May 10, 2013

Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application

Part 2

FSAR Revision 3

Update Tracking Report

Revision 1

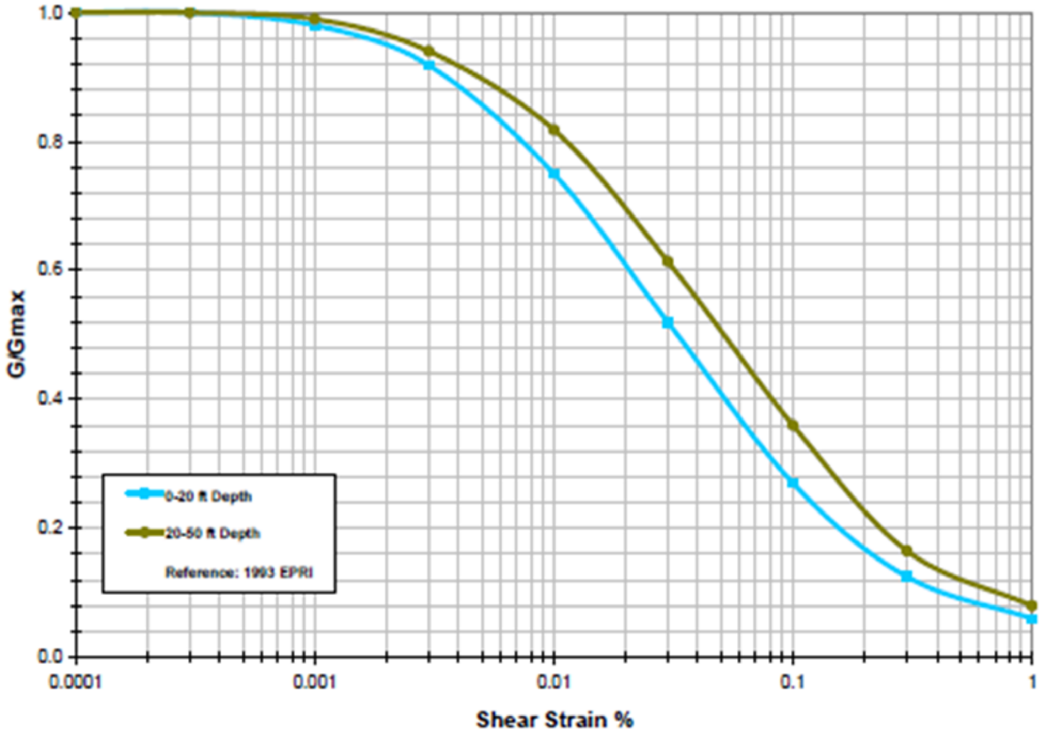
(Update Tracking Report – file 4/4)

File 2/4 Figures 2.5.2-201 through 2.5.2-220

File 3/4 Figures 2.5.2-221 through 2.5.2-240

File 4/4 Figures 2.5.2-241 through 2.5.2-259 and new figures 2.5.2-260 through 2.5.20277

CTS-01521



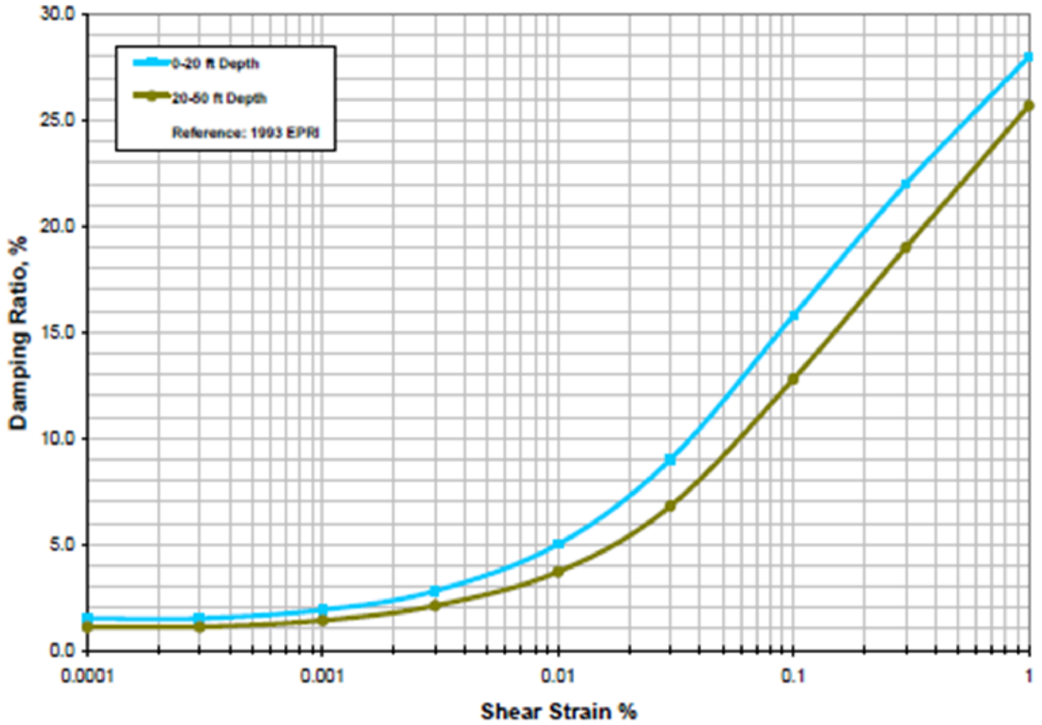


Figure 2.5.2-241 ~~Summary Statistics from Synthetic Profiles for GMRS/FIRS1Site Column Compared to Values in Table 2.5.2-227~~G/Gmax and Damping Ratio versus Strain for Granular Fill

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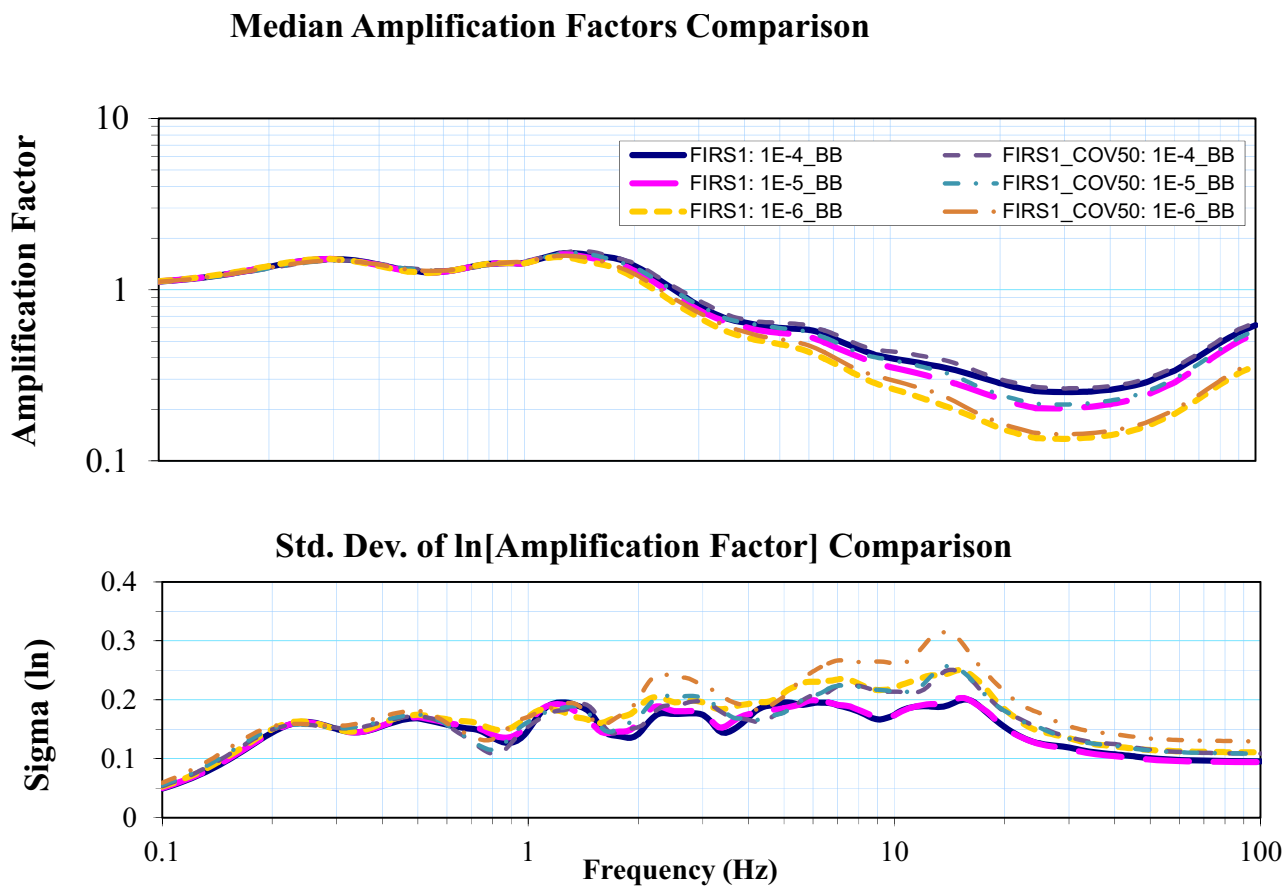

Figure 2.5.2-242 ~~Graph of Velocity vs. Depth for the First 10 Synthetic Profiles Generated for the Top Portion of the FIRS4 Site Column~~Comparison of Amplification Results for GMRS/FIRS1 and FIRS1_COV50

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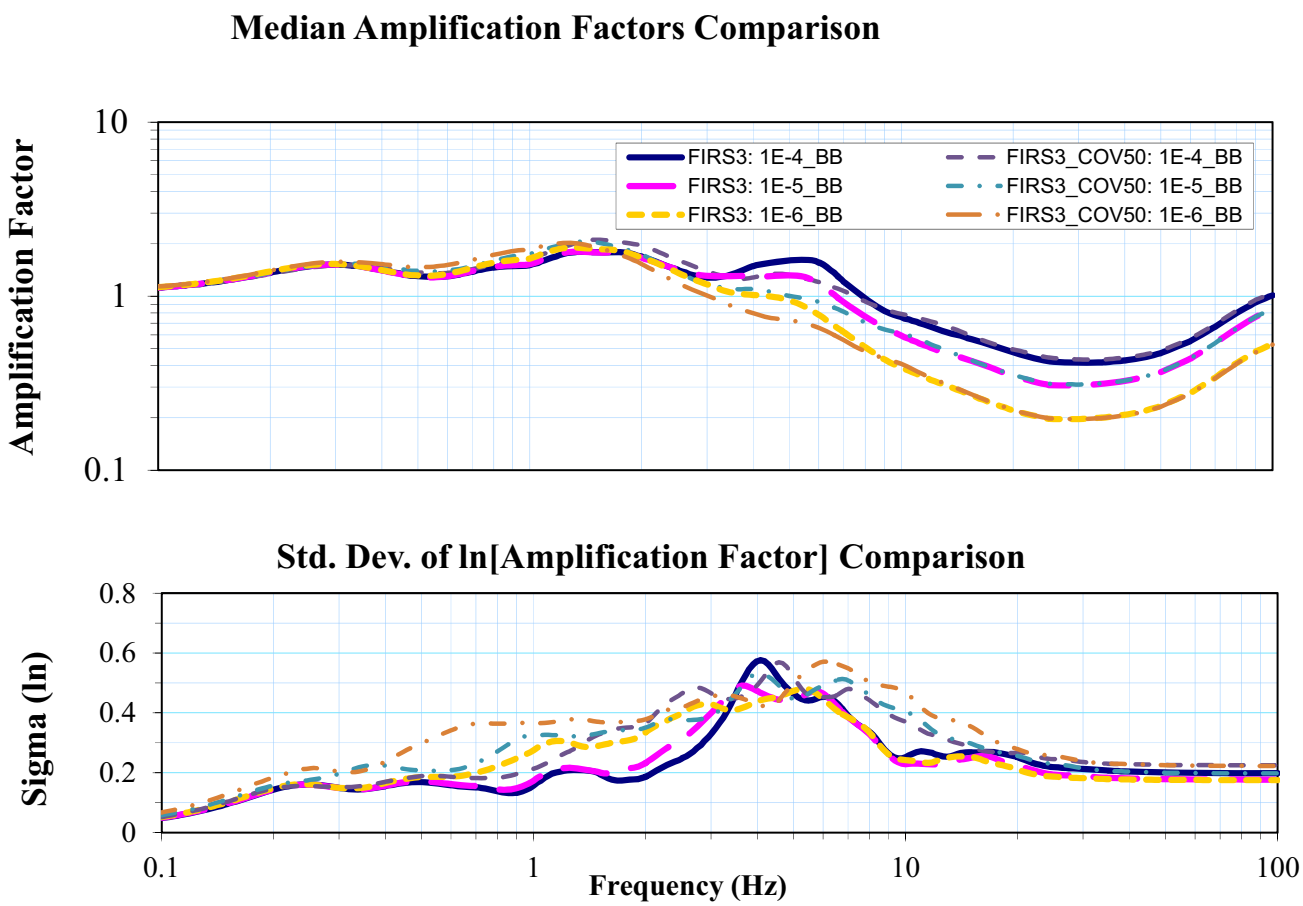

Figure 2.5.2-243 ~~Summary Statistics from Synthetic Profiles for the Top Portion ofthe FIRS4 Site Column Compared to Values in Table 2.5.2-227~~Comparison of Amplification Results for FIRS3 (PBSRS for GMRS/FIRS1 and FIRS2) and FIRS3_COV50 (PBSRS for FIRS1_COV50 and FIRS2_COV50)

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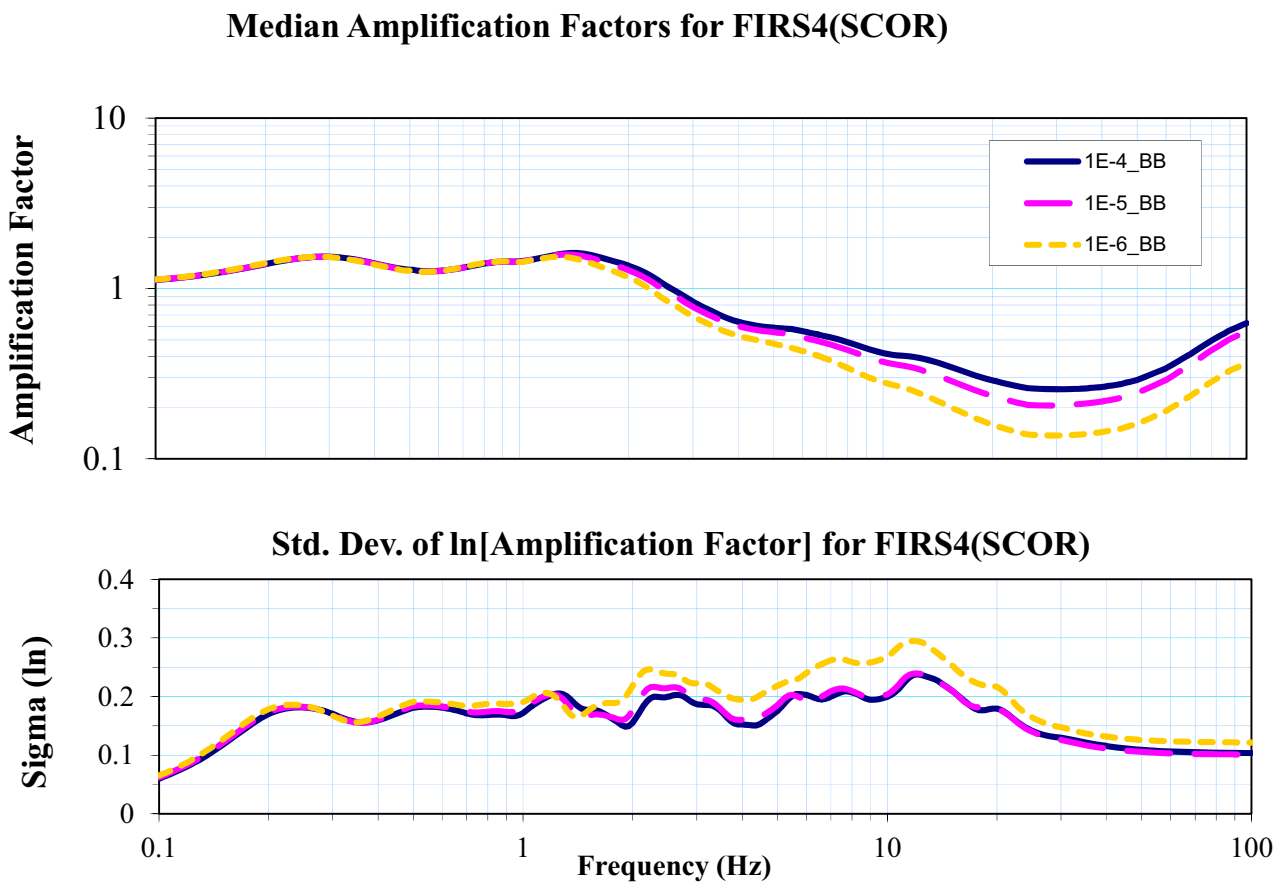

Figure 2.5.2-244 ~~Damping Ratios vs. Strain for the Strawn Formation in the 60 Synthetic Profiles for GMRS/FIRS1 Site Column~~Summary of Amplification Results for FIRS4 (Soil Column Outcrop Response)

CTS-01521

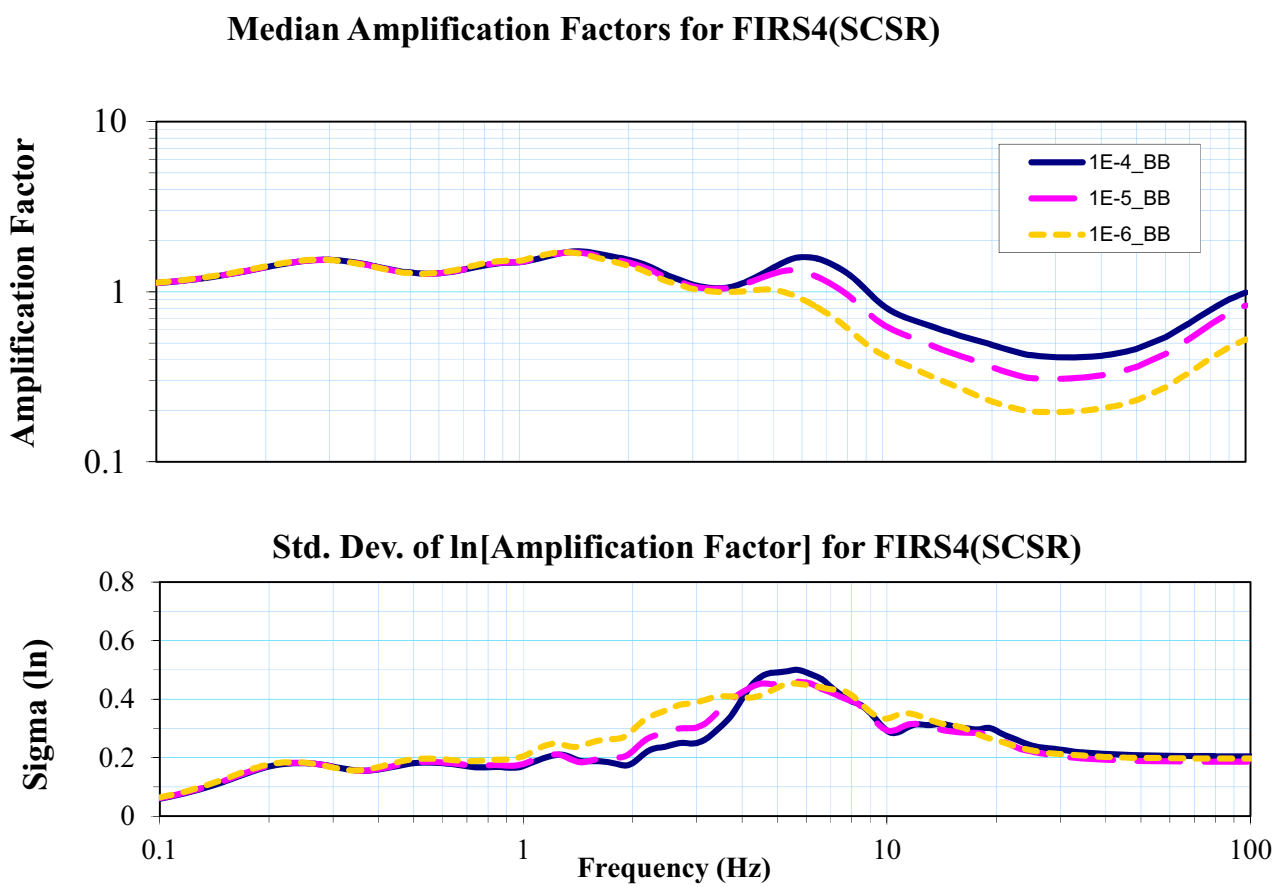

Figure 2.5.2-245 ~~G/Gmax and Damping Ratios vs. Strain for the Fill (0-20 ft depth) in the 60 Synthetic Profiles for FIRS4 Site Column~~Summary of Amplification Results for FIRS4_SCSR (PBSRS for FIRS4)

CTS-01521

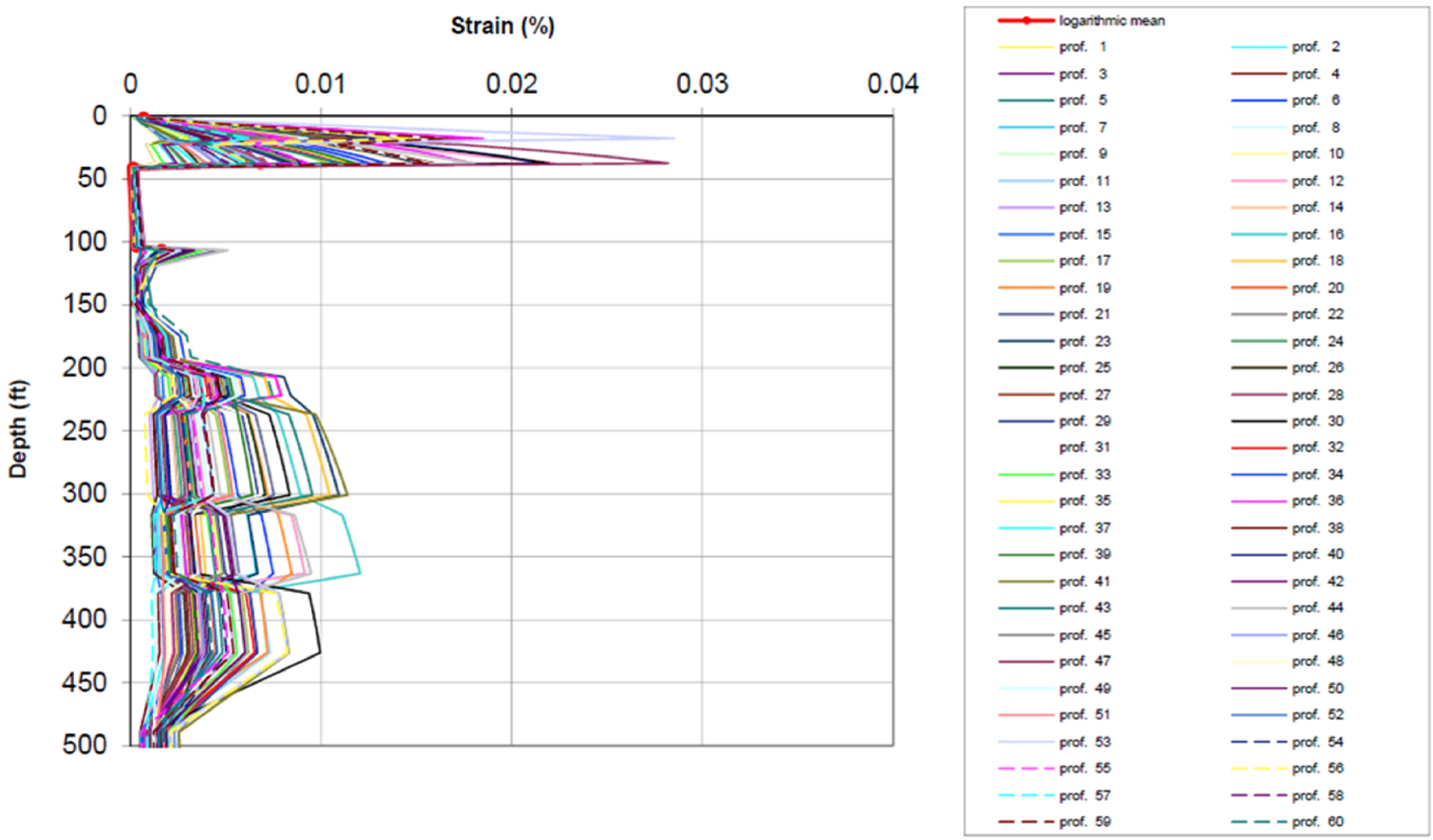

Figure 2.5.2-246 ~~Comparison of Median Amplification Factors for GMRS/FIRS1 Site column: HF vs BB Inputs~~Maximum Shear Strain for the Upper 500 feet below Elevation 822 ft of FIRS3 Site Column (Full Site Column Corresponding to GMRS/FIRS1 and FIRS2) for 10^{-4} Broad-Band Spectra

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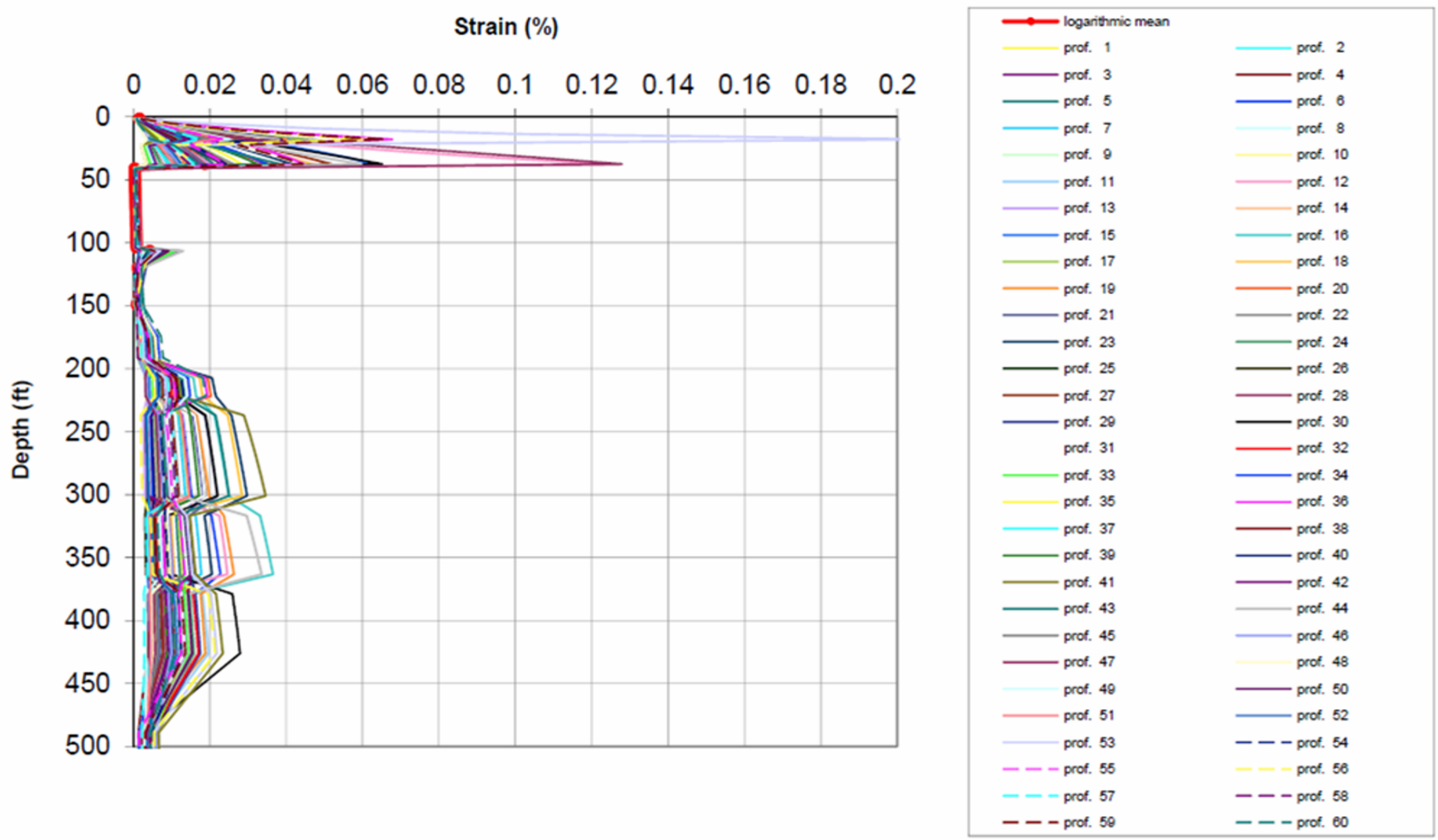

Figure 2.5.2-247 ~~Comanche Peak 1E-5 UHRS (for GMRS Conditions) and GMRS, Horizontal~~ Maximum Shear Strain for the Upper 500 feet below Elevation 822 ft of FIRS3 Site Column (Full Site Column Corresponding to GMRS/FIRS1 and FIRS2) for 10^{-5} Broad-Band Spectra

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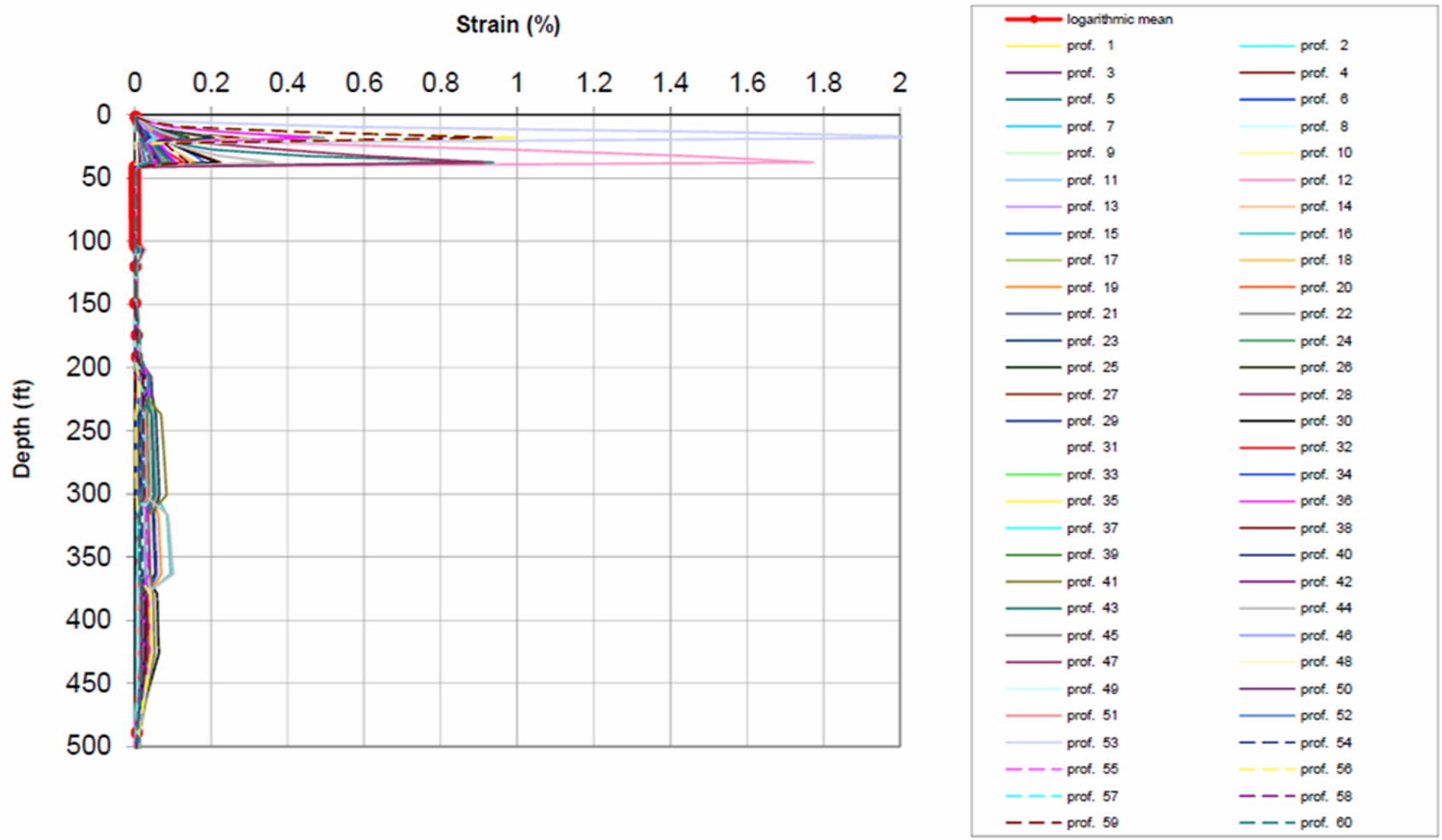

Figure 2.5.2-248 ~~Comanche Peak 1E-5 UHRS (for FIRS2 Conditions) and FIRS2, Horizontal~~Maximum Shear Strain for the Upper 500 feet below Elevation 822 ft of FIRS3 Site Column (Full Site Column Corresponding to GMRS/FIRS1 and FIRS2) for 10^{-6} Broad-Band Spectra

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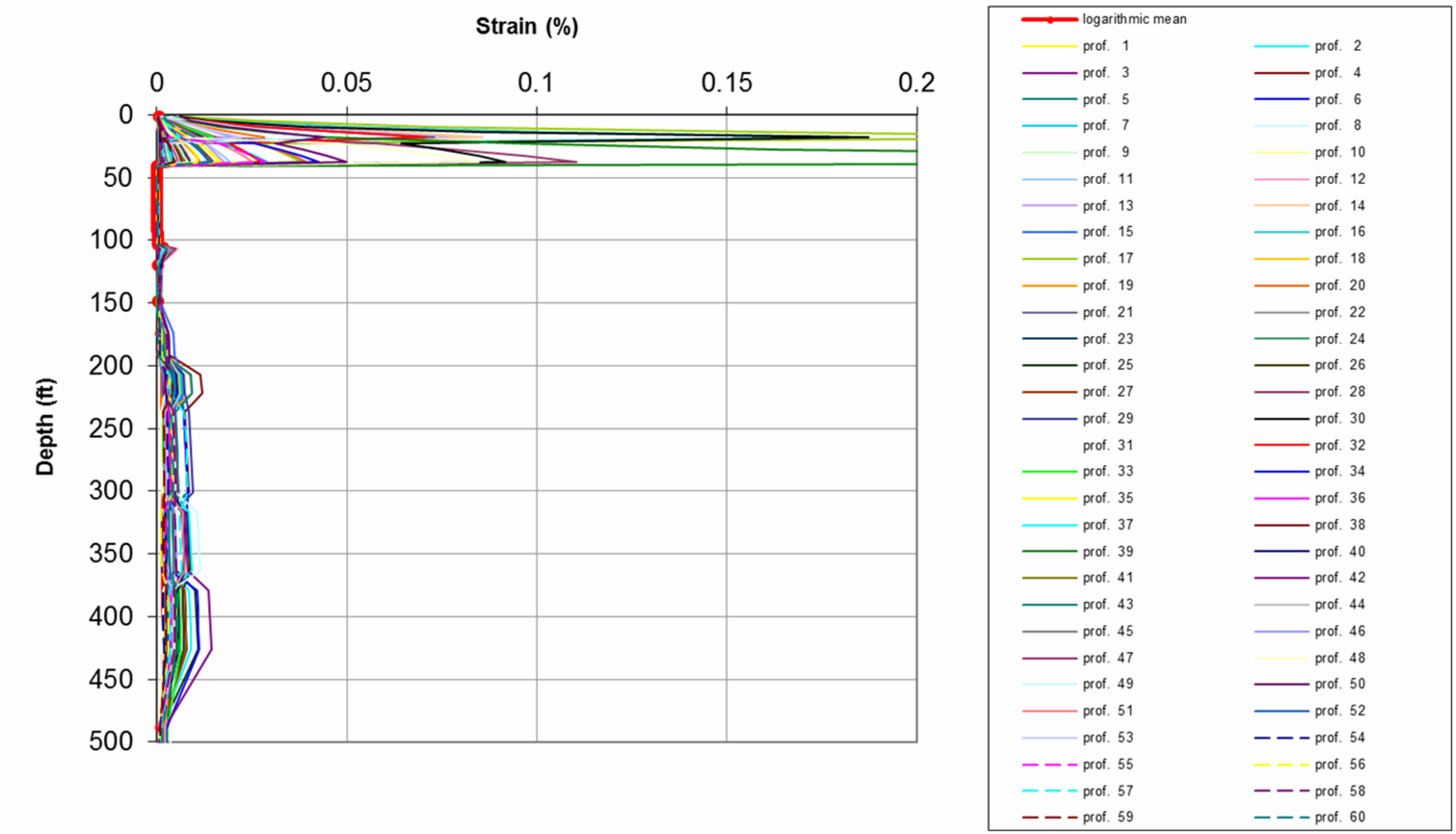

Figure 2.5.2-249 ~~Comanche Peak 1E-5 UHRS (for FIRS3 Conditions) and FIRS3, Horizontal~~Maximum Shear Strain for the Upper 500 feet below Elevation 822 ft of FIRS3_COV50 Site Column (Full Site Column Corresponding to FIRS1_COV50 and FIRS2_COV50) for 10^{-4} Broad-Band Spectra

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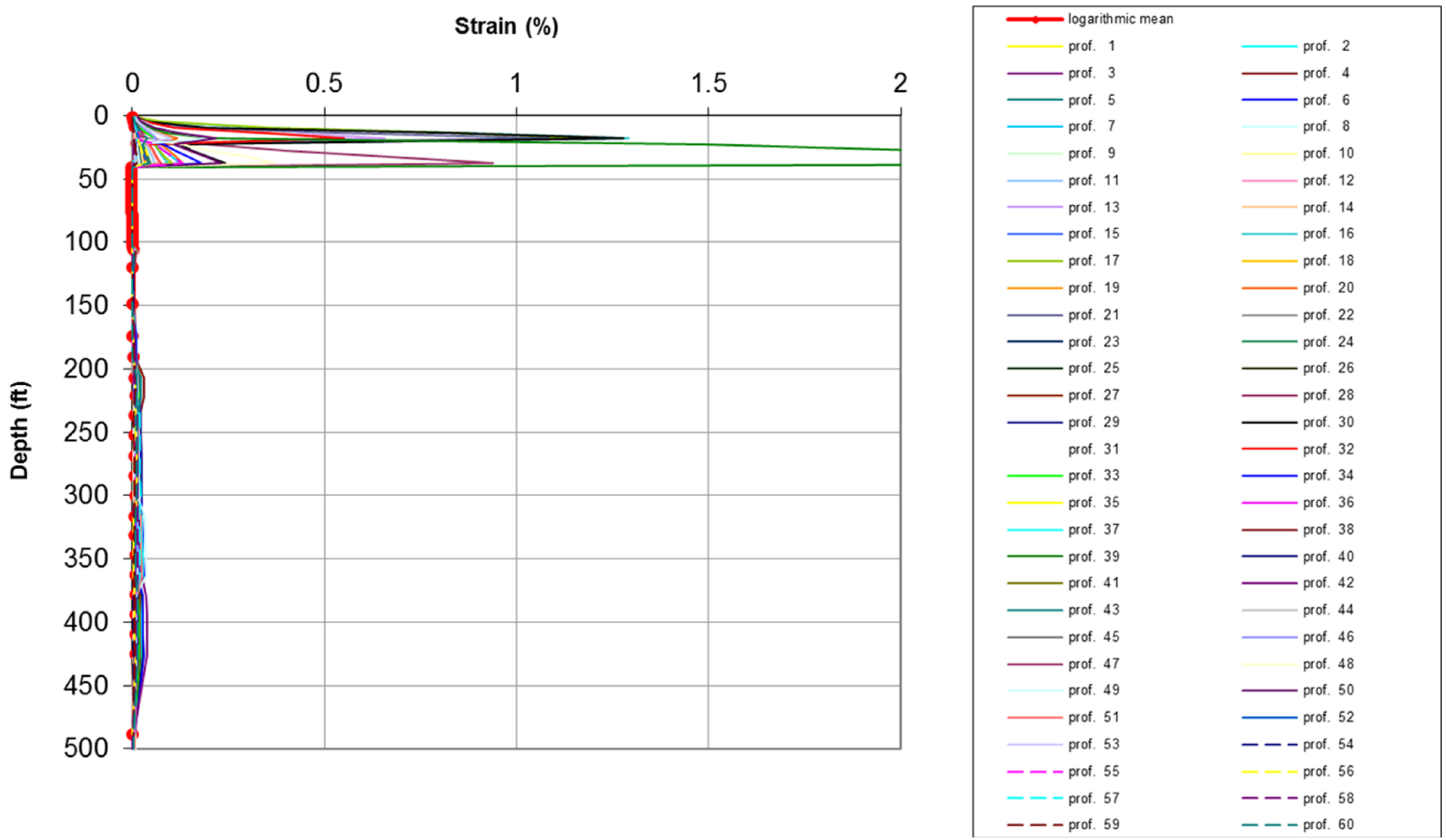

Figure 2.5.2-250 ~~Comanche Peak 1E-5 UHRS (for FIRS4 Conditions) and FIRS4, Horizontal~~Maximum Shear Strain for the Upper 500 feet below Elevation 822 ft of FIRS3_COV50 Site Column (Full Site Column Corresponding to FIRS1_COV50 and FIRS2_COV50) for 10^{-5} Broad-Band Spectra

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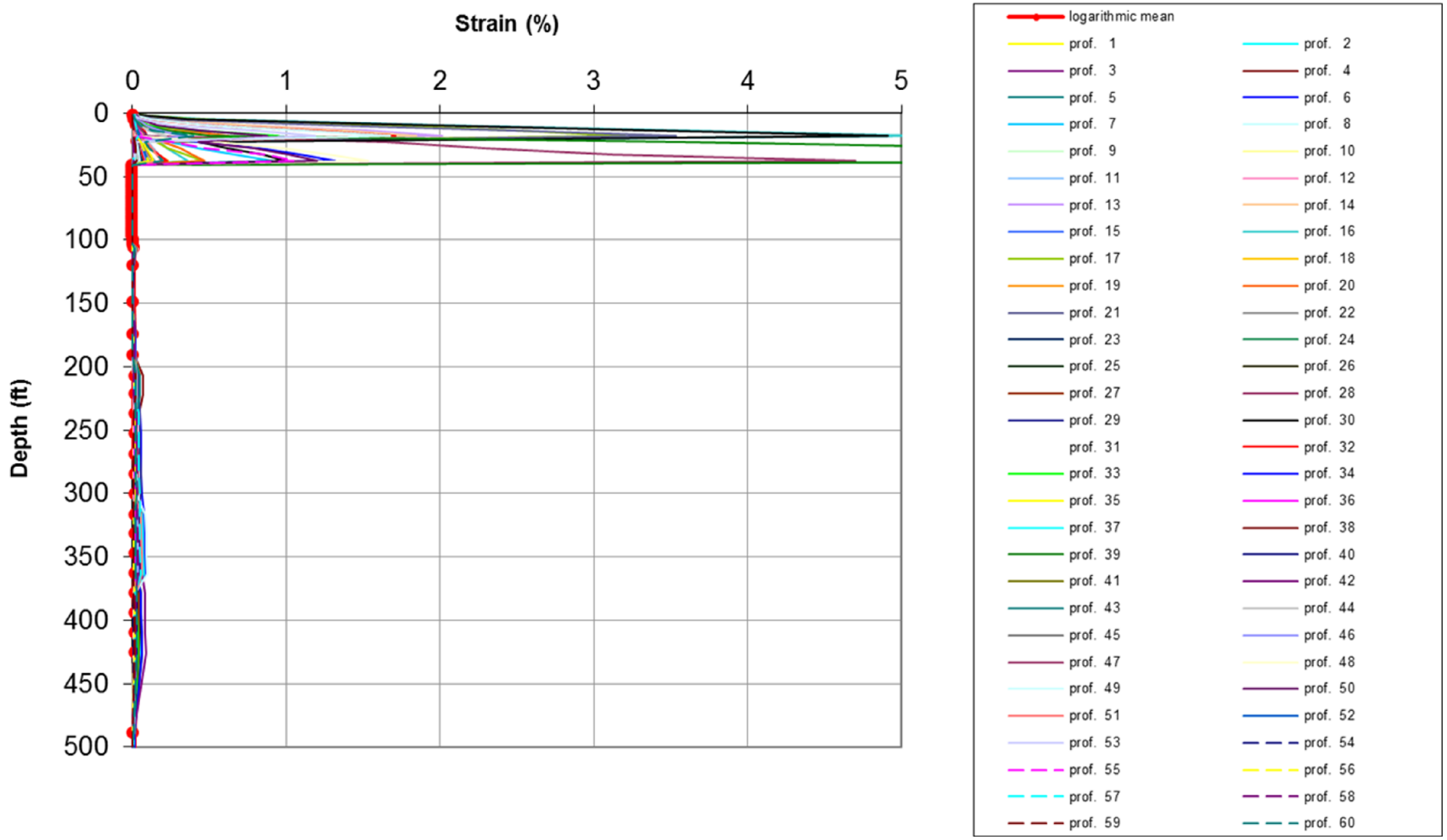

Figure 2.5.2-251 ~~Comanche Peak 1E-5 UHRS (for FIRS4_CoV50 Conditions) and FIRS4_CoV50, Horizontal~~ Maximum Shear Strain for the Upper 500 feet below Elevation 822 ft of FIRS3_COV50 Site Column (Full Site Column Corresponding to FIRS1_COV50 and FIRS2_COV50) for 10^{-6} Broad-Band Spectra

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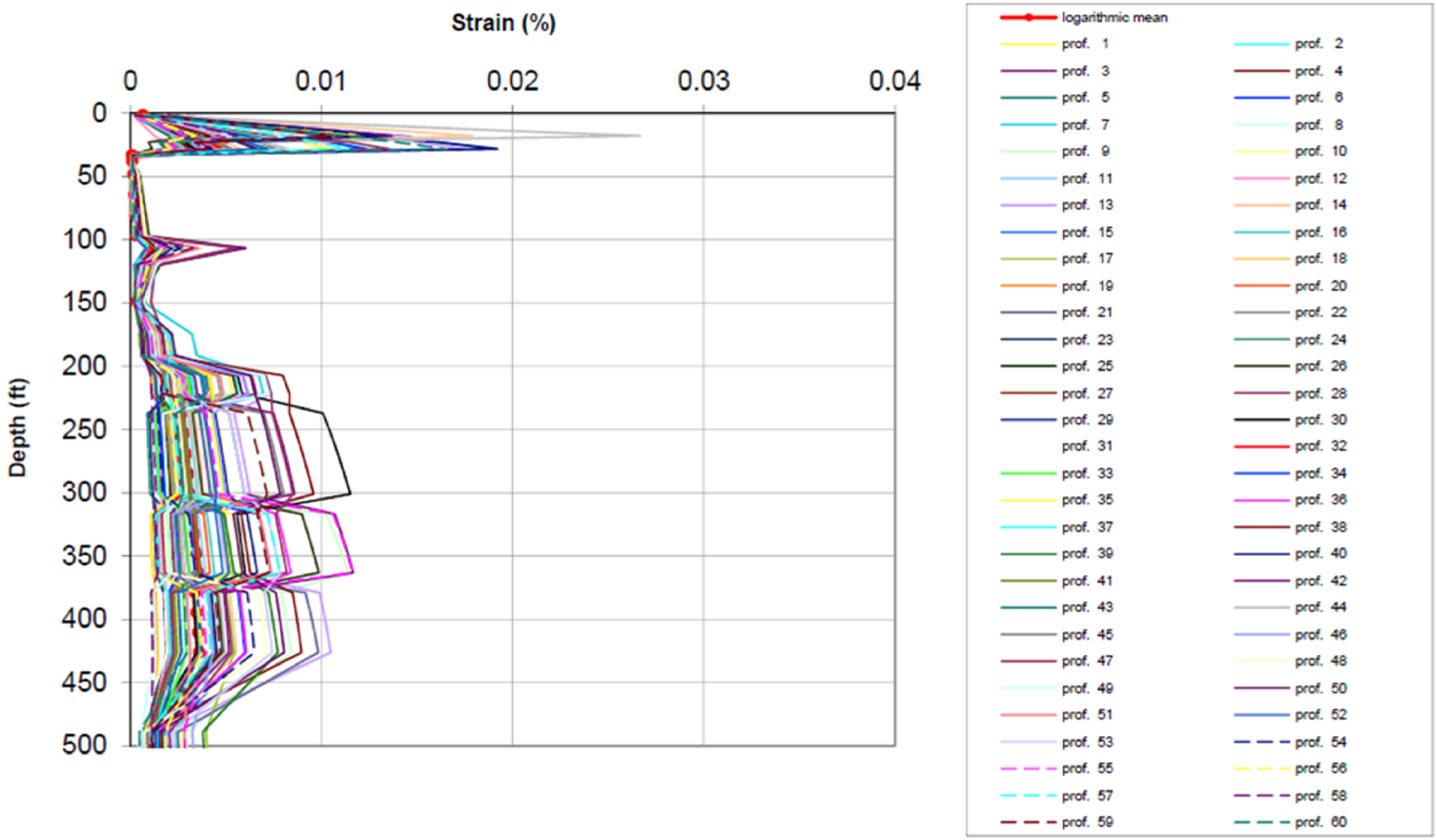

Figure 2.5.2-252 ~~V/H Ratios from Two References, and Assumed V/H Ratio~~Maximum Shear Strain for the upper 500 feet below Elevation 822 ft of FIRS4_SCSR (Full Site Column Corresponding to FIRS4) for 10^{-4} Broad-Band Spectra

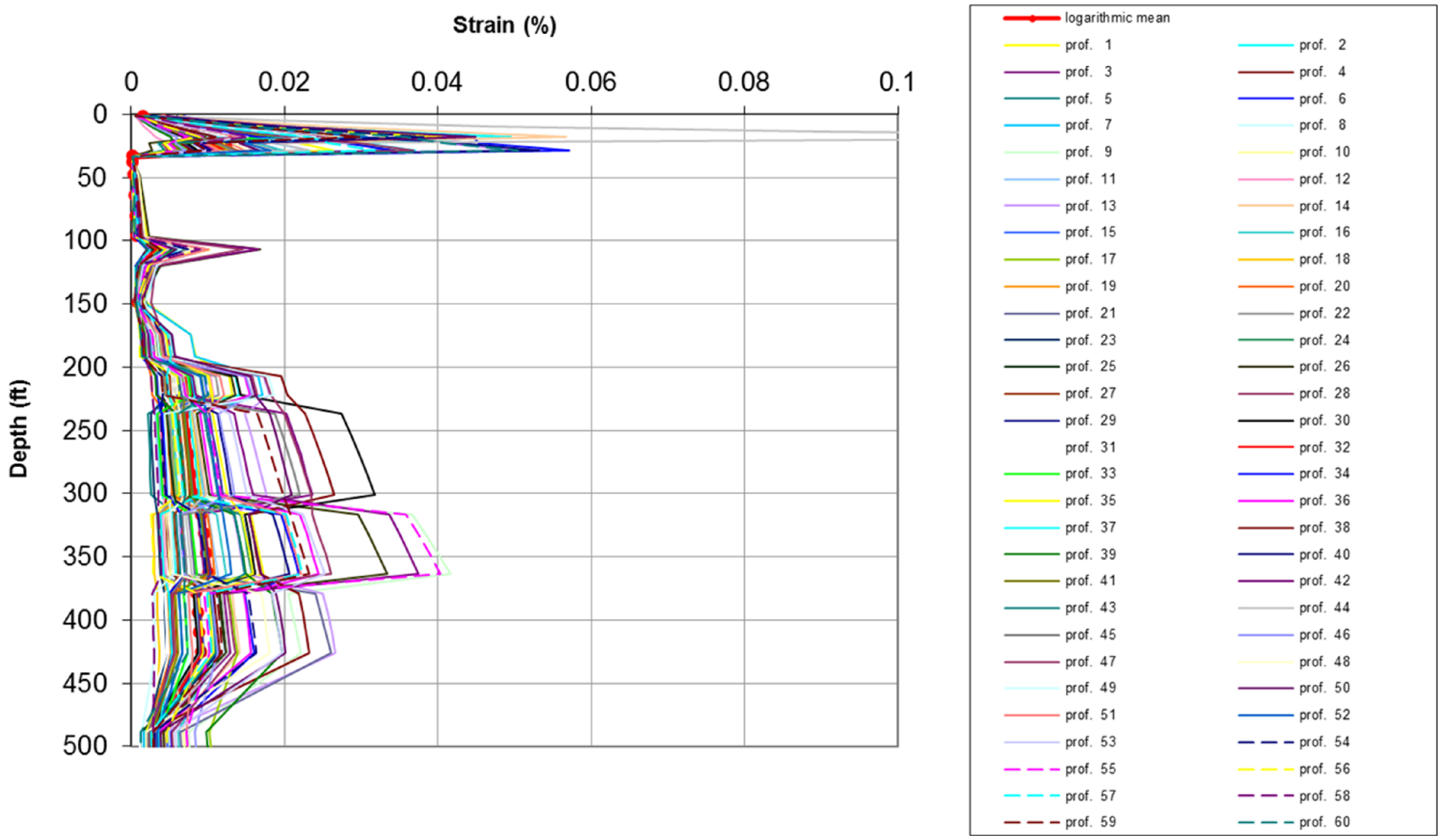

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Figure 2.5.2-253 ~~Maximum Strain for Upper 500 ft of GMRS/FIRS1 Profiles 1x10^{-4} Broad-Band Spectra~~Maximum Shear Strain for the upper 500 feet below Elevation 822 ft of FIRS4_SCSR (Full Site Column Corresponding to FIRS4) for 10^{-5} Broad-Band Spectra

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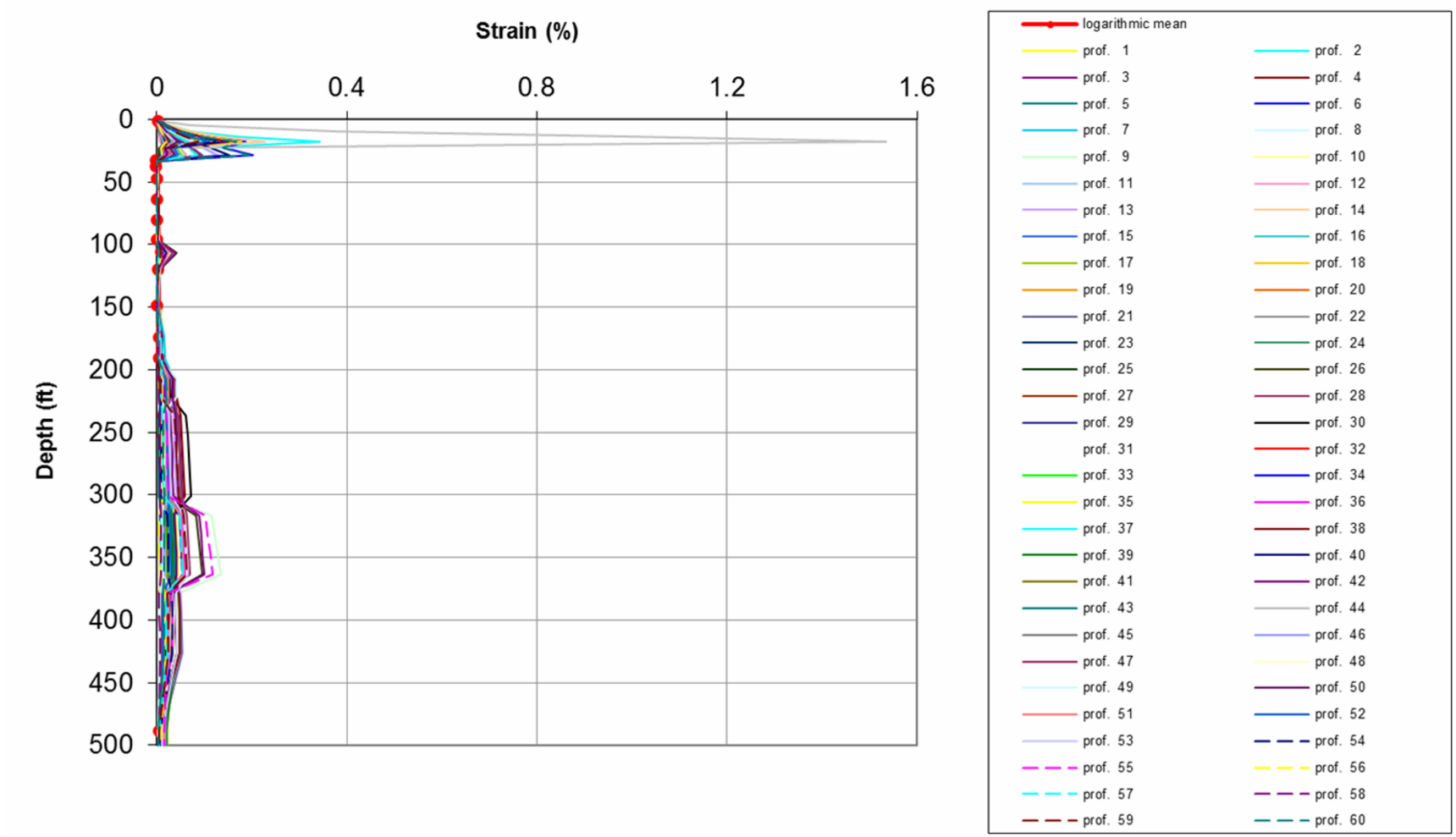

Figure 2.5.2-254 ~~Maximum Strain for Upper 500 ft of GMRS/FIRS1 Profiles 1x10^{-5} Broad-Band Spectra~~Maximum Shear Strain for the upper 500 feet below Elevation 822 ft of FIRS4_SCSR (Full Site Column Corresponding to FIRS4) for 10^{-6} Broad-Band Spectra

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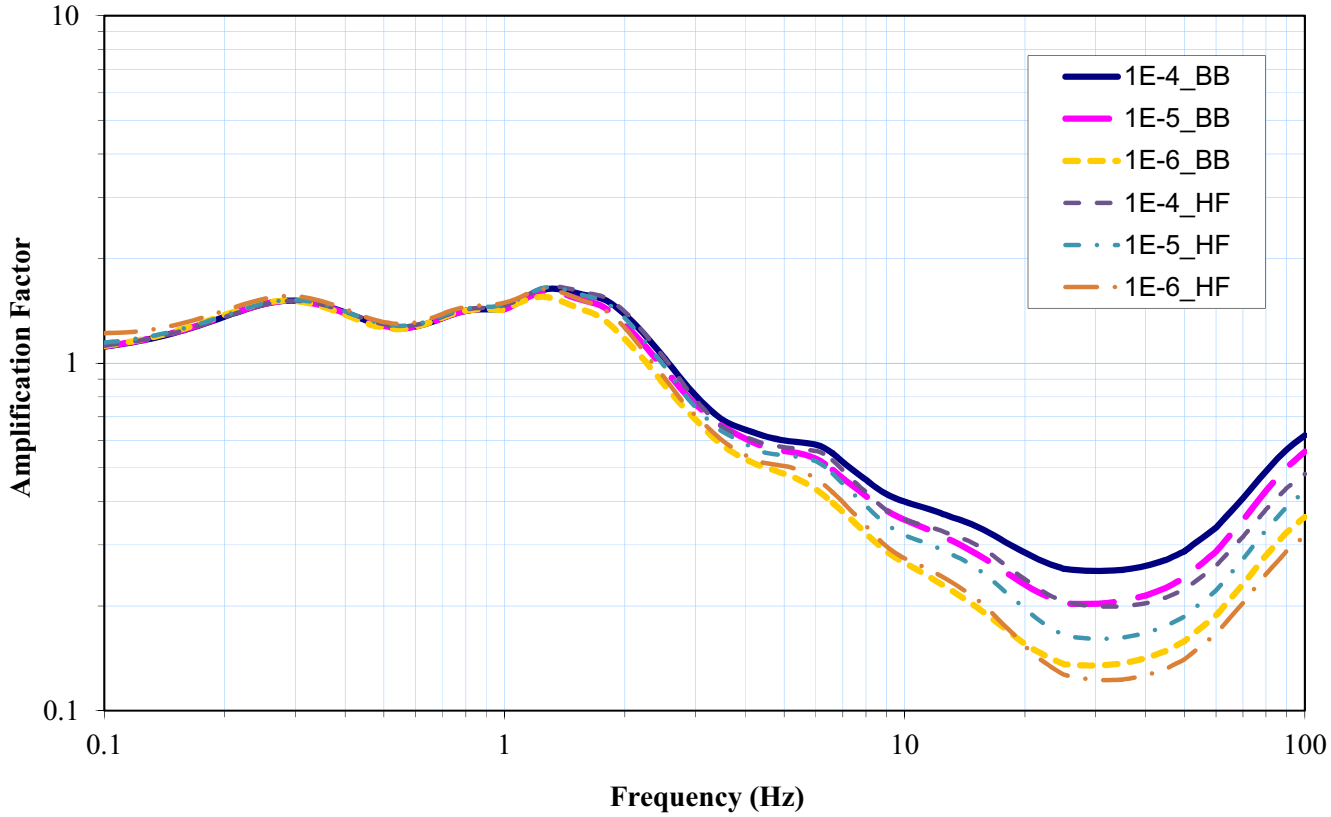

Figure 2.5.2-255 ~~Maximum Strain for Upper 50 ft of FIRS4 Profiles 1x10^{-4} Broad Band Spectra~~Comparison of Median Amplification Factors for the GMRS/FIRS1 Profile (Equivalent to FIRS2): HF and BB Inputs

CTS-01521

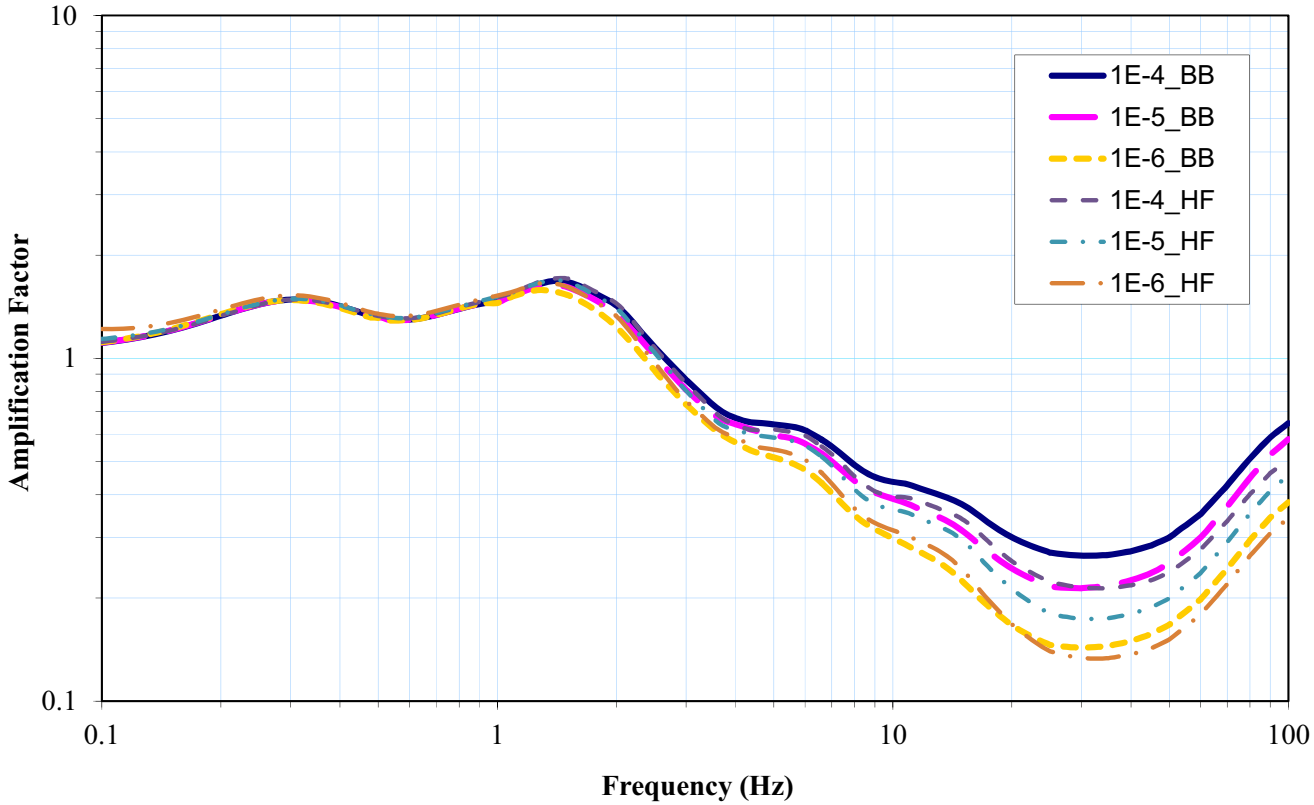

Figure 2.5.2-256 ~~Maximum Strain for Upper 50 ft of FIRS4 Profiles 1x10^{-5} Broad Band Spectra~~Comparison of Median Amplification Factors for the FIRS1_COV50 Profile (Equivalent to FIRS2_COV50): HF and BB Inputs

CTS-01521

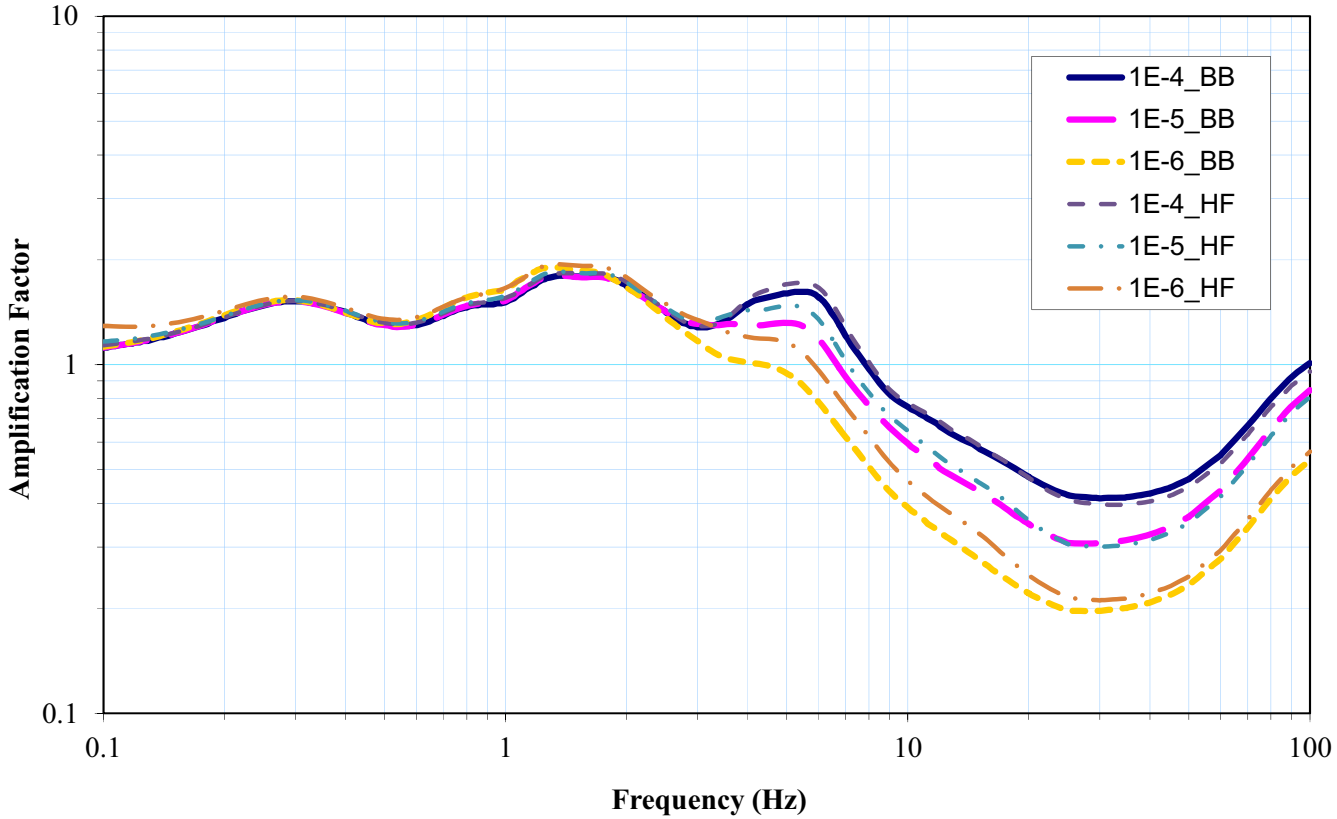

Figure 2.5.2-257 ~~Horizontal GMRS and FIRS Spectra Plotted with Minimum CSDRS Spectra, 5% Damping~~Comparison of Median Amplification Factors for the FIRS3 Profile (PBSRS for GMRS/FIRS1 and FIRS2): HF and BB Inputs

CTS-01521

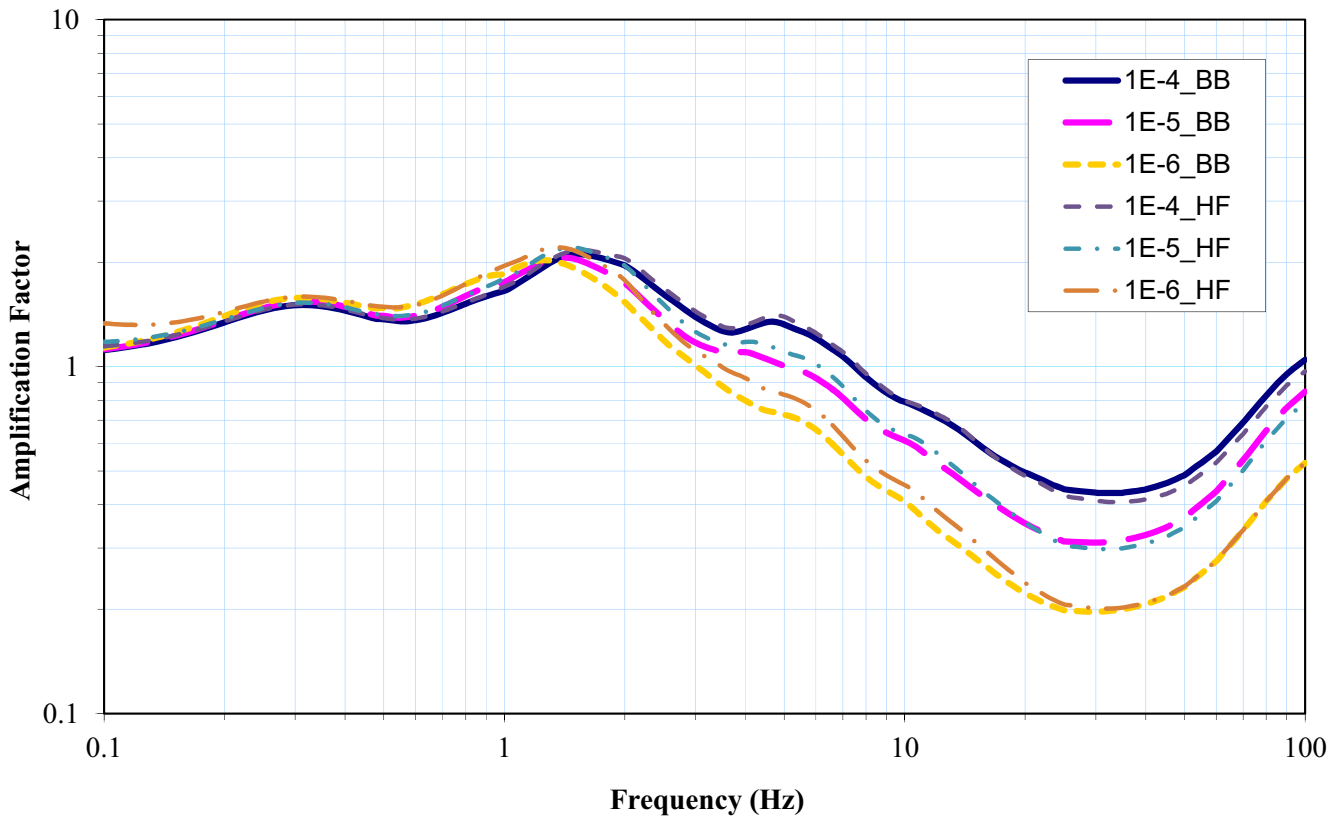

Figure 2.5.2-258 ~~Vertical GMRS and FIRS Spectra Plotted with Minimum CSDRS Spectra, 5% Damping~~Comparison of Median Amplification Factors for the FIRS3_COV50 Profile (PBSRS for FIRS1_COV50 and FIRS2_COV50): HF and BB Inputs

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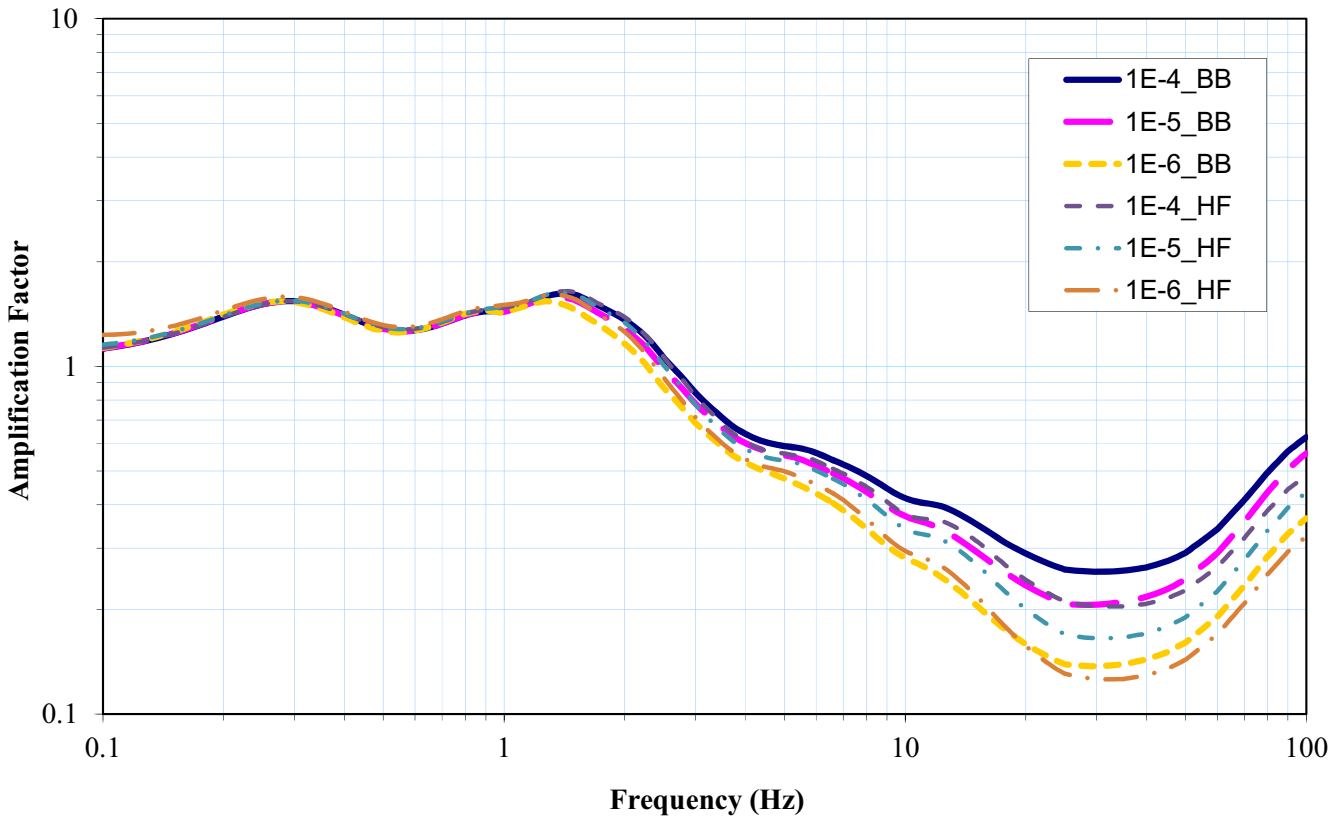

Figure 2.5.2-259 ~~Logic Tree of Return Period and Characteristic Magnitude for the Meers Fault~~Comparison of Median Amplification Factors for the FIRS4 Profile: HF and BB Inputs

CTS-01521

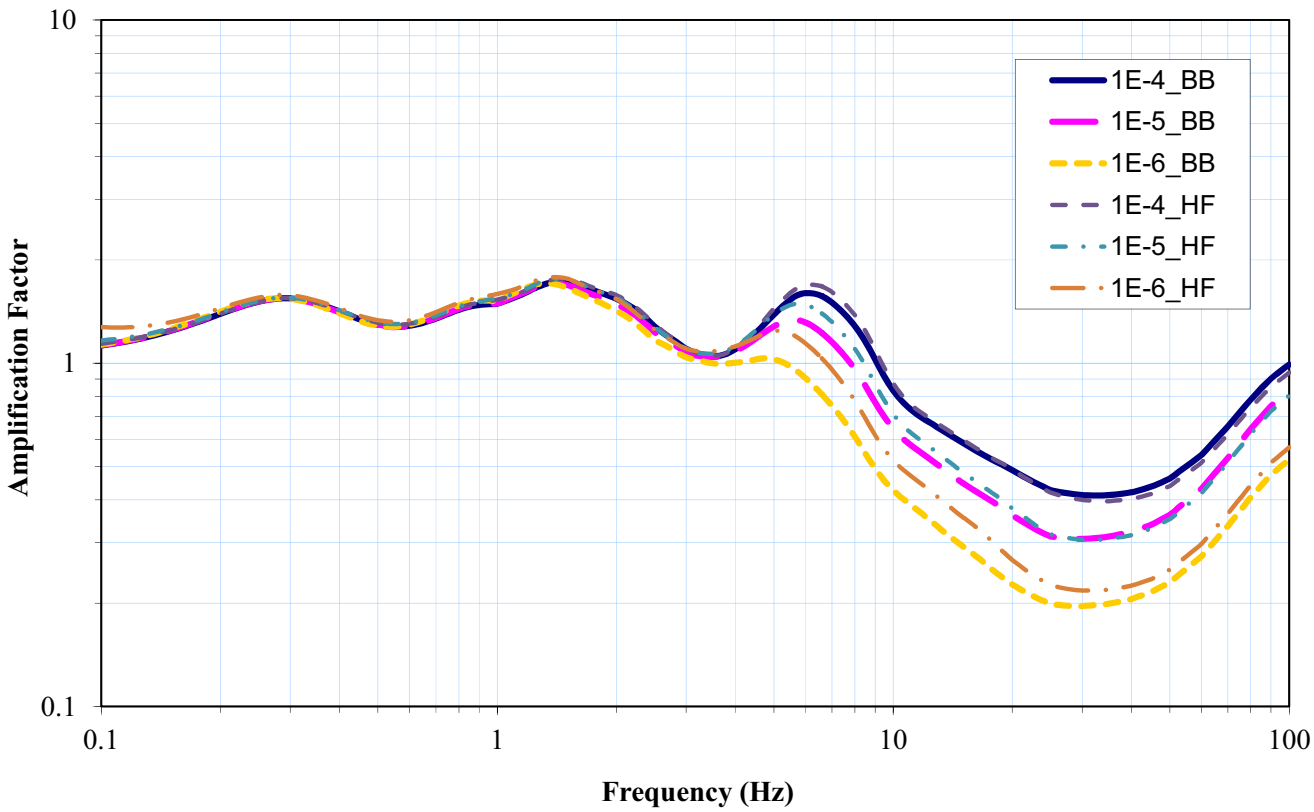

Figure 2.5.2-260 Comparison of Median Amplification Factors for the FIRS4_SCSR (PBSRS for FIRS4) Profile: HF and BB Inputs

CTS-01521

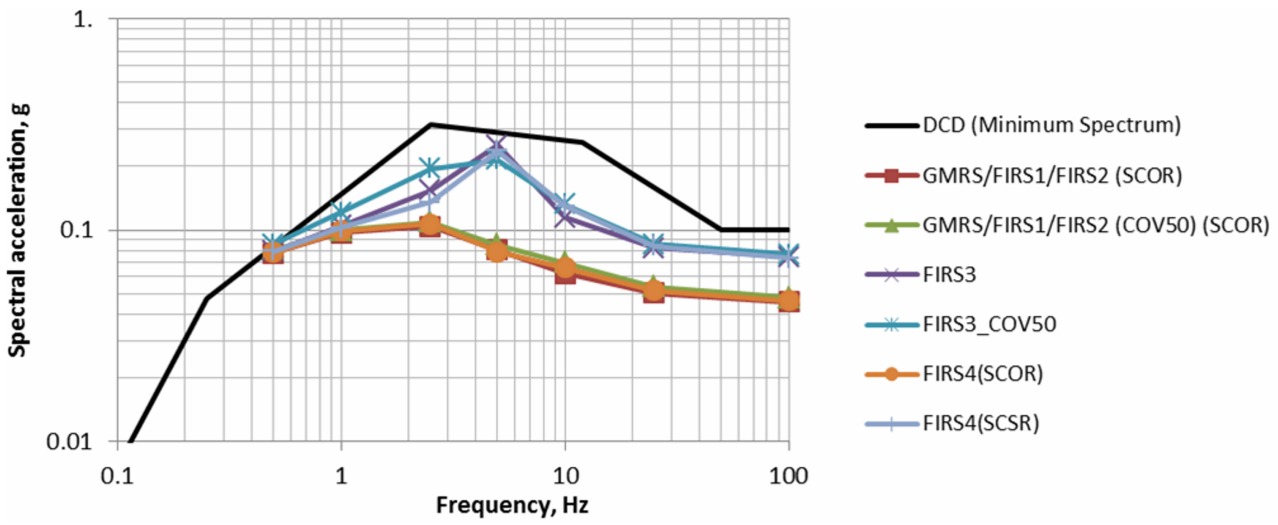

Figure 2.5.2-261 Horizontal GMRS/FIRS Spectra plotted with Minimum DCD Spectrum

CTS-01521

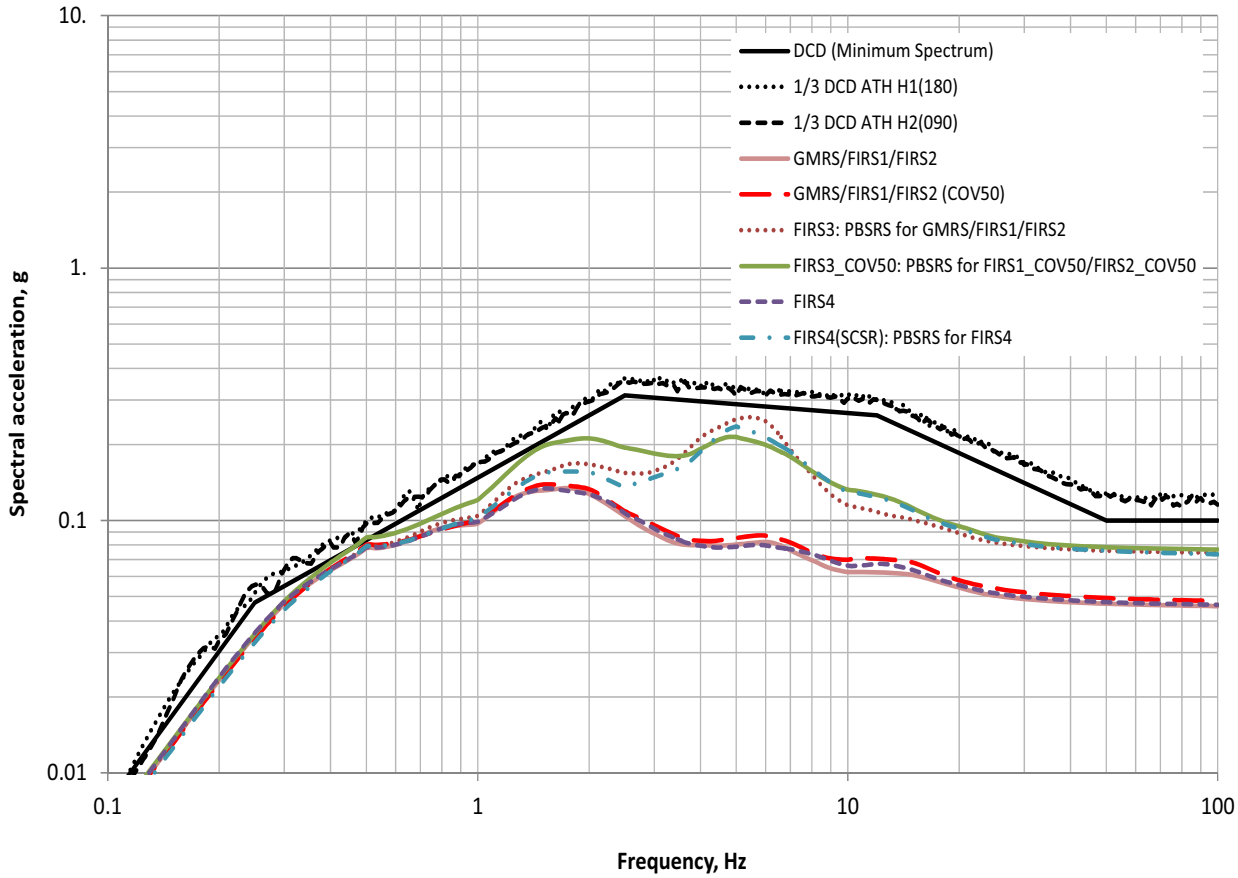

Figure 2.5.2-262 Smooth Horizontal GMRS/FIRS Spectra plotted with Minimum DCD Spectrum and DCD acceleration time histories scaled by one third, 5% Damping

CTS-01521

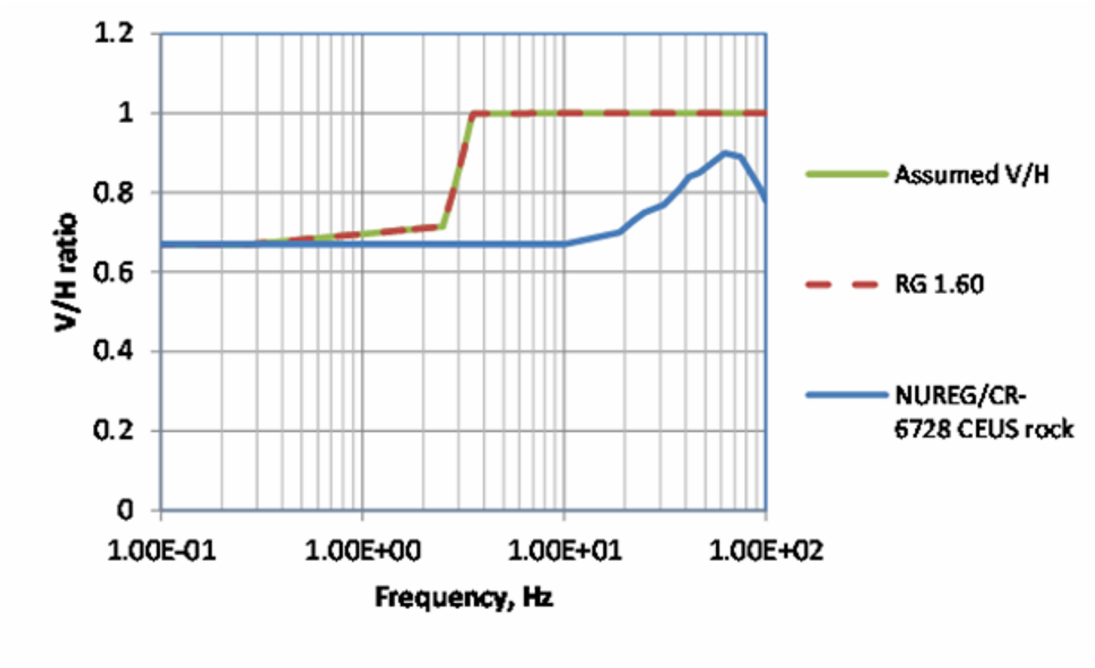

Figure 2.5.2-263 V/H Ratios from Two References and Assumed V/H Ratio

CTS-01521

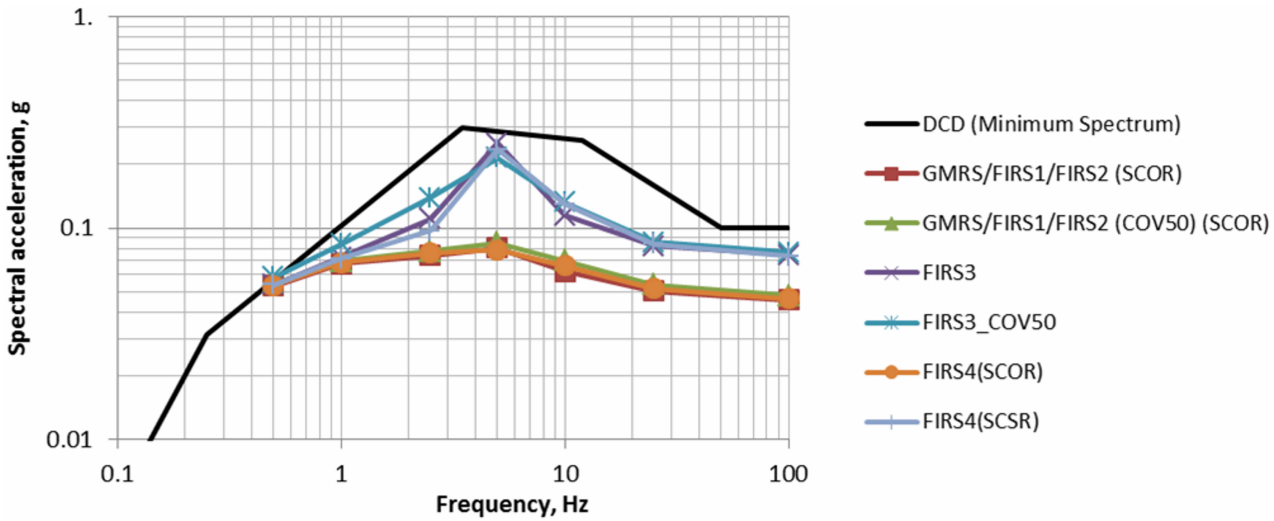

Figure 2.5.2-264 Vertical GMRS/FIRS Spectra plotted with Minimum DCD Spectrum

CTS-01521

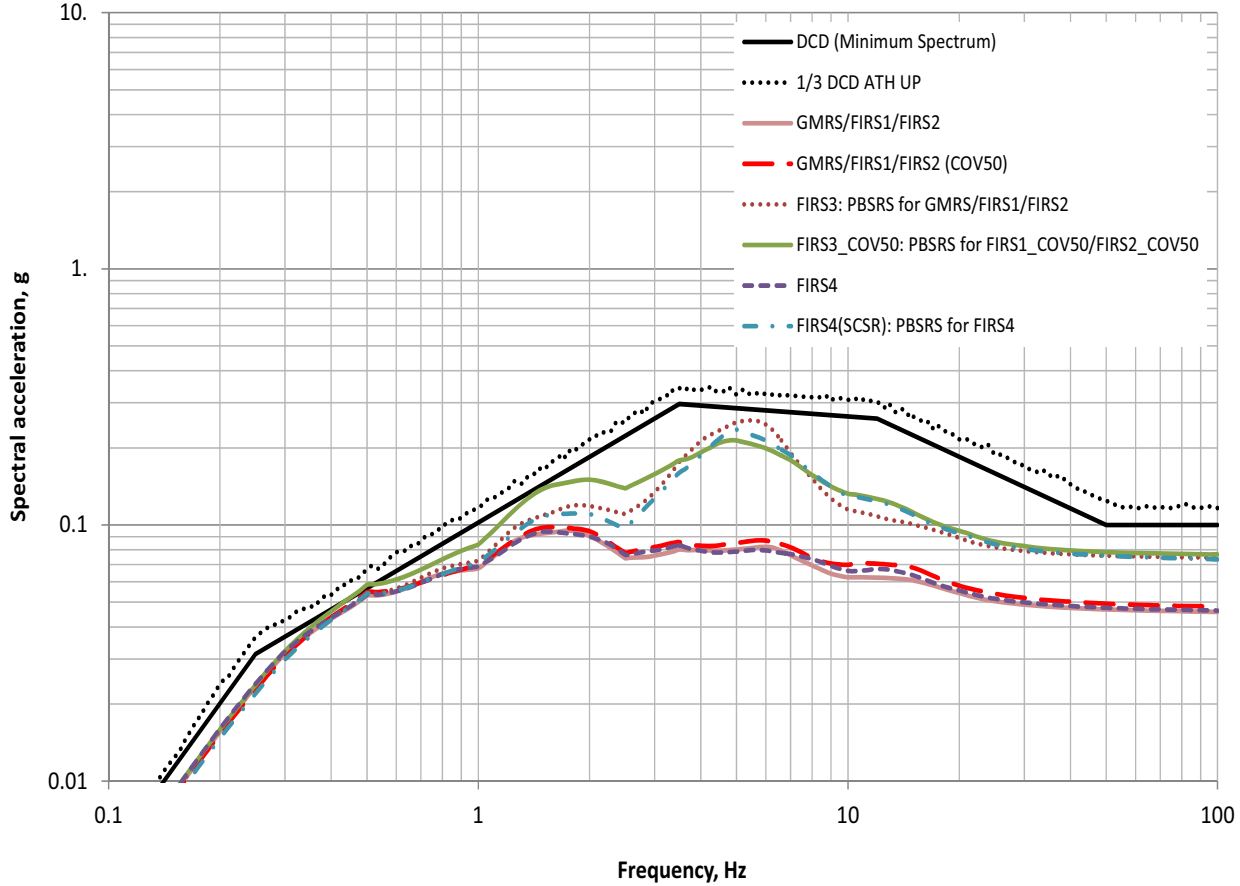

Figure 2.5.2-265 Smooth Vertical GMRS/FIRS Spectra plotted with Minimum DCD Spectrum and DCD acceleration time histories scaled by one third, 5% Damping

CTS-01521

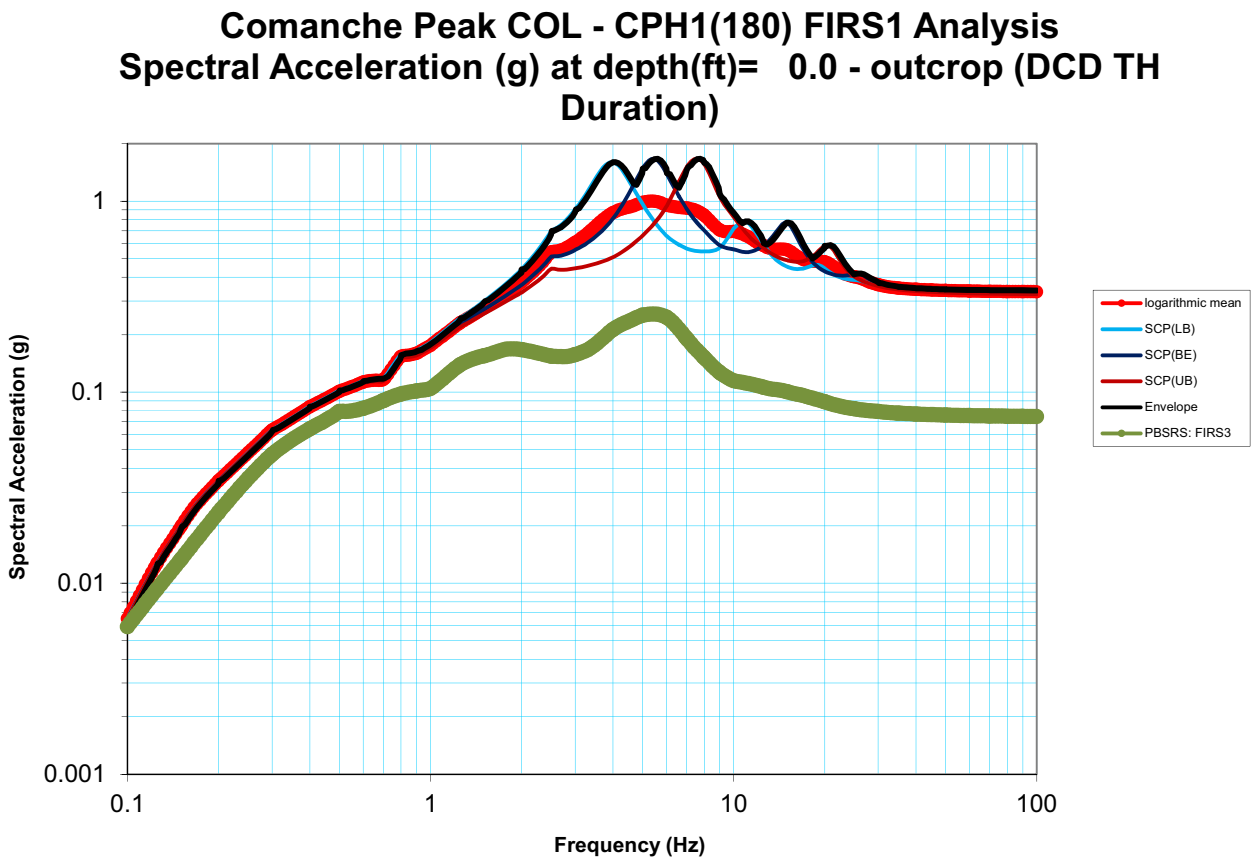

Figure 2.5.2-266 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, GMRS/FIRS1 (Equivalent to FIRS2), CPH1(180), DCD time history strong motion duration, 5%damping

CTS-01521

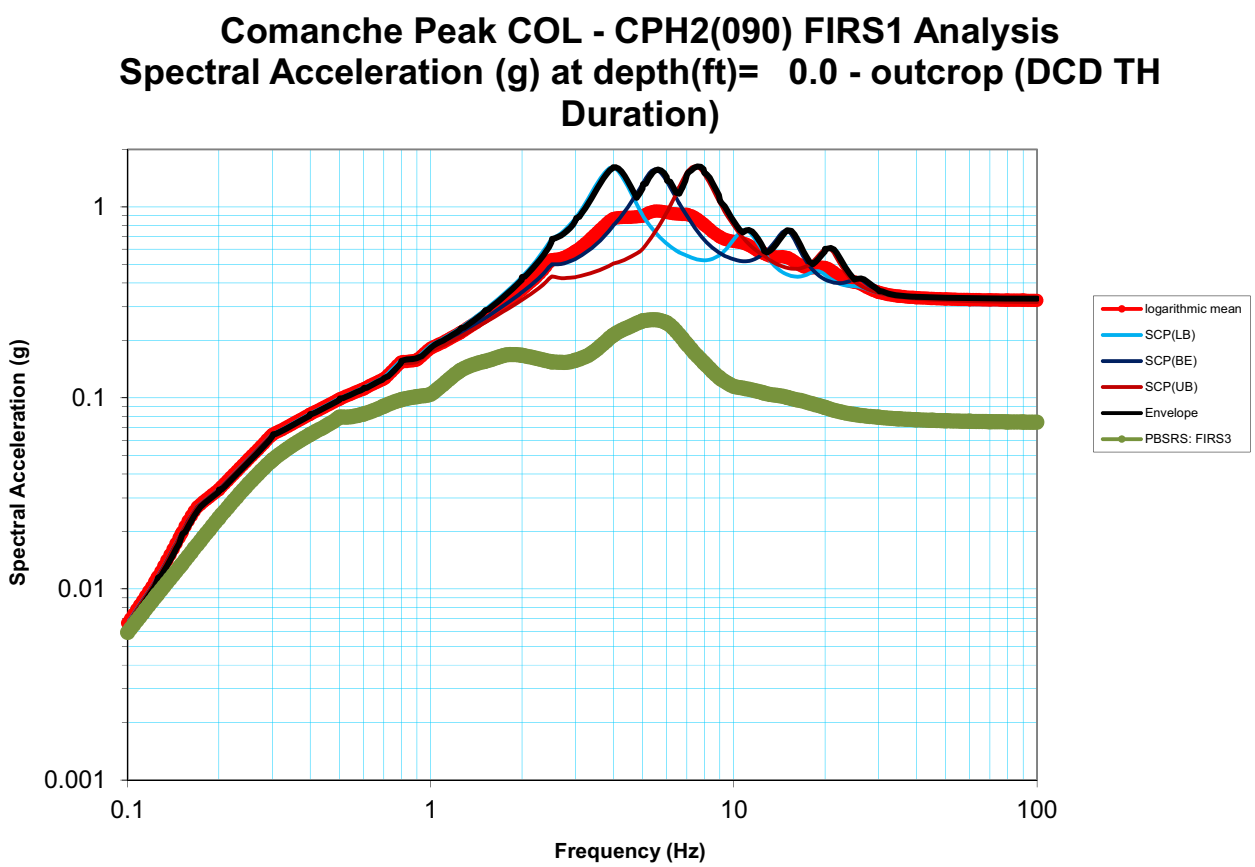

Figure 2.5.2-267 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, GMRS/FIRS1 (Equivalent to FIRS2), CPH2(090), DCD time history strong motion duration, 5%damping

CTS-01521

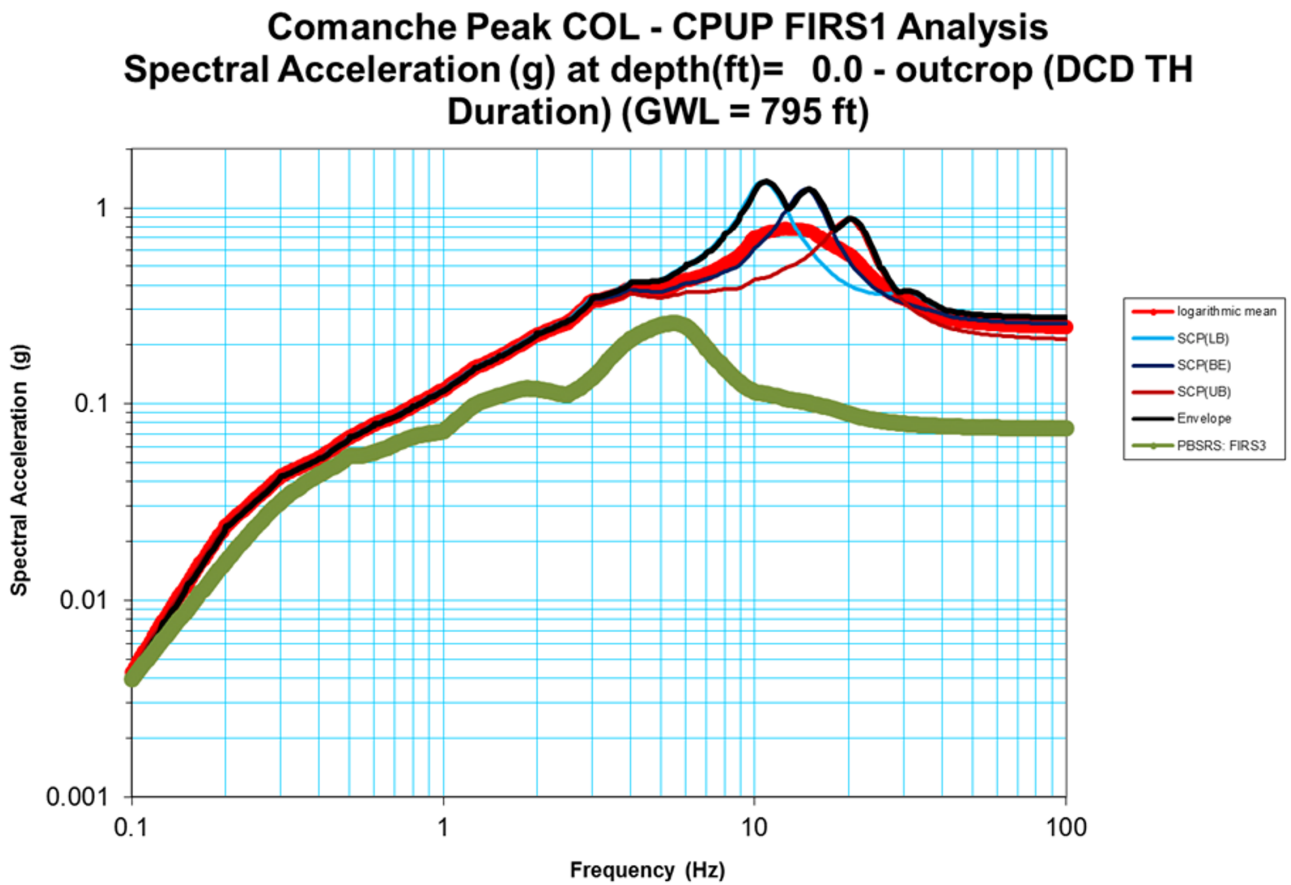

Figure 2.5.2-268 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, GMRS/FIRS1 (Equivalent to FIRS2), CPUP, DCD time history strong motion duration, saturated granular fill below nominal GWL 795 ft, 5% damping

CTS-01521

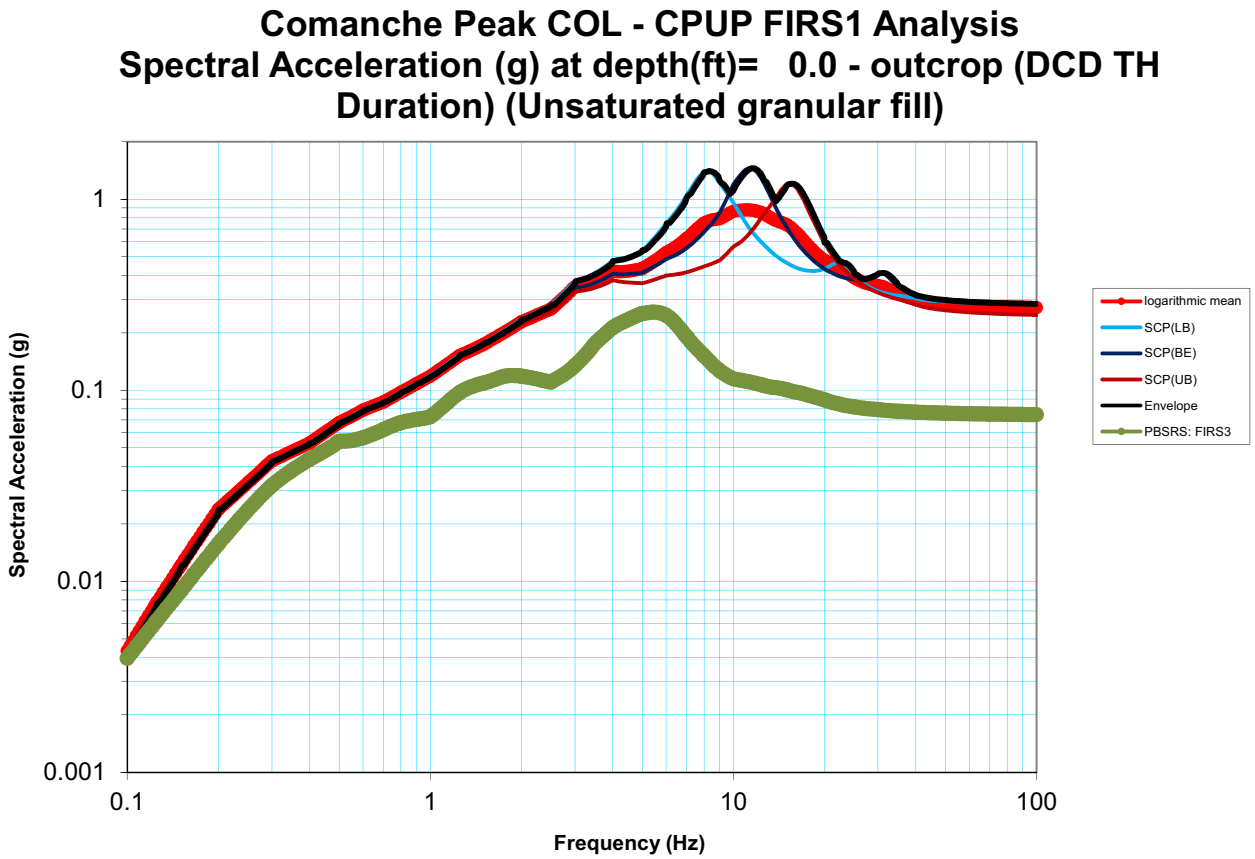

Figure 2.5.2-269 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, GMRS/FIRS1 (Equivalent to FIRS2), CPUP, DCD time history strong motion duration, unsaturated granular fill, 5% damping

CTS-01521

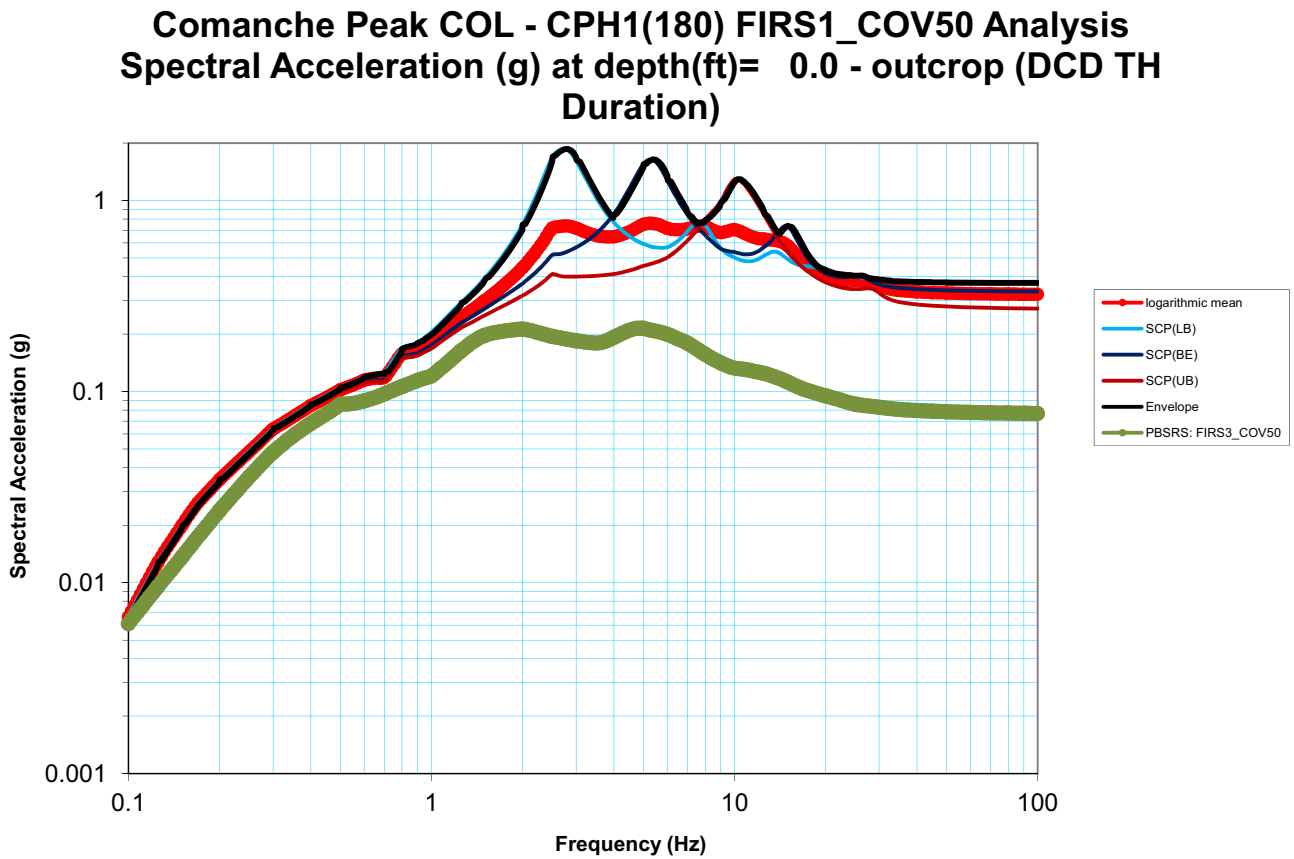

Figure 2.5.2-270 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, FIRS1_COV50 (Equivalent to FIRS2_COV50), CPH1(180), DCD time history strong motion duration, 5% damping

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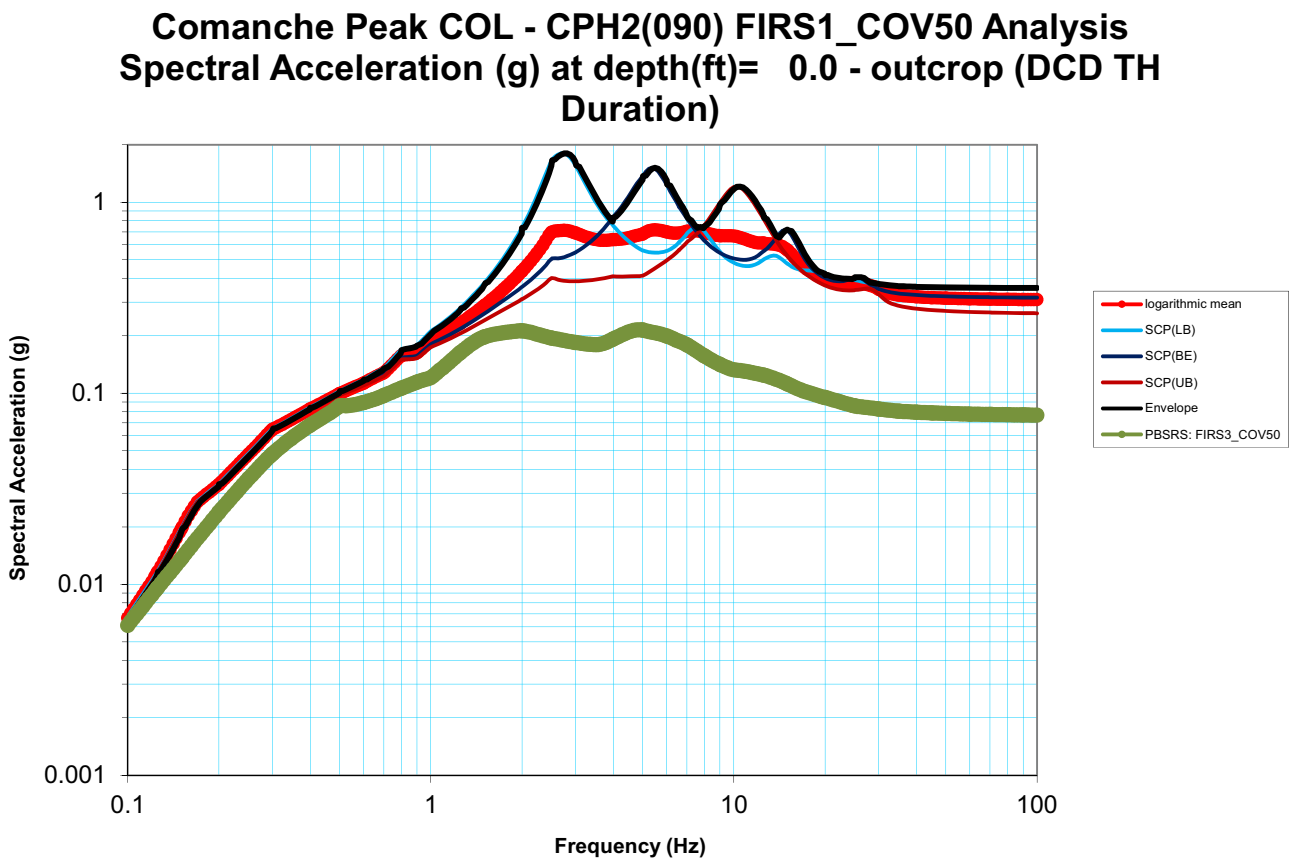

Figure 2.5.2-271 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, FIRS1_COV50 (Equivalent to FIRS2_COV50), CPH2(090), DCD time history strong motion duration, 5% damping

CTS-01521

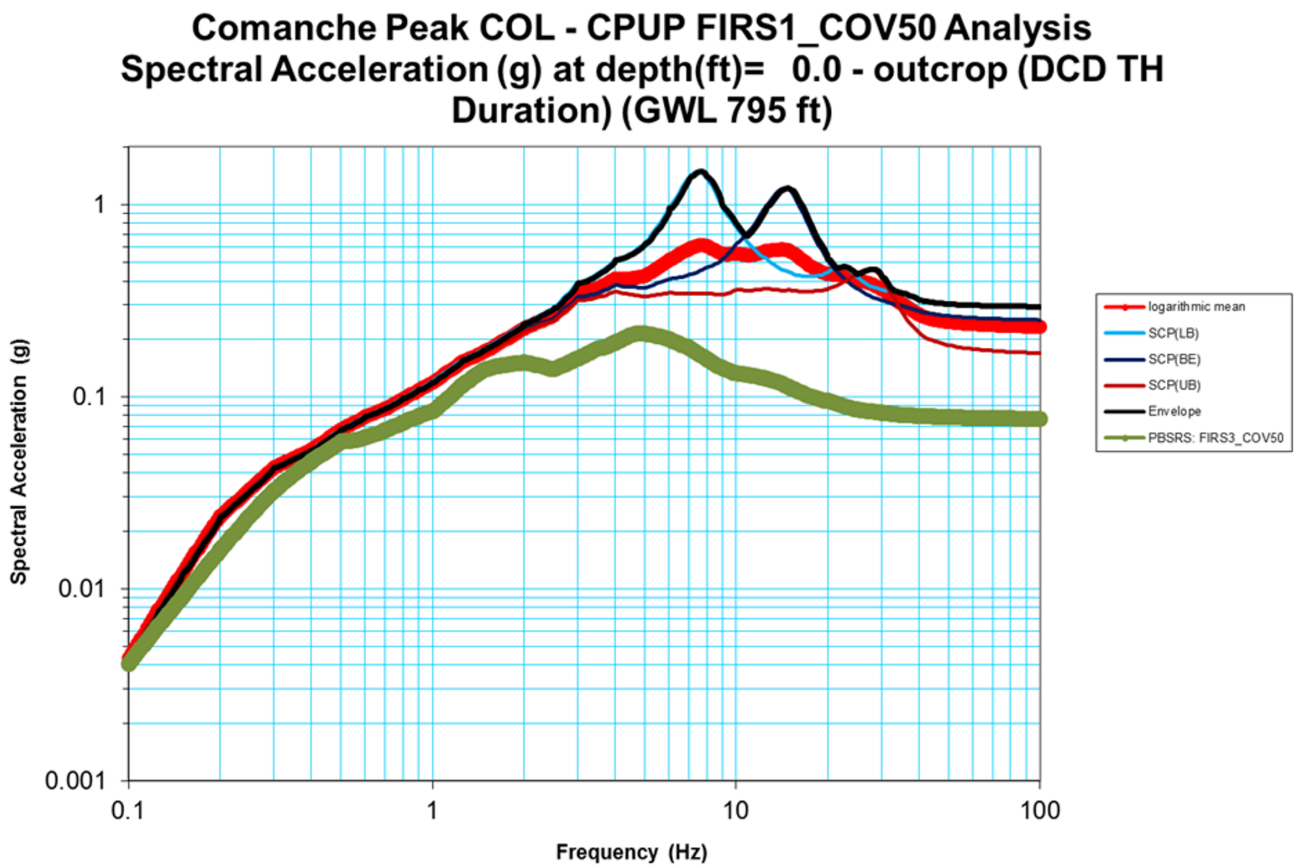

Figure 2.5.2-272 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, FIRS1_COV50 (Equivalent to FIRS2_COV50), CPUP, DCD time history strong motion duration, saturated granular fill below nominal GWL 795 ft, 5% damping

CTS-01521

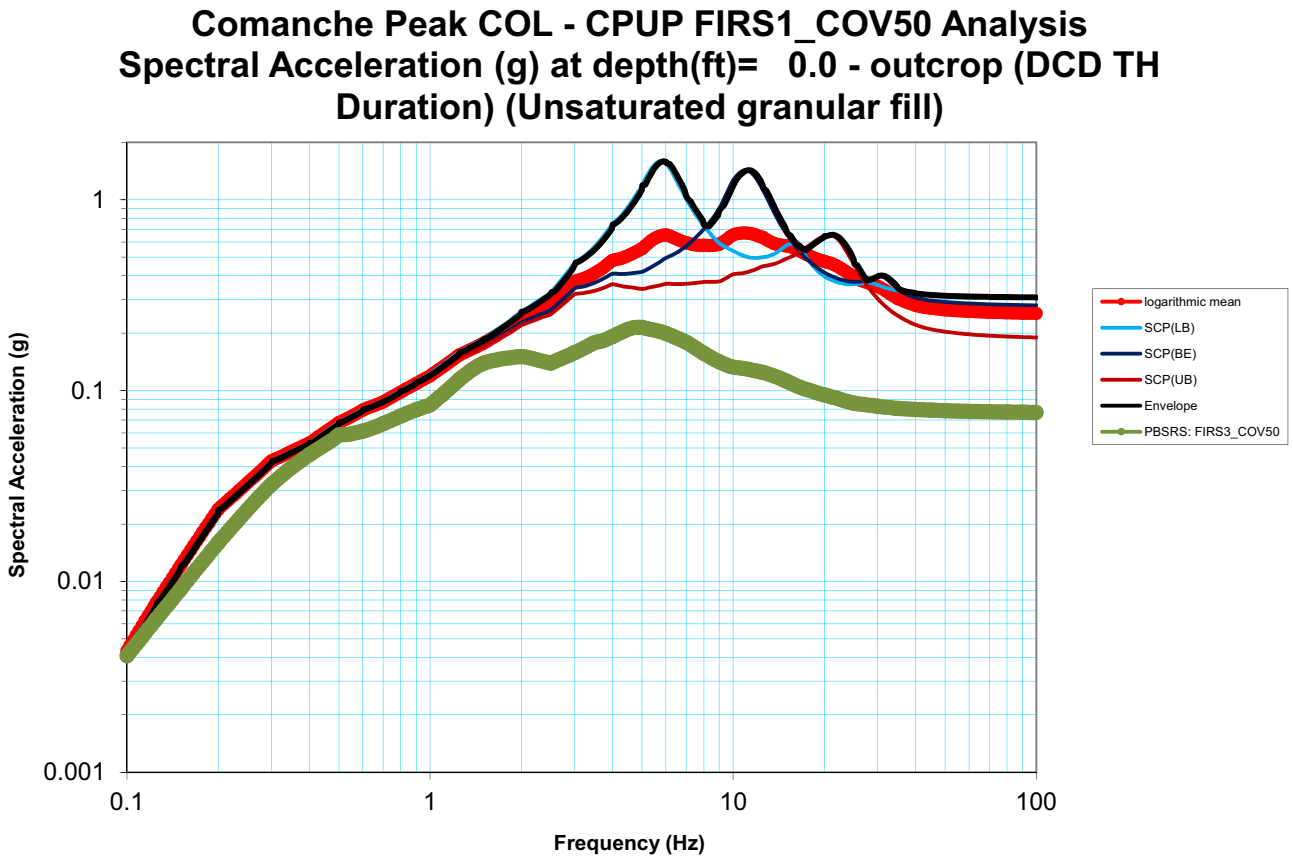

Figure 2.5.2-273 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, FIRS1_COV50 (Equivalent to FIRS2_COV50), CPUP, DCD time history strong motion duration, unsaturated granular fill, 5% damping

CTS-01521

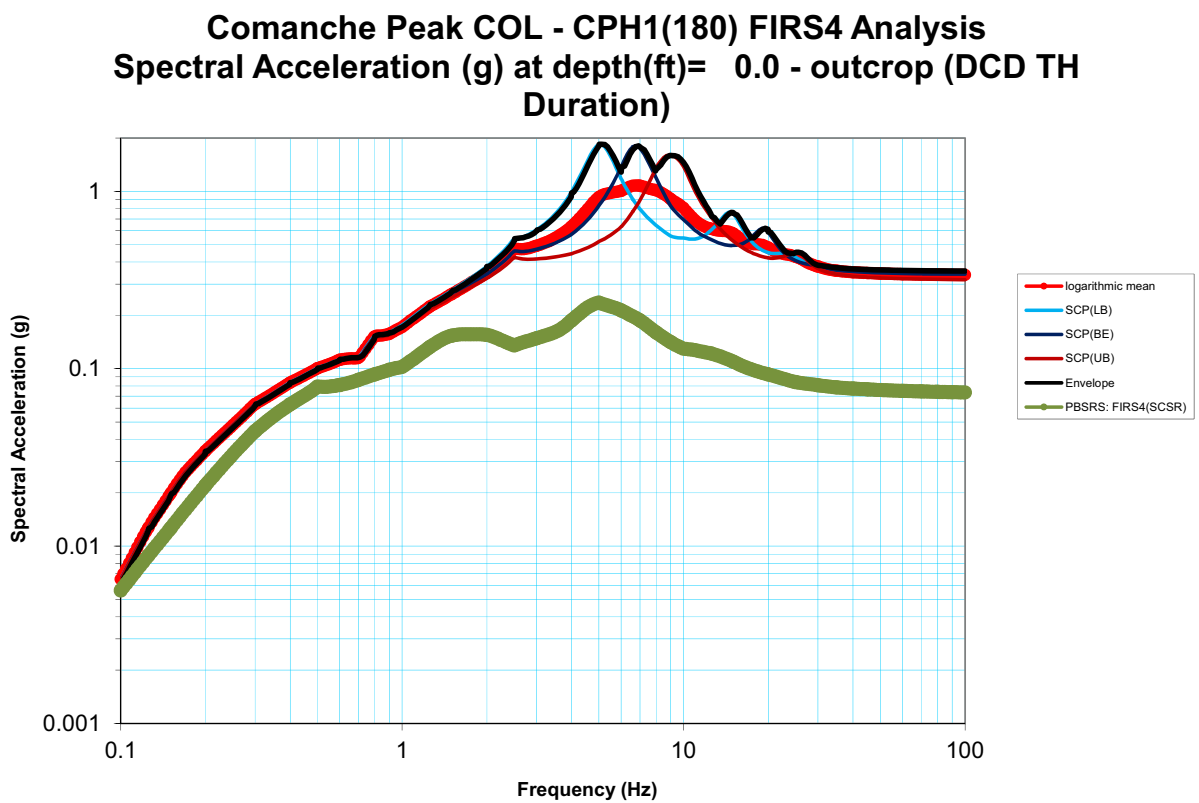

Figure 2.5.2-274 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, FIRS4, CPH1(180), DCD time history duration, 5% damping

CTS-01521

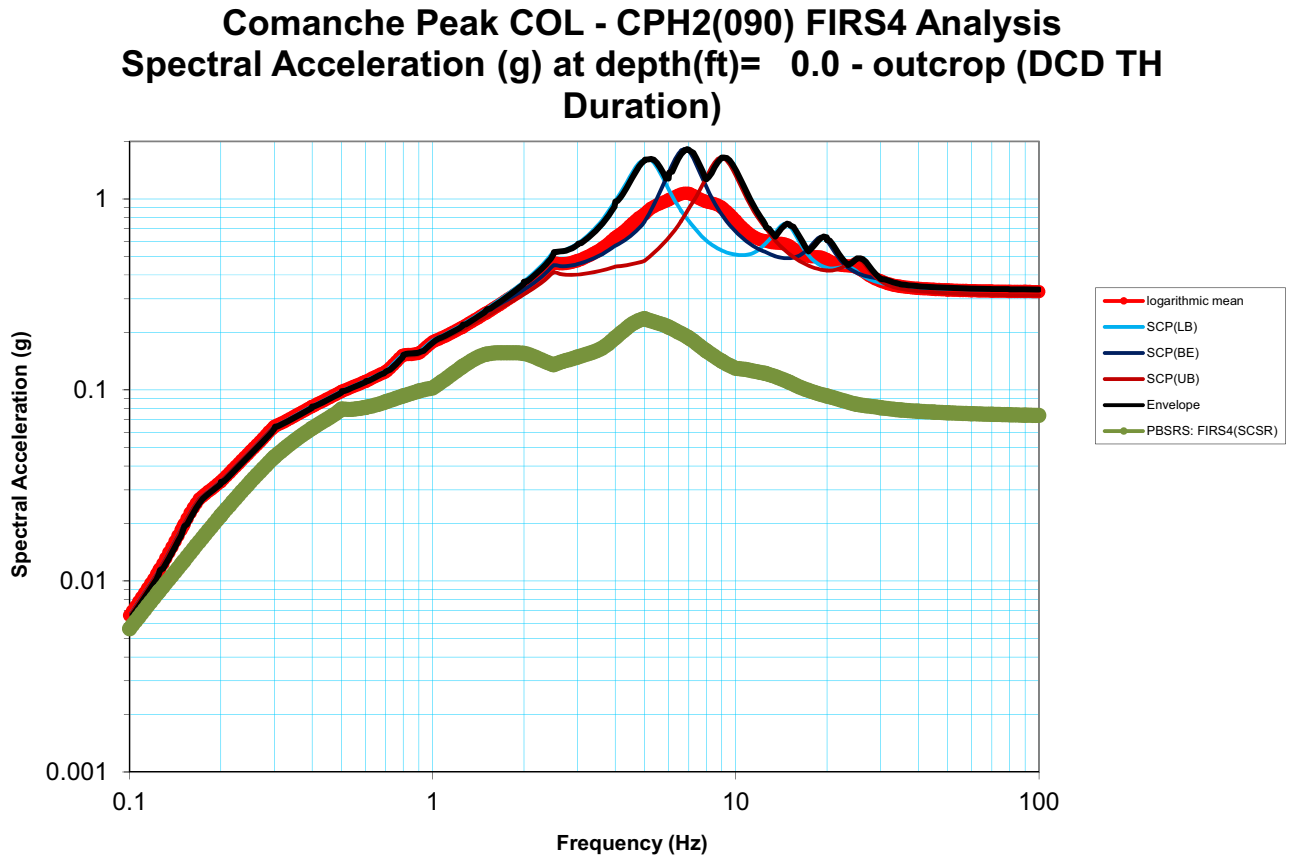

Figure 2.5.2-275 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, FIRS4, CPH2(090), DCD time history duration, 5% damping

CTS-01521

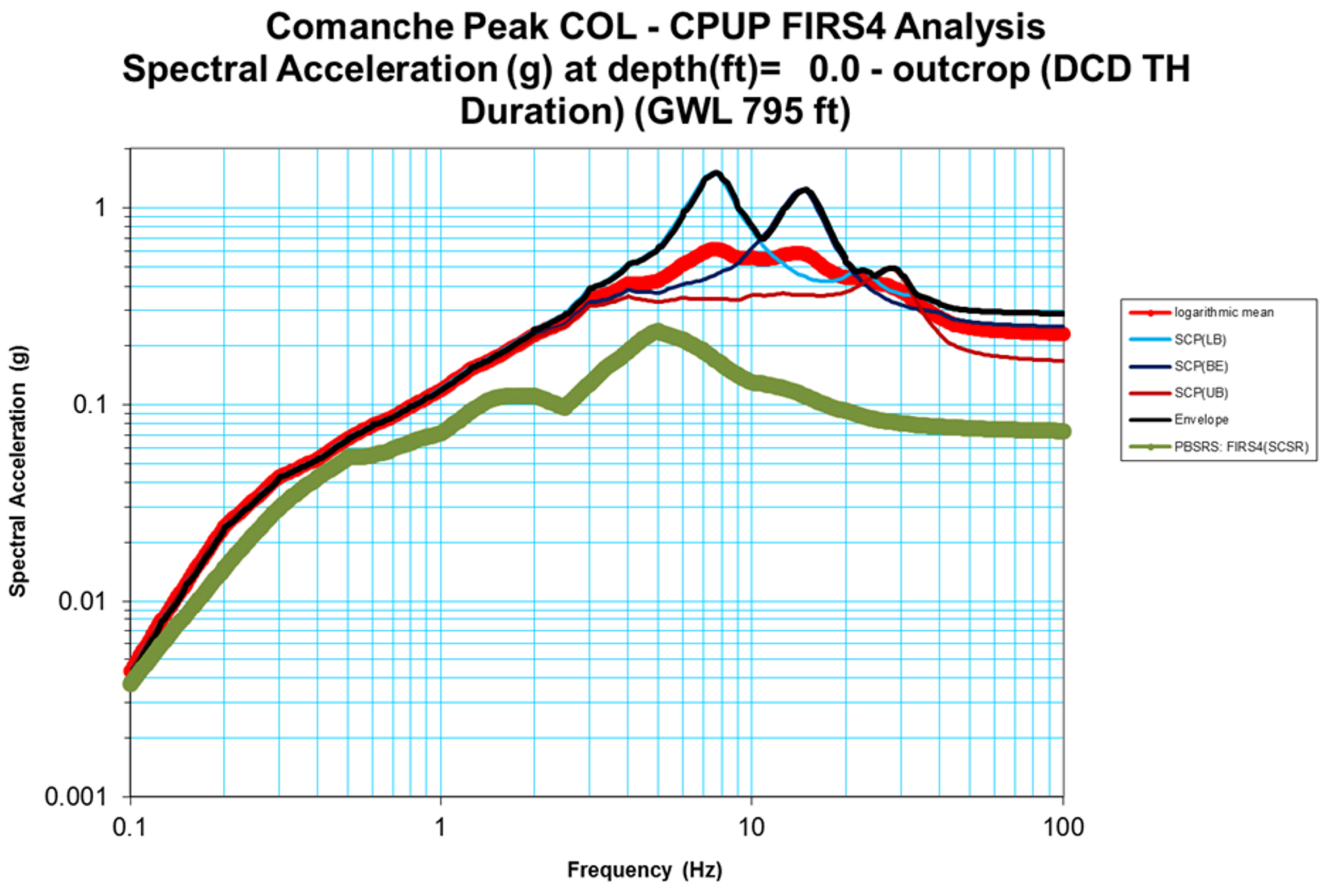

Figure 2.5.2-276 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, FIRS4, CPUP, DCD time history duration, saturated granular fill below nominal GWL 795 ft, 5% damping

CTS-01521

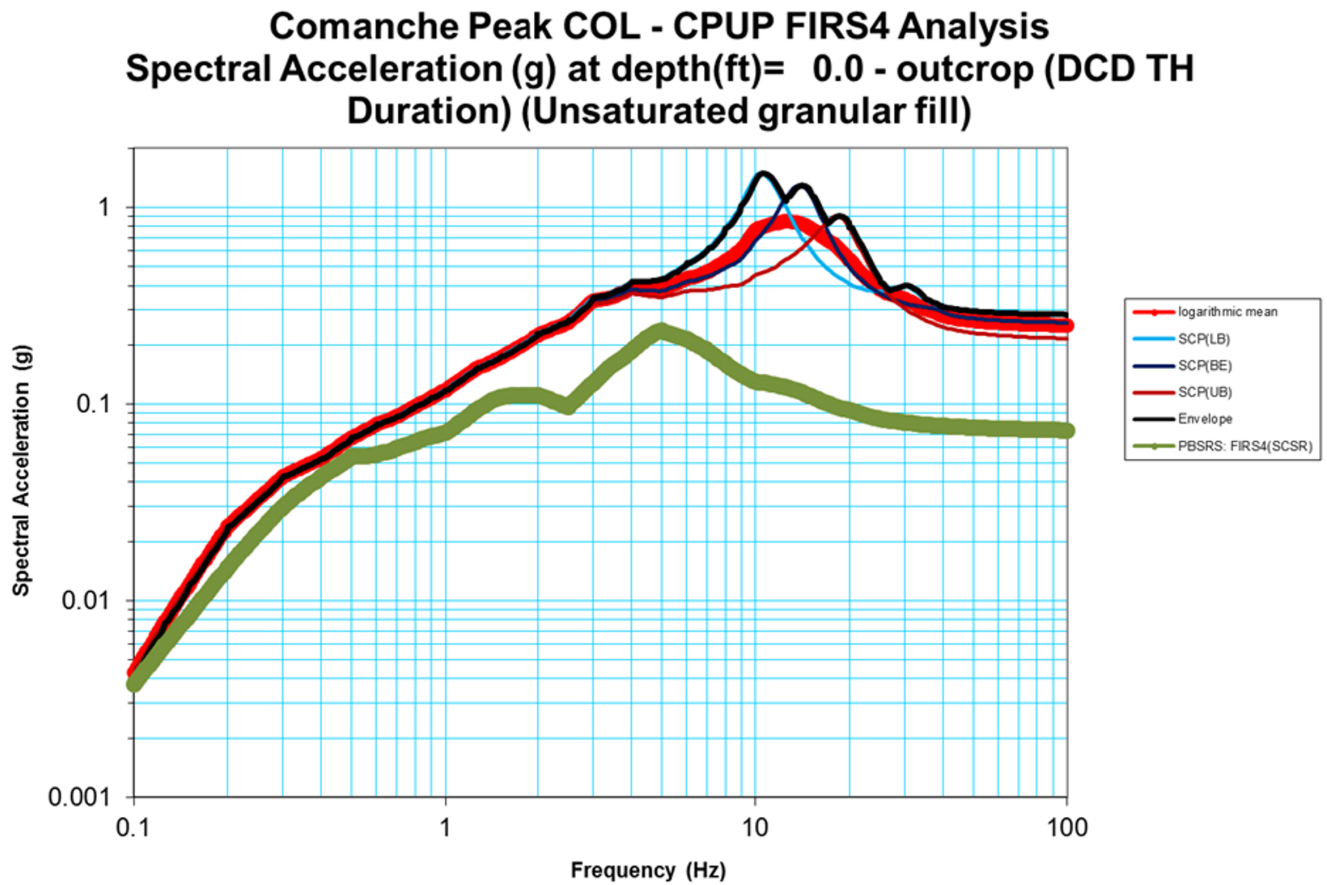

Figure 2.5.2-277 Comparison of envelope of spectral accelerations of the surface response spectra for LB, BE, and UB and the corresponding PBSRS, FIRS4, CPUP, DCD time history duration, unsaturated granular fill, 5% damping