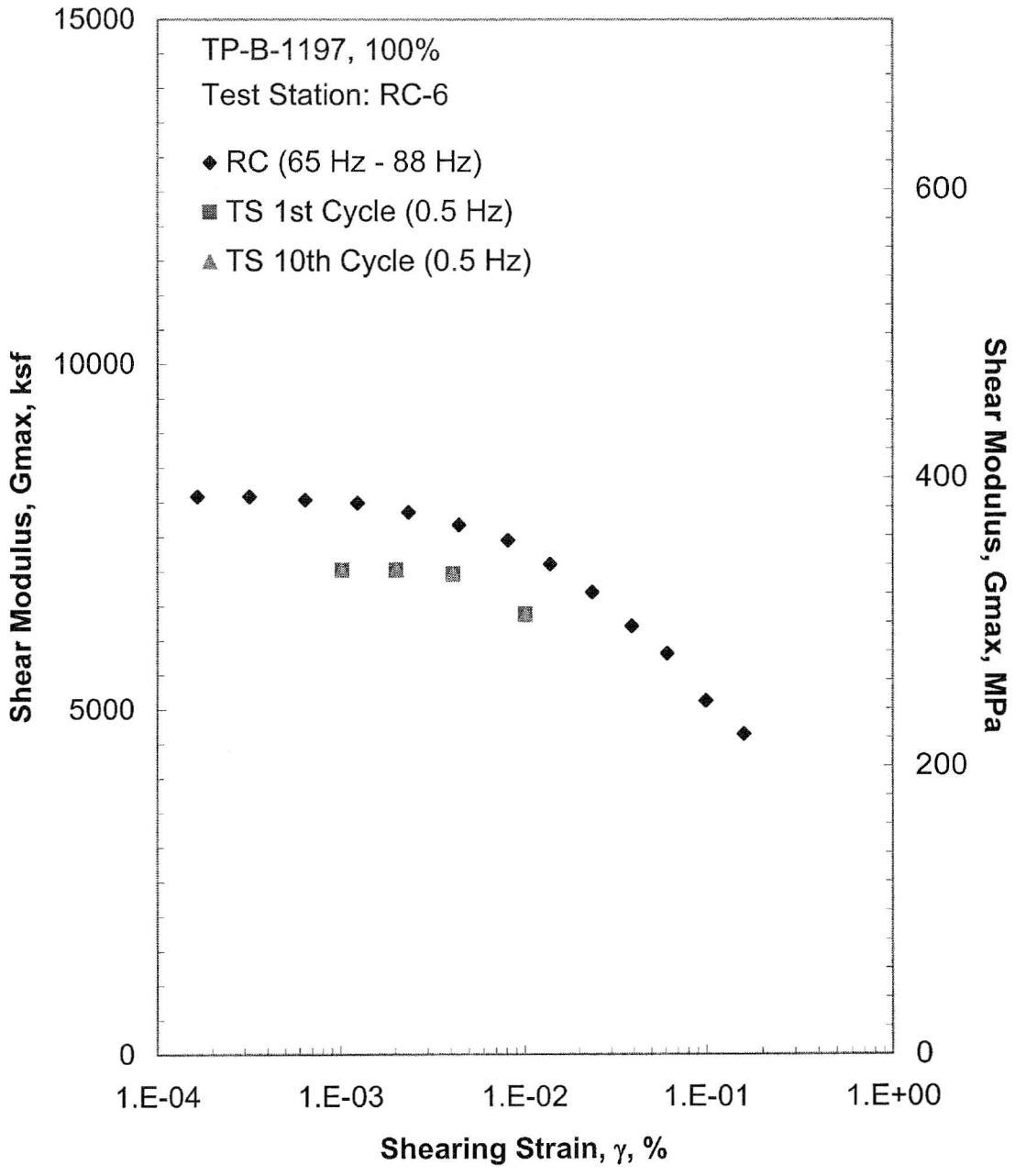

Figure Q.16 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 96 psi from the Combined RCTS Tests

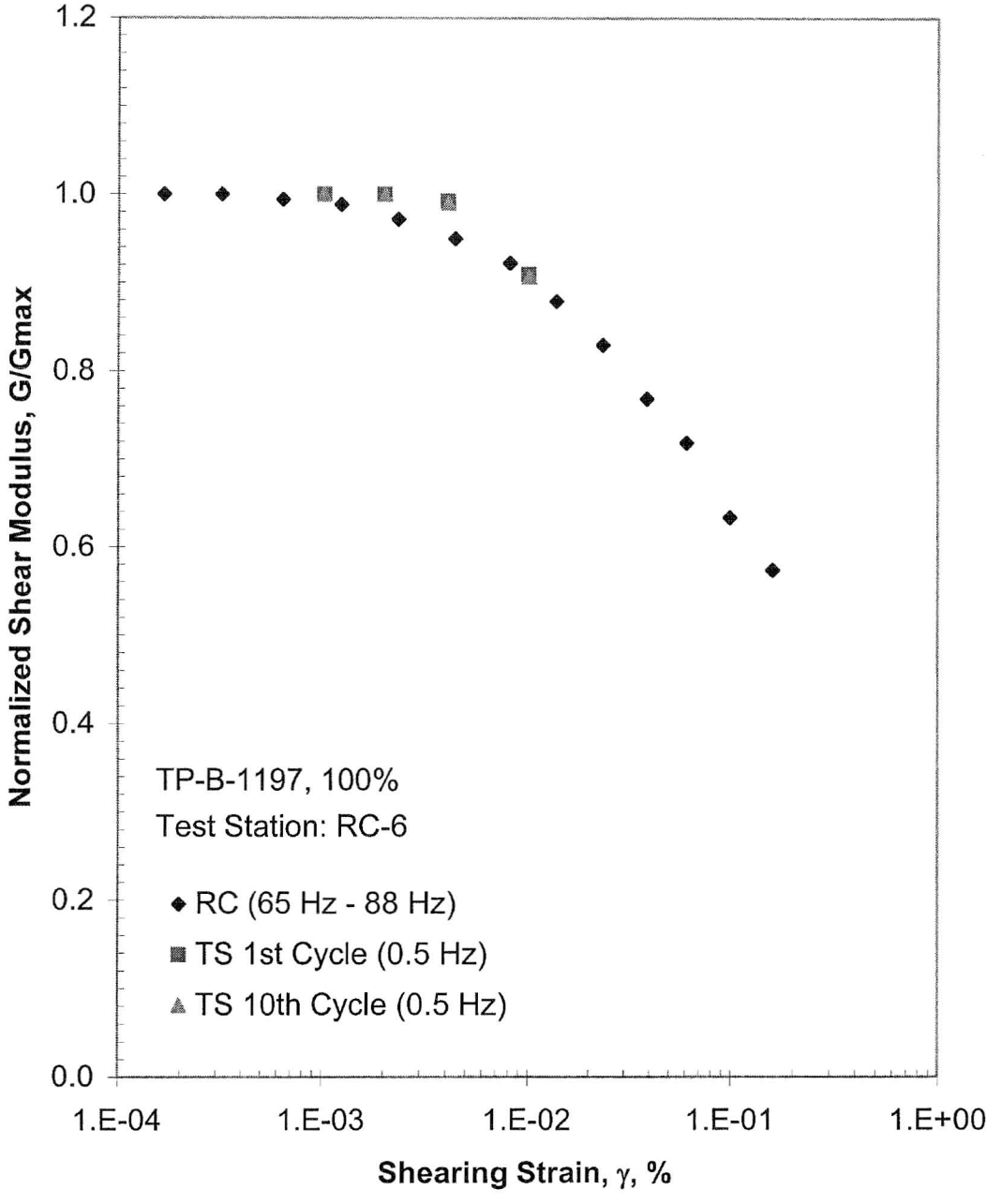

Figure Q.17 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 96 psi from the Combined RCTS Tests

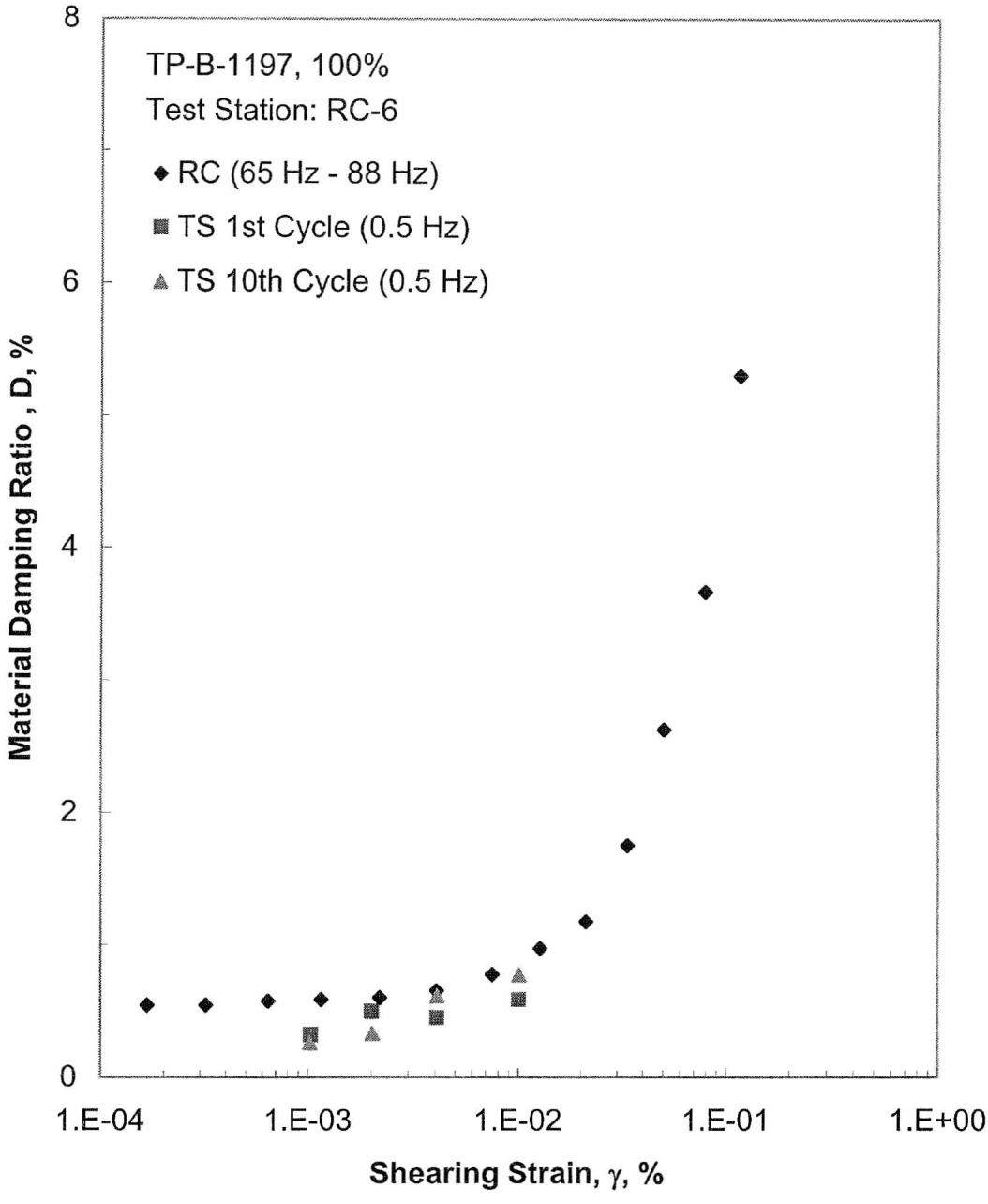

Figure Q.18 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 96 psi from the Combined RCTS Tests

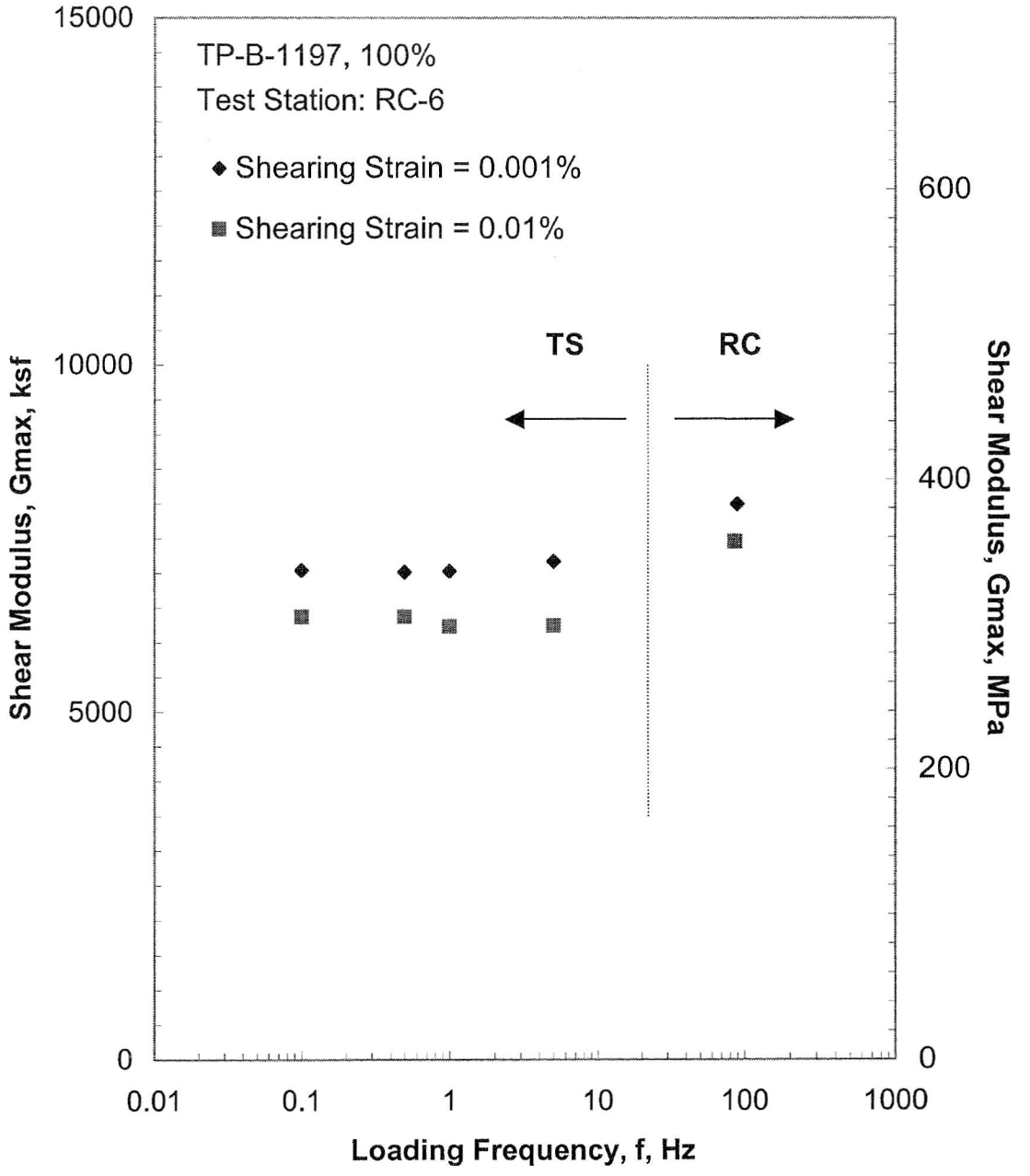

Figure Q.19 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 96 psi from the Combined RCTS Tests

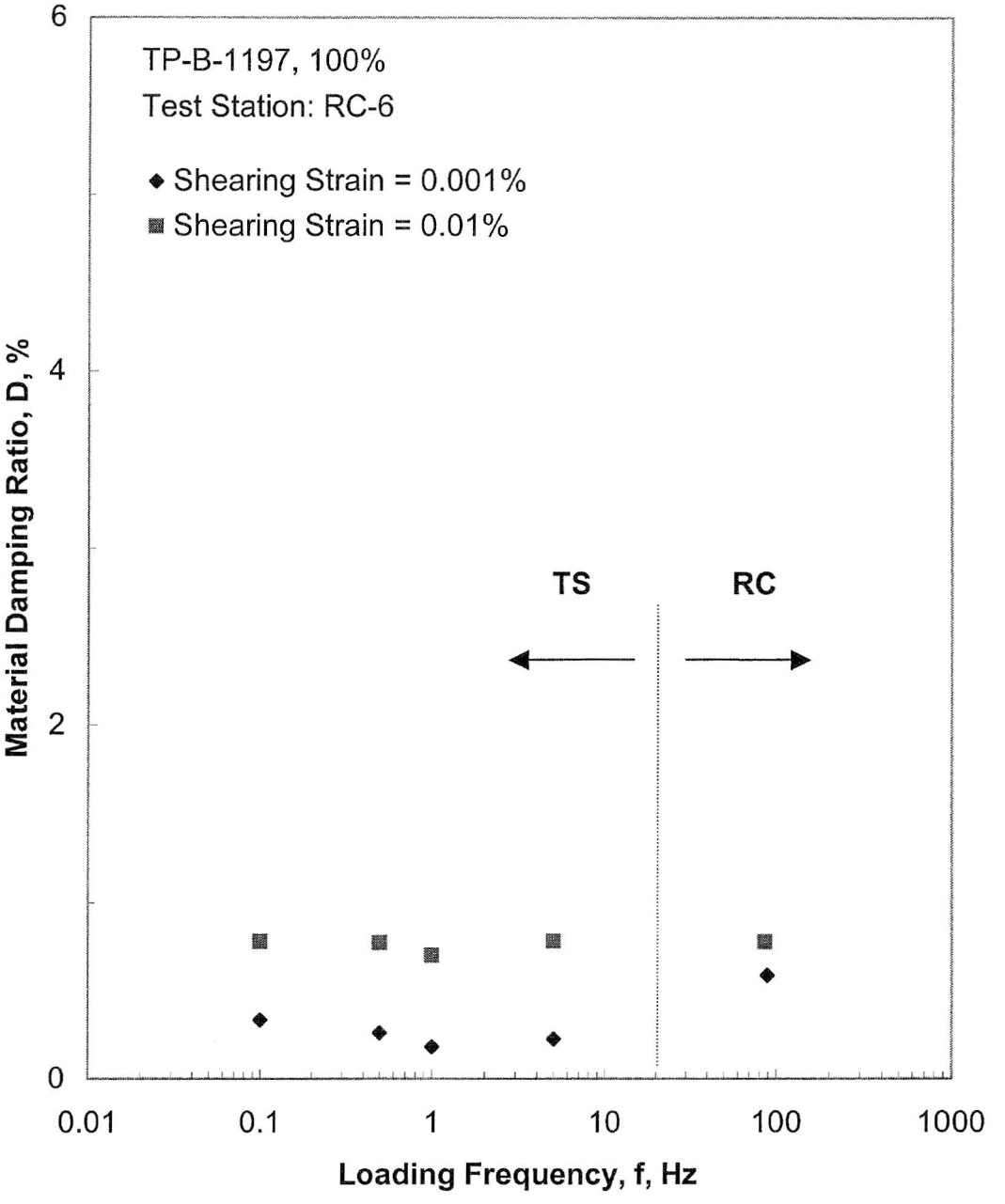

Figure Q.20 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 96 psi from the Combined RCTS Tests

Table Q.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 TP-B-1197, 100%

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)	(%)	
6	864	41	2629	126	821	0.89	0.45
12	1728	83	3422	164	937	0.79	0.45
24	3470	166	4472	215	1070	0.73	0.45
48	6912	331	6056	291	1244	0.63	0.45
96	13824	661	8177	393	1445	0.54	0.45

Table Q.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen TP-B-1197, 100%; Isoptropic Confining Pressure, σ_o=24 psi (3.5 ksf = 166 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
3.28E-04	4370	1.00	3.28E-04	0.69
6.29E-04	4370	1.00	6.29E-04	0.69
1.22E-03	4303	0.98	1.12E-03	0.70
2.28E-03	4237	0.97	2.09E-03	0.79
4.30E-03	4073	0.93	3.87E-03	0.90
7.69E-03	3922	0.90	6.92E-03	0.96
1.30E-02	3680	0.84	1.16E-02	1.26
2.08E-02	3375	0.77	1.77E-02	1.99
3.39E-02	3056	0.70	2.65E-02	3.25
5.65E-02	2697	0.62	4.13E-02	4.30

[+] 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 Q.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen TP-B-1197, 100%; Isotropic Confining Pressure, σ_o = 24 psi (3.5 ksf =166 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	3865	1.00	0.22	1.02E-03	3822	1.00	0.36
2.06E-03	3779	0.98	0.38	2.09E-03	3725	0.97	0.29
4.31E-03	3614	0.94	0.90	4.34E-03	3586	0.94	0.71
9.69E-03	3279	0.85	1.14	9.71E-03	3275	0.86	1.19

Table Q.4 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen TP-B-1197, 100%; Isoptropic Confining Pressure, σ_o= 96 psi (13.8 ksf = 661 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
1.66E-04	8086	1.00	1.66E-04	0.55
3.20E-04	8086	1.00	3.20E-04	0.55
6.43E-04	8040	0.99	6.43E-04	0.58
1.24E-03	7995	0.99	1.16E-03	0.59
2.36E-03	7859	0.97	2.20E-03	0.60
4.44E-03	7679	0.95	4.08E-03	0.66
8.15E-03	7456	0.92	7.50E-03	0.78
1.38E-02	7108	0.88	1.27E-02	0.97
2.36E-02	6704	0.83	2.12E-02	1.17
3.91E-02	6215	0.77	3.36E-02	1.75
6.12E-02	5810	0.72	5.02E-02	2.63
9.91E-02	5124	0.63	7.93E-02	3.67
1.60E-01	4640	0.57	1.17E-01	5.30

[+] 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 Q.5 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen TP-B-1197, 100%; Isotropic Confining Pressure, σ_o=96 psi (13.8 ksf = 661 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	7026	1.00	0.32	1.02E-03	7033	1.00	0.26
2.02E-03	7026	1.00	0.50	2.03E-03	7033	1.00	0.33
4.11E-03	6973	0.99	0.45	4.11E-03	6965	0.99	0.61
1.01E-02	6388	0.91	0.58	1.01E-02	6374	0.91	0.77

APPENDIX R

Specimen TP-B-1194, 95%
Reconstituted Engineering Fill at 95% Compaction
(Non-Plastic)

Borehole ---
B-1194
Depth = 15 ft (4.6 m)
Total Unit Weight = 119.7 lb/ft^3
Water Content = 11.1 %
Estimated In-Situ Ko = 0.44
Estimated In-Situ Mean Effective
Stress = 8 psi

FUGRO JOB #: 0401-1667
Testing Station: RC7

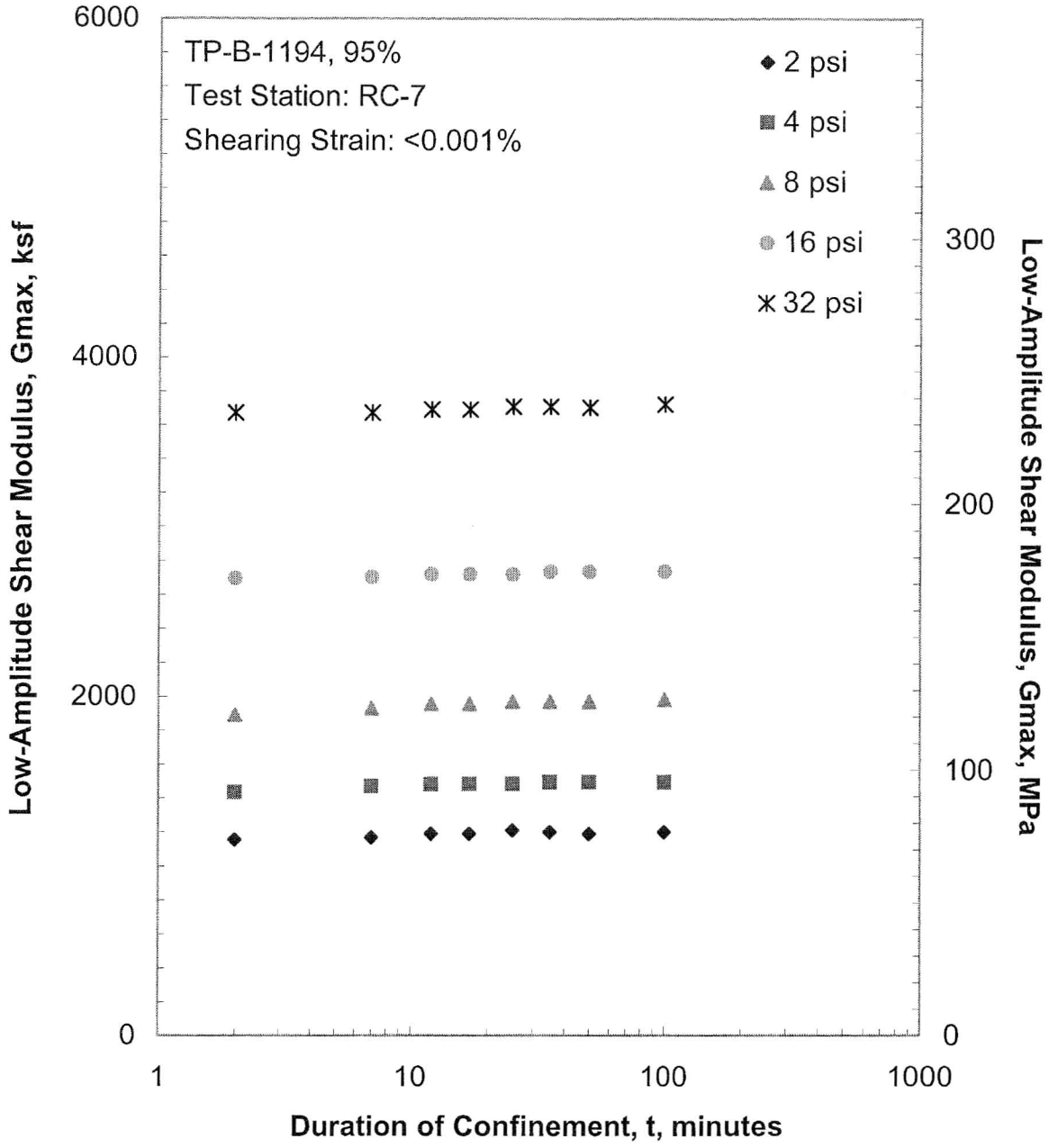

Figure R.1 Variation in Low-Amplitude Shear Modulus with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

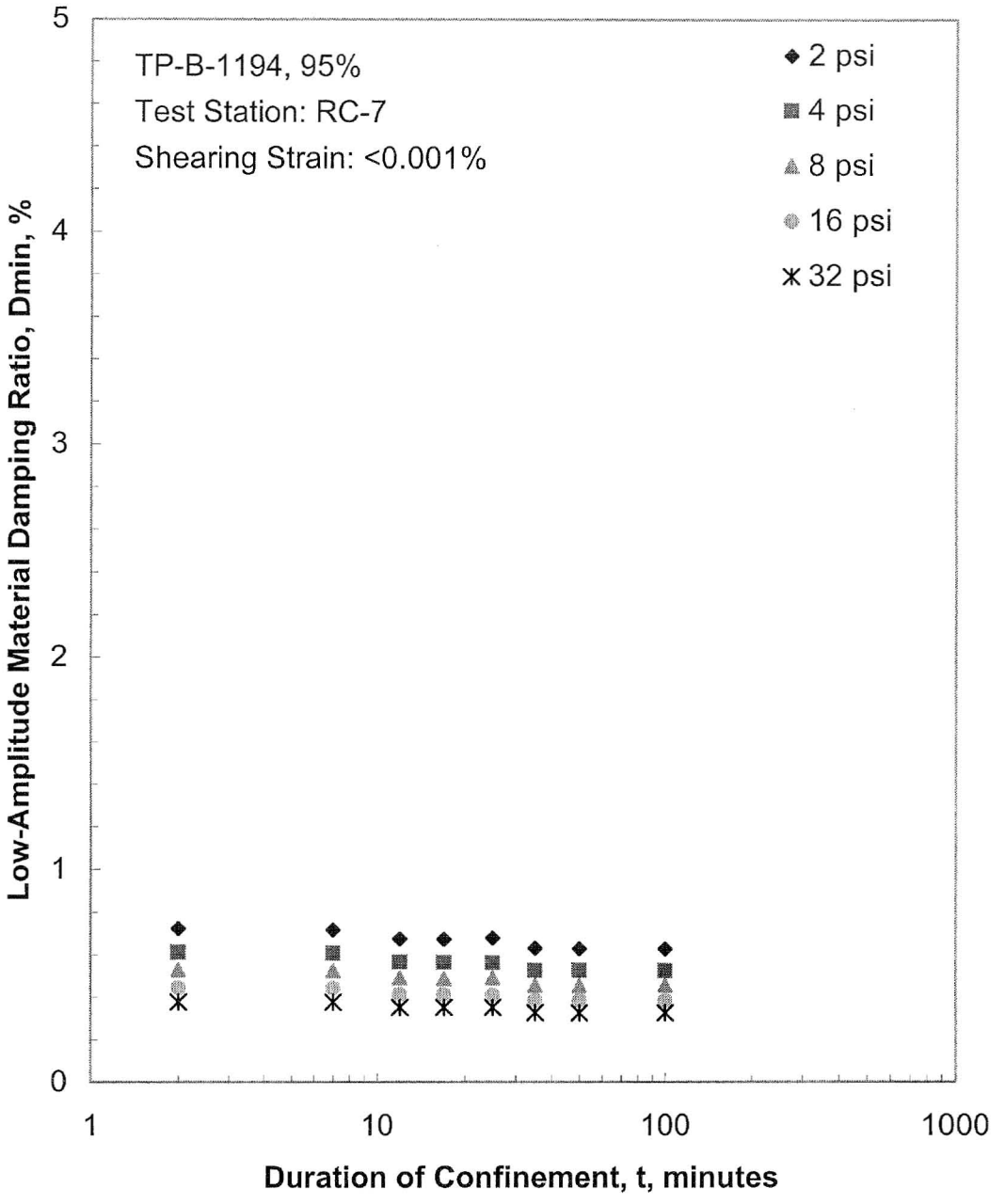

Figure R.2 Variation in Low-Amplitude Material Damping Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

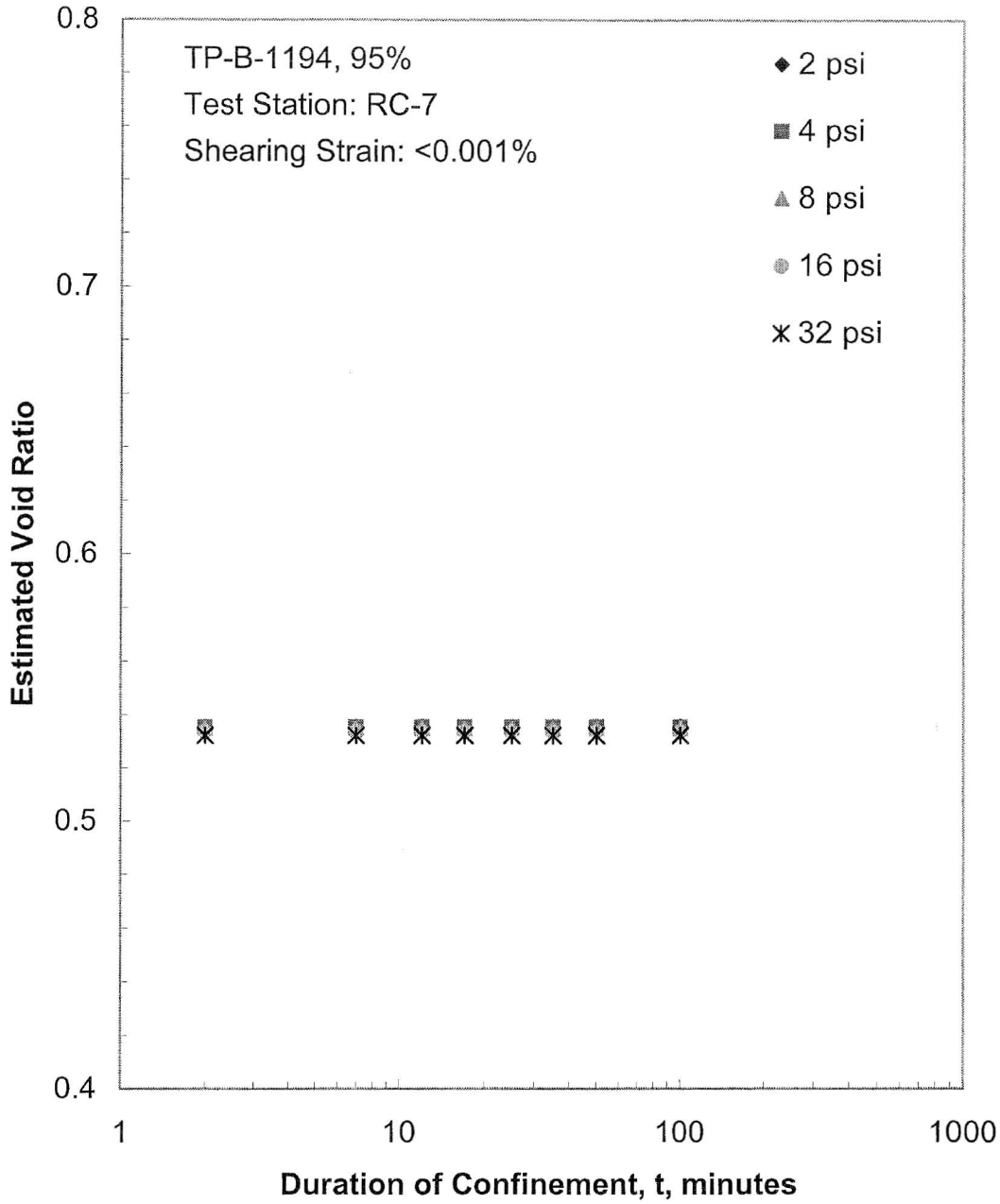

Figure R.3 Variation in Estimated Void Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

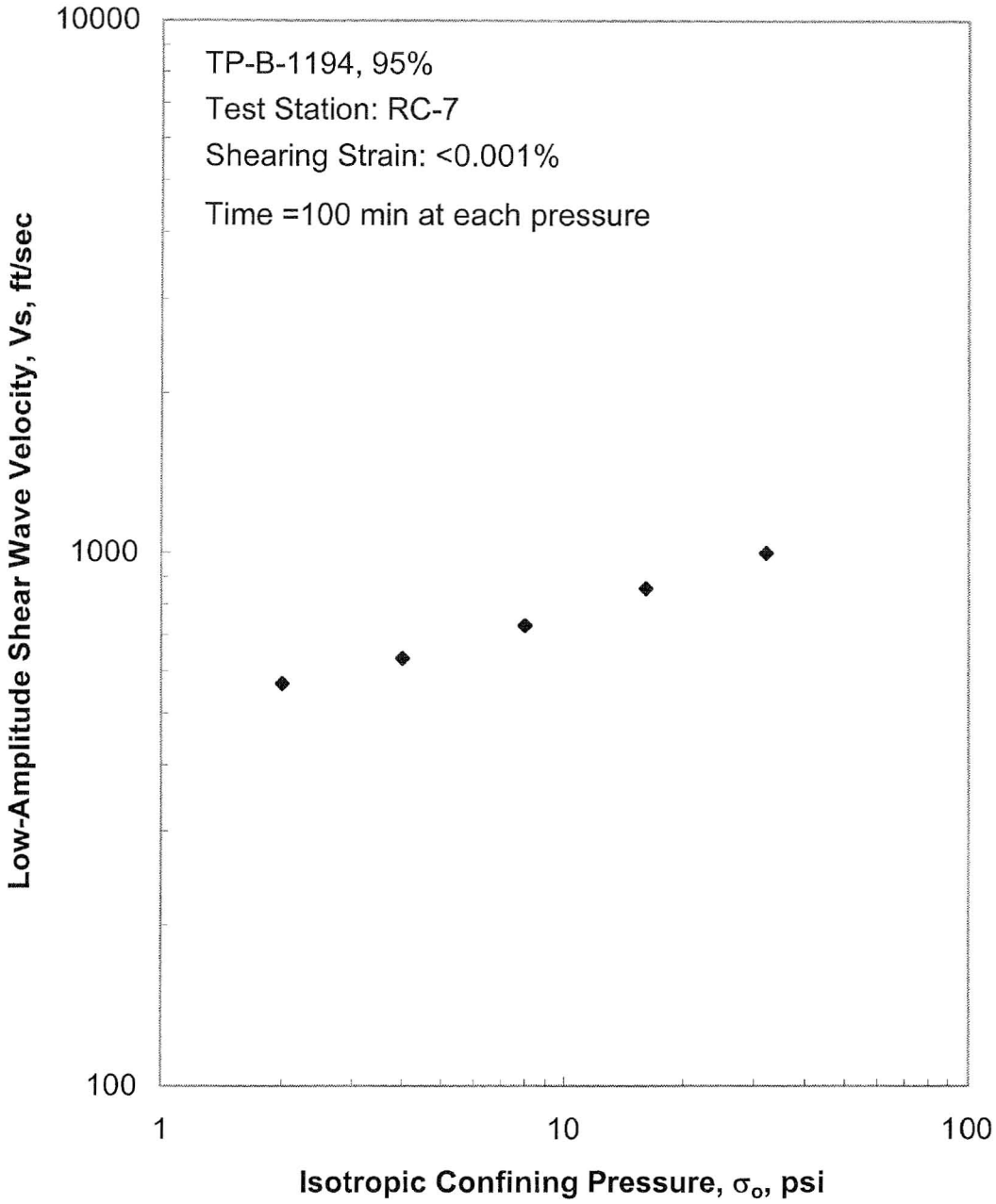

Figure R.4 Variation in Low-Amplitude Shear Wave Velocity with Isotropic Confining Pressure from Resonant Column Tests

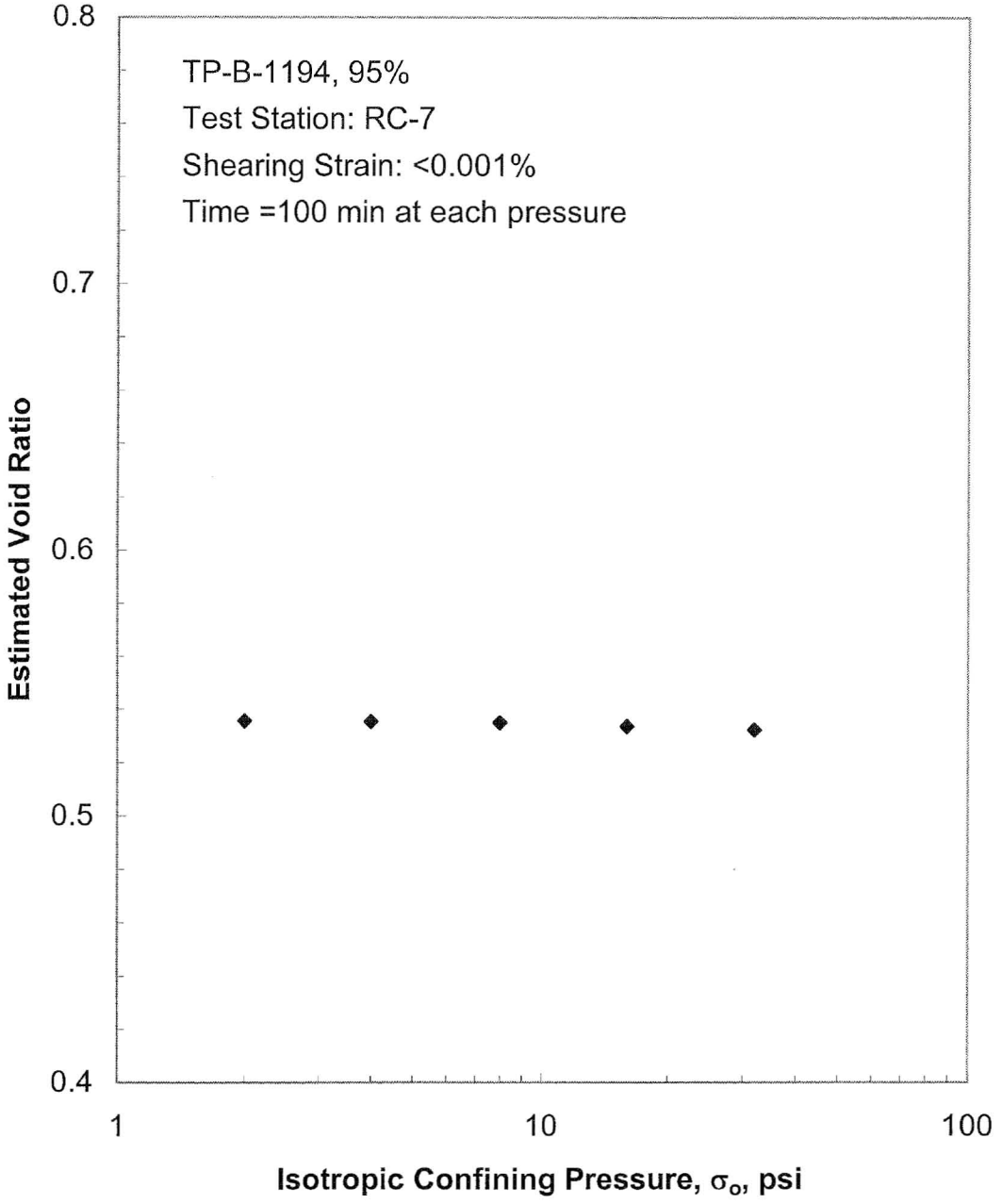

Figure R.7 Variation in Estimated Void Ratio with Isotropic Confining Pressure from Resonant Column Tests

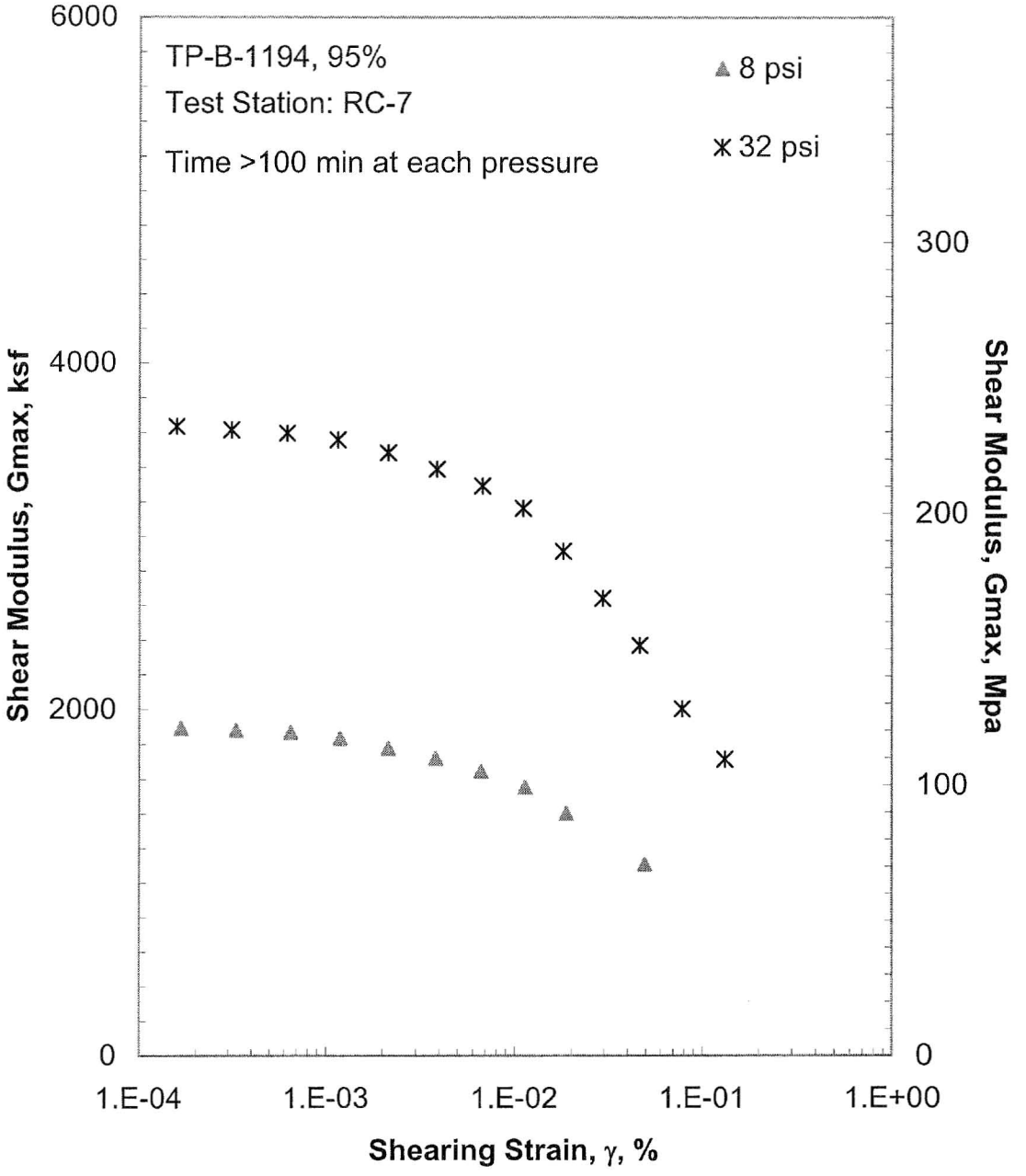

Figure R.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

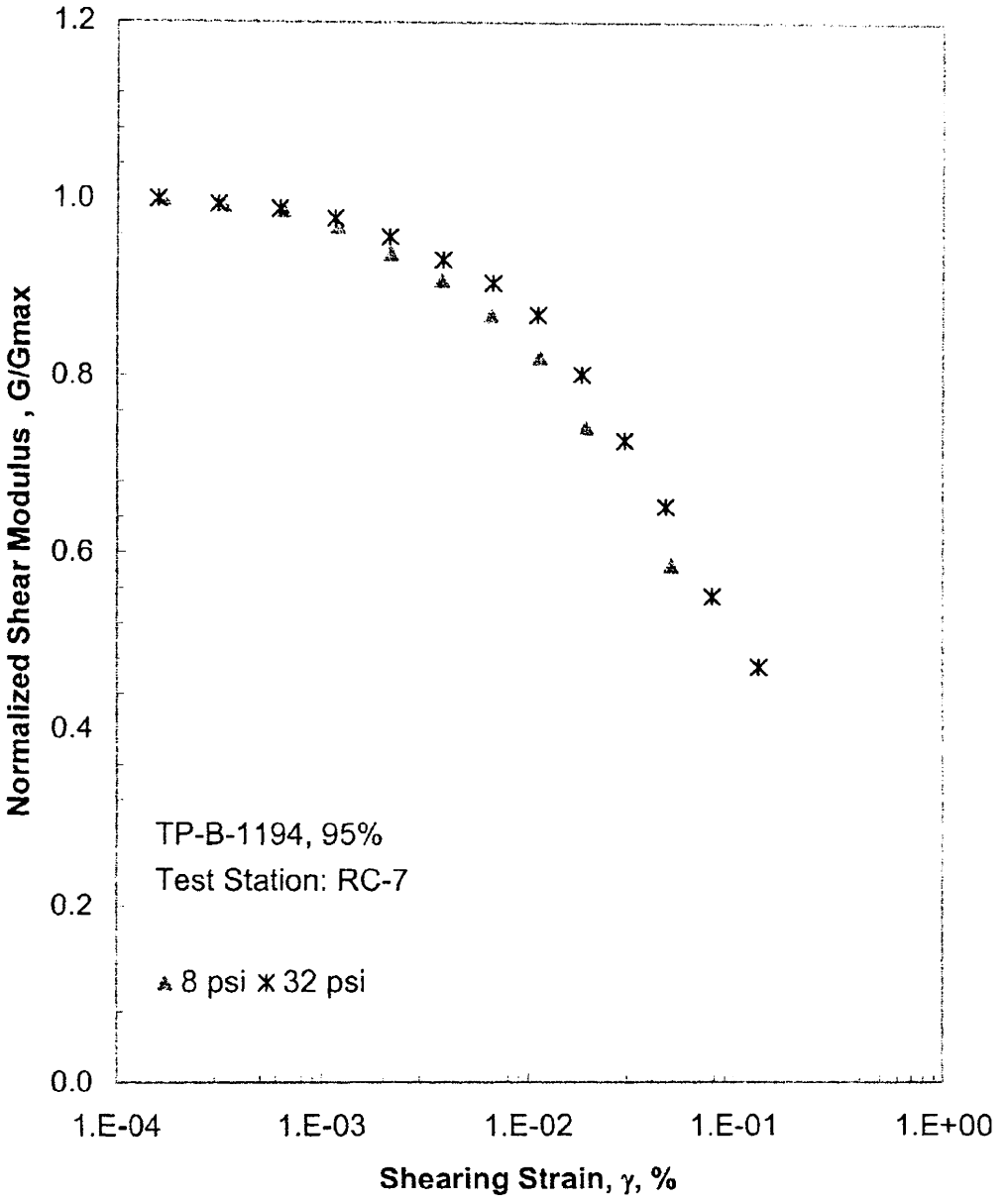

Figure R.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

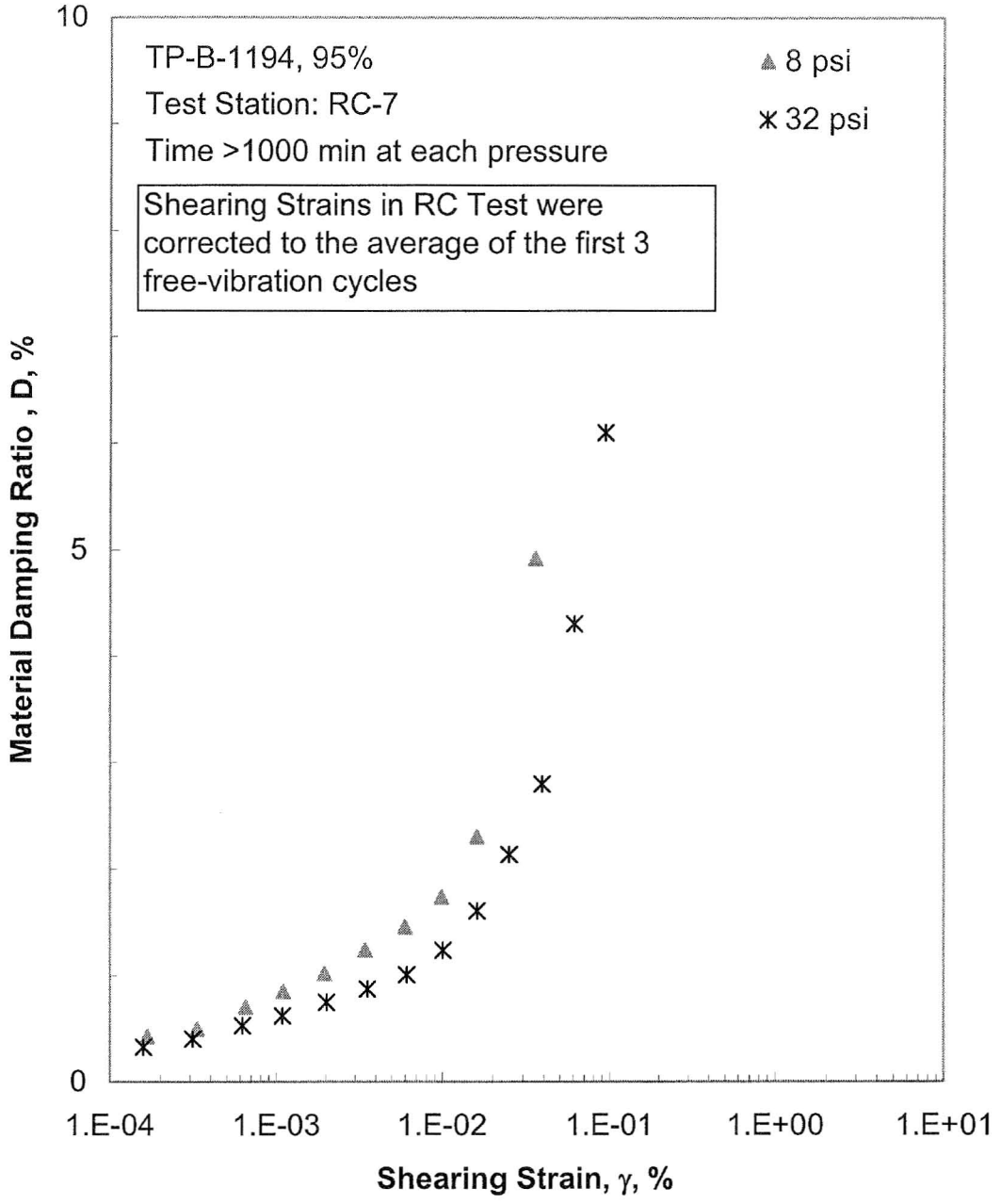

Figure R.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

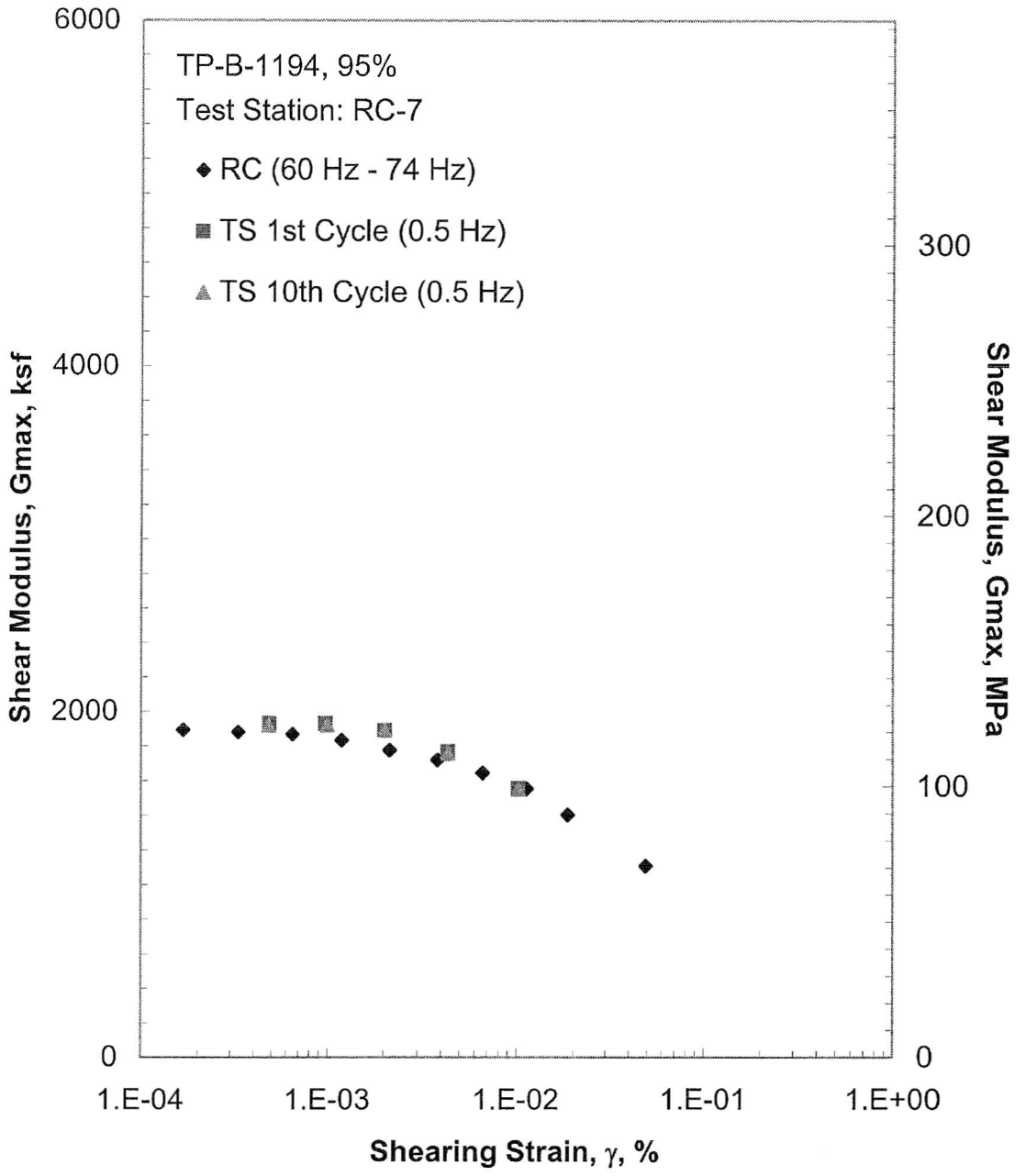

Figure R.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

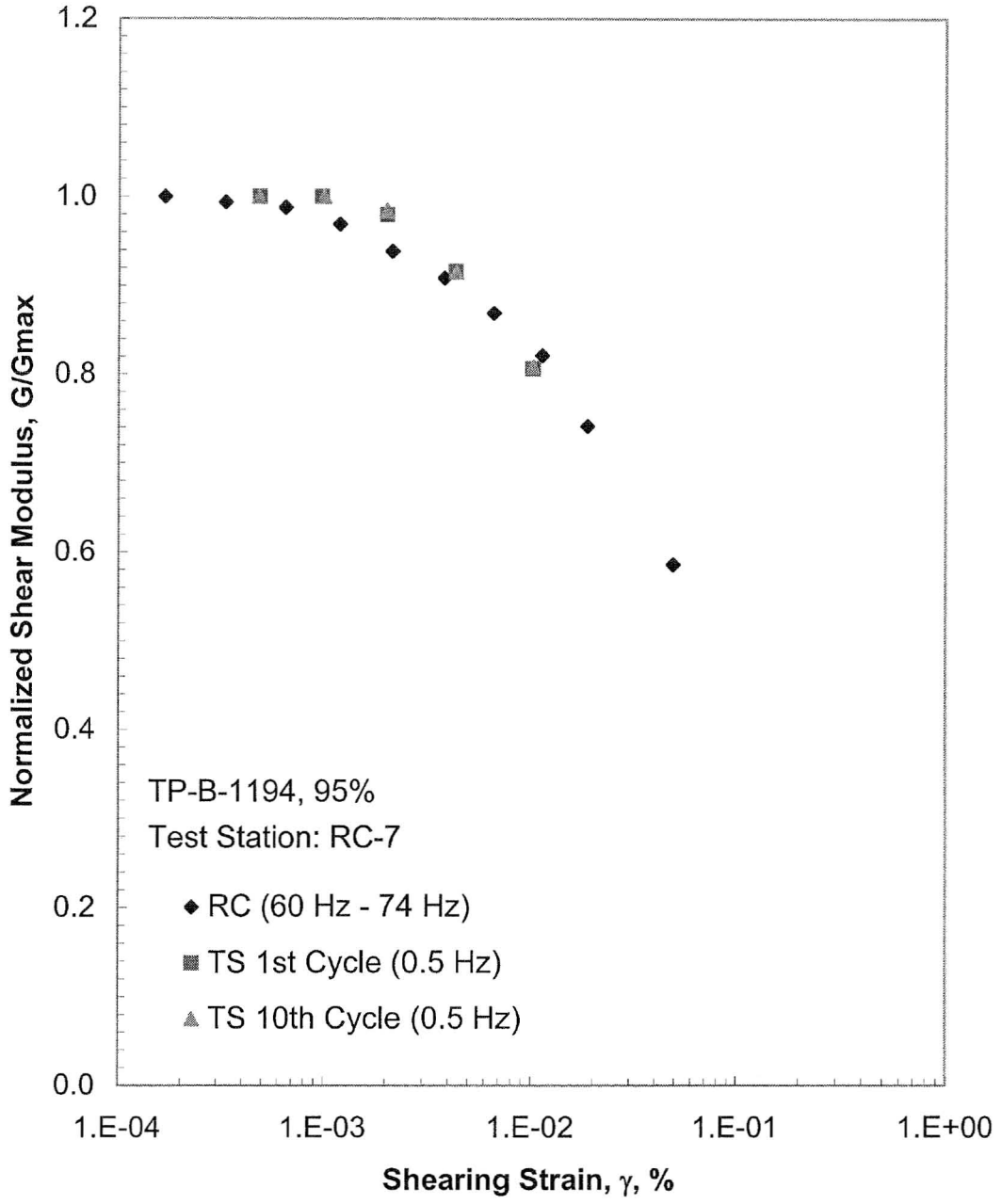

Figure R.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

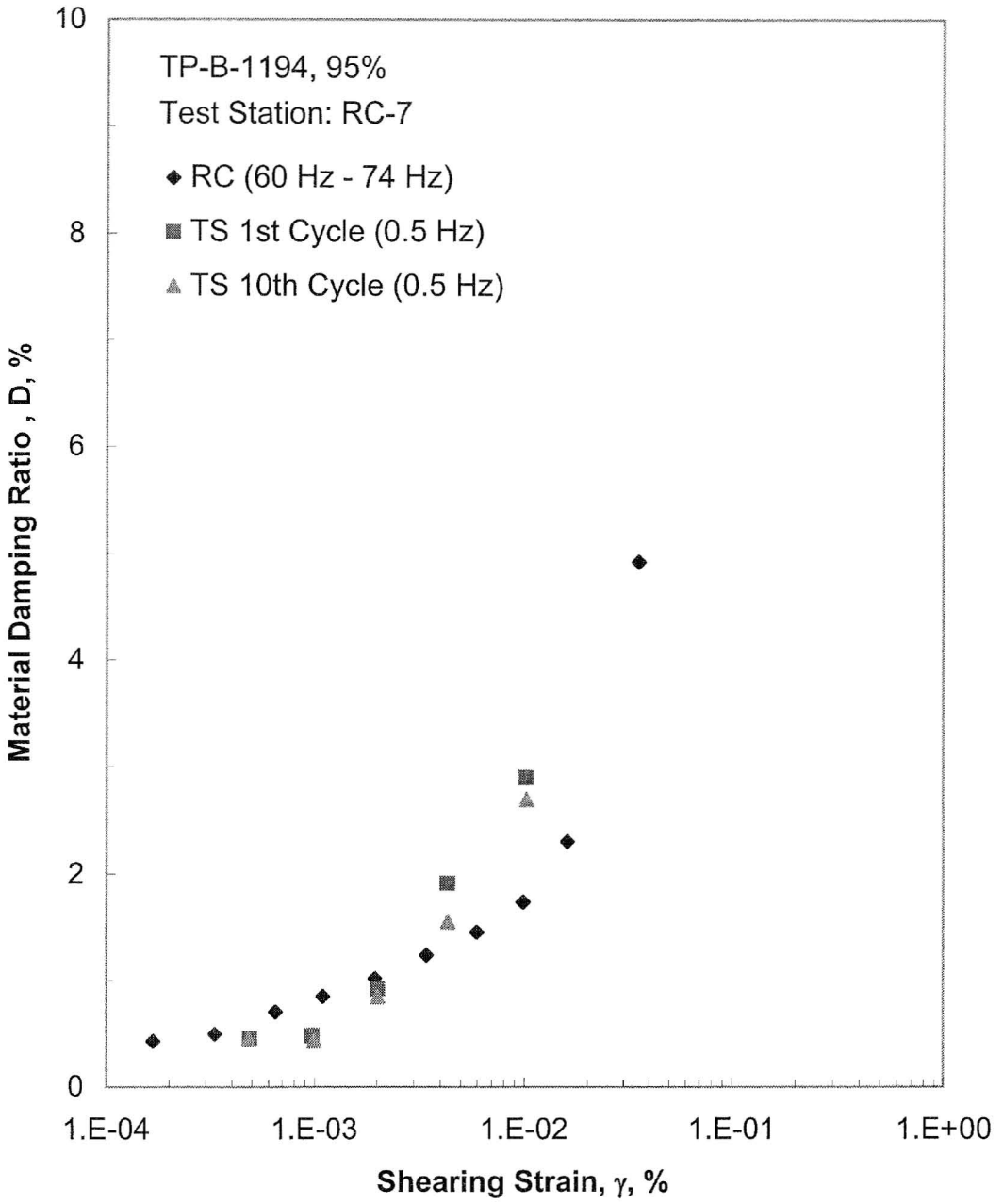

Figure R.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

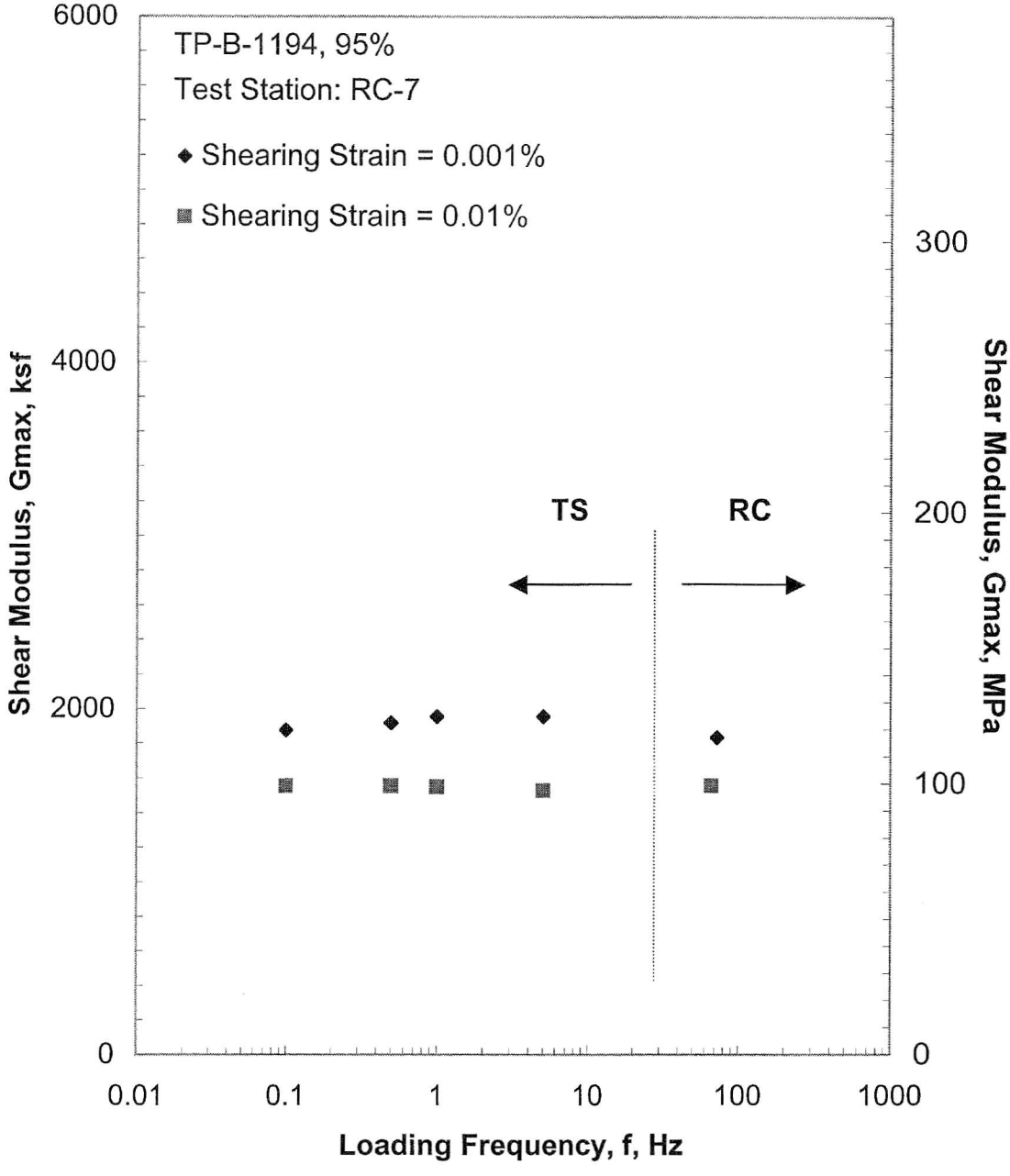

Figure R.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

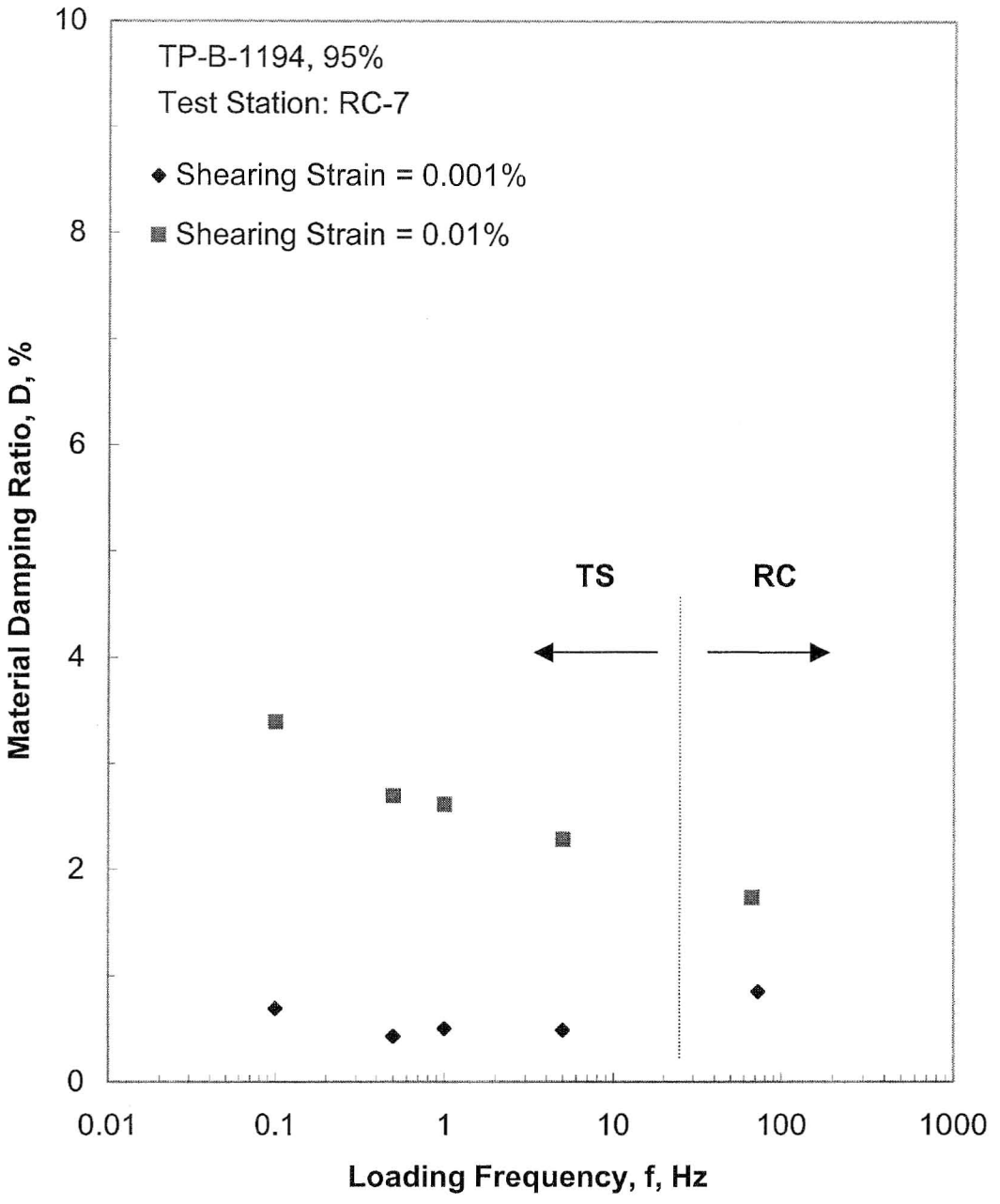

Figure R.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

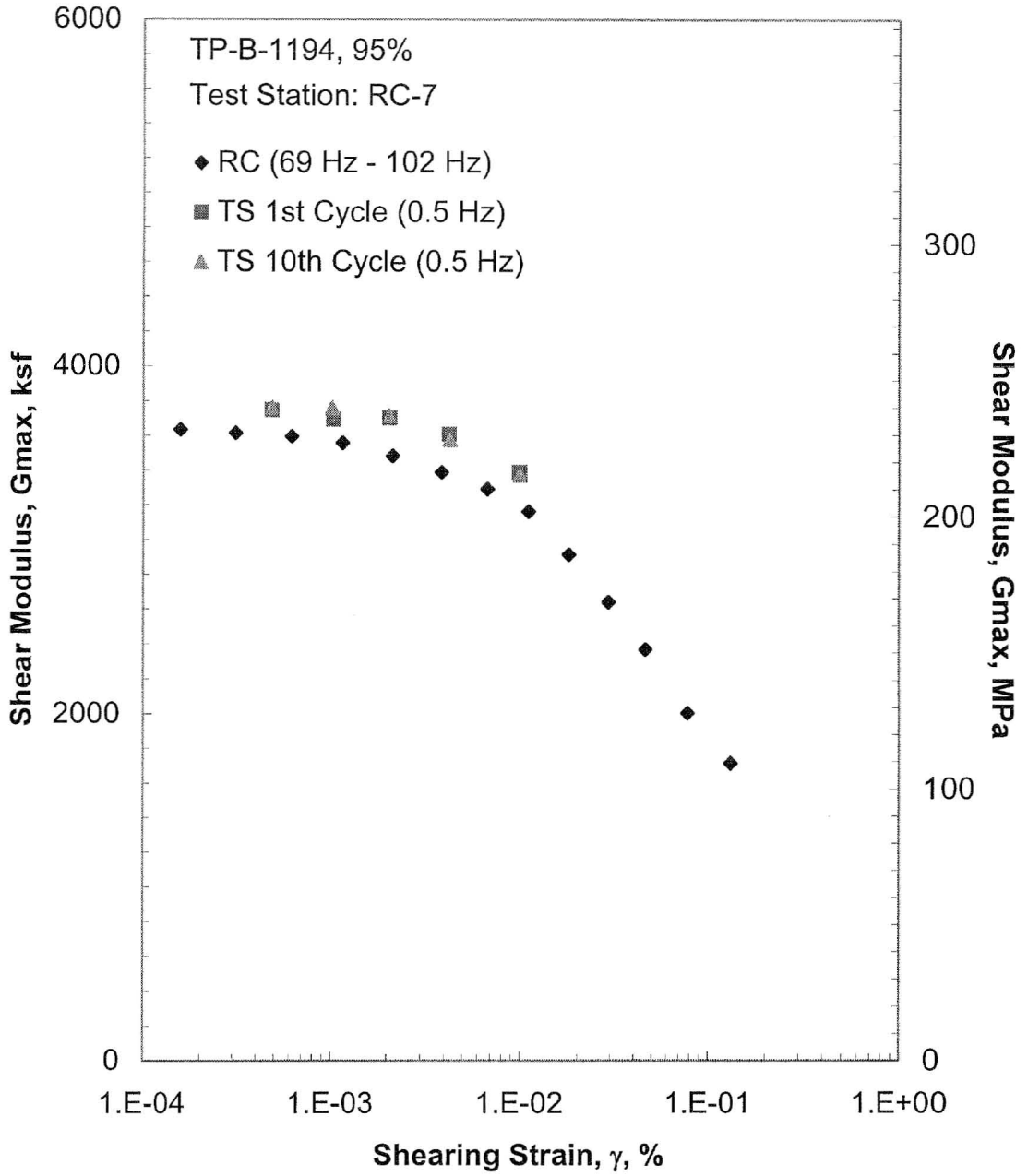

Figure R.16 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

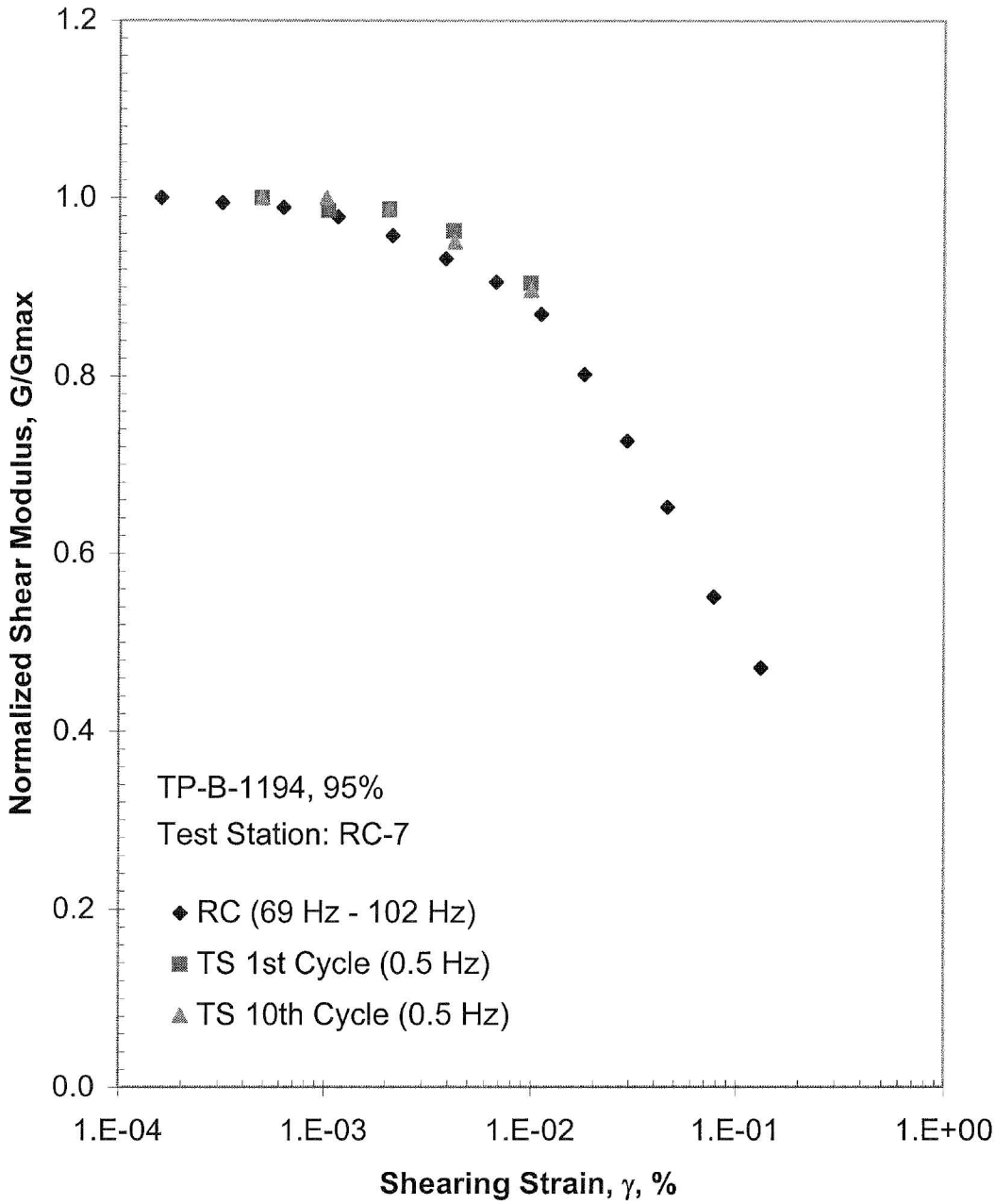

Figure R.17 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

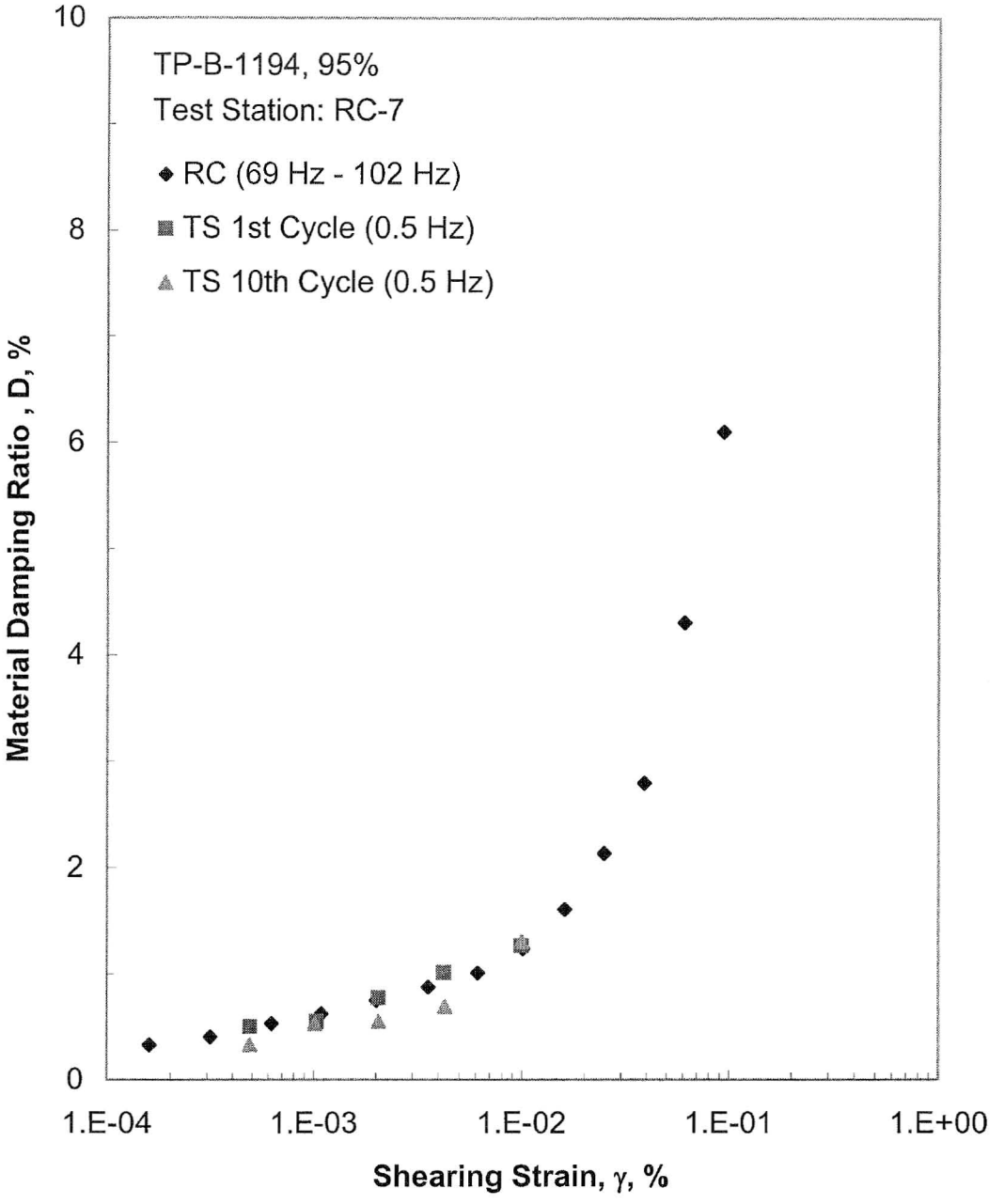

Figure R.18 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

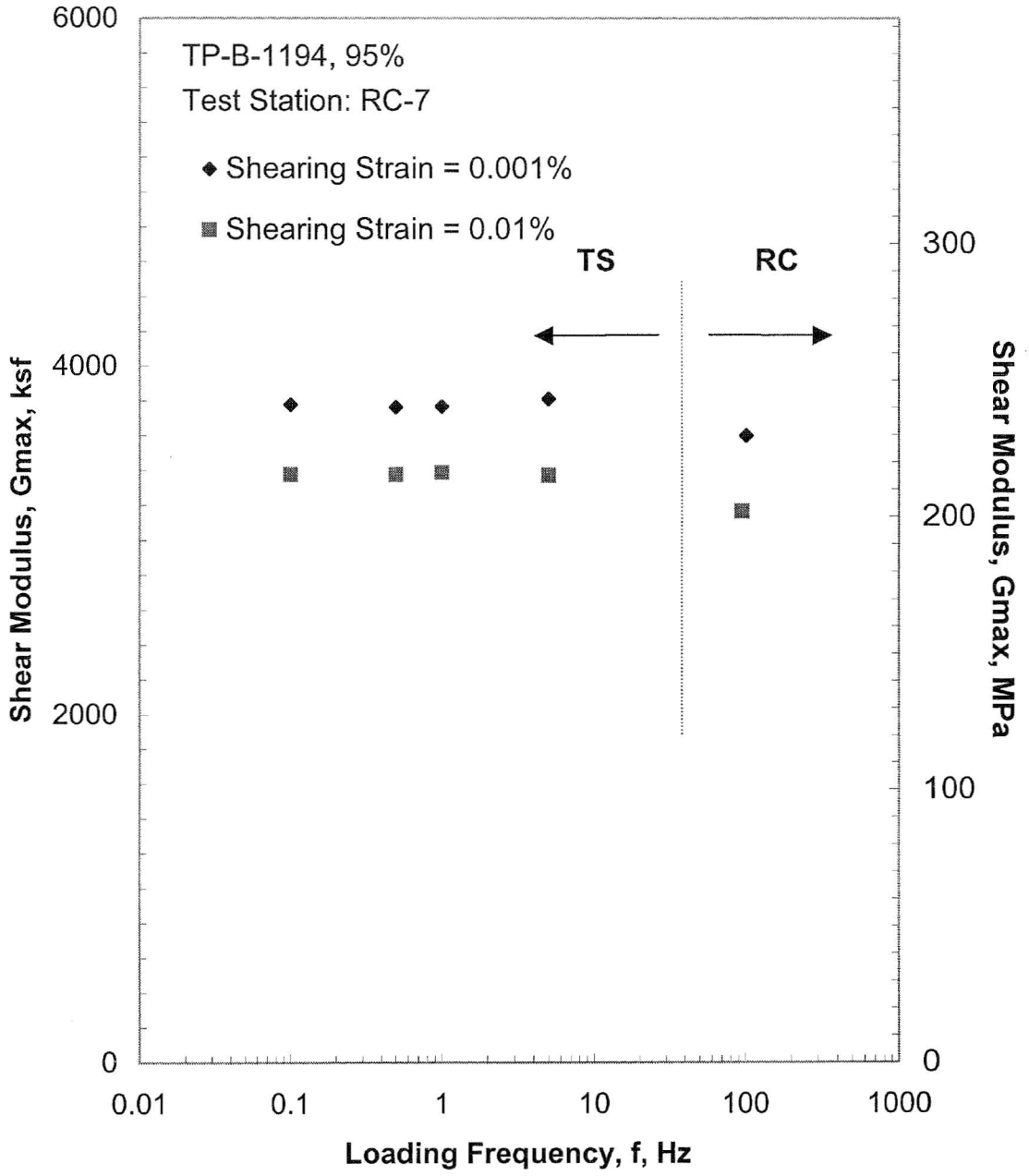

Figure R.19 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

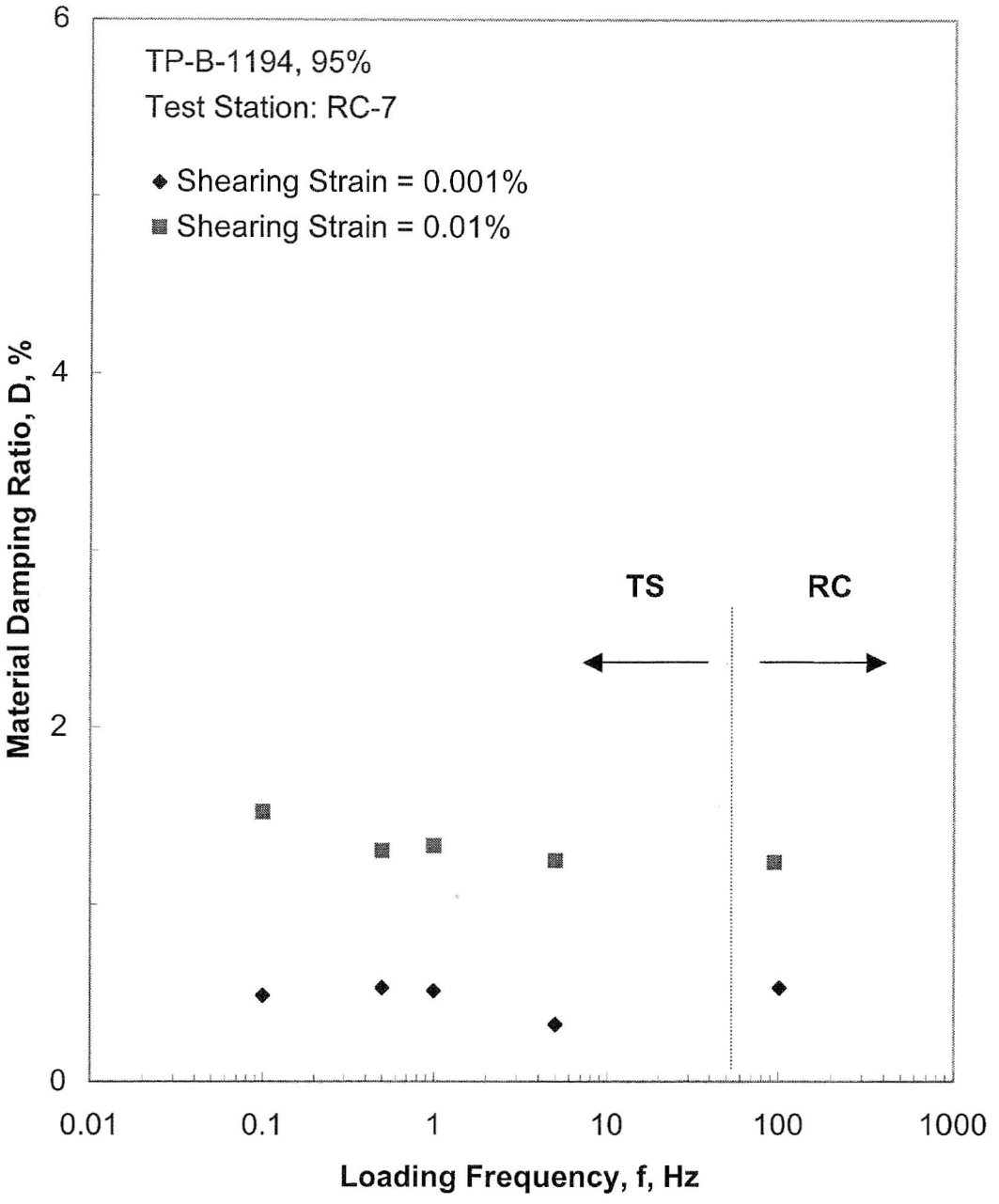

Figure R.20 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

Table R.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 TP-B-1194, 95%

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)	(%)	
2	288	14	1201	58	568	0.63	0.54
4	576	28	1495	72	634	0.52	0.54
8	1152	55	1982	95	730	0.46	0.53
16	2304	110	2735	131	857	0.38	0.53
32	4608	220	3722	179	999	0.33	0.53

Table R.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen TP-B-1194, 95%; Isoptropic Confining Pressure, σ_o=8 psi (1.2 ksf = 55 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
1.67E-04	1893	1.00	1.67E-04	0.43
3.31E-04	1881	0.99	3.31E-04	0.50
6.50E-04	1869	0.99	6.50E-04	0.71
1.19E-03	1834	0.97	1.10E-03	0.85
2.16E-03	1776	0.94	1.96E-03	1.02
3.83E-03	1719	0.91	3.45E-03	1.24
6.64E-03	1645	0.87	5.97E-03	1.46
1.13E-02	1554	0.82	9.86E-03	1.74
1.88E-02	1404	0.74	1.60E-02	2.30
4.92E-02	1109	0.59	3.55E-02	4.92

[+] 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 R.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen TP-B-1194, 95%; Isotropic Confining Pressure, σ_o = 8 psi (1.2 ksf =55 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, %
4.88E-04	1930	1.00	0.46	4.82E-04	1921	1.00	0.45
9.78E-04	1930	1.00	0.48	9.98E-04	1921	1.00	0.43
2.03E-03	1890	0.98	0.92	2.03E-03	1890	0.98	0.85
4.33E-03	1767	0.92	1.91	4.35E-03	1758	0.92	1.55
1.02E-02	1556	0.81	2.90	1.02E-02	1552	0.81	2.69

Table R.4 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen TP-B-1194, 95%; Isoptropic Confining Pressure, σ_o= 32 psi (4.6 ksf = 220 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
1.58E-04	3636	1.00	1.58E-04	0.33
3.12E-04	3617	0.99	3.12E-04	0.41
6.23E-04	3597	0.99	6.23E-04	0.53
1.16E-03	3559	0.98	1.09E-03	0.62
2.14E-03	3482	0.96	2.02E-03	0.75
3.88E-03	3388	0.93	3.57E-03	0.87
6.75E-03	3293	0.91	6.15E-03	1.01
1.11E-02	3163	0.87	1.01E-02	1.24
1.80E-02	2916	0.80	1.61E-02	1.61
2.93E-02	2642	0.73	2.49E-02	2.13
4.64E-02	2370	0.65	3.89E-02	2.79
7.81E-02	2004	0.55	6.09E-02	4.31
1.32E-01	1714	0.47	9.38E-02	6.10

[+] 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 R.5 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen TP-B-1194, 95%; Isotropic Confining Pressure, σ_o=32 psi (4.6 ksf = 220 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, %
4.88E-04	3747	1.00	0.50	4.87E-04	3762	1.00	0.33
1.04E-03	3693	0.99	0.55	1.02E-03	3762	1.00	0.53
2.07E-03	3699	0.99	0.77	2.06E-03	3712	0.99	0.55
4.24E-03	3608	0.96	1.01	4.27E-03	3577	0.95	0.69
9.92E-03	3388	0.90	1.26	9.96E-03	3373	0.90	1.30

* Data not available due to noisy signals

APPENDIX S

Specimen TP-B-1194, 100%
Reconstituted Engineering Fill at 100% Compaction
(Non-Plastic)

Borehole ---
B-1194
Depth = 15 ft (4.6 m)
Total Unit Weight = 125.9 lb/ft^3
Water Content = 11.4 %
Estimated In-Situ Ko = 0.44
Estimated In-Situ Mean Effective
Stress = 8 psi

FUGRO JOB #: 0401-1667
Testing Station: RC7

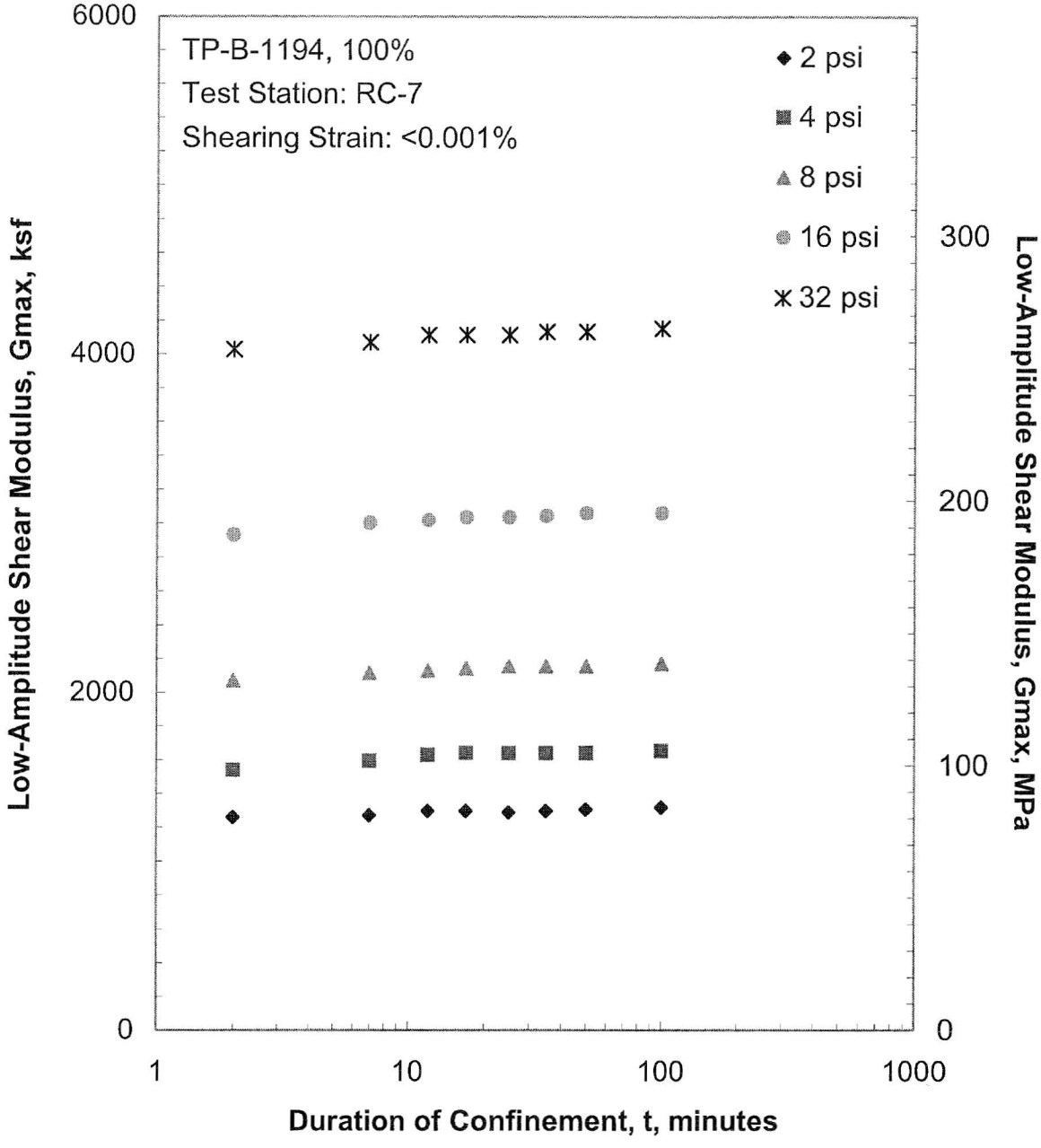

Figure S.1 Variation in Low-Amplitude Shear Modulus with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

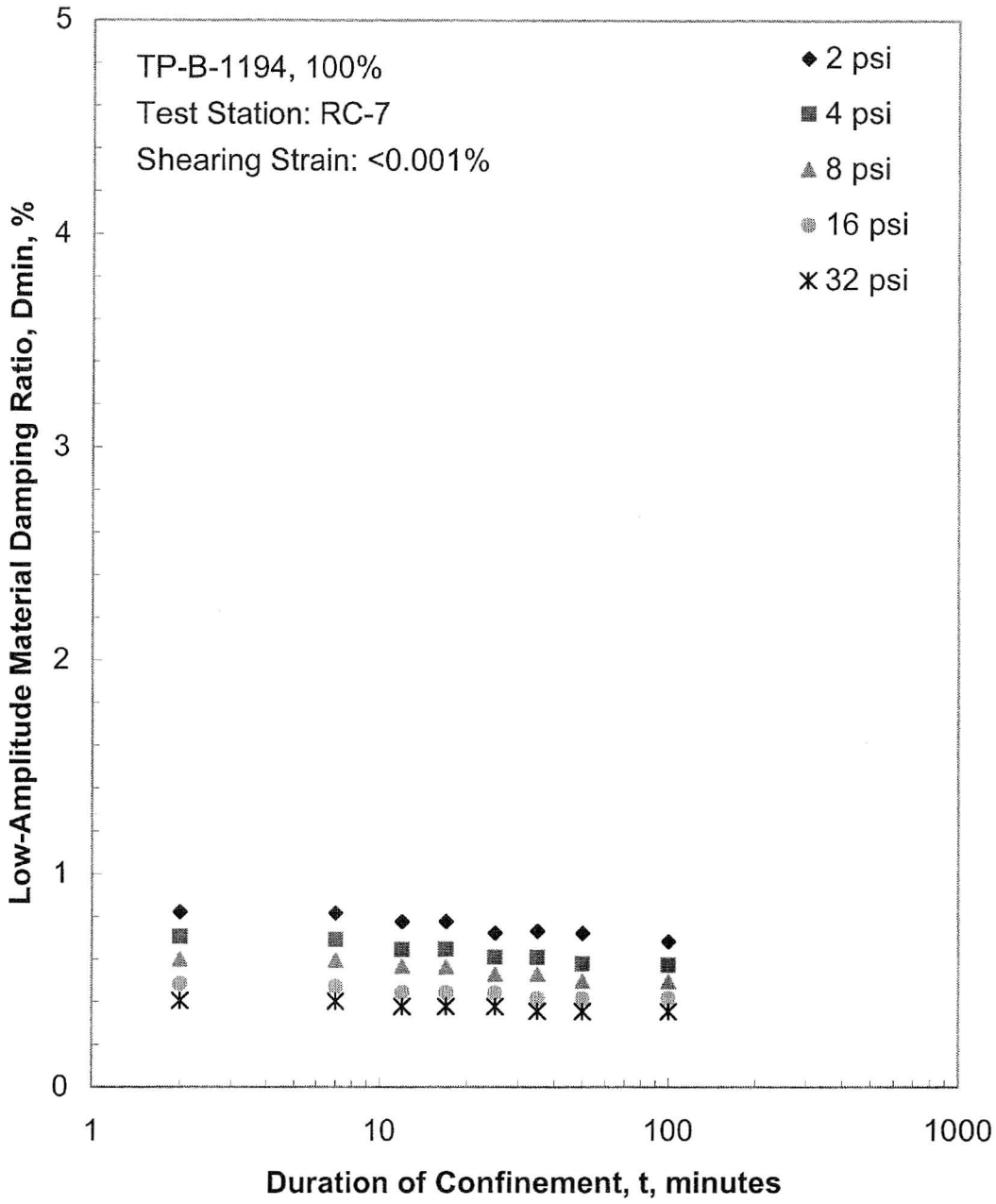

Figure S.2 Variation in Low-Amplitude Material Damping Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

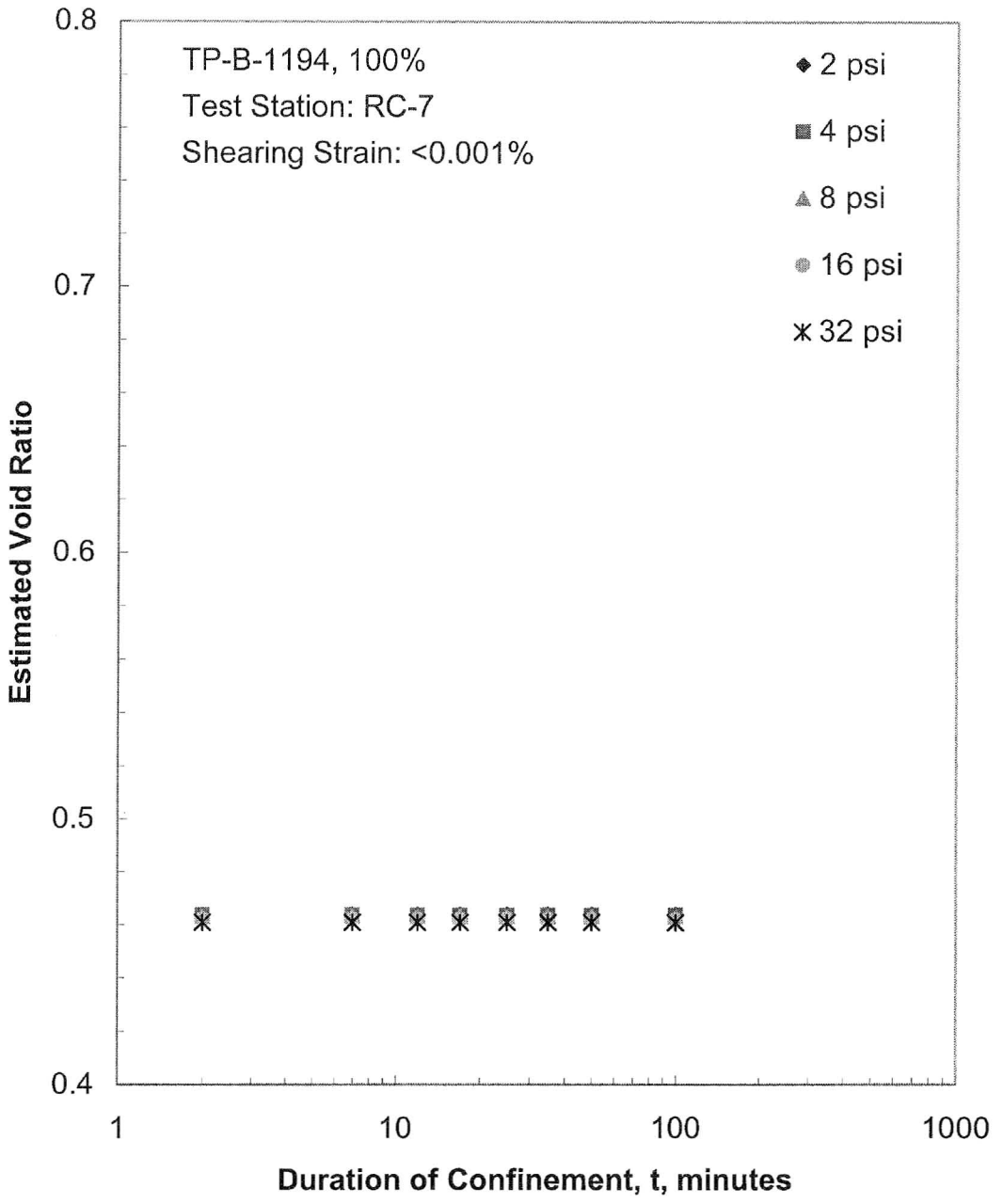

Figure S.3 Variation in Estimated Void Ratio with Magnitude and Duration of Isotropic Confining Pressure from Resonant Column Tests

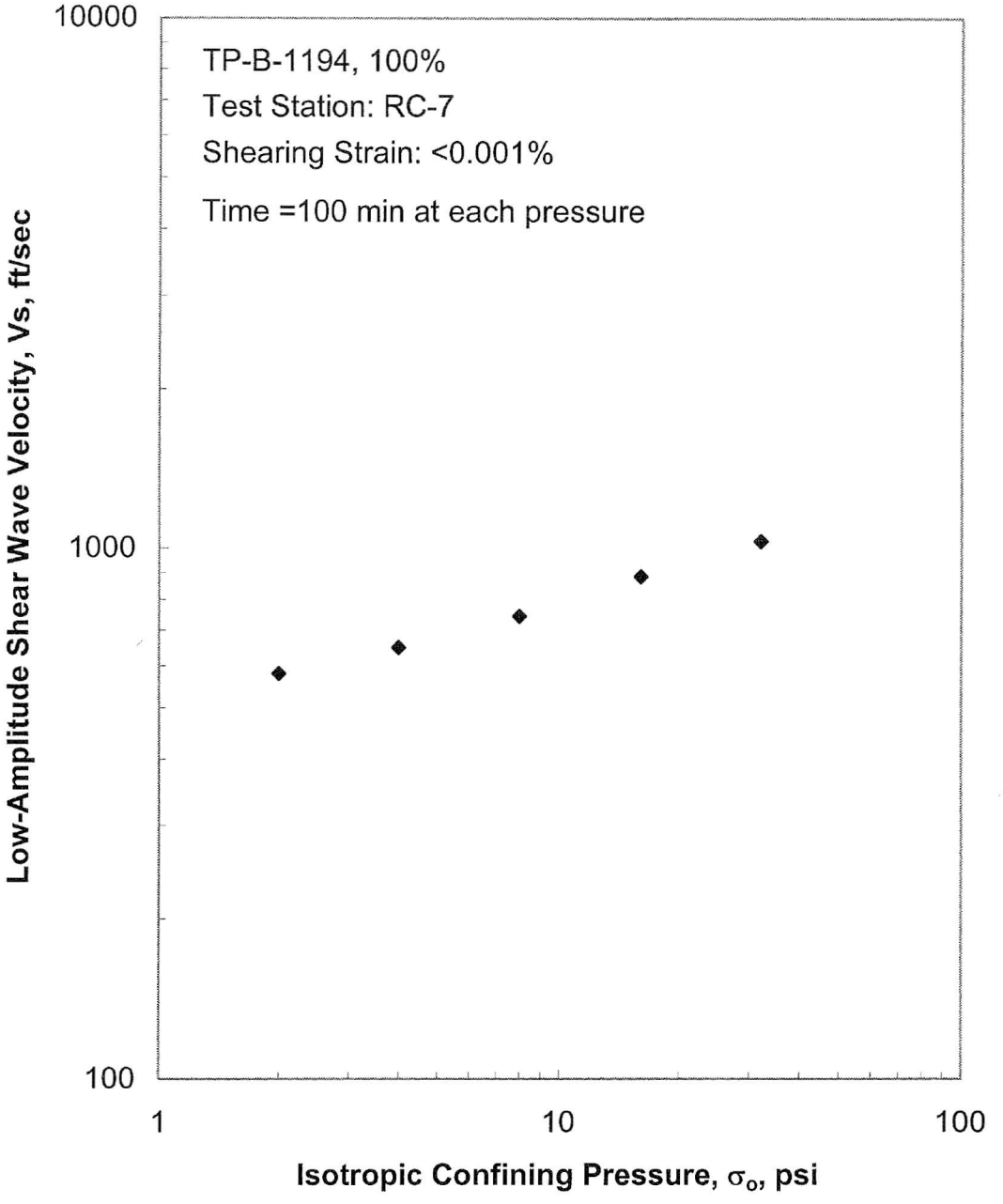

Figure S.4 Variation in Low-Amplitude Shear Wave Velocity with Isotropic Confining Pressure from Resonant Column Tests

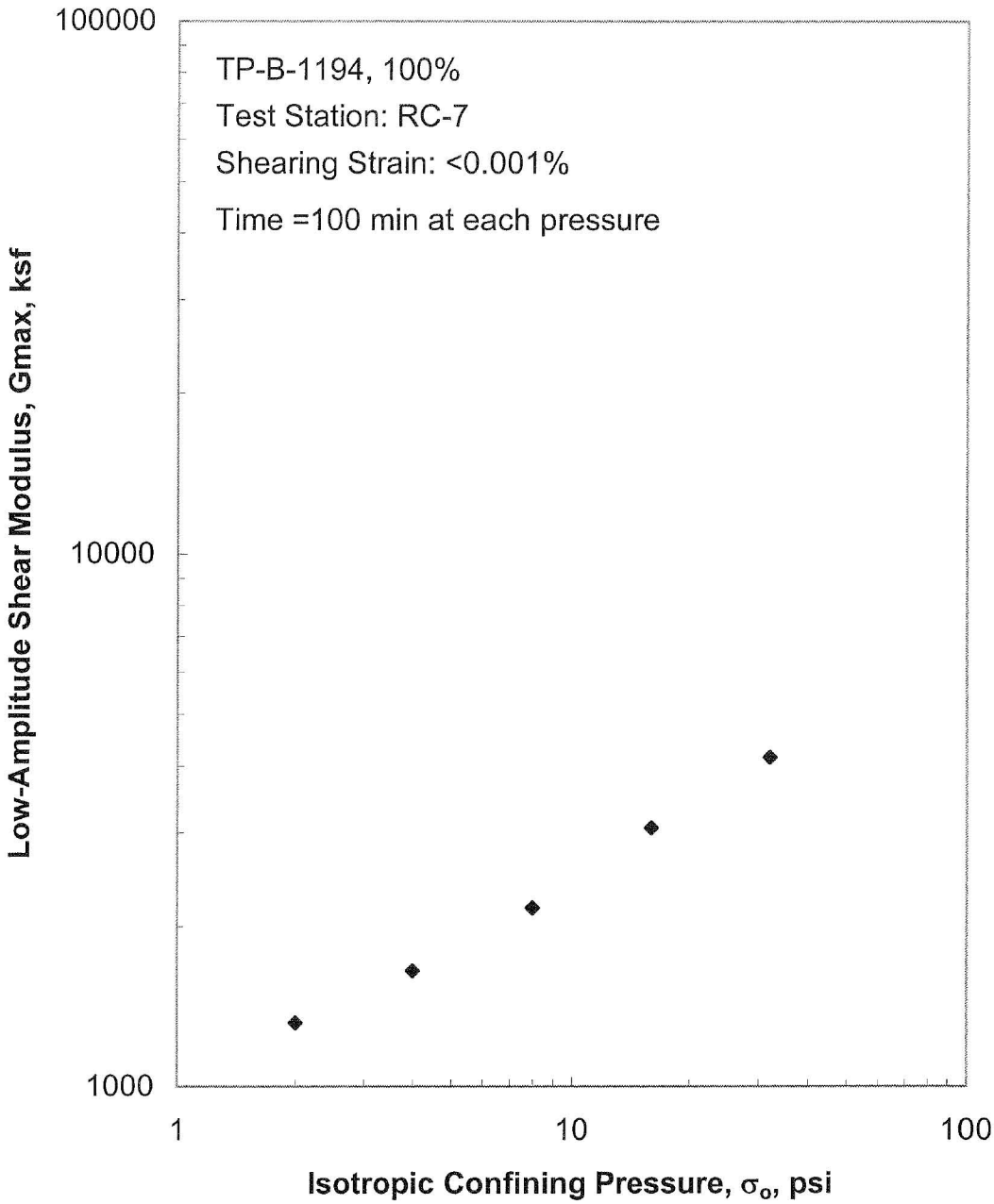

Figure S.5 Variation in Low-Amplitude Shear Modulus with Isotropic Confining Pressure from Resonant Column Tests

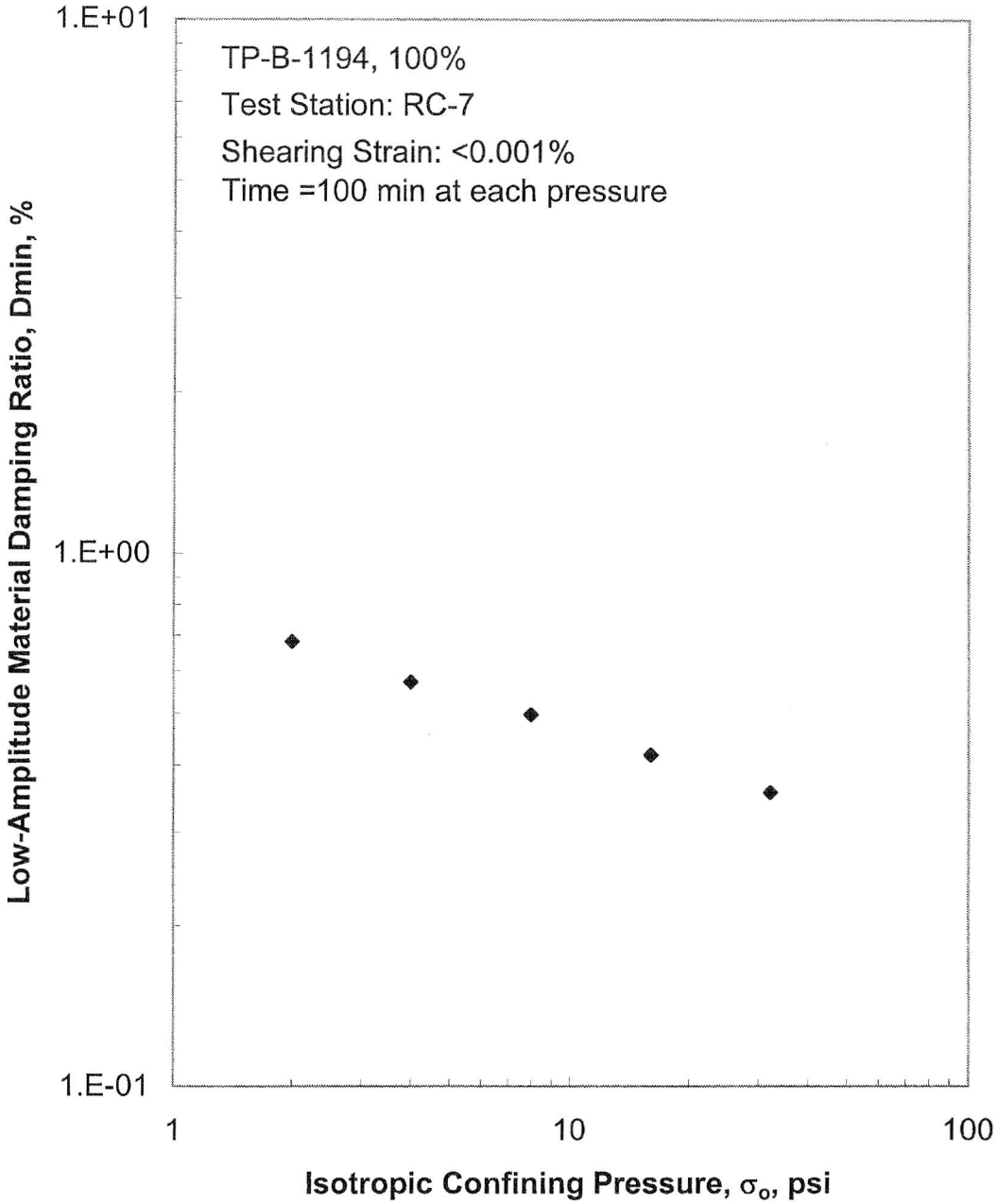

Figure S.6 Variation in Low-Amplitude Material Damping Ratio with Isotropic Confining Pressure from Resonant Column Tests

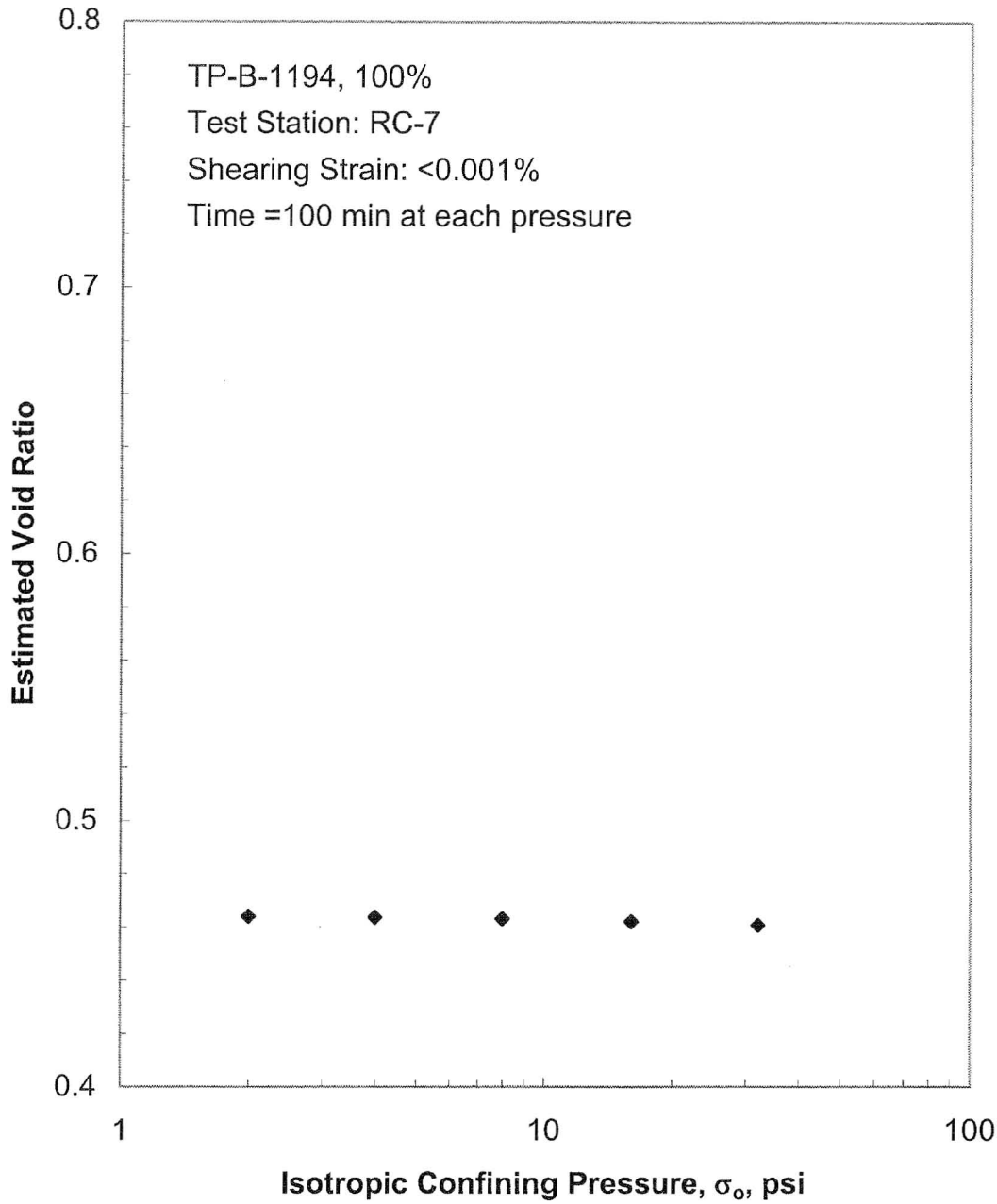

Figure S.7 Variation in Estimated Void Ratio with Isotropic Confining Pressure from Resonant Column Tests

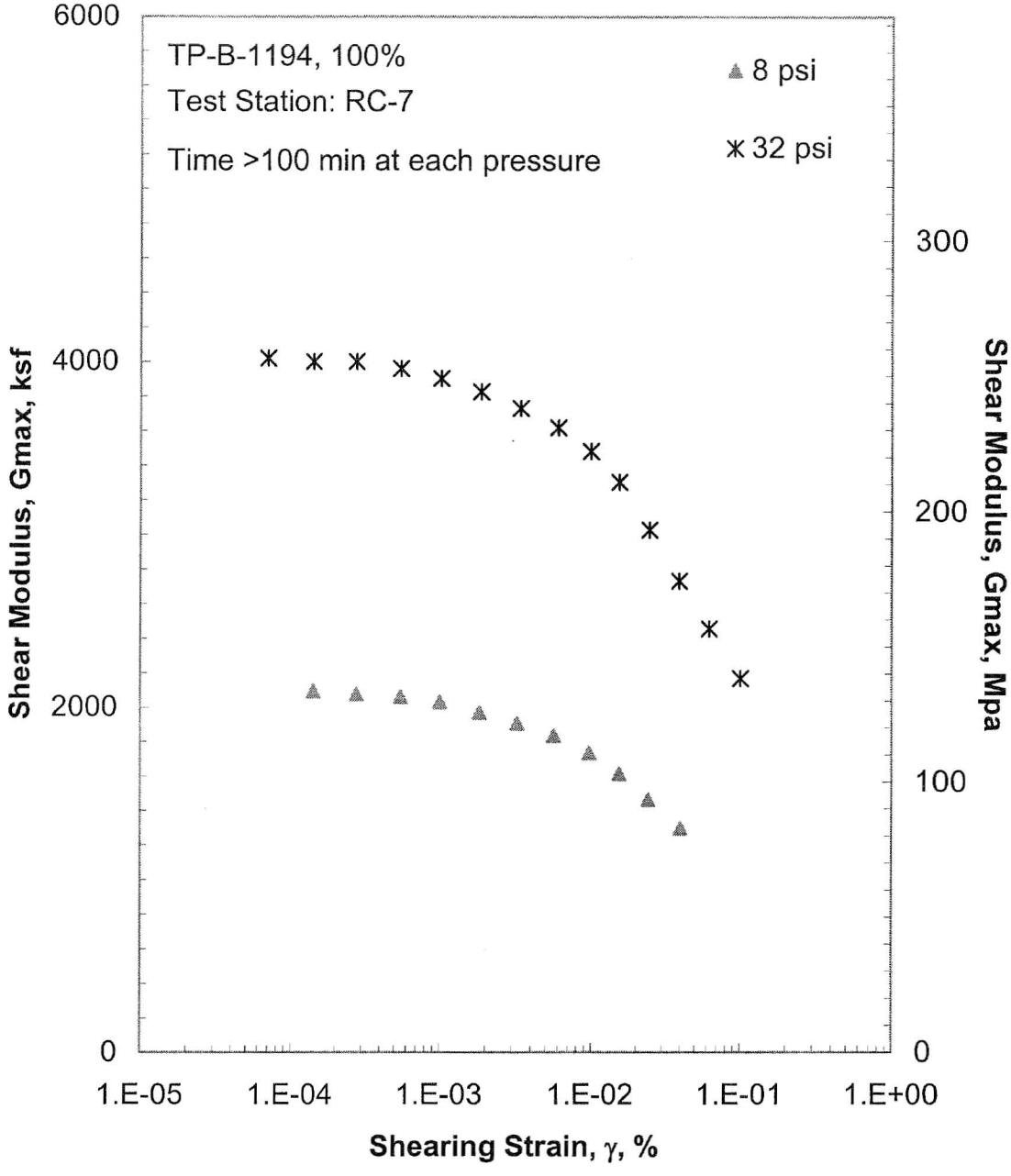

Figure S.8 Comparison of the Variation in Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

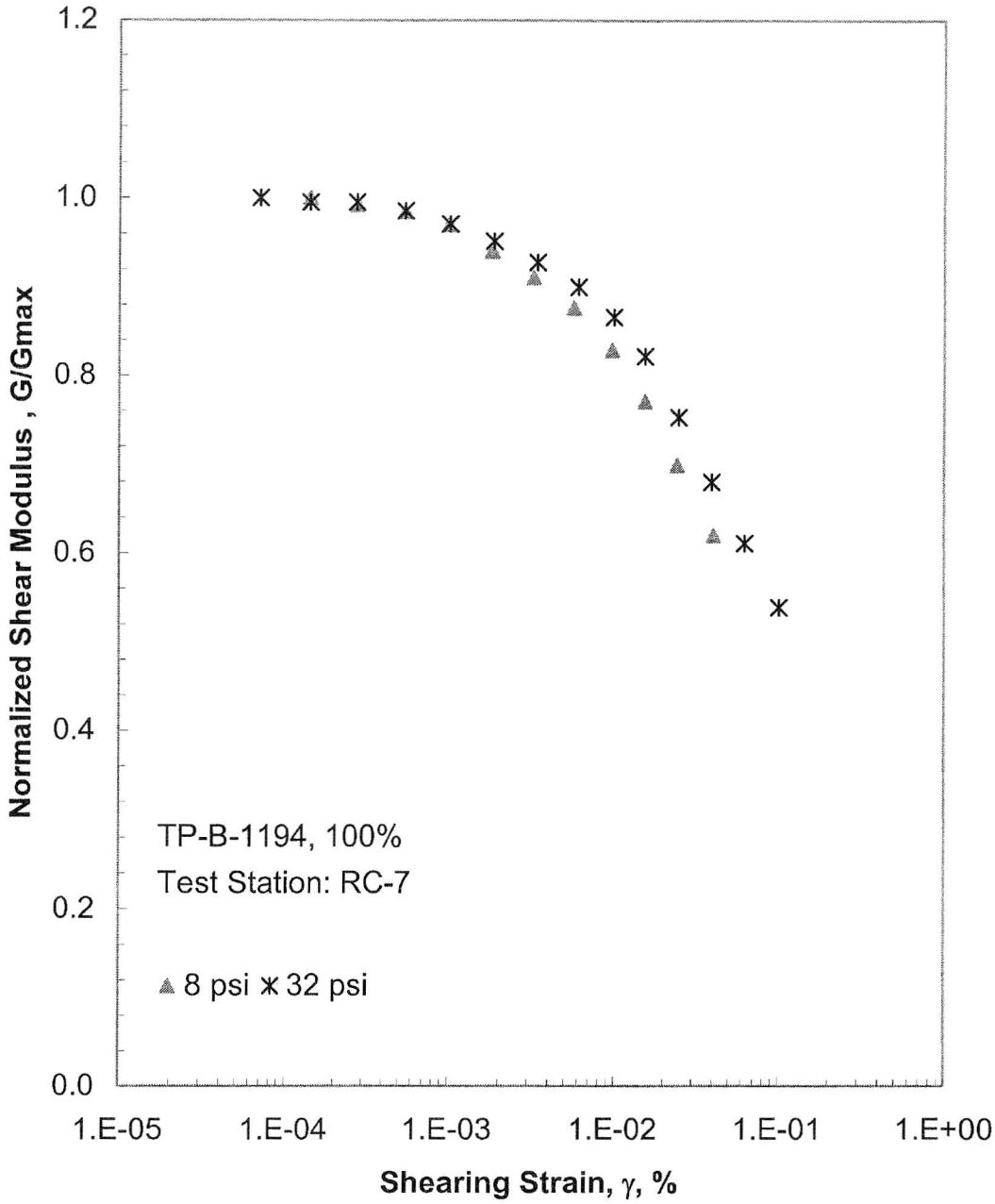

Figure S.9 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

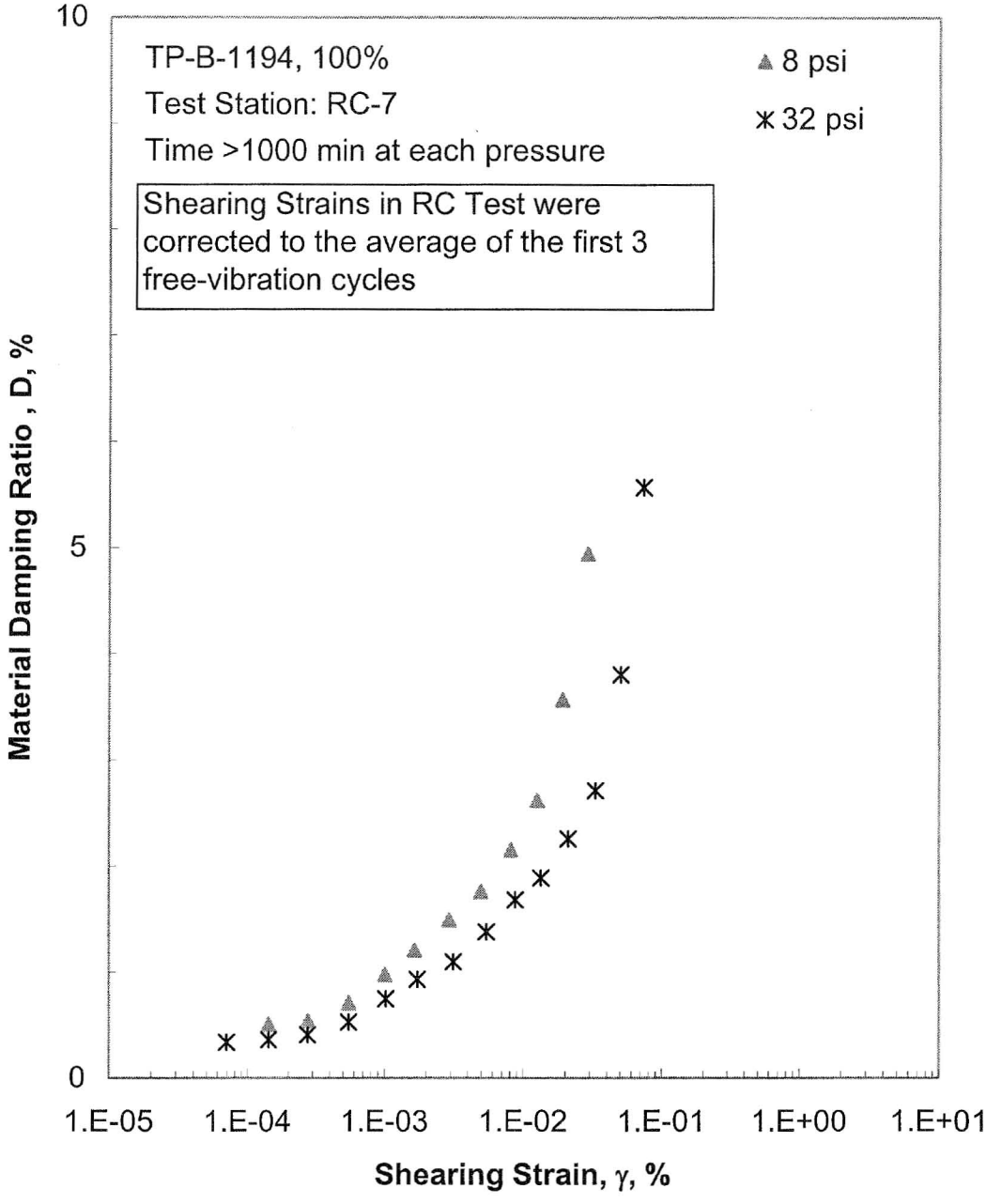

Figure S.10 Comparison of the Variation in Material Damping Ratio with Shearing Strain and Isotropic Confining Pressure from the Resonant Column Tests

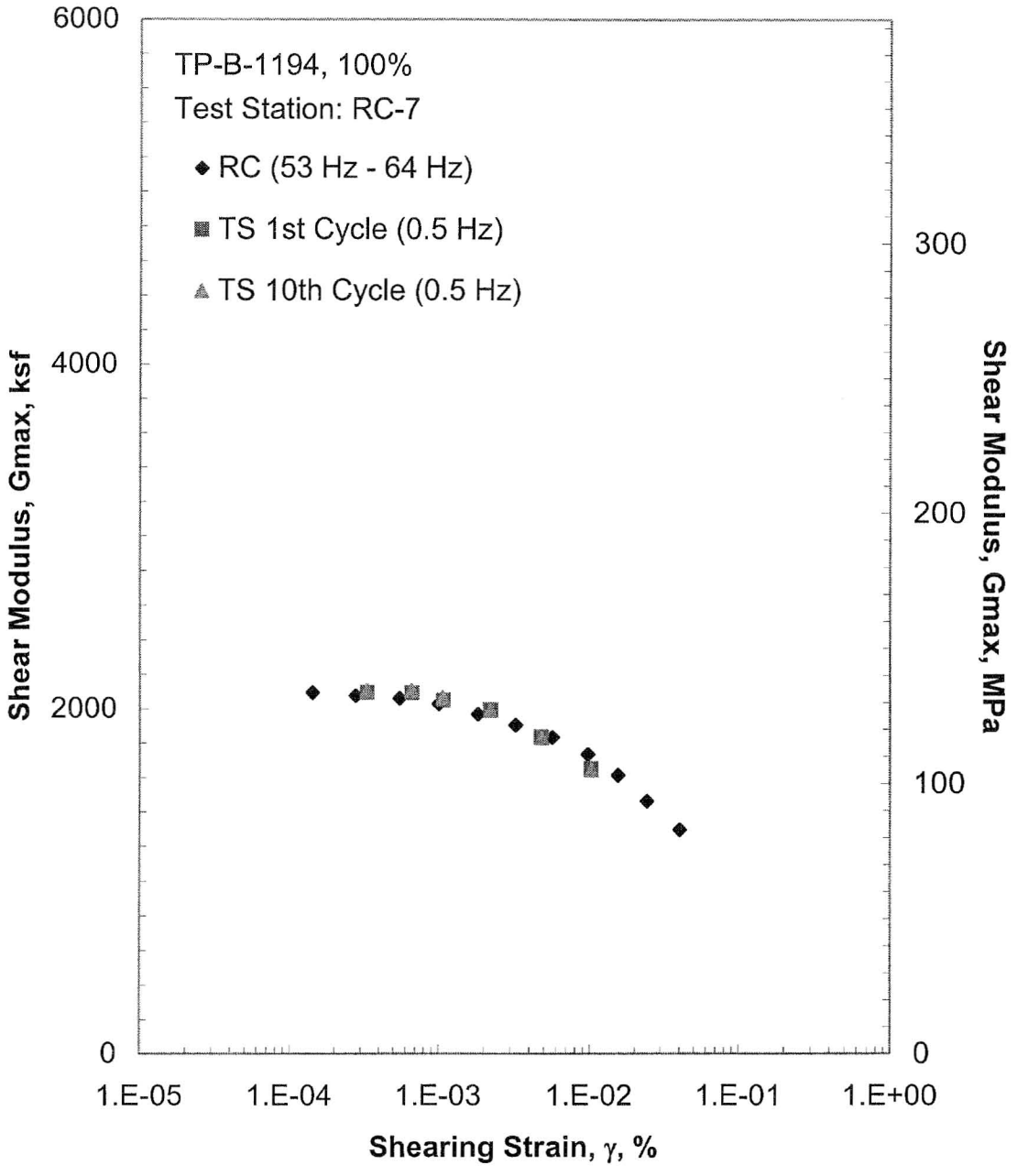

Figure S.11 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

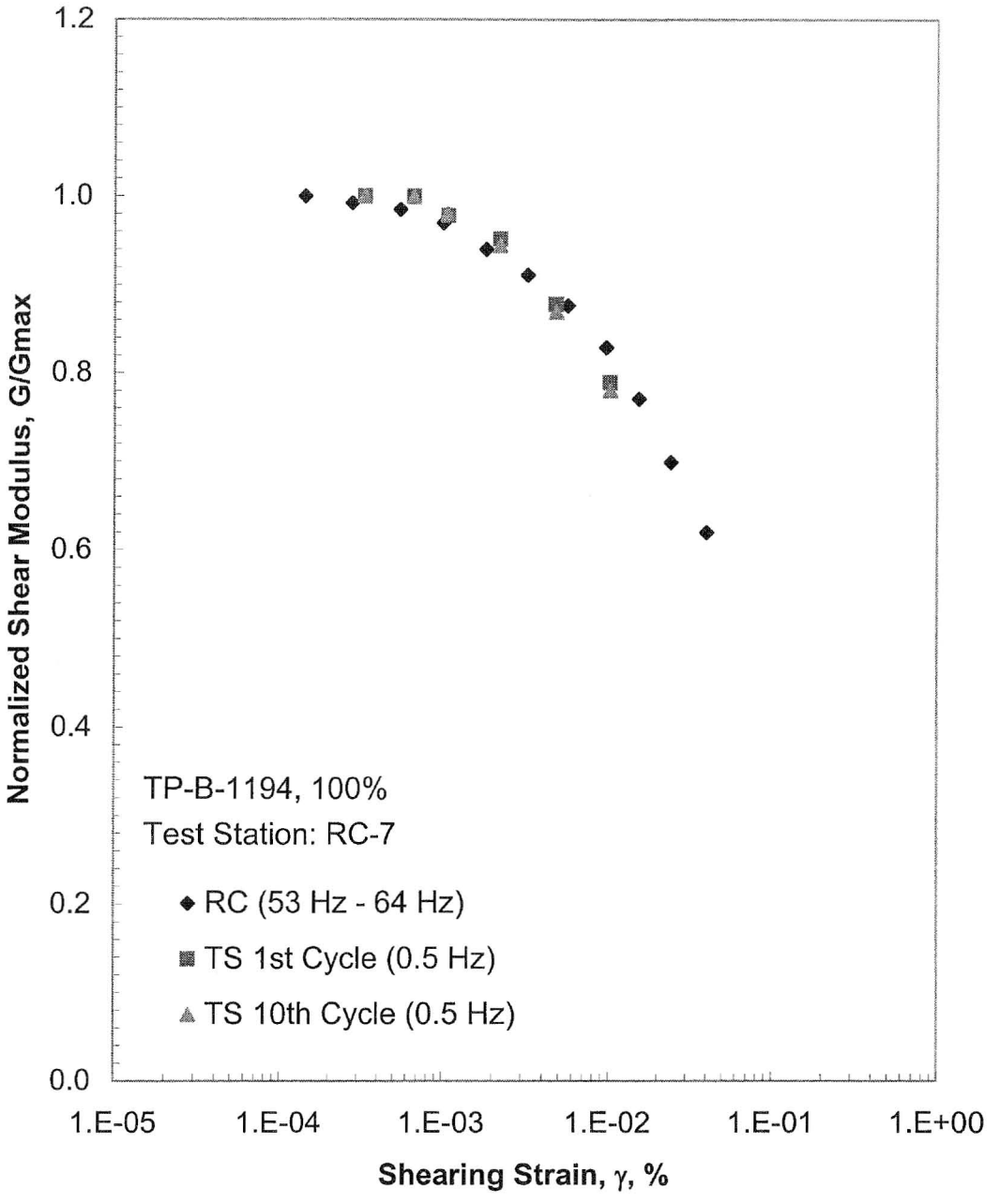

Figure S.12 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

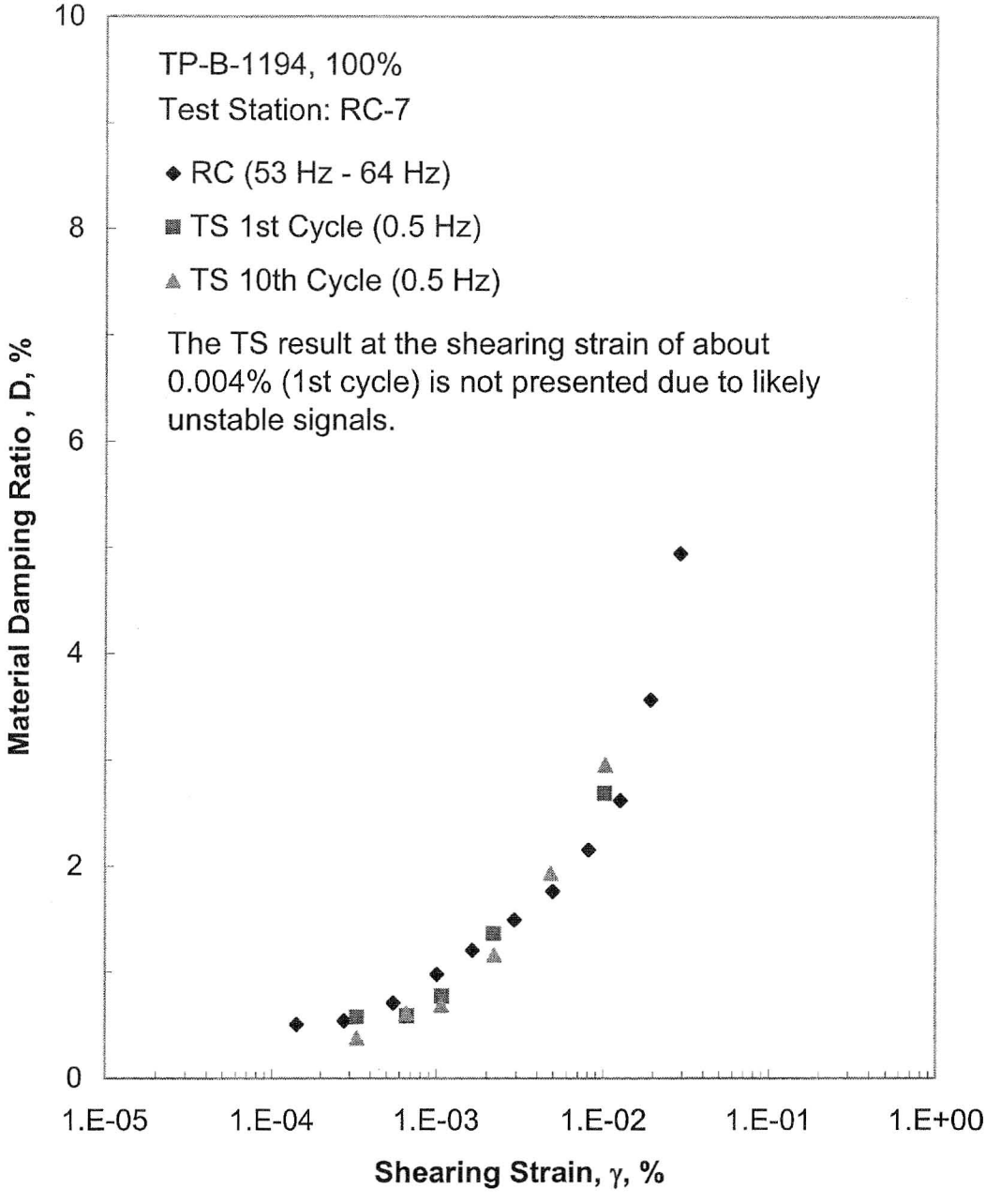

Figure S.13 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

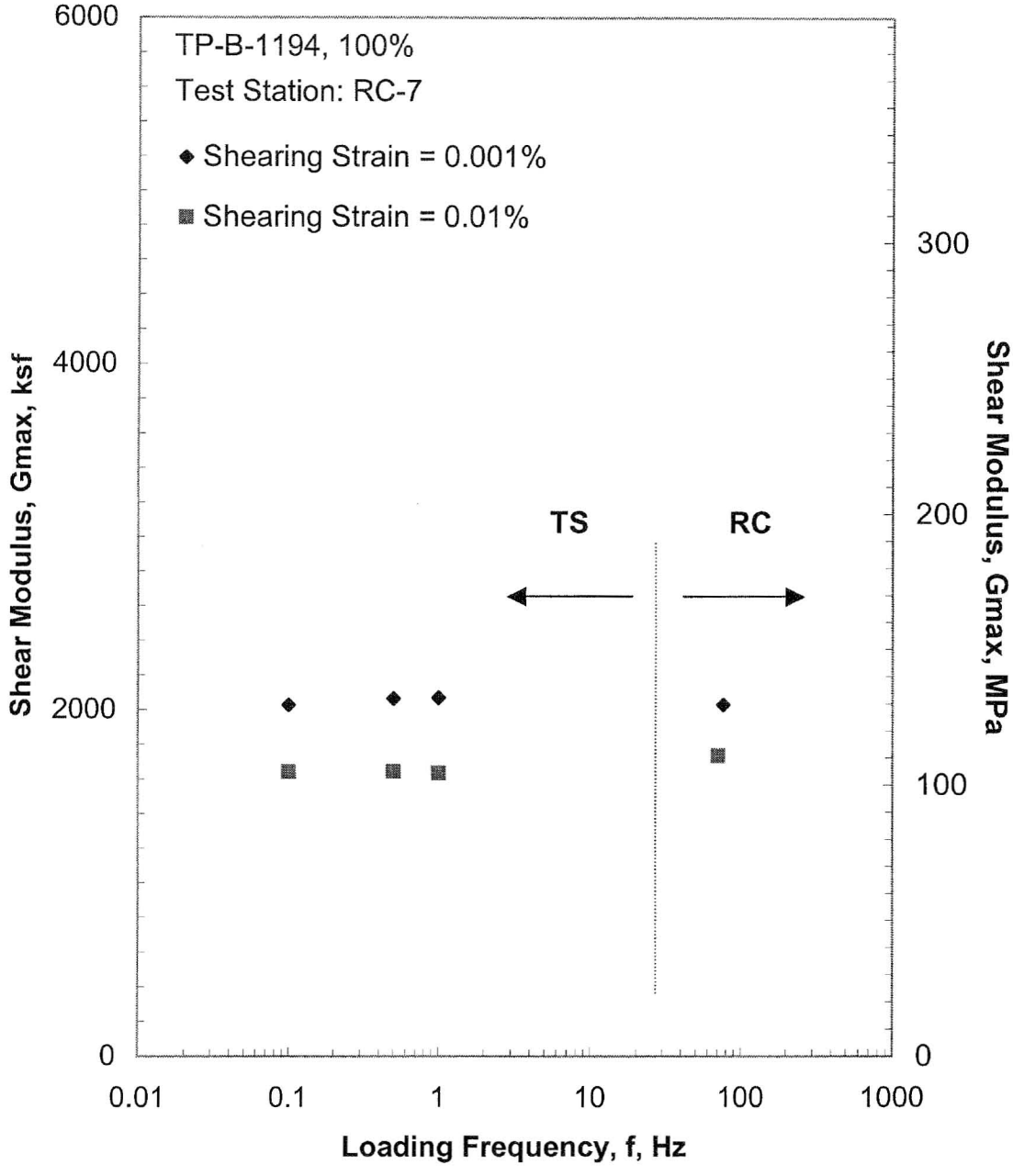

Figure S.14 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

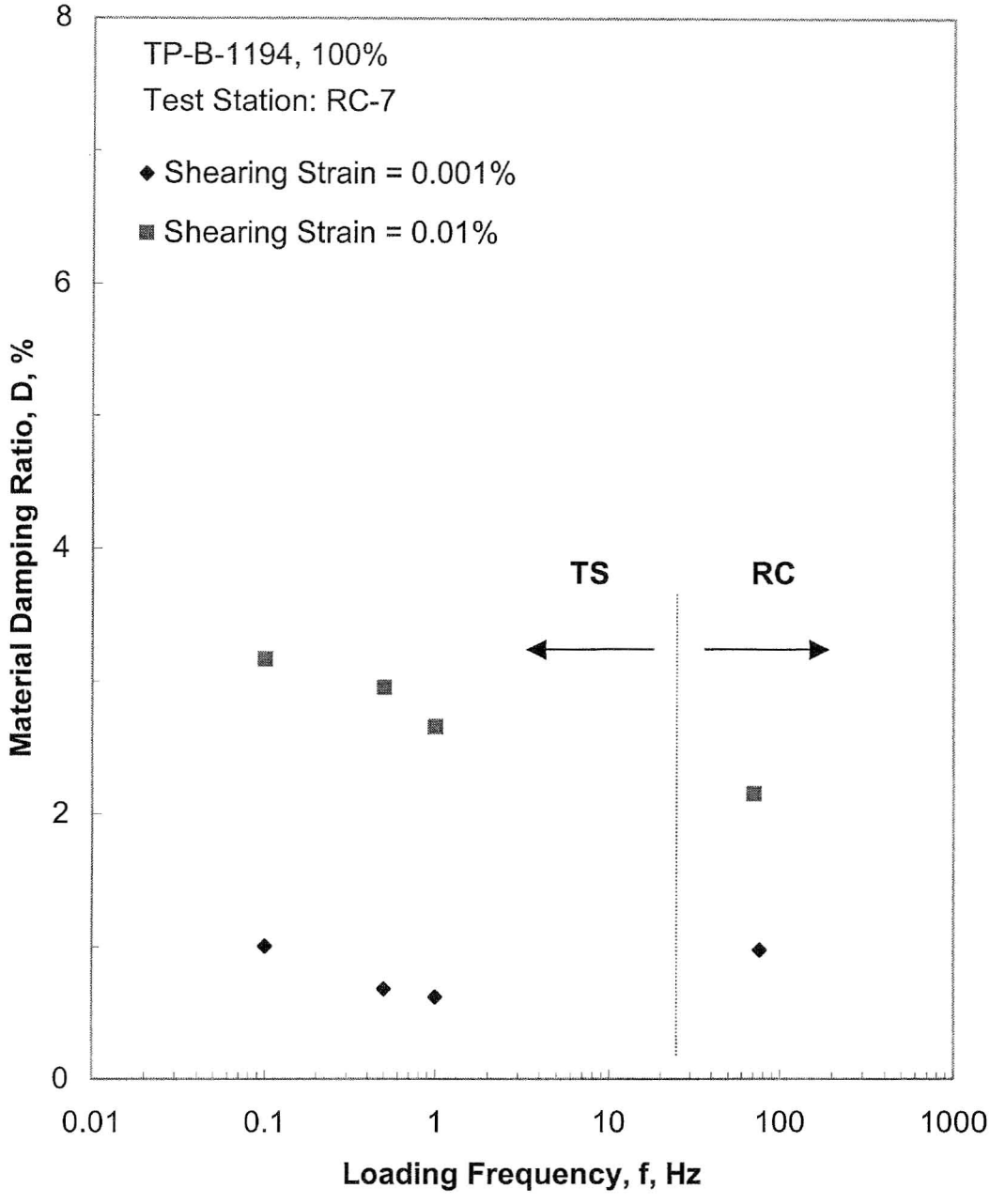

Figure S.15 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 8 psi from the Combined RCTS Tests

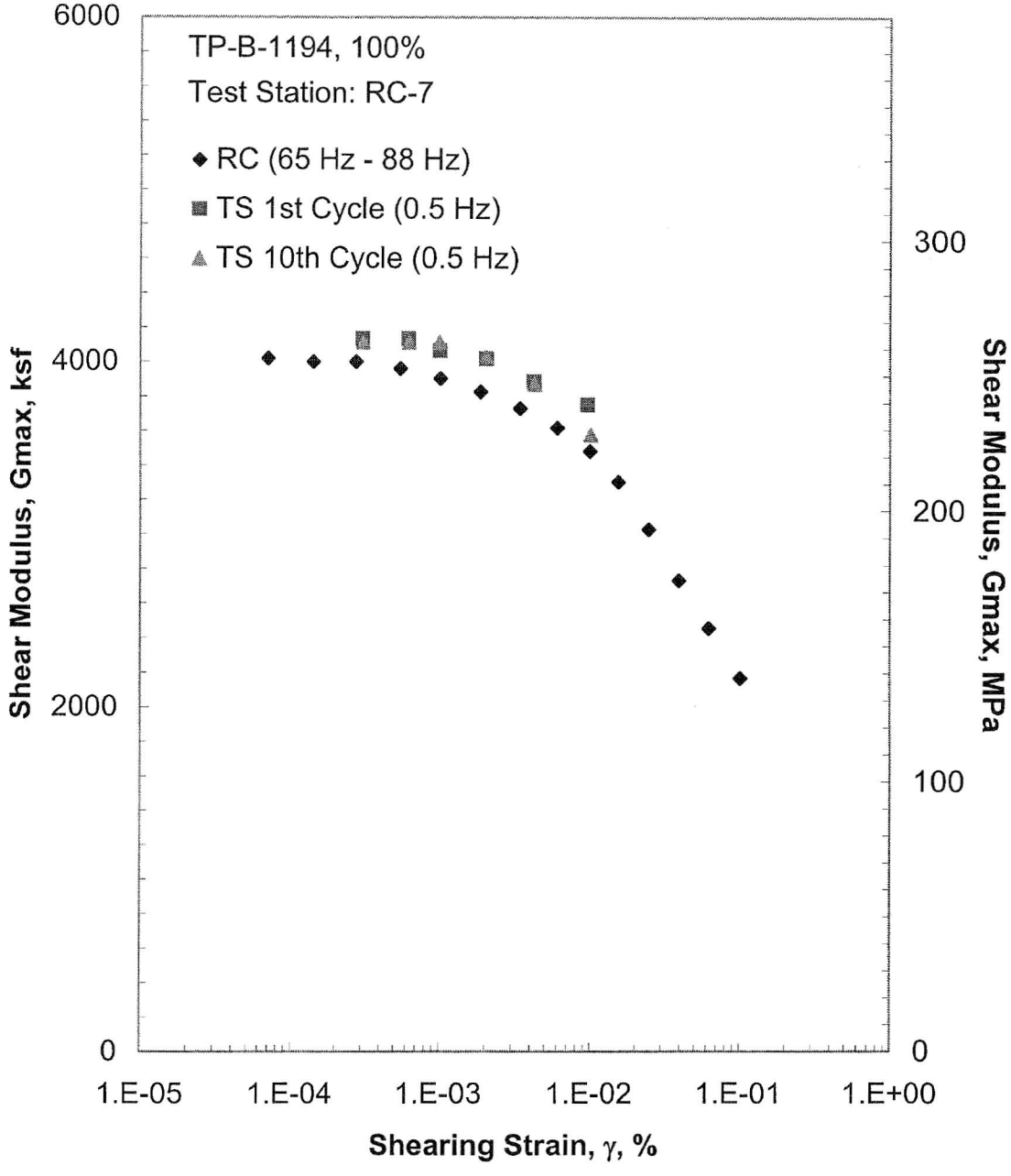

Figure S.16 Comparison of the Variation in Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

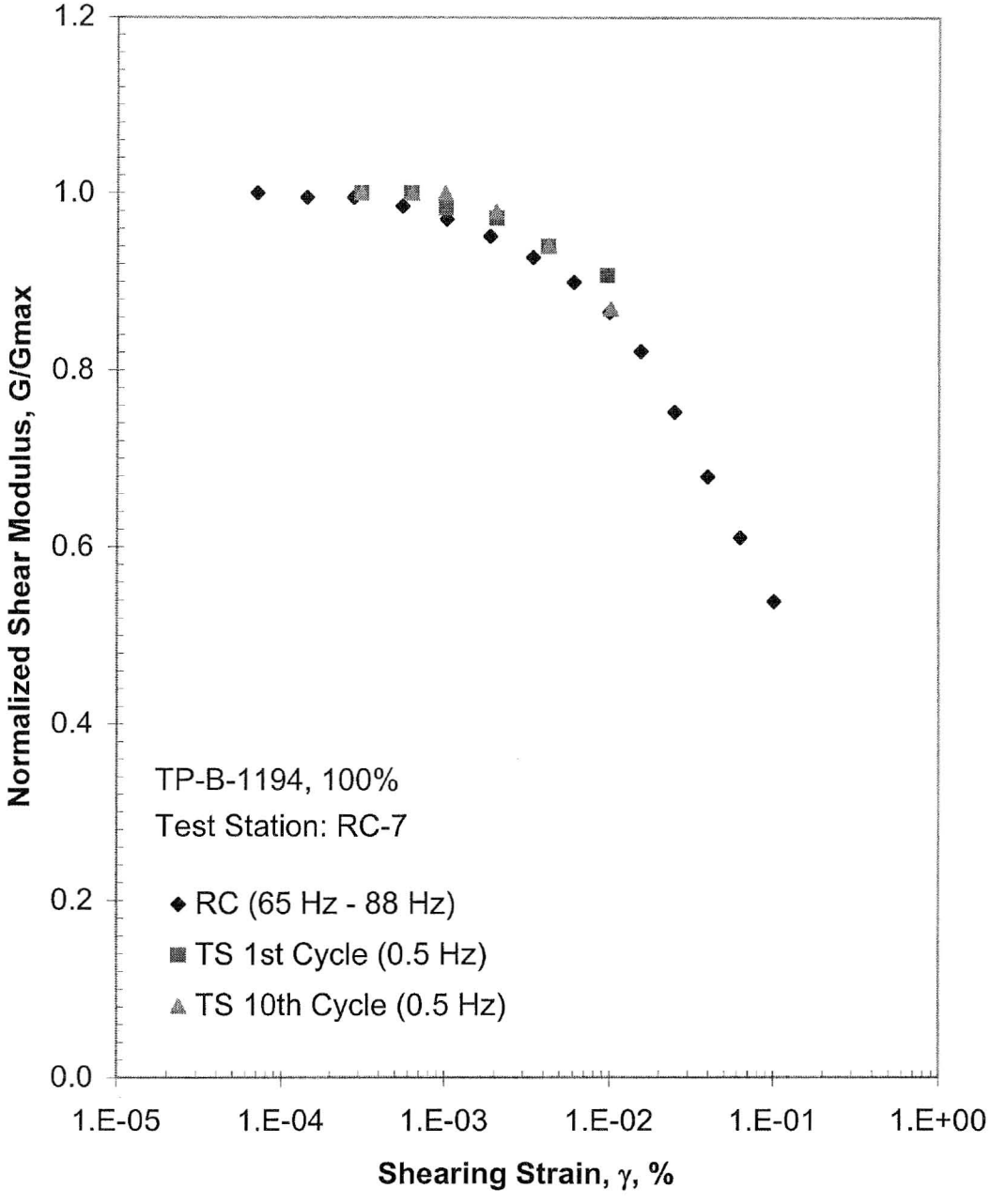

Figure S.17 Comparison of the Variation in Normalized Shear Modulus with Shearing Strain at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

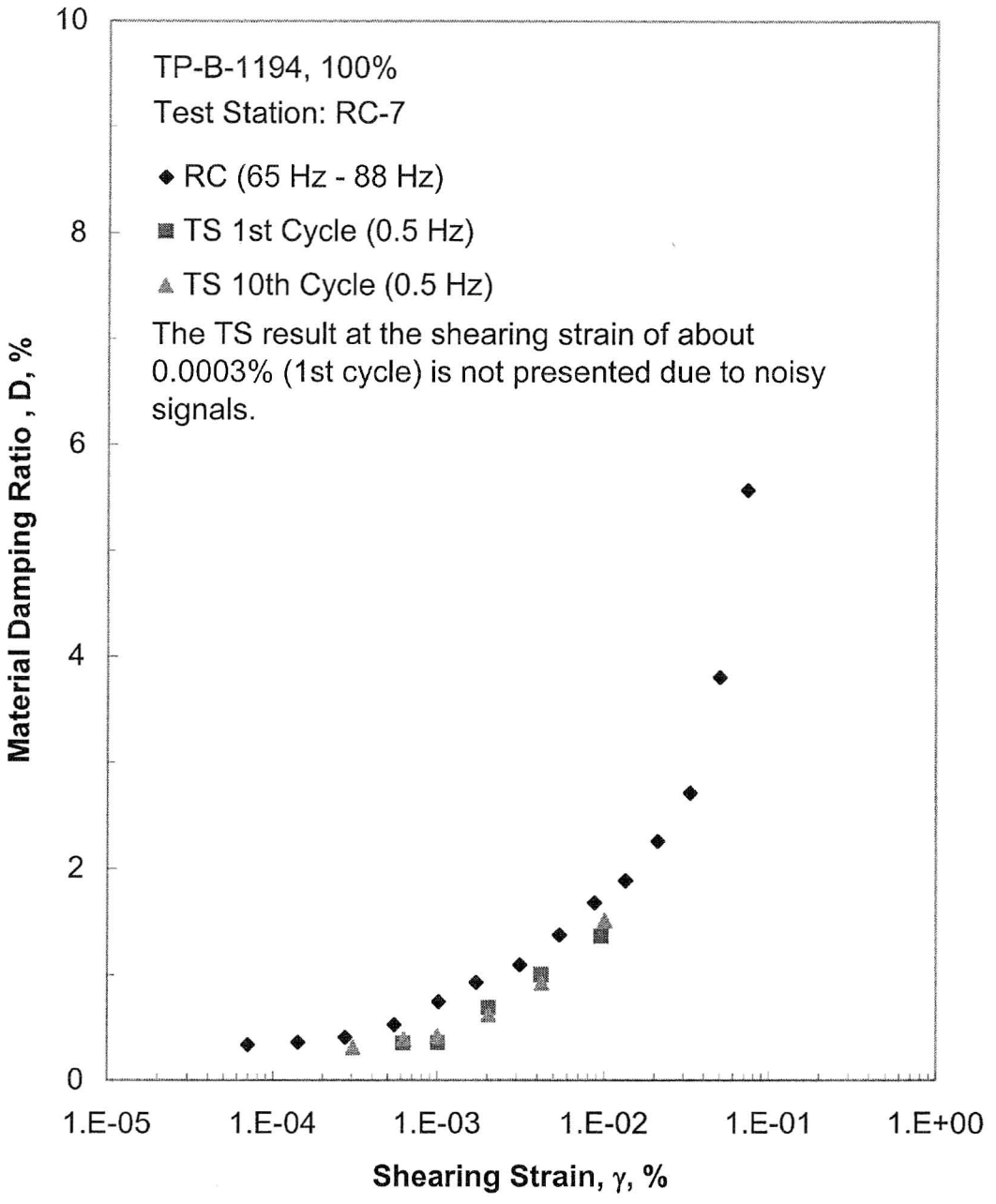

Figure S.18 Comparison of the Variation in Material Damping Ratio with Shearing Strain at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

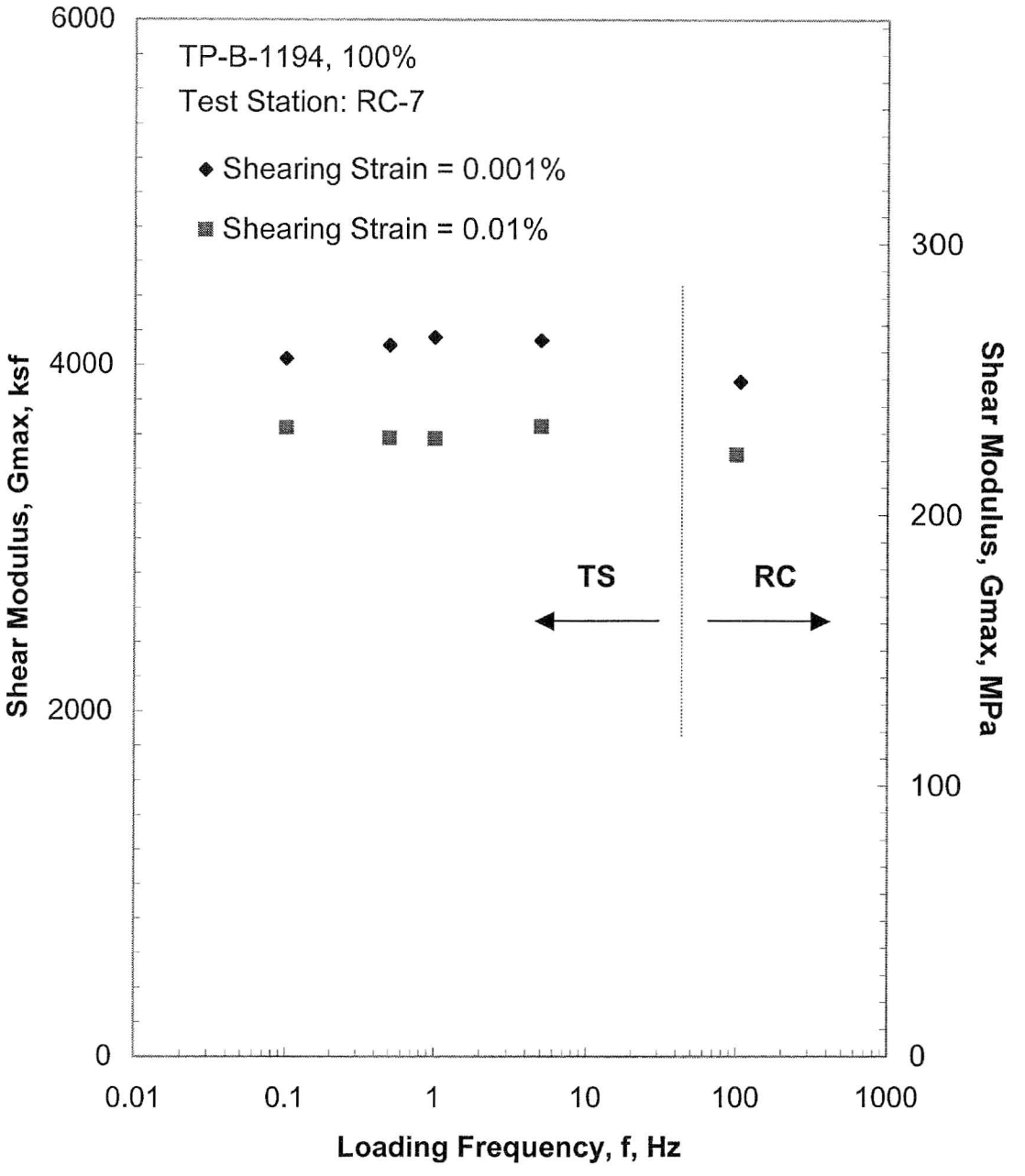

Figure S.19 Comparison of the Variation in Shear Modulus with Loading Frequency at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

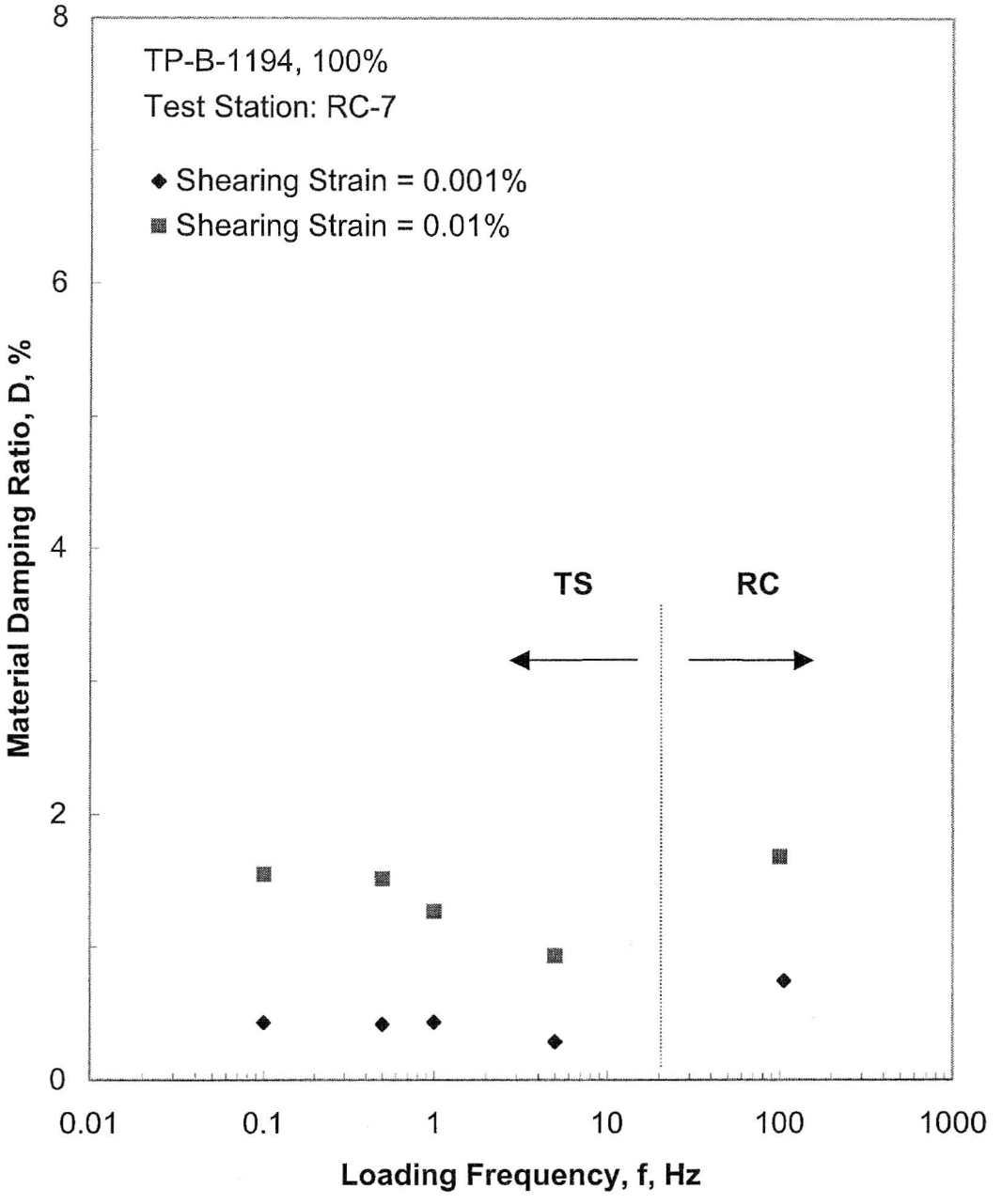

Figure S.20 Comparison of the Variation in Material Damping Ratio with Loading Frequency at an Isotropic Confining Pressure of 32 psi from the Combined RCTS Tests

Table S.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 TP-B-1194, 100%

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)	(%)	
2	288	14	1318	63	580	0.68	0.46
4	576	28	1652	79	650	0.57	0.46
8	1152	55	2170	104	744	0.50	0.46
16	2304	110	3061	147	884	0.42	0.46
32	4622	221	4153	199	1029	0.36	0.46

Table S.2 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen TP-B-1194, 100%; Isoptropic Confining Pressure, σ_o=8 psi (1.2 ksf = 55 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
1.42E-04	2093	1.00	1.42E-04	0.51
2.78E-04	2077	0.99	2.78E-04	0.54
5.49E-04	2061	0.98	5.49E-04	0.71
1.01E-03	2030	0.97	1.01E-03	0.98
1.83E-03	1967	0.94	1.65E-03	1.20
3.26E-03	1906	0.91	2.93E-03	1.49
5.65E-03	1834	0.88	4.97E-03	1.76
9.69E-03	1734	0.83	8.14E-03	2.15
1.54E-02	1613	0.77	1.26E-02	2.62
2.42E-02	1462	0.70	1.91E-02	3.56
4.02E-02	1297	0.62	2.89E-02	4.94

[+] 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 S.3 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen TP-B-1194, 100%; Isotropic Confining Pressure, σ_o = 8 psi (1.2 ksf =55 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, %
3.32E-04	2094	1.00	0.57	3.31E-04	2106	1.00	0.38
6.65E-04	2093	1.00	0.58	6.62E-04	2104	1.00	0.61
1.08E-03	2048	0.98	0.77	1.07E-03	2064	0.98	0.68
2.21E-03	1992	0.95	1.36	2.22E-03	1988	0.94	1.16
4.80E-03	1837	0.88	---	4.82E-03	1830	0.87	1.93
1.02E-02	1652	0.79	2.69	1.02E-02	1643	0.78	2.95

Table S.4 Variation in Shear Modulus and Material Damping Ratio with Shearing Strain from RC Tests of Specimen TP-B-1194, 100%; Isoptropic Confining Pressure, σ_o= 32 psi (4.6 ksf = 221 kPa)

Peak Shearing Strain, %	Shear Modulus, G, ksf	Normalized Shear Modulus, G/G_{max}	Average[+] Shearing Strain, %	Material Damping Ratio[x], D, %
7.00E-05	4020	1.00	7.00E-05	0.34
1.42E-04	4000	1.00	1.42E-04	0.36
2.76E-04	4000	1.00	2.76E-04	0.41
5.49E-04	3961	0.99	5.49E-04	0.53
1.02E-03	3903	0.97	1.02E-03	0.74
1.88E-03	3825	0.95	1.73E-03	0.93
3.42E-03	3729	0.93	3.15E-03	1.09
6.04E-03	3617	0.90	5.43E-03	1.38
9.93E-03	3481	0.87	8.74E-03	1.68
1.54E-02	3303	0.82	1.34E-02	1.89
2.47E-02	3026	0.75	2.10E-02	2.26
3.93E-02	2732	0.68	3.30E-02	2.71
6.24E-02	2455	0.61	4.99E-02	3.80
1.01E-01	2166	0.54	7.35E-02	5.57

[+] 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 S.5 Variation in Shear Modulus, Normalized Shear Modulus and Material Damping Ratio with Shearing Strain from TS Tests of Specimen TP-B-1194, 100%; Isotropic Confining Pressure, σ_o=32 psi (4.6 ksf = 221 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, %
3.06E-04	4134	1.00	---	3.07E-04	4112	1.00	0.31
6.21E-04	4134	1.00	0.35	6.27E-04	4112	1.00	0.39
1.01E-03	4064	0.98	0.36	1.00E-03	4112	1.00	0.42
2.05E-03	4018	0.97	0.69	2.04E-03	4026	0.98	0.62
4.23E-03	3886	0.94	1.00	4.25E-03	3870	0.94	0.92
9.58E-03	3750	0.91	1.36	1.00E-02	3576	0.87	1.51

* Data not available due to noisy signals