ISSUED BY
RPP-WTP PDC

BECHTEL	**MECHANICAL SYSTEMS DATA SHEET: VESSEL**	PLANT ITEM No. *24590-PTF-MV-CNP-DISTC-00001* Data Sheet No. *24590-PTF-MVD-CNP-00016*

R11105819

Project:	***RPP-WTP***	P&ID:	***24590-PTF-M6-CNP-00010, 24590-QL-POA-MEVV-00002-07-23***
Project No:	***24590***	Process Data:	***24590-PTF-MVC-CNP-00015*** 1
Project Site:	***Hanford***	Vessel Drawing	***24590-QL-POA-MEVV-00002-07-08***
Description:	***Cesium Evaporator Nitric Acid Rectifier CNP-DISTC-00001***		

Reference Data

Charge Vessels (Tag Numbers)	***N/A***
Pulsejet Mixers / Agitators (Tag Numbers)	***N/A***
RFDs/Pumps (Tag Numbers)	***N/A***

Quality Level		***Q (Note 8 & 15)*** 1	Fabrication Specs	***24590-WTP-3PS-MV00-T0001***
Seismic Category		***SC-I (Note 15)*** 1	Design Code	***ASME section VIII Division 1***
Service/Contents		***Nitric Acid***	Code Stamp	***Yes, U1 Stamp***
Design Specific Gravity		***1.50***	NB Registration	***Yes***
Maximum Operating Volume	gal	***22***	Wind Design	***None***
Total Volume	gal	***877***	Snow/Ash Design	***None***
Postweld Heat Treat		***Not Required***	Seismic Design	***24590-WTP-3PS-MV00-T0002***
Seismic Base Moment	ft*lb	***N/A***		***24590-WTP-3PS-SS90-T0001***

Design Data

Inside Diameter	inch	***42***		Corrosion Allowance inch	***0.04***
Length/Height (TL-TL)	inch	***144***			
		Vessel Operating	Vessel Design	Coil / Jacket Design	Notes
Internal Pressure	psig	***1.08 psia***	***50***	***N/A***	
External Pressure	psig	***0*** 1	***14.7***	***N/A***	
Temperature	°F	***104***	***230***	***N/A***	
Min. Design Metal Temp.	°F	***40***		Hydrostatic Test Pressure PSIG	***65***

Materials of Construction

Component	Material	Containment	Notes
Top Head	***SB 688 UNS N08367 (AL6XN)***	***Auxiliary***	***3/8" thickness***
Shell	***SB 688 UNS N08367 (AL6XN)***	***Primary***	***3/8" thickness***
Lower Cone	***SB 688 UNS N08367 (AL6XN)***	***Primary***	***3/8" thickness***
Vessel Support	***A-554 MT-304,*** 1 ***A-240 304SS (note 5)***	***N/A***	
Jacket/Coils/Half-Pipe Jacket	***N/A***	***N/A***	
Internals	***SB 688 UNS N08367***	***N/A***	
Pipe	***SB 690 UNS N08367 (AL6XN) (6% MO Seamless)***	***Note 1***	
Forgings/ Bar stock	***N/A***		
Gaskets	***N/A***		
Bolting (Captive Bolts)	***N/A***		
Other (Fittings)			

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BECHTEL	**MECHANICAL SYSTEMS DATA SHEET: VESSEL**	PLANT ITEM No. *24590-PTF-MV-CNP-DISTC-00001* Data Sheet No. *24590-PTF-MVD-CNP-00016*

Miscellaneous Data

Orientation	***Vertical***
Support Type	***Stainless Steel ASTM A554 MT-304 (Max. Carbon 0.30%)***
Insulation Function	***N/A***
Insulation Thickness (inch)	***None***
Insulation Material	***None***
External Finish	***Welds Descaled as Laid***
Internal Finish	***Welds Ground Smooth***

Notes

(1) Nozzles located below the top of the overflow nozzle are primary containment. See 24590-WTP-3PS-MV00-T0001 for NDE requirements.
(2) Nozzle tolerance +/- 1/4"
(3) 40 years design life.
(4) NDE for this vessel must meet requirements per para 6.1, 6.2 and 7.2 of specification 24590-WTP-3PS-MV00-T0001.
(5) Maximum Carbon content of 0.030 percent for all welded components.
(6) All welds forming part of the primary and auxiliary containment including nozzle attachment welds shall be subject to 100% volumetric examination.
1 ***(7) Deleted.***
(8) Vendor will provide Item at BNI quality level Q, 1 which correlates to the vendors quality level of QL-2.
(9) Vendor Design information is from document 24590-QL-POA-MEVV-00002-10-00011.
(10) Equipment Cyclic Data is from document 24590-QL-POA-MEVV-00002-10-00002.
(11) This vessel requires a fatigue analysis or fatigue assessment.
(12) When combining vessel loading with seismic, seller should 1 use design pressure. Seller has the option to use 2 psi or 15% over maximum operating pressure, whichever is greatest, not to exceed vessel design pressure and full vacuum in lieu of vessel design pressure.
1 ***(13) Contents of this drawing are Dangerous Waste Permit Affecting.***
1 ***(14) Please note that source, special nuclear and byproduct materials, as defined in the Atomic Energy Act of 1954 (AEA), are regulated at the U.S. Department of Energy (DOE) facilities exclusively by DOE acting pursuant to its AEA authority. DOE asserts, that pursuant to the AEA, it has sole and exclusive responsibility and authority to regulate source, special nuclear, and byproduct materials at DOE-owned nuclear facilities. Information contained herein on radionuclides is provided for process description purposes only.***
1 ***(15) For commercial reasons, safety and seismic classification may be higher than elsewhere documented, and therefore conservative.***
1 ***(16) Allowable nozzle loads shall be per SC-I stainless steel nozzle design loads of 24590-WTP-3PS-MV00-T0001.***

Safety screening/evaluation required? ☒Yes ☐No If yes per 24590-WTP-GPP-SREG-002, E&NS signature required below.

Revision History

Rev	Description	By	Checked	EN&S	Approved	Date
1	Updated to add Dangerous Waste Permit Affecting note, DOE AEA note (14), reflect WSGM analysis, 24590-PTF-U0D-W16T-00001 changes, and update other data. Supersedes 24590-PTF-MWD-CNP-00001, Rev. C03	D. Tate	S. Thakkar	B. Hall		8/24/09
0	Issued for Procurement	R. Rickenbach	S. Thakkar	S. Sontag	J. Julyk	08/06/2008

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EQUIPMENT QUALIFICATION DATASHEET (EQD)

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Equipment Identification

Component Tag Number	24590-PTF-MV-CNP-DISTC-00001	Safety Classification	☒ SC ☐ SS ☐ APC ☐ SDC ☐ SDS ☐ RRC Note 12 1
Manufacturer / Supplier	AREVA NP, INC.		
Requisition Number	24590-QL-POA-MEVV-00002		
Model	N/A	Seismic Category	☒ SC-I ☐ SC-II ☐ SC-III ☐ SC-IV Note 12 1
Description (Include descriptive text [e.g., location, elevation])	CESIUM EVAPORATOR NITRIC ACID RECTIFIER CNP-DISTC-00001, ROOM P-0320, ELEVATION 56'-0"		
Safety Function(s)	Prevent post seismic disruption of H2 vessel purge air pathways, spread of contamination into C3 areas. 1		

Seismic Safety Function	☒ Yes ☐ No	Room Number(s):	P-0320
Maintenance Accessible	☒ Yes ☐ No	Method of Maintenance Access:	☐ Remote ☒ Hands On ☐ None
Seismic Operability Requirements:	1 ☐ During Seismic Event 1 ☐ After Seismic Event		
ITS Equipment Type:	☒ Passive Mechanical ☐ Active Mechanical ☐ Electrical		

Equipment Environmental Qualification (EEQ)

Environment ☒ Mild ☐ Harsh Contamination Class: C3 Radiation Class: R3	Hi Rad Service ☐ Yes ☒ No	Design Life (yrs) ☐ 40 ☒ Other ____ Note 13 1

Parameter Type/Units	Parameter Value	Time Duration (number)	Time Units	WTP Document Number (BUYER)	Submittal Number (SELLER)
Normal					
Normal High Temperature (°F)	95	40	yrs	24590-PTF-U0D-W16T-00001, Note 8	Note 1
Normal Low Temperature (°F)	59	40	yrs	24590-PTF-U0D-W16T-00001, Note 8	Note 1
Normal High Relative Humidity (%RH)	100	40	yrs	24590-PTF-U0D-W16T-00001	Note 1
Normal Low Relative Humidity (%RH)	10	40	yrs	24590-PTF-U0D-W16T-00001	Note 1
Normal High Pressure (in.-w.g.)	0	40	yrs	24590-PTF-U0D-W16T-00001	Note 1
Normal Low Pressure (in.-w.g.)	-0.4	40	yrs	24590-PTF-U0D-W16T-00001	Note 1
Normal Radiation Dose Rate (mR/hr)	10	40	yrs	24590-PTF-U0D-W16T-00001	Note 1
Vibration Magnitude (g)	N/A	N/A	N/A	N/A 1	Note 1
Vibration Frequency (Hz)	N/A	N/A	N/A	N/A 1	Note 1
Additional Normal Information:	See Note 2 for pressure units.				

EQUIPMENT QUALIFICATION DATASHEET (EQD)

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Equipment Environmental Qualification (EEQ) *(continued)*

Parameter Type/Units	Parameter Value	Time Duration (number)	Time units	WTP Document Number (BUYER)	Submittal Number (SELLER)
Abnormal					
Abnormal High Temperature (°F)	125	8	hr/yr	24590-PTF-U0D-W16T-00001, Note 8 & 11 1	Note 1
Abnormal Low Temperature (°F) 1	Note 10 40	8	hr/yr	24590-PTF-U0D-W16T-00001, Note 8 & 10 1	Note 1
Abnormal High Relative Humidity (%RH)	100	24	hr/yr	24590-PTF-U0D-W16T-00001	Note 1
Abnormal Low Relative Humidity (%RH)	2	22	hr/yr	24590-PTF-U0D-W16T-00001, Note 11 1	Note 1
Abnormal High Pressure (in.-w.g.)	4	8	hr/yr	24590-PTF-U0D-W16T-00001	Note 1
Abnormal Low Pressure (in.-w.g.)	-7.3	8	hr/yr	24590-PTF-U0D-W16T-00001	Note 1
Abnormal Radiation Dose Rate (mR/hr)	10, Note 5	0	hr/yr	24590-PTF-U0D-W16T-00001	Note 1
Wet Sprinkler System Present	Yes	2	hr 1	24590-PTF-U0D-W16T-00001	Note 1
Additional Abnormal Information	See Note 2 for pressure units.				
Design Basis Events (DBE)					
DBE High Temperature (°F)	130	1000	hrs	24590-PTF-U0D-W16T-00001, Note 8 & 11 1	Note 1
DBE Low Temperature (°F) 1	40	1000	hrs	24590-PTF-U0D-W16T-00001, Note 8 1	Note 1
DBE High Relative Humidity (%RH)	100	482	1 hrs	24590-PTF-U0D-W16T-00001	Note 1
DBE Low Relative Humidity (%RH)	6.0	1000	hrs	24590-PTF-U0D-W16T-00001, Note 11 1	Note 1
DBE High Pressure (in.-w.g.)	4	1000	hrs	24590-PTF-U0D-W16T-00001	Note 1
DBE Low Pressure (in.-w.g.)	-7.3	1000	hrs	24590-PTF-U0D-W16T-00001	Note 1
DBE Radiation Dose Rate (mR/hr)	10, Note 5	0	hrs	24590-PTF-U0D-W16T-00001	Note 1
Flood Height (ft)	0.67	1000	hrs	24590-PTF-U0D-W16T-00001	Note 1
Submergence (ft)	0.3, Note 6	1000	hrs	1 24590-QL-POA-MEVV-00002-07-03	Note 1
Chemical/Spray Exposure	YES, Note 9	12.5	hrs	24590-PTF-U0D-W16T-00001	Note 1
Additional DBE Information	See Note 2 for pressure units.				

EQUIPMENT QUALIFICATION DATASHEET (EQD)

DBE Chemical Exposure Details	
DBE Chemical Types/Concentrations	0.1M, 2M SODIUM HYDROXIDE 2M NITRIC ACID 1

Interfaces (Electrical)	
Power Supply Voltage (VAC, VDC)	N/A
Power Supply Frequency (Hz)	N/A
Power Connection Method	N/A
I/O Signals to/from Equipment	N/A
I/O Connection Method	N/A

Interfaces (Mechanical)	
Mounting Configuration (orientation)	VERTICAL, SEE VENDOR SUBMITAL 24590-QL-POA-MEVV-00002-07-03.
Mounting Method (bolts, welds, etc.)	WELDS, SEE DWG. 24590-PTF-DB-S13T-00057
Auxiliary Devices	N/A

Equipment Seismic Qualification (ESQ)

Parameter	Title	Reference/Document Number	Version / Revision	Remarks
WTP Seismic Design Specification (BUYER)	Engineering Specification for Seismic Qualification Criteria for Pressure Vessels Engineering Specification for Seismic Qualification of Seismic Category I/II Equipment and Tanks.	24590-WTP-3PS-MV00-T0002 24590-WTP-3PS-SS90-T0001	002 001 1	N/A
Specified Seismic Load (BUYER)	Seismic Analysis of Pretreatment Building - WSGM In-Structure Response Spectre (ISRS) 1	24590-PTF-S0C-S15T-00057 1	00A 1	Calculation is not included in MR, see attached figures 37, 38 and 114 per CCN 185267. 1
Design Seismic Load (SELLER	1	1	1	Note 1 1
Qualification Method (SELLER)	1	1	1	Note 1 1
Qualification Report Number (SELLER)	1	1	1	Note 1 1
Submittal Number (BUYER)	TBD 1	TBD 1	TBD 1	None 1

Notes and Additional Information

1. Data to be provided by seller through the submittal process as required on the G-321-E form.
2. Where pressure is given in inches of water column (in.-w.c.) in the source document, it is generally assumed that this is in reference to atmospheric pressure and is therefore equivalent to inches of water gage (in.-w.g.)
3. deleted. 1
4. The equipment qualification will be documented in accordance with the requirements in Appendix D of Engineering Specification for Environmental Qualification of Mechanical Equipment, document number 24590-WTP-3PS-G000-T0015. for the passive and active safety functions.
5. Abnormal and DBE Radiation dose rates are set equal to normal and do not contribute to the total integrated dose rate.
6. Submergence depth is the difference between the lowest point on the equipment and the flood depth above the floor. The submergence depth is set to zero if the lowest section of the equipment is above the flood depth.
7. Environmental data from calculation 24590-PTF-U0D-W16T-00001 is for room environment only.
8. For application of AISC N690, 1 abnormal temperatures shall be applied as Normal Operation Temperature, T_O, with seismic effects, E_S. The Design basis event temperatures shall be applied as a Thermal Load generated by a postulated accident, T_A, without seismic effects, E_s. 1
9. See DBE Chemical Exposure Details. 1
10. Abnormal minimum temperature is set equal to the normal minimum temperature (59F) for the purposes of seismic 1 analysis. A DBE seismic event coincident with an extreme low abnormal temperature is not a credible scenario. [The probability of an abnormal minimum temperature is estimated as follows: temperatures <40 F occur 31% of the year (average historical weather data, 0.31 probability); a loss of heating is assumed to occur 8 hrs/yr (0.001 probability); combined probability is 0.31 x 0.001 = 0.00031 (3.1E-4). The combination of this event with a seismic DBE (4 E-04 probability) is not credible (<1 E-06 probability).]
11. Parameter values used on data sheet have been previously established and determined to provide more conservative 1 constraints than values derived from 24590-PTF-U0D-W16T-00001.
12. For commercial reasons, safety and seismic classification may be higher than elsewhere documented, and therefore 1 conservative.
13. Facility design life is 40 years. Seller will determine equipment design life and required maintenance / replacement 1 intervals to maintain qualification of equipment components subject to wear or aging.

REFERENCES

1. 24590-WTP-PSAR-ESH-01-002-02, Rev. 04E, Preliminary Documented Safety Analysis to Support Construction 1 Authorization; PT Facility Specific Information.
2. deleted. 1
3. 24590-PTF-M6-CNP-00010, Rev. 2, P&ID - PTF Cesium Nitric Acid Recovery Process System Rectifier and Condensers.
4. 24590-PTF-U0D-W16T-00001, Rev. 0, PTF Room Environment Datasheet [Including DCNs: 24590-PTF-U0N-W16T 1 -00001, 24590-PTF-U0N-W16T-00003, & 24590-PTF-U0N-W16T-00004].
5. 24590-WTP-DB-ENG-01-001, Rev. 1N, Basis of Deisgn. 1
6. 24590-QL-POA-MEVV-00002-07-08, Rev. 00B, DRAWING - CNP DISTILLATION COLUMN VESSEL 1
7. 24590-PTF-M6X-CNP-00037 Rev. 002, MS LINE LIST FOR P&ID 24590-PTF-M6-CNP-00010, REV. 2 1

RPP-WTP Pretreatment Facility ISRS

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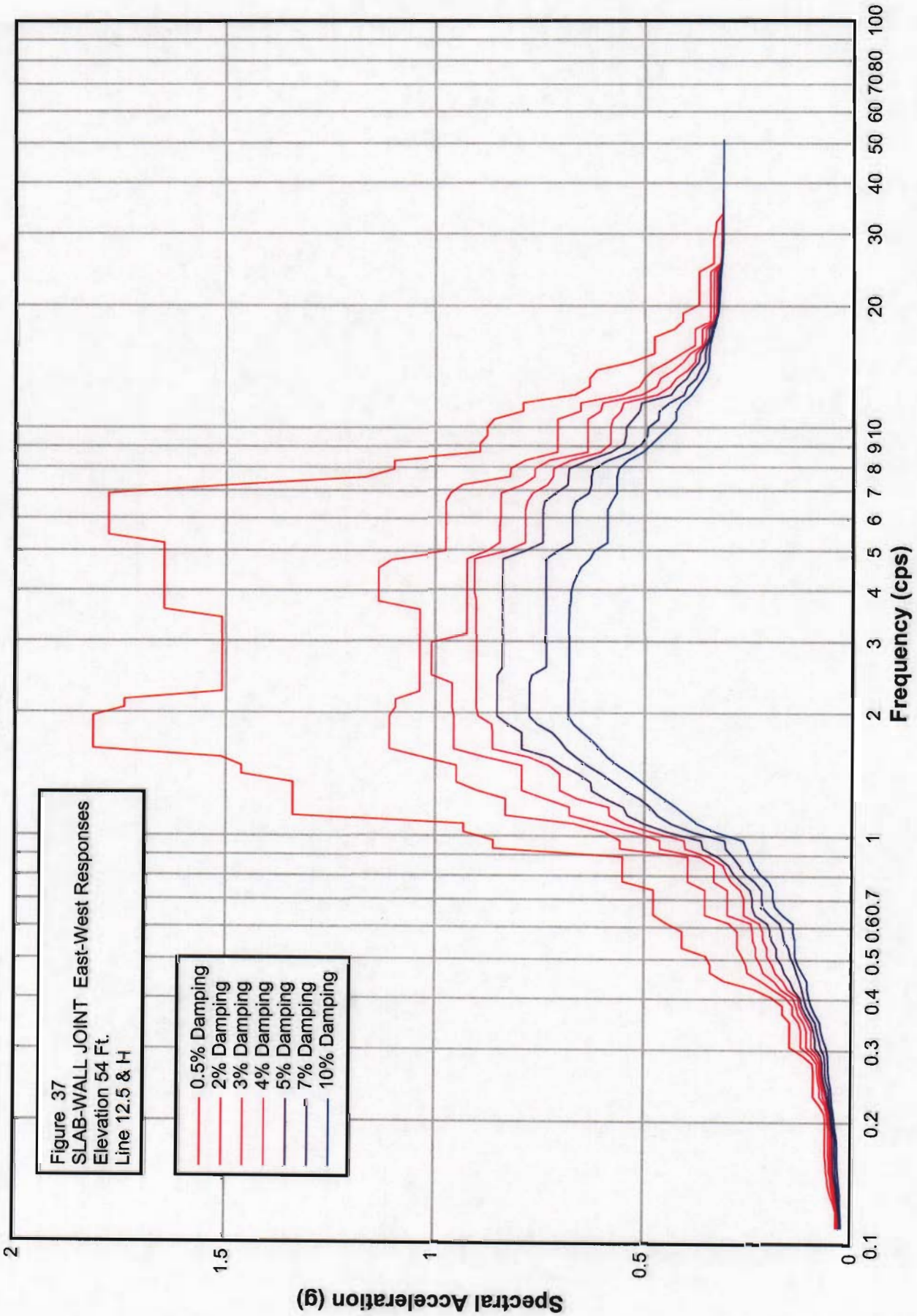
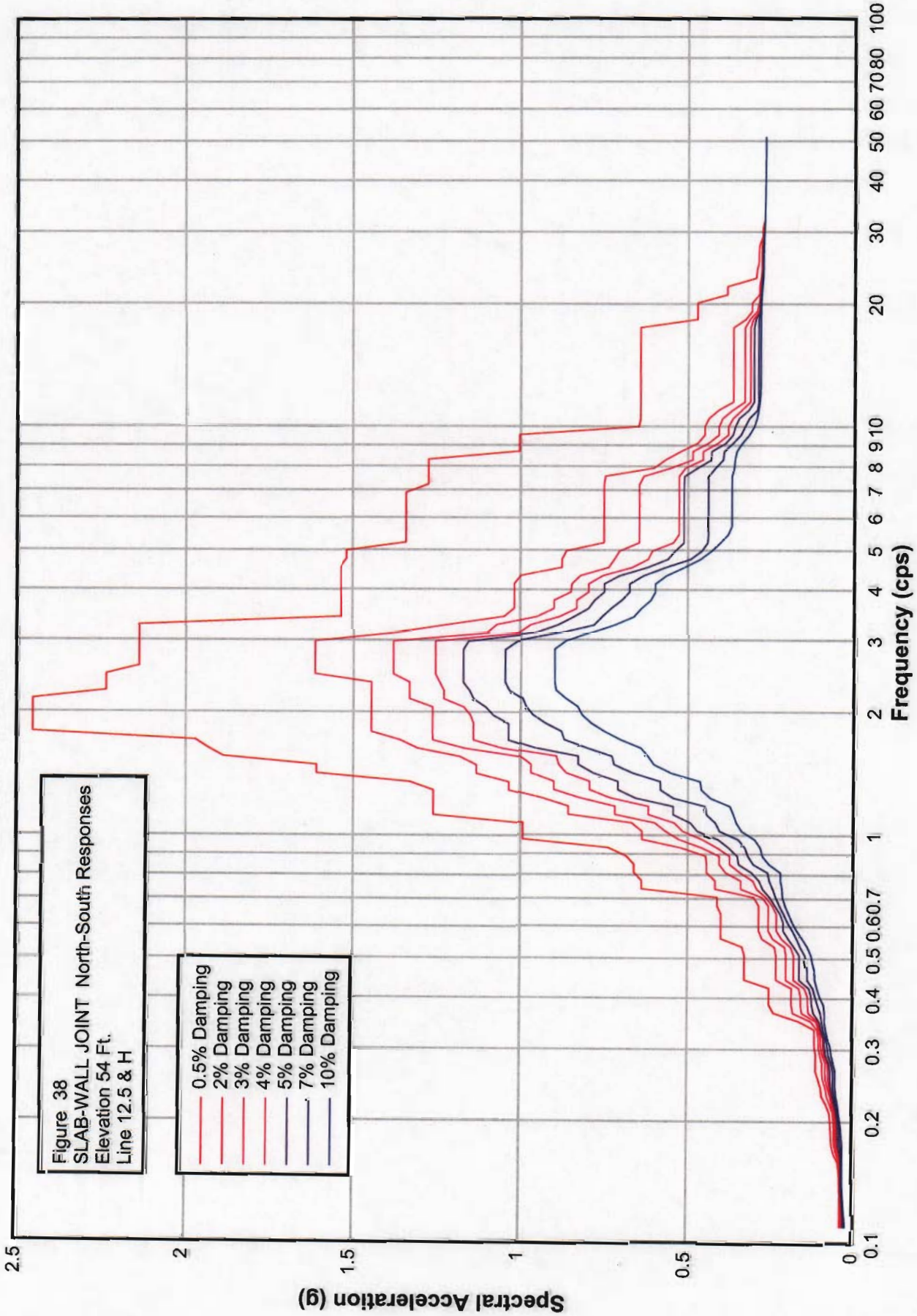
Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A



RPP-WTP Pretreatment Facility ISRS

Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A



RPP-WTP Pretreatment Facility ISRS

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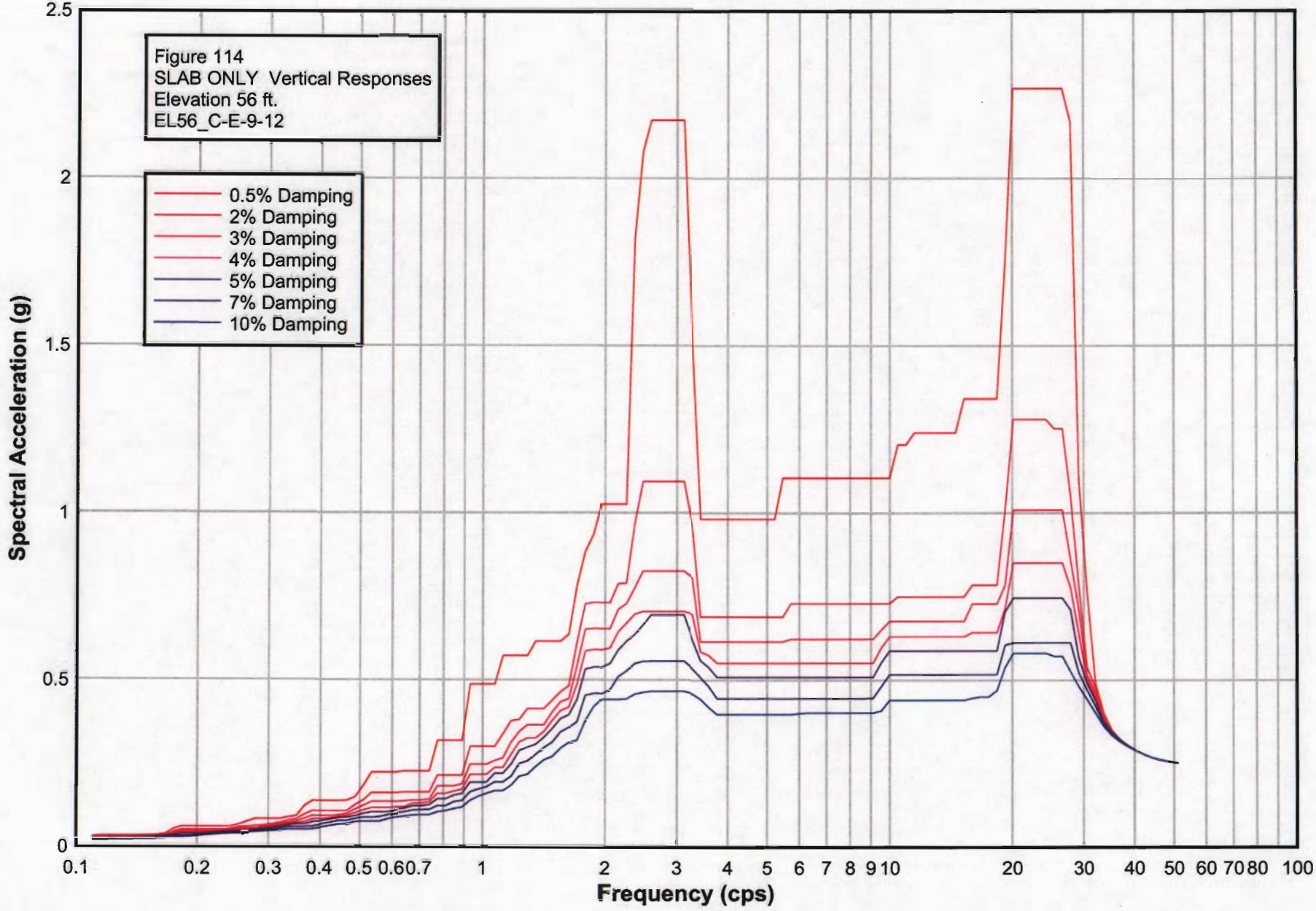
Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A



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Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW037.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g)
~ Figure 37 ~ SLAB-WALL JOINT East-West Responses ~ Elevation 54 Ft. ~ Line 12.5 H

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
0.1098	0.0375	0.1098	0.0344	0.1098	0.0327	0.1098	0.0312	0.1098	0.0298	0.1098	0.0274	0.1098	0.0252
0.115	0.0375	0.115	0.0344	0.115	0.0327	0.115	0.0312	0.115	0.0299	0.115	0.0277	0.115	0.0258
0.1204	0.0375	0.1204	0.0344	0.1204	0.0331	0.1204	0.0322	0.1204	0.0312	0.1204	0.0294	0.1204	0.0269
0.1262	0.0431	0.1262	0.0397	0.1262	0.0378	0.1262	0.036	0.1262	0.0343	0.1262	0.0314	0.1262	0.0278
0.1322	0.0504	0.1322	0.045	0.1322	0.042	0.1322	0.0393	0.1322	0.0369	0.1322	0.0328	0.1322	0.0281
0.1385	0.056	0.1385	0.0489	0.1385	0.0449	0.1385	0.0414	0.1385	0.0384	0.1385	0.0344	0.1385	0.0303
0.1451	0.058	0.1451	0.0509	0.1451	0.0475	0.1451	0.0445	0.1451	0.0419	0.1451	0.0375	0.1451	0.0325
0.152	0.0616	0.152	0.0546	0.152	0.0506	0.152	0.0472	0.152	0.0442	0.152	0.0391	0.152	0.0338
0.1592	0.062	0.1592	0.0546	0.1592	0.0506	0.1592	0.0472	0.1592	0.0442	0.1592	0.0396	0.1592	0.0351
0.1668	0.064	0.1668	0.056	0.1668	0.0517	0.1668	0.0481	0.1668	0.0451	0.1668	0.0403	0.1668	0.0356
0.1748	0.064	0.1748	0.056	0.1748	0.0517	0.1748	0.0481	0.1748	0.0451	0.1748	0.0403	0.1748	0.0356
0.1831	0.064	0.1831	0.056	0.1831	0.0517	0.1831	0.0481	0.1831	0.0451	0.1831	0.0403	0.1831	0.0368
0.1918	0.0641	0.1918	0.0561	0.1918	0.0517	0.1918	0.0495	0.1918	0.0477	0.1918	0.0445	0.1918	0.0404
0.2009	0.0642	0.2009	0.0583	0.2009	0.0558	0.2009	0.0535	0.2009	0.0513	0.2009	0.0474	0.2009	0.0424
0.2105	0.0665	0.2105	0.0603	0.2105	0.0575	0.2105	0.0549	0.2105	0.0525	0.2105	0.049	0.2105	0.0448
0.2205	0.078	0.2205	0.0647	0.2205	0.062	0.2205	0.0595	0.2205	0.0573	0.2205	0.0533	0.2205	0.0484
0.231	0.0933	0.231	0.0774	0.231	0.0694	0.231	0.063	0.231	0.0598	0.231	0.0556	0.231	0.0503
0.242	0.0933	0.242	0.0774	0.242	0.0723	0.242	0.0678	0.242	0.0638	0.242	0.0567	0.242	0.0513
0.2535	0.0933	0.2535	0.0817	0.2535	0.0771	0.2535	0.0729	0.2535	0.0692	0.2535	0.0628	0.2535	0.0553
0.2656	0.0933	0.2656	0.0839	0.2656	0.0794	0.2656	0.0754	0.2656	0.0718	0.2656	0.0653	0.2656	0.0575
0.2783	0.0954	0.2783	0.0847	0.2783	0.0794	0.2783	0.0754	0.2783	0.0718	0.2783	0.0653	0.2783	0.058
0.2915	0.1187	0.2915	0.0987	0.2915	0.089	0.2915	0.0813	0.2915	0.0753	0.2915	0.0668	0.2915	0.0592
0.3054	0.1504	0.3054	0.1235	0.3054	0.1097	0.3054	0.0985	0.3054	0.0894	0.3054	0.0758	0.3054	0.0633
0.3199	0.1504	0.3199	0.1235	0.3199	0.1097	0.3199	0.0985	0.3199	0.0894	0.3199	0.0801	0.3199	0.0706
0.3352	0.1504	0.3352	0.1235	0.3352	0.1097	0.3352	0.0985	0.3352	0.0931	0.3352	0.0857	0.3352	0.0762
0.3511	0.1504	0.3511	0.1289	0.3511	0.1172	0.3511	0.107	0.3511	0.0997	0.3511	0.0894	0.3511	0.0786
0.3678	0.168	0.3678	0.1438	0.3678	0.1303	0.3678	0.1186	0.3678	0.1121	0.3678	0.1017	0.3678	0.0898
0.3853	0.168	0.3853	0.1438	0.3853	0.1346	0.3853	0.1279	0.3853	0.1219	0.3853	0.1115	0.3853	0.0992
0.4037	0.194	0.4037	0.1598	0.4037	0.1426	0.4037	0.1306	0.4037	0.1259	0.4037	0.117	0.4037	0.1054
0.4229	0.2368	0.4229	0.1906	0.4229	0.1721	0.4229	0.1558	0.4229	0.1416	0.4229	0.1217	0.4229	0.1092
0.4431	0.3088	0.4431	0.2193	0.4431	0.1881	0.4431	0.1671	0.4431	0.1496	0.4431	0.1273	0.4431	0.1097
0.4642	0.3417	0.4642	0.2524	0.4642	0.2138	0.4642	0.1852	0.4642	0.1637	0.4642	0.1345	0.4642	0.1211
0.4863	0.3417	0.4863	0.256	0.4863	0.2208	0.4863	0.1928	0.4863	0.1701	0.4863	0.1409	0.4863	0.1323
0.5094	0.3522	0.5094	0.2656	0.5094	0.2325	0.5094	0.2054	0.5094	0.1831	0.5094	0.1497	0.5094	0.1391

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW037.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g)
~ Figure 37 ~ SLAB-WALL JOINT East-West Responses ~ Elevation 54 Ft. ~ Line 12.5 H

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
0.5337	0.4096	0.5337	0.2771	0.5337	0.2325	0.5337	0.2054	0.5337	0.1831	0.5337	0.1539	0.5337	0.1396
0.5591	0.4096	0.5591	0.2771	0.5591	0.2398	0.5591	0.2148	0.5591	0.1949	0.5591	0.1654	0.5591	0.1396
0.5857	0.4096	0.5857	0.2771	0.5857	0.2404	0.5857	0.2159	0.5857	0.1975	0.5857	0.1686	0.5857	0.1441
0.6136	0.4475	0.6136	0.2969	0.6136	0.2444	0.6136	0.2234	0.6136	0.2051	0.6136	0.1751	0.6136	0.1441
0.6428	0.478	0.6428	0.3547	0.6428	0.3006	0.6428	0.2612	0.6428	0.2347	0.6428	0.1988	0.6428	0.168
0.6734	0.478	0.6734	0.3547	0.6734	0.3006	0.6734	0.2612	0.6734	0.2413	0.6734	0.2165	0.6734	0.1872
0.7055	0.478	0.7055	0.3547	0.7055	0.3006	0.7055	0.2612	0.7055	0.2413	0.7055	0.2186	0.7055	0.1922
0.7391	0.478	0.7391	0.3547	0.7391	0.3006	0.7391	0.2692	0.7391	0.2463	0.7391	0.2186	0.7391	0.1922
0.7743	0.5518	0.7743	0.3958	0.7743	0.3332	0.7743	0.2918	0.7743	0.268	0.7743	0.2351	0.7743	0.2018
0.8111	0.5518	0.8111	0.3958	0.8111	0.3332	0.8111	0.3035	0.8111	0.2874	0.8111	0.2587	0.8111	0.2236
0.8497	0.5518	0.8497	0.3958	0.8497	0.3332	0.8497	0.3117	0.8497	0.2984	0.8497	0.2723	0.8497	0.2373
0.8902	0.5518	0.8902	0.3958	0.8902	0.3656	0.8902	0.3431	0.8902	0.3226	0.8902	0.2873	0.8902	0.2462
0.9326	0.8605	0.9326	0.5585	0.9326	0.4629	0.9326	0.4023	0.9326	0.3602	0.9326	0.3049	0.9326	0.2549
0.977	0.8605	0.977	0.5585	0.977	0.4629	0.977	0.4045	0.977	0.3644	0.977	0.3083	0.977	0.2637
1.0235	0.9315	1.0235	0.5965	1.0235	0.5261	1.0235	0.4814	1.0235	0.4436	1.0235	0.3837	1.0235	0.3277
1.0723	0.9315	1.0723	0.6685	1.0723	0.603	1.0723	0.5467	1.0723	0.4995	1.0723	0.4355	1.0723	0.3729
1.1233	1.3398	1.1233	0.8315	1.1233	0.6788	1.1233	0.5837	1.1233	0.5408	1.1233	0.4681	1.1233	0.3987
1.1768	1.3398	1.1768	0.8315	1.1768	0.6788	1.1768	0.5855	1.1768	0.5505	1.1768	0.4858	1.1768	0.4238
1.2328	1.3398	1.2328	0.8315	1.2328	0.7369	1.2328	0.6596	1.2328	0.5925	1.2328	0.5105	1.2328	0.452
1.2916	1.3398	1.2916	0.9002	1.2916	0.7926	1.2916	0.7024	1.2916	0.6263	1.2916	0.5455	1.2916	0.4806
1.353	1.3398	1.353	0.9485	1.353	0.7926	1.353	0.7024	1.353	0.6282	1.353	0.574	1.353	0.5058
1.4175	1.4626	1.4175	0.9485	1.4175	0.7926	1.4175	0.7024	1.4175	0.6579	1.4175	0.6026	1.4175	0.5321
1.485	1.4626	1.485	0.9485	1.485	0.7926	1.485	0.7282	1.485	0.6958	1.485	0.636	1.485	0.5624
1.5557	1.5113	1.5557	1.0297	1.5557	0.8797	1.5557	0.7754	1.5557	0.726	1.5557	0.6634	1.5557	0.5886
1.6298	1.8158	1.6298	1.1086	1.6298	0.9552	1.6298	0.8627	1.6298	0.7931	1.6298	0.6875	1.6298	0.6064
1.7074	1.8158	1.7074	1.1086	1.7074	0.9552	1.7074	0.8627	1.7074	0.7931	1.7074	0.7024	1.7074	0.6246
1.7887	1.8158	1.7887	1.1086	1.7887	0.9552	1.7887	0.8627	1.7887	0.7931	1.7887	0.7213	1.7887	0.6476
1.8738	1.8158	1.8738	1.1086	1.8738	0.9552	1.8738	0.8651	1.8738	0.8263	1.8738	0.7567	1.8738	0.6698
1.963	1.8158	1.963	1.1086	1.963	0.9552	1.963	0.8972	1.963	0.8525	1.963	0.7755	1.963	0.683
2.0565	1.7414	2.0565	1.0948	2.0565	0.9593	2.0565	0.9017	2.0565	0.8525	2.0565	0.7755	2.0565	0.683
2.1544	1.7414	2.1544	1.0948	2.1544	0.9593	2.1544	0.9017	2.1544	0.8525	2.1544	0.7755	2.1544	0.683
2.257	1.5091	2.257	1.0367	2.257	0.9593	2.257	0.9017	2.257	0.8525	2.257	0.7755	2.257	0.683
2.3645	1.5091	2.3645	1.0367	2.3645	0.9593	2.3645	0.9017	2.3645	0.8525	2.3645	0.7755	2.3645	0.683
2.4771	1.5091	2.4771	1.0367	2.4771	1.009	2.4771	0.9017	2.4771	0.852	2.4771	0.7697	2.4771	0.6811
2.595	1.5091	2.595	1.0367	2.595	1.009	2.595	0.9017	2.595	0.8387	2.595	0.7357	2.595	0.6811

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW037.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g)
~ Figure 37 ~ SLAB-WALL JOINT East-West Responses ~ Elevation 54 Ft. ~ Line 12.5 H

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
2.7186	1.5091	2.7186	1.0367	2.7186	1.009	2.7186	0.9017	2.7186	0.8387	2.7186	0.7357	2.7186	0.6811
2.848	1.5091	2.848	1.0367	2.848	1.009	2.848	0.9017	2.848	0.8387	2.848	0.7357	2.848	0.6811
2.9836	1.5091	2.9836	1.0367	2.9836	1.009	2.9836	0.9017	2.9836	0.8387	2.9836	0.7357	2.9836	0.6811
3.1257	1.5091	3.1257	1.0367	3.1257	0.9237	3.1257	0.9017	3.1257	0.8387	3.1257	0.7357	3.1257	0.6811
3.2745	1.5091	3.2745	1.0367	3.2745	0.9237	3.2745	0.9017	3.2745	0.8387	3.2745	0.7357	3.2745	0.6811
3.4305	1.5091	3.4305	1.0367	3.4305	0.9237	3.4305	0.9017	3.4305	0.8387	3.4305	0.7357	3.4305	0.6801
3.5938	1.6472	3.5938	1.0367	3.5938	0.9237	3.5938	0.9017	3.5938	0.8387	3.5938	0.7357	3.5938	0.6801
3.7649	1.6472	3.7649	1.1356	3.7649	0.9237	3.7649	0.9017	3.7649	0.8387	3.7649	0.7357	3.7649	0.6766
3.9442	1.6472	3.9442	1.1356	3.9442	0.9237	3.9442	0.906	3.9442	0.8387	3.9442	0.7357	3.9442	0.6759
4.132	1.6472	4.132	1.1356	4.132	0.9237	4.132	0.906	4.132	0.8387	4.132	0.7357	4.132	0.6712
4.3288	1.6472	4.3288	1.1356	4.3288	0.9237	4.3288	0.906	4.3288	0.8387	4.3288	0.7357	4.3288	0.6626
4.5349	1.6472	4.5349	1.1356	4.5349	0.9237	4.5349	0.906	4.5349	0.8387	4.5349	0.7357	4.5349	0.6525
4.7508	1.6472	4.7508	1.1048	4.7508	0.9237	4.7508	0.906	4.7508	0.8387	4.7508	0.7357	4.7508	0.6316
4.977	1.6472	4.977	0.9746	4.977	0.8757	4.977	0.829	4.977	0.7851	4.977	0.7083	4.977	0.6206
5.214	1.6472	5.214	0.9746	5.214	0.8463	5.214	0.785	5.214	0.7434	5.214	0.6732	5.214	0.5898
5.4623	1.7798	5.4623	0.9746	5.4623	0.8463	5.4623	0.785	5.4623	0.7434	5.4623	0.6732	5.4623	0.5898
5.7224	1.7798	5.7224	0.9746	5.7224	0.8463	5.7224	0.785	5.7224	0.7434	5.7224	0.6732	5.7224	0.5898
5.9948	1.7798	5.9948	0.9746	5.9948	0.8438	5.9948	0.785	5.9948	0.7434	5.9948	0.6732	5.9948	0.5898
6.2803	1.7798	6.2803	0.9746	6.2803	0.8438	6.2803	0.785	6.2803	0.7434	6.2803	0.6732	6.2803	0.5898
6.5793	1.7798	6.5793	0.9746	6.5793	0.8438	6.5793	0.7804	6.5793	0.7393	6.5793	0.6657	6.5793	0.5795
6.8926	1.7798	6.8926	0.963	6.8926	0.8429	6.8926	0.7674	6.8926	0.7128	6.8926	0.6345	6.8926	0.5677
7.2208	1.4914	7.2208	0.935	7.2208	0.7922	7.2208	0.7331	7.2208	0.6844	7.2208	0.6283	7.2208	0.5677
7.5646	1.168	7.5646	0.822	7.5646	0.7632	7.5646	0.7188	7.5646	0.6833	7.5646	0.6283	7.5646	0.5677
7.9248	1.0987	7.9248	0.8201	7.9248	0.7623	7.9248	0.7176	7.9248	0.6811	7.9248	0.6237	7.9248	0.5627
8.3022	1.0987	8.3022	0.7845	8.3022	0.7283	8.3022	0.6777	8.3022	0.6364	8.3022	0.5884	8.3022	0.5417
8.6975	0.8935	8.6975	0.7092	8.6975	0.6368	8.6975	0.6061	8.6975	0.5819	8.6975	0.5373	8.6975	0.5059
9.1116	0.8935	9.1116	0.7092	9.1116	0.6368	9.1116	0.5827	9.1116	0.5505	9.1116	0.5085	9.1116	0.4846
9.5455	0.8763	9.5455	0.7092	9.5455	0.6368	9.5455	0.5827	9.5455	0.5459	9.5455	0.4951	9.5455	0.4643
10	0.8763	10	0.7092	10	0.6368	10	0.5827	10	0.5459	10	0.4934	10	0.4429
10.4762	0.8603	10.4762	0.7092	10.4762	0.6368	10.4762	0.5774	10.4762	0.5297	10.4762	0.4688	10.4762	0.4271
10.975	0.791	10.975	0.6543	10.975	0.6067	10.975	0.5582	10.975	0.5137	10.975	0.4674	10.975	0.4271
11.4976	0.791	11.4976	0.6543	11.4976	0.6014	11.4976	0.5519	11.4976	0.5094	11.4976	0.4435	11.4976	0.4142
12.045	0.6677	12.045	0.5543	12.045	0.5086	12.045	0.4716	12.045	0.4394	12.045	0.4081	12.045	0.3915
12.6186	0.6325	12.6186	0.5145	12.6186	0.4727	12.6186	0.4409	12.6186	0.4251	12.6186	0.4004	12.6186	0.3774
13.2194	0.6325	13.2194	0.5025	13.2194	0.4639	13.2194	0.4269	13.2194	0.4021	13.2194	0.379	13.2194	0.3634

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW037.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g)
~ Figure 37 ~ SLAB-WALL JOINT East-West Responses ~ Elevation 54 Ft. ~ Line 12.5 H

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
13.8489	0.6152	13.8489	0.4815	13.8489	0.433	13.8489	0.3995	13.8489	0.3896	13.8489	0.3705	13.8489	0.3527
14.5083	0.5318	14.5083	0.4455	14.5083	0.4096	14.5083	0.381	14.5083	0.3726	14.5083	0.3575	14.5083	0.3484
15.1991	0.4787	15.1991	0.4141	15.1991	0.3936	15.1991	0.3795	15.1991	0.3697	15.1991	0.3575	15.1991	0.3484
15.9228	0.4787	15.9228	0.3815	15.9228	0.3644	15.9228	0.3609	15.9228	0.358	15.9228	0.3528	15.9228	0.3467
16.681	0.4787	16.681	0.3815	16.681	0.3644	16.681	0.3544	16.681	0.3483	16.681	0.3439	16.681	0.3416
17.4753	0.4307	17.4753	0.3815	17.4753	0.3644	17.4753	0.3544	17.4753	0.3483	17.4753	0.3418	17.4753	0.337
18.3074	0.4095	18.3074	0.3431	18.3074	0.3367	18.3074	0.3354	18.3074	0.3336	18.3074	0.3315	18.3074	0.3305
19.1791	0.4095	19.1791	0.3431	19.1791	0.3349	19.1791	0.3293	19.1791	0.3262	19.1791	0.3251	19.1791	0.325
20.0923	0.3708	20.0923	0.3431	20.0923	0.3349	20.0923	0.3293	20.0923	0.3262	20.0923	0.3243	20.0923	0.323
21.049	0.3708	21.049	0.3431	21.049	0.3349	21.049	0.3293	21.049	0.3262	21.049	0.3236	21.049	0.3215
22.0513	0.3708	22.0513	0.3431	22.0513	0.3349	22.0513	0.3293	22.0513	0.3262	22.0513	0.323	22.0513	0.3199
23.1013	0.3708	23.1013	0.3431	23.1013	0.3349	23.1013	0.3293	23.1013	0.3262	23.1013	0.323	23.1013	0.3199
24.2013	0.3708	24.2013	0.3431	24.2013	0.3349	24.2013	0.3293	24.2013	0.3255	24.2013	0.3206	24.2013	0.3186
25.3536	0.3358	25.3536	0.3197	25.3536	0.3192	25.3536	0.3187	25.3536	0.3181	25.3536	0.317	25.3536	0.3164
26.5609	0.3358	26.5609	0.3169	26.5609	0.3159	26.5609	0.3158	26.5609	0.3158	26.5609	0.3155	26.5609	0.3148
27.8256	0.3358	27.8256	0.3169	27.8256	0.3159	27.8256	0.3153	27.8256	0.3149	27.8256	0.3143	27.8256	0.3137
29.1505	0.3358	29.1505	0.3165	29.1505	0.3153	29.1505	0.3142	29.1505	0.3137	29.1505	0.3132	29.1505	0.313
30.5386	0.3312	30.5386	0.3165	30.5386	0.3153	30.5386	0.3142	30.5386	0.3133	30.5386	0.3131	30.5386	0.313
31.9927	0.3297	31.9927	0.3163	31.9927	0.3146	31.9927	0.3138	31.9927	0.3132	31.9927	0.3131	31.9927	0.313
33.516	0.3144	33.516	0.3134	33.516	0.3133	33.516	0.3132	33.516	0.3132	33.516	0.3131	33.516	0.313
35.1119	0.3135	35.1119	0.3134	35.1119	0.3133	35.1119	0.3132	35.1119	0.3132	35.1119	0.3131	35.1119	0.313
36.7838	0.3134	36.7838	0.3133	36.7838	0.3132	36.7838	0.3132	36.7838	0.3132	36.7838	0.3131	36.7838	0.313
38.5353	0.3132	38.5353	0.3132	38.5353	0.3131	38.5353	0.3131	38.5353	0.3131	38.5353	0.3131	38.5353	0.313
40.3702	0.3131	40.3702	0.3131	40.3702	0.3131	40.3702	0.313	40.3702	0.313	40.3702	0.313	40.3702	0.3129
42.2924	0.313	42.2924	0.3129	42.2924	0.3129	42.2924	0.3129	42.2924	0.3129	42.2924	0.3129	42.2924	0.3129
44.3062	0.3128	44.3062	0.3128	44.3062	0.3128	44.3062	0.3128	44.3062	0.3128	44.3062	0.3128	44.3062	0.3128
46.4159	0.3127	46.4159	0.3127	46.4159	0.3127	46.4159	0.3127	46.4159	0.3127	46.4159	0.3127	46.4159	0.3127
48.626	0.3126	48.626	0.3126	48.626	0.3126	48.626	0.3126	48.626	0.3126	48.626	0.3126	48.626	0.3126
50.9414	0.3125	50.9414	0.3125	50.9414	0.3125	50.9414	0.3125	50.9414	0.3125	50.9414	0.3125	50.9414	0.3125

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW038.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g)
~ Figure 38 ~ SLAB-WALL JOINT North-South Responses ~ Elevation 54 Ft. ~ Line 12.5 H

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
0.1098	0.0405	0.1098	0.0365	0.1098	0.0342	0.1098	0.0322	0.1098	0.0303	0.1098	0.0272	0.1098	0.0235
0.115	0.0405	0.115	0.0365	0.115	0.0342	0.115	0.0322	0.115	0.0303	0.115	0.0272	0.115	0.0259
0.1204	0.0405	0.1204	0.0365	0.1204	0.0342	0.1204	0.0322	0.1204	0.031	0.1204	0.0297	0.1204	0.028
0.1262	0.0405	0.1262	0.0365	0.1262	0.0352	0.1262	0.0342	0.1262	0.0334	0.1262	0.0318	0.1262	0.0297
0.1322	0.0405	0.1322	0.0382	0.1322	0.037	0.1322	0.0359	0.1322	0.0349	0.1322	0.0333	0.1322	0.0316
0.1385	0.0411	0.1385	0.0392	0.1385	0.0382	0.1385	0.0372	0.1385	0.0363	0.1385	0.0348	0.1385	0.0328
0.1451	0.0417	0.1451	0.0398	0.1451	0.0387	0.1451	0.0377	0.1451	0.0368	0.1451	0.0352	0.1451	0.0332
0.152	0.0439	0.152	0.0401	0.152	0.0387	0.152	0.0377	0.152	0.0368	0.152	0.0352	0.152	0.0332
0.1592	0.0462	0.1592	0.0416	0.1592	0.0396	0.1592	0.0377	0.1592	0.0368	0.1592	0.0352	0.1592	0.0332
0.1668	0.0584	0.1668	0.0506	0.1668	0.0463	0.1668	0.0426	0.1668	0.0395	0.1668	0.0352	0.1668	0.0332
0.1748	0.0645	0.1748	0.0566	0.1748	0.0522	0.1748	0.0484	0.1748	0.045	0.1748	0.0394	0.1748	0.0332
0.1831	0.0668	0.1831	0.0583	0.1831	0.0541	0.1831	0.0504	0.1831	0.0471	0.1831	0.0415	0.1831	0.0354
0.1918	0.0678	0.1918	0.0586	0.1918	0.0543	0.1918	0.0507	0.1918	0.0474	0.1918	0.0418	0.1918	0.038
0.2009	0.0697	0.2009	0.0596	0.2009	0.0543	0.2009	0.0514	0.2009	0.0487	0.2009	0.0438	0.2009	0.0411
0.2105	0.0722	0.2105	0.062	0.2105	0.0582	0.2105	0.0547	0.2105	0.0516	0.2105	0.0482	0.2105	0.0446
0.2205	0.0819	0.2205	0.0709	0.2205	0.0651	0.2205	0.06	0.2205	0.0574	0.2205	0.0531	0.2205	0.0475
0.231	0.0959	0.231	0.0792	0.231	0.0703	0.231	0.0665	0.231	0.063	0.231	0.0578	0.231	0.0525
0.242	0.0984	0.242	0.0845	0.242	0.0774	0.242	0.0721	0.242	0.0681	0.242	0.0618	0.242	0.0551
0.2535	0.1059	0.2535	0.0913	0.2535	0.0833	0.2535	0.0763	0.2535	0.0702	0.2535	0.0618	0.2535	0.0551
0.2656	0.1138	0.2656	0.0944	0.2656	0.084	0.2656	0.0763	0.2656	0.0702	0.2656	0.0618	0.2656	0.0551
0.2783	0.1138	0.2783	0.0944	0.2783	0.084	0.2783	0.0779	0.2783	0.074	0.2783	0.0677	0.2783	0.0611
0.2915	0.1138	0.2915	0.1008	0.2915	0.0946	0.2915	0.0892	0.2915	0.0843	0.2915	0.0764	0.2915	0.0677
0.3054	0.1179	0.3054	0.1056	0.3054	0.0987	0.3054	0.0926	0.3054	0.0872	0.3054	0.0785	0.3054	0.0706
0.3199	0.1179	0.3199	0.1056	0.3199	0.0987	0.3199	0.0926	0.3199	0.0894	0.3199	0.0844	0.3199	0.0786
0.3352	0.1179	0.3352	0.1098	0.3352	0.1056	0.3352	0.1017	0.3352	0.0982	0.3352	0.0921	0.3352	0.0848
0.3511	0.1654	0.3511	0.129	0.3511	0.1133	0.3511	0.1075	0.3511	0.1035	0.3511	0.0964	0.3511	0.088
0.3678	0.2415	0.3678	0.1832	0.3678	0.1565	0.3678	0.1364	0.3678	0.1213	0.3678	0.1006	0.3678	0.088
0.3853	0.2549	0.3853	0.187	0.3853	0.1595	0.3853	0.1387	0.3853	0.1269	0.3853	0.1092	0.3853	0.091
0.4037	0.2549	0.4037	0.187	0.4037	0.1595	0.4037	0.1387	0.4037	0.1279	0.4037	0.1163	0.4037	0.1034
0.4229	0.2549	0.4229	0.187	0.4229	0.1651	0.4229	0.1485	0.4229	0.1344	0.4229	0.1233	0.4229	0.1111
0.4431	0.3288	0.4431	0.2339	0.4431	0.2038	0.4431	0.1813	0.4431	0.1641	0.4431	0.1399	0.4431	0.1181
0.4642	0.3288	0.4642	0.2339	0.4642	0.2038	0.4642	0.1813	0.4642	0.1641	0.4642	0.1399	0.4642	0.1181
0.4863	0.3288	0.4863	0.2339	0.4863	0.2038	0.4863	0.1813	0.4863	0.1641	0.4863	0.1421	0.4863	0.1246
0.5094	0.3288	0.5094	0.2339	0.5094	0.2038	0.5094	0.1813	0.5094	0.1641	0.5094	0.1472	0.5094	0.1295

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW038.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g)
~ Figure 38 ~ SLAB-WALL JOINT North-South Responses ~ Elevation 54 Ft. ~ Line 12.5 H

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
0.5337	0.3356	0.5337	0.2387	0.5337	0.2081	0.5337	0.19	0.5337	0.1796	0.5337	0.1614	0.5337	0.1401
0.5591	0.3997	0.5591	0.2762	0.5591	0.244	0.5591	0.2179	0.5591	0.1971	0.5591	0.1724	0.5591	0.1556
0.5857	0.3997	0.5857	0.2863	0.5857	0.2573	0.5857	0.2332	0.5857	0.2128	0.5857	0.1853	0.5857	0.1724
0.6136	0.3997	0.6136	0.2863	0.6136	0.2573	0.6136	0.2332	0.6136	0.2128	0.6136	0.1998	0.6136	0.1858
0.6428	0.3997	0.6428	0.2863	0.6428	0.2573	0.6428	0.2332	0.6428	0.2219	0.6428	0.2115	0.6428	0.1969
0.6734	0.411	0.6734	0.2863	0.6734	0.2574	0.6734	0.2449	0.6734	0.2378	0.6734	0.2244	0.6734	0.2072
0.7055	0.411	0.7055	0.301	0.7055	0.2757	0.7055	0.2638	0.7055	0.2534	0.7055	0.2357	0.7055	0.2156
0.7391	0.6367	0.7391	0.4169	0.7391	0.3404	0.7391	0.2927	0.7391	0.2746	0.7391	0.2445	0.7391	0.217
0.7743	0.6367	0.7743	0.4169	0.7743	0.3404	0.7743	0.3038	0.7743	0.2858	0.7743	0.2555	0.7743	0.2218
0.8111	0.6596	0.8111	0.4428	0.8111	0.386	0.8111	0.3422	0.8111	0.3081	0.8111	0.2598	0.8111	0.2218
0.8497	0.6596	0.8497	0.4428	0.8497	0.4051	0.8497	0.3738	0.8497	0.347	0.8497	0.3034	0.8497	0.256
0.8902	0.6828	0.8902	0.4451	0.8902	0.4051	0.8902	0.3738	0.8902	0.3511	0.8902	0.3194	0.8902	0.2761
0.9326	0.737	0.9326	0.5191	0.9326	0.4567	0.9326	0.411	0.9326	0.3766	0.9326	0.328	0.9326	0.2821
0.977	0.9914	0.977	0.6358	0.977	0.525	0.977	0.4553	0.977	0.408	0.977	0.3484	0.977	0.2994
1.0235	0.9914	1.0235	0.6358	1.0235	0.5662	1.0235	0.5139	1.0235	0.4702	1.0235	0.4041	1.0235	0.3384
1.0723	0.9914	1.0723	0.6668	1.0723	0.5976	1.0723	0.5399	1.0723	0.4914	1.0723	0.4166	1.0723	0.3541
1.1233	1.2606	1.1233	0.8561	1.1233	0.7168	1.1233	0.6174	1.1233	0.5433	1.1233	0.4431	1.1233	0.3633
1.1768	1.2606	1.1768	0.8561	1.1768	0.7168	1.1768	0.6174	1.1768	0.5433	1.1768	0.4467	1.1768	0.3729
1.2328	1.2606	1.2328	0.935	1.2328	0.8202	1.2328	0.7293	1.2328	0.6556	1.2328	0.5433	1.2328	0.4321
1.2916	1.2606	1.2916	1.0351	1.2916	0.8991	1.2916	0.793	1.2916	0.708	1.2916	0.5814	1.2916	0.4586
1.353	1.3319	1.353	1.0351	1.353	0.8991	1.353	0.793	1.353	0.708	1.353	0.5814	1.353	0.4631
1.4175	1.6092	1.4175	1.1325	1.4175	0.9683	1.4175	0.8621	1.4175	0.7817	1.4175	0.6627	1.4175	0.5486
1.485	1.6092	1.485	1.1325	1.485	0.9683	1.485	0.885	1.485	0.8264	1.485	0.7199	1.485	0.6006
1.5557	1.8872	1.5557	1.1818	1.5557	1.0008	1.5557	0.892	1.5557	0.8264	1.5557	0.7265	1.5557	0.6185
1.6298	1.9322	1.6298	1.3084	1.6298	1.1683	1.6298	1.0534	1.6298	0.9565	1.6298	0.8016	1.6298	0.6401
1.7074	1.9702	1.7074	1.3601	1.7074	1.2627	1.7074	1.1415	1.7074	1.0371	1.7074	0.8692	1.7074	0.7006
1.7887	2.4552	1.7887	1.4456	1.7887	1.2629	1.7887	1.1415	1.7887	1.0371	1.7887	0.8773	1.7887	0.7486
1.8738	2.4552	1.8738	1.4456	1.8738	1.2629	1.8738	1.1415	1.8738	1.0371	1.8738	0.9259	1.8738	0.788
1.963	2.4552	1.963	1.4456	1.963	1.2629	1.963	1.1498	1.963	1.0818	1.963	0.9626	1.963	0.8157
2.0565	2.4552	2.0565	1.4456	2.0565	1.2629	2.0565	1.1701	2.0565	1.1049	2.0565	0.9829	2.0565	0.8288
2.1544	2.4552	2.1544	1.4456	2.1544	1.3316	2.1544	1.2297	2.1544	1.1411	2.1544	0.9932	2.1544	0.8645
2.257	2.2367	2.257	1.4456	2.257	1.3316	2.257	1.2297	2.257	1.1534	2.257	1.0344	2.257	0.8939
2.3645	2.2367	2.3645	1.4456	2.3645	1.3316	2.3645	1.2422	2.3645	1.1724	2.3645	1.0471	2.3645	0.898
2.4771	2.2367	2.4771	1.6143	2.4771	1.3804	2.4771	1.2551	2.4771	1.1724	2.4771	1.0471	2.4771	0.898
2.595	2.138	2.595	1.6143	2.595	1.3804	2.595	1.2551	2.595	1.1724	2.595	1.0471	2.595	0.898

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW038.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g) ~ Figure 38 ~ SLAB-WALL JOINT North-South Responses ~ Elevation 54 Ft. ~ Line 12.5 H

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
2.7186	2.138	2.7186	1.6143	2.7186	1.3804	2.7186	1.2551	2.7186	1.1724	2.7186	1.0471	2.7186	0.898
2.848	2.138	2.848	1.6143	2.848	1.3804	2.848	1.2551	2.848	1.1724	2.848	1.0471	2.848	0.898
2.9836	2.138	2.9836	1.6143	2.9836	1.3804	2.9836	1.2551	2.9836	1.1568	2.9836	1.0114	2.9836	0.8645
3.1257	2.138	3.1257	1.3773	3.1257	1.0982	3.1257	1.0035	3.1257	0.9573	3.1257	0.8829	3.1257	0.7931
3.2745	2.138	3.2745	1.2119	3.2745	1.0686	3.2745	0.9673	3.2745	0.886	3.2745	0.778	3.2745	0.7168
3.4305	1.5368	3.4305	1.0471	3.4305	0.9495	3.4305	0.8824	3.4305	0.8379	3.4305	0.7547	3.4305	0.6598
3.5938	1.5368	3.5938	1.0165	3.5938	0.898	3.5938	0.8299	3.5938	0.7946	3.5938	0.7273	3.5938	0.6376
3.7649	1.5368	3.7649	1.0165	3.7649	0.898	3.7649	0.8299	3.7649	0.7769	3.7649	0.6958	3.7649	0.6089
3.9442	1.5368	3.9442	1.0165	3.9442	0.8472	3.9442	0.7941	3.9442	0.7477	3.9442	0.6723	3.9442	0.5955
4.132	1.5368	4.132	1.0165	4.132	0.845	4.132	0.7941	4.132	0.7477	4.132	0.6723	4.132	0.5955
4.3288	1.5368	4.3288	0.9973	4.3288	0.8194	4.3288	0.7522	4.3288	0.7017	4.3288	0.6303	4.3288	0.5622
4.5349	1.5368	4.5349	0.8745	4.5349	0.7347	4.5349	0.6652	4.5349	0.6197	4.5349	0.5656	4.5349	0.5097
4.7508	1.518	4.7508	0.8745	4.7508	0.7183	4.7508	0.6169	4.7508	0.5587	4.7508	0.4909	4.7508	0.4618
4.977	1.518	4.977	0.8614	4.977	0.7025	4.977	0.6052	4.977	0.5367	4.977	0.4572	4.977	0.4284
5.214	1.3404	5.214	0.7497	5.214	0.6443	5.214	0.5421	5.214	0.5109	5.214	0.4398	5.214	0.4021
5.4623	1.3404	5.4623	0.7497	5.4623	0.6443	5.4623	0.5254	5.4623	0.5109	5.4623	0.438	5.4623	0.3783
5.7224	1.3404	5.7224	0.7497	5.7224	0.6443	5.7224	0.5254	5.7224	0.5109	5.7224	0.438	5.7224	0.3681
5.9948	1.3404	5.9948	0.7497	5.9948	0.6443	5.9948	0.5254	5.9948	0.5109	5.9948	0.438	5.9948	0.3681
6.2803	1.3404	6.2803	0.7497	6.2803	0.6443	6.2803	0.5254	6.2803	0.5109	6.2803	0.438	6.2803	0.3681
6.5793	1.3404	6.5793	0.7497	6.5793	0.6443	6.5793	0.5254	6.5793	0.5109	6.5793	0.438	6.5793	0.3681
6.8926	1.3404	6.8926	0.7497	6.8926	0.6443	6.8926	0.5254	6.8926	0.5109	6.8926	0.438	6.8926	0.3681
7.2208	1.274	7.2208	0.7497	7.2208	0.6443	7.2208	0.5254	7.2208	0.5109	7.2208	0.438	7.2208	0.3681
7.5646	1.274	7.5646	0.7455	7.5646	0.6309	7.5646	0.5254	7.5646	0.5092	7.5646	0.438	7.5646	0.3681
7.9248	1.274	7.9248	0.6003	7.9248	0.5494	7.9248	0.5064	7.9248	0.471	7.9248	0.4168	7.9248	0.3609
8.3022	1.274	8.3022	0.5659	8.3022	0.4849	8.3022	0.454	8.3022	0.4288	8.3022	0.394	8.3022	0.3594
8.6975	1.0027	8.6975	0.521	8.6975	0.4849	8.6975	0.454	8.6975	0.4288	8.6975	0.3913	8.6975	0.3536
9.1116	1.0027	9.1116	0.4701	9.1116	0.4386	9.1116	0.4105	9.1116	0.3865	9.1116	0.3654	9.1116	0.3376
9.5455	1.0027	9.5455	0.4494	9.5455	0.4069	9.5455	0.3794	9.5455	0.3652	9.5455	0.3418	9.5455	0.3167
10	0.6463	10	0.4494	10	0.4069	10	0.3794	10	0.3585	10	0.3293	10	0.3015
10.4762	0.6411	10.4762	0.4371	10.4762	0.3959	10.4762	0.3648	10.4762	0.347	10.4762	0.3169	10.4762	0.2936
10.975	0.6411	10.975	0.4085	10.975	0.3668	10.975	0.3387	10.975	0.3179	10.975	0.2923	10.975	0.2891
11.4976	0.6411	11.4976	0.3647	11.4976	0.3304	11.4976	0.3133	11.4976	0.3024	11.4976	0.2893	11.4976	0.2857
12.045	0.6411	12.045	0.3647	12.045	0.3304	12.045	0.3133	12.045	0.3024	12.045	0.2893	12.045	0.2839
12.6186	0.6411	12.6186	0.3647	12.6186	0.3304	12.6186	0.3133	12.6186	0.3024	12.6186	0.2893	12.6186	0.2831
13.2194	0.6411	13.2194	0.3647	13.2194	0.3304	13.2194	0.3133	13.2194	0.3024	13.2194	0.2893	13.2194	0.2831

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW038.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g)
~ Figure 38 ~ SLAB-WALL JOINT North-South Responses ~ Elevation 54 Ft. ~ Line 12.5 H

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
13.8489	0.6411	13.8489	0.3647	13.8489	0.3304	13.8489	0.3133	13.8489	0.3024	13.8489	0.2893	13.8489	0.2831
14.5083	0.6411	14.5083	0.3647	14.5083	0.3304	14.5083	0.3133	14.5083	0.3024	14.5083	0.2893	14.5083	0.2831
15.1991	0.6411	15.1991	0.3647	15.1991	0.3304	15.1991	0.3133	15.1991	0.3024	15.1991	0.2893	15.1991	0.2831
15.9228	0.6411	15.9228	0.3647	15.9228	0.3304	15.9228	0.3133	15.9228	0.3024	15.9228	0.2893	15.9228	0.2831
16.681	0.6411	16.681	0.3647	16.681	0.3304	16.681	0.3133	16.681	0.3024	16.681	0.2893	16.681	0.2831
17.4753	0.6411	17.4753	0.3647	17.4753	0.3304	17.4753	0.3133	17.4753	0.3024	17.4753	0.2893	17.4753	0.2831
18.3074	0.4714	18.3074	0.3284	18.3074	0.3152	18.3074	0.3052	18.3074	0.298	18.3074	0.2893	18.3074	0.2831
19.1791	0.4714	19.1791	0.3088	19.1791	0.2936	19.1791	0.2872	19.1791	0.2851	19.1791	0.2842	19.1791	0.2825
20.0923	0.4714	20.0923	0.3088	20.0923	0.2886	20.0923	0.2865	20.0923	0.2851	20.0923	0.2833	20.0923	0.2814
21.049	0.3824	21.049	0.2877	21.049	0.2842	21.049	0.2843	21.049	0.2836	21.049	0.2819	21.049	0.2801
22.0513	0.3824	22.0513	0.2873	22.0513	0.2834	22.0513	0.2816	22.0513	0.2806	22.0513	0.2795	22.0513	0.2783
23.1013	0.2973	23.1013	0.2832	23.1013	0.2814	23.1013	0.2802	23.1013	0.2793	23.1013	0.2779	23.1013	0.2765
24.2013	0.2947	24.2013	0.2805	24.2013	0.2788	24.2013	0.2776	24.2013	0.2768	24.2013	0.2763	24.2013	0.2756
25.3536	0.288	25.3536	0.2805	25.3536	0.2788	25.3536	0.2776	25.3536	0.2768	25.3536	0.2757	25.3536	0.2749
26.5609	0.288	26.5609	0.2805	26.5609	0.2788	26.5609	0.2776	26.5609	0.2768	26.5609	0.2757	26.5609	0.2747
27.8256	0.2867	27.8256	0.28	27.8256	0.2782	27.8256	0.2771	27.8256	0.2762	27.8256	0.2751	27.8256	0.2741
29.1505	0.2773	29.1505	0.2753	29.1505	0.2749	29.1505	0.2745	29.1505	0.2742	29.1505	0.2738	29.1505	0.2732
30.5386	0.2773	30.5386	0.2727	30.5386	0.2726	30.5386	0.2725	30.5386	0.2724	30.5386	0.2723	30.5386	0.2721
31.9927	0.2707	31.9927	0.271	31.9927	0.271	31.9927	0.2711	31.9927	0.2711	31.9927	0.2712	31.9927	0.2712
33.516	0.2707	33.516	0.2707	33.516	0.2706	33.516	0.2706	33.516	0.2706	33.516	0.2706	33.516	0.2706
35.1119	0.27	35.1119	0.27	35.1119	0.27	35.1119	0.2701	35.1119	0.2701	35.1119	0.2701	35.1119	0.2701
36.7838	0.2695	36.7838	0.2696	36.7838	0.2696	36.7838	0.2696	36.7838	0.2697	36.7838	0.2697	36.7838	0.2697
38.5353	0.2693	38.5353	0.2693	38.5353	0.2693	38.5353	0.2693	38.5353	0.2693	38.5353	0.2693	38.5353	0.2693
40.3702	0.269	40.3702	0.269	40.3702	0.269	40.3702	0.269	40.3702	0.269	40.3702	0.269	40.3702	0.269
42.2924	0.2687	42.2924	0.2687	42.2924	0.2687	42.2924	0.2687	42.2924	0.2687	42.2924	0.2687	42.2924	0.2688
44.3062	0.2685	44.3062	0.2685	44.3062	0.2685	44.3062	0.2685	44.3062	0.2685	44.3062	0.2685	44.3062	0.2685
46.4159	0.2683	46.4159	0.2683	46.4159	0.2683	46.4159	0.2683	46.4159	0.2683	46.4159	0.2683	46.4159	0.2683
48.626	0.2681	48.626	0.2681	48.626	0.2681	48.626	0.2681	48.626	0.2681	48.626	0.2681	48.626	0.2681
50.9414	0.2679	50.9414	0.2679	50.9414	0.2679	50.9414	0.2679	50.9414	0.2679	50.9414	0.2679	50.9414	0.2679

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW114.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g)
~ Figure 114 ~ SLAB ONLY Vertical Responses ~ Elevation 56 ft. ~ EL56_C-E-9-12

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
0.1098	0.0291	0.1098	0.026	0.1098	0.0244	0.1098	0.0229	0.1098	0.022	0.1098	0.0213	0.1098	0.0204
0.115	0.0309	0.115	0.026	0.115	0.0244	0.115	0.0233	0.115	0.0229	0.115	0.0221	0.115	0.0211
0.1204	0.0313	0.1204	0.0263	0.1204	0.0245	0.1204	0.024	0.1204	0.0236	0.1204	0.0227	0.1204	0.0217
0.1262	0.0313	0.1262	0.027	0.1262	0.0257	0.1262	0.0245	0.1262	0.024	0.1262	0.0232	0.1262	0.0221
0.1322	0.0313	0.1322	0.0271	0.1322	0.0258	0.1322	0.0247	0.1322	0.0243	0.1322	0.0234	0.1322	0.0224
0.1385	0.0313	0.1385	0.0277	0.1385	0.0265	0.1385	0.0255	0.1385	0.0245	0.1385	0.0234	0.1385	0.0224
0.1451	0.0316	0.1451	0.0295	0.1451	0.0282	0.1451	0.027	0.1451	0.0259	0.1451	0.0239	0.1451	0.0224
0.152	0.032	0.152	0.0298	0.152	0.0285	0.152	0.0273	0.152	0.0261	0.152	0.024	0.152	0.0224
0.1592	0.033	0.1592	0.0311	0.1592	0.0299	0.1592	0.0288	0.1592	0.0278	0.1592	0.0261	0.1592	0.0242
0.1668	0.0367	0.1668	0.0323	0.1668	0.0312	0.1668	0.0302	0.1668	0.0292	0.1668	0.0277	0.1668	0.0257
0.1748	0.0507	0.1748	0.0427	0.1748	0.0385	0.1748	0.035	0.1748	0.0321	0.1748	0.0284	0.1748	0.0264
0.1831	0.0586	0.1831	0.0492	0.1831	0.0442	0.1831	0.0399	0.1831	0.0362	0.1831	0.0306	0.1831	0.0266
0.1918	0.0586	0.1918	0.0492	0.1918	0.0442	0.1918	0.0399	0.1918	0.0362	0.1918	0.0306	0.1918	0.0268
0.2009	0.0586	0.2009	0.0492	0.2009	0.0442	0.2009	0.0399	0.2009	0.0362	0.2009	0.0324	0.2009	0.0296
0.2105	0.0586	0.2105	0.0492	0.2105	0.0442	0.2105	0.0399	0.2105	0.0384	0.2105	0.0358	0.2105	0.0324
0.2205	0.0586	0.2205	0.0492	0.2205	0.0453	0.2205	0.0426	0.2205	0.0407	0.2205	0.0377	0.2205	0.0338
0.231	0.0586	0.231	0.0492	0.231	0.0457	0.231	0.0438	0.231	0.0419	0.231	0.0388	0.231	0.0354
0.242	0.0586	0.242	0.0509	0.242	0.0486	0.242	0.0465	0.242	0.0445	0.242	0.0411	0.242	0.0369
0.2535	0.0648	0.2535	0.0573	0.2535	0.0529	0.2535	0.0489	0.2535	0.0454	0.2535	0.0411	0.2535	0.0371
0.2656	0.0731	0.2656	0.0586	0.2656	0.0535	0.2656	0.049	0.2656	0.0454	0.2656	0.0424	0.2656	0.0402
0.2783	0.0817	0.2783	0.0599	0.2783	0.0535	0.2783	0.05	0.2783	0.0485	0.2783	0.0458	0.2783	0.0426
0.2915	0.0817	0.2915	0.0618	0.2915	0.058	0.2915	0.0547	0.2915	0.0516	0.2915	0.0479	0.2915	0.0437
0.3054	0.0817	0.3054	0.0663	0.3054	0.0622	0.3054	0.0584	0.3054	0.0549	0.3054	0.0489	0.3054	0.0448
0.3199	0.0817	0.3199	0.0702	0.3199	0.0659	0.3199	0.0622	0.3199	0.0589	0.3199	0.0532	0.3199	0.047
0.3352	0.0872	0.3352	0.0767	0.3352	0.0707	0.3352	0.066	0.3352	0.0626	0.3352	0.0568	0.3352	0.0498
0.3511	0.0906	0.3511	0.0807	0.3511	0.0749	0.3511	0.0699	0.3511	0.0653	0.3511	0.0578	0.3511	0.0501
0.3678	0.1215	0.3678	0.095	0.3678	0.0822	0.3678	0.072	0.3678	0.0653	0.3678	0.0578	0.3678	0.0501
0.3853	0.136	0.3853	0.1057	0.3853	0.0918	0.3853	0.0807	0.3853	0.0718	0.3853	0.0586	0.3853	0.0506
0.4037	0.136	0.4037	0.1057	0.4037	0.0918	0.4037	0.0821	0.4037	0.0762	0.4037	0.0664	0.4037	0.0571
0.4229	0.136	0.4229	0.1057	0.4229	0.0918	0.4229	0.085	0.4229	0.0799	0.4229	0.0709	0.4229	0.0612
0.4431	0.136	0.4431	0.1057	0.4431	0.0934	0.4431	0.0886	0.4431	0.084	0.4431	0.0758	0.4431	0.0653
0.4642	0.1373	0.4642	0.1057	0.4642	0.0974	0.4642	0.0914	0.4642	0.0859	0.4642	0.0763	0.4642	0.067
0.4863	0.1478	0.4863	0.1237	0.4863	0.1107	0.4863	0.0996	0.4863	0.0902	0.4863	0.0823	0.4863	0.073
0.5094	0.1813	0.5094	0.1382	0.5094	0.1216	0.5094	0.1082	0.5094	0.0975	0.5094	0.0865	0.5094	0.075

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW114.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g) ~ Figure 114 ~ SLAB ONLY Vertical Responses ~ Elevation 56 ft. ~ EL56_C-E-9-12

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
0.5337	0.2215	0.5337	0.1604	0.5337	0.1342	0.5337	0.1149	0.5337	0.1022	0.5337	0.0865	0.5337	0.075
0.5591	0.2215	0.5591	0.1604	0.5591	0.1342	0.5591	0.1149	0.5591	0.1022	0.5591	0.0882	0.5591	0.075
0.5857	0.2215	0.5857	0.1604	0.5857	0.1342	0.5857	0.1149	0.5857	0.1022	0.5857	0.0937	0.5857	0.082
0.6136	0.2215	0.6136	0.1604	0.6136	0.1342	0.6136	0.1176	0.6136	0.1109	0.6136	0.1	0.6136	0.0872
0.6428	0.2258	0.6428	0.1621	0.6428	0.1356	0.6428	0.1177	0.6428	0.1129	0.6428	0.1028	0.6428	0.0895
0.6734	0.2258	0.6734	0.1621	0.6734	0.1383	0.6734	0.1286	0.6734	0.1207	0.6734	0.108	0.6734	0.0932
0.7055	0.2258	0.7055	0.1621	0.7055	0.1383	0.7055	0.1286	0.7055	0.1207	0.7055	0.109	0.7055	0.0946
0.7391	0.2258	0.7391	0.1621	0.7391	0.1409	0.7391	0.1325	0.7391	0.1242	0.7391	0.1095	0.7391	0.0946
0.7743	0.3171	0.7743	0.2132	0.7743	0.1805	0.7743	0.1582	0.7743	0.1421	0.7743	0.1212	0.7743	0.1034
0.8111	0.3171	0.8111	0.2132	0.8111	0.1805	0.8111	0.1582	0.8111	0.1421	0.8111	0.1212	0.8111	0.1063
0.8497	0.3171	0.8497	0.2132	0.8497	0.1805	0.8497	0.1653	0.8497	0.1529	0.8497	0.1331	0.8497	0.1125
0.8902	0.3171	0.8902	0.2132	0.8902	0.1863	0.8902	0.1706	0.8902	0.1575	0.8902	0.137	0.8902	0.117
0.9326	0.4856	0.9326	0.2988	0.9326	0.2458	0.9326	0.2147	0.9326	0.1923	0.9326	0.1629	0.9326	0.1372
0.977	0.4856	0.977	0.2988	0.977	0.2458	0.977	0.2147	0.977	0.1923	0.977	0.1712	0.977	0.1498
1.0235	0.4856	1.0235	0.2988	1.0235	0.2458	1.0235	0.2147	1.0235	0.1923	1.0235	0.1778	1.0235	0.1585
1.0723	0.4856	1.0723	0.2988	1.0723	0.2567	1.0723	0.2357	1.0723	0.2186	1.0723	0.1927	1.0723	0.1661
1.1233	0.571	1.1233	0.3365	1.1233	0.2645	1.1233	0.2357	1.1233	0.2186	1.1233	0.1927	1.1233	0.1661
1.1768	0.571	1.1768	0.3761	1.1768	0.3118	1.1768	0.2752	1.1768	0.2461	1.1768	0.2094	1.1768	0.1827
1.2328	0.571	1.2328	0.3802	1.2328	0.3434	1.2328	0.3123	1.2328	0.287	1.2328	0.2477	1.2328	0.2092
1.2916	0.571	1.2916	0.4124	1.2916	0.3638	1.2916	0.324	1.2916	0.2966	1.2916	0.2555	1.2916	0.2155
1.353	0.6146	1.353	0.4124	1.353	0.3638	1.353	0.324	1.353	0.3054	1.353	0.2746	1.353	0.2387
1.4175	0.6146	1.4175	0.4124	1.4175	0.3638	1.4175	0.3436	1.4175	0.3262	1.4175	0.2952	1.4175	0.259
1.485	0.6146	1.485	0.4377	1.485	0.4023	1.485	0.3763	1.485	0.3523	1.485	0.3122	1.485	0.2688
1.5557	0.6146	1.5557	0.4628	1.5557	0.4325	1.5557	0.406	1.5557	0.3819	1.5557	0.3421	1.5557	0.2937
1.6298	0.6344	1.6298	0.4805	1.6298	0.4418	1.6298	0.4164	1.6298	0.3937	1.6298	0.3554	1.6298	0.3103
1.7074	0.7807	1.7074	0.6115	1.7074	0.5414	1.7074	0.4855	1.7074	0.4393	1.7074	0.3723	1.7074	0.3174
1.7887	0.8828	1.7887	0.7257	1.7887	0.6496	1.7887	0.585	1.7887	0.5302	1.7887	0.452	1.7887	0.3759
1.8738	0.9335	1.8738	0.7297	1.8738	0.6518	1.8738	0.5887	1.8738	0.5371	1.8738	0.4575	1.8738	0.418
1.963	1.0248	1.963	0.7297	1.963	0.6518	1.963	0.5887	1.963	0.5371	1.963	0.4575	1.963	0.4401
2.0565	1.0248	2.0565	0.7297	2.0565	0.6518	2.0565	0.5945	2.0565	0.5478	2.0565	0.4696	2.0565	0.4401
2.1544	1.0248	2.1544	0.7864	2.1544	0.7093	2.1544	0.6425	2.1544	0.5884	2.1544	0.5086	2.1544	0.4401
2.257	1.0248	2.257	0.788	2.257	0.7266	2.257	0.6685	2.257	0.6147	2.257	0.5258	2.257	0.4416
2.3645	1.8203	2.3645	0.9657	2.3645	0.7731	2.3645	0.6955	2.3645	0.6344	2.3645	0.5474	2.3645	0.4561
2.4771	2.0792	2.4771	1.093	2.4771	0.8239	2.4771	0.7035	2.4771	0.6626	2.4771	0.5541	2.4771	0.4612
2.595	2.1716	2.595	1.093	2.595	0.8239	2.595	0.7035	2.595	0.6934	2.595	0.5552	2.595	0.4649

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
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~ Figure 114 ~ SLAB ONLY Vertical Responses ~ Elevation 56 ft. ~ EL56_C-E-9-12

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
2.7186	2.1716	2.7186	1.093	2.7186	0.8239	2.7186	0.7035	2.7186	0.6934	2.7186	0.5552	2.7186	0.4649
2.848	2.1716	2.848	1.093	2.848	0.8239	2.848	0.7035	2.848	0.6934	2.848	0.5552	2.848	0.4649
2.9836	2.1716	2.9836	1.093	2.9836	0.8239	2.9836	0.7035	2.9836	0.6934	2.9836	0.5552	2.9836	0.4649
3.1257	2.1716	3.1257	1.093	3.1257	0.8239	3.1257	0.7035	3.1257	0.6934	3.1257	0.5552	3.1257	0.4649
3.2745	1.4998	3.2745	0.9545	3.2745	0.8037	3.2745	0.6961	3.2745	0.6196	3.2745	0.5335	3.2745	0.458
3.4305	0.9809	3.4305	0.6884	3.4305	0.6145	3.4305	0.5843	3.4305	0.558	3.4305	0.5075	3.4305	0.4416
3.5938	0.9809	3.5938	0.6884	3.5938	0.6145	3.5938	0.5735	3.5938	0.5378	3.5938	0.48	3.5938	0.4174
3.7649	0.9809	3.7649	0.6884	3.7649	0.6145	3.7649	0.5503	3.7649	0.5077	3.7649	0.4448	3.7649	0.3971
3.9442	0.9809	3.9442	0.6884	3.9442	0.6145	3.9442	0.5503	3.9442	0.5077	3.9442	0.4448	3.9442	0.3971
4.132	0.9809	4.132	0.6884	4.132	0.6145	4.132	0.5503	4.132	0.5077	4.132	0.4448	4.132	0.3971
4.3288	0.9809	4.3288	0.6884	4.3288	0.6145	4.3288	0.5503	4.3288	0.5077	4.3288	0.4448	4.3288	0.3971
4.5349	0.9809	4.5349	0.6884	4.5349	0.6145	4.5349	0.5503	4.5349	0.5077	4.5349	0.4448	4.5349	0.3971
4.7508	0.9809	4.7508	0.6884	4.7508	0.6145	4.7508	0.5503	4.7508	0.5077	4.7508	0.4448	4.7508	0.3971
4.977	0.9809	4.977	0.6884	4.977	0.6145	4.977	0.5503	4.977	0.5077	4.977	0.4448	4.977	0.3971
5.214	0.9809	5.214	0.6884	5.214	0.6145	5.214	0.5503	5.214	0.5077	5.214	0.4448	5.214	0.3971
5.4623	1.1044	5.4623	0.6884	5.4623	0.6145	5.4623	0.5503	5.4623	0.5077	5.4623	0.4448	5.4623	0.3971
5.7224	1.1044	5.7224	0.7283	5.7224	0.622	5.7224	0.5503	5.7224	0.5077	5.7224	0.4448	5.7224	0.3971
5.9948	1.1044	5.9948	0.7283	5.9948	0.622	5.9948	0.5503	5.9948	0.5077	5.9948	0.4448	5.9948	0.3998
6.2803	1.1044	6.2803	0.7283	6.2803	0.622	6.2803	0.5503	6.2803	0.5077	6.2803	0.4448	6.2803	0.4016
6.5793	1.1044	6.5793	0.7283	6.5793	0.622	6.5793	0.5503	6.5793	0.5077	6.5793	0.4448	6.5793	0.4016
6.8926	1.1044	6.8926	0.7283	6.8926	0.622	6.8926	0.5503	6.8926	0.5077	6.8926	0.4448	6.8926	0.4016
7.2208	1.1044	7.2208	0.7283	7.2208	0.622	7.2208	0.5503	7.2208	0.5077	7.2208	0.4448	7.2208	0.4016
7.5646	1.1044	7.5646	0.7283	7.5646	0.622	7.5646	0.5503	7.5646	0.5077	7.5646	0.4448	7.5646	0.4016
7.9248	1.1044	7.9248	0.7283	7.9248	0.622	7.9248	0.5503	7.9248	0.5077	7.9248	0.4448	7.9248	0.4016
8.3022	1.1044	8.3022	0.7283	8.3022	0.622	8.3022	0.5503	8.3022	0.5077	8.3022	0.4448	8.3022	0.4016
8.6975	1.1044	8.6975	0.7283	8.6975	0.622	8.6975	0.5503	8.6975	0.5077	8.6975	0.4448	8.6975	0.4016
9.1116	1.1044	9.1116	0.7283	9.1116	0.622	9.1116	0.5503	9.1116	0.5077	9.1116	0.4455	9.1116	0.4016
9.5455	1.1044	9.5455	0.7283	9.5455	0.6496	9.5455	0.5959	9.5455	0.5516	9.5455	0.4806	9.5455	0.4077
10	1.1044	10	0.7283	10	0.6753	10	0.6293	10	0.5867	10	0.5157	10	0.4392
10.4762	1.204	10.4762	0.7487	10.4762	0.6753	10.4762	0.6293	10.4762	0.5867	10.4762	0.5157	10.4762	0.4392
10.975	1.204	10.975	0.7487	10.975	0.6753	10.975	0.6293	10.975	0.5867	10.975	0.5157	10.975	0.4392
11.4976	1.2393	11.4976	0.7487	11.4976	0.6753	11.4976	0.6293	11.4976	0.5867	11.4976	0.5157	11.4976	0.4392
12.045	1.2393	12.045	0.7487	12.045	0.6753	12.045	0.6293	12.045	0.5867	12.045	0.5157	12.045	0.4392
12.6186	1.2393	12.6186	0.7487	12.6186	0.6753	12.6186	0.6293	12.6186	0.5867	12.6186	0.5157	12.6186	0.4392
13.2194	1.2393	13.2194	0.7487	13.2194	0.6753	13.2194	0.6293	13.2194	0.5867	13.2194	0.5157	13.2194	0.4392

Numerical data from 24590-PTF-S0C-S15T-00057, Rev. A; eMedia file 24590-RMCD-02169 "PTF Final ISRS Dplots"
PTWW114.grf ~ RPP-WTP Pretreatment Facility ISRS ~ Calc No.: 24590-PTF-S0C-S15T-00057, Rev. A ~ Frequency (cps) ~ Spectral Acceleration (g)
~ Figure 114 ~ SLAB ONLY Vertical Responses ~ Elevation 56 ft. ~ EL56_C-E-9-12

Damping	0.50%		2%		3%		4%		5%		7%		10%
Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.	Freq.	Accel.
13.8489	1.2393	13.8489	0.7487	13.8489	0.6753	13.8489	0.6293	13.8489	0.5867	13.8489	0.5157	13.8489	0.4392
14.5083	1.2393	14.5083	0.7487	14.5083	0.6753	14.5083	0.6293	14.5083	0.5867	14.5083	0.5157	14.5083	0.4392
15.1991	1.3415	15.1991	0.7487	15.1991	0.6753	15.1991	0.6293	15.1991	0.5867	15.1991	0.5157	15.1991	0.4392
15.9228	1.3415	15.9228	0.7838	15.9228	0.7272	15.9228	0.6416	15.9228	0.5867	15.9228	0.5157	15.9228	0.4453
16.681	1.3415	16.681	0.7838	16.681	0.7272	16.681	0.6416	16.681	0.5867	16.681	0.5157	16.681	0.4493
17.4753	1.3415	17.4753	0.7838	17.4753	0.7272	17.4753	0.6416	17.4753	0.5867	17.4753	0.5157	17.4753	0.4493
18.3074	1.3415	18.3074	0.7838	18.3074	0.7272	18.3074	0.6416	18.3074	0.5867	18.3074	0.5157	18.3074	0.4681
19.1791	1.7415	19.1791	1.0077	19.1791	0.7827	19.1791	0.7138	19.1791	0.7037	19.1791	0.6041	19.1791	0.5379
20.0923	2.2676	20.0923	1.2791	20.0923	1.0078	20.0923	0.8492	20.0923	0.7444	20.0923	0.6108	20.0923	0.5802
21.049	2.2676	21.049	1.2791	21.049	1.0078	21.049	0.8492	21.049	0.7444	21.049	0.6108	21.049	0.5802
22.0513	2.2676	22.0513	1.2791	22.0513	1.0078	22.0513	0.8492	22.0513	0.7444	22.0513	0.6108	22.0513	0.5802
23.1013	2.2676	23.1013	1.2791	23.1013	1.0078	23.1013	0.8492	23.1013	0.7444	23.1013	0.6108	23.1013	0.5802
24.2013	2.2676	24.2013	1.2791	24.2013	1.0078	24.2013	0.8492	24.2013	0.7444	24.2013	0.6108	24.2013	0.5802
25.3536	2.2676	25.3536	1.2517	25.3536	1.0078	25.3536	0.8492	25.3536	0.7444	25.3536	0.6108	25.3536	0.5708
26.5609	2.2676	26.5609	1.2517	26.5609	1.0078	26.5609	0.8492	26.5609	0.7444	26.5609	0.6108	26.5609	0.5708
27.8256	2.169	27.8256	1.0486	27.8256	0.8581	27.8256	0.7745	27.8256	0.7093	27.8256	0.6108	27.8256	0.5248
29.1505	1.0972	29.1505	0.7793	29.1505	0.7092	29.1505	0.6373	29.1505	0.5666	29.1505	0.5216	29.1505	0.4804
30.5386	0.7655	30.5386	0.5382	30.5386	0.5146	30.5386	0.5014	30.5386	0.4905	30.5386	0.4703	30.5386	0.4417
31.9927	0.49	31.9927	0.4758	31.9927	0.4619	31.9927	0.4498	31.9927	0.4394	31.9927	0.4224	31.9927	0.4018
33.516	0.4005	33.516	0.3959	33.516	0.3892	33.516	0.3827	33.516	0.3768	33.516	0.3684	33.516	0.3616
35.1119	0.3498	35.1119	0.3494	35.1119	0.3485	35.1119	0.3471	35.1119	0.3453	35.1119	0.3411	35.1119	0.3342
36.7838	0.3221	36.7838	0.3222	36.7838	0.322	36.7838	0.3215	36.7838	0.3209	36.7838	0.3191	36.7838	0.3155
38.5353	0.3028	38.5353	0.303	38.5353	0.303	38.5353	0.3028	38.5353	0.3026	38.5353	0.3017	38.5353	0.2998
40.3702	0.2881	40.3702	0.2882	40.3702	0.2883	40.3702	0.2883	40.3702	0.2882	40.3702	0.2878	40.3702	0.2867
42.2924	0.2762	42.2924	0.2764	42.2924	0.2765	42.2924	0.2765	42.2924	0.2765	42.2924	0.2763	42.2924	0.2758
44.3062	0.2664	44.3062	0.2665	44.3062	0.2666	44.3062	0.2666	44.3062	0.2666	44.3062	0.2666	44.3062	0.2664
46.4159	0.2593	46.4159	0.2596	46.4159	0.2598	46.4159	0.26	46.4159	0.2602	46.4159	0.2605	46.4159	0.2608
48.626	0.2549	48.626	0.2552	48.626	0.2553	48.626	0.2555	48.626	0.2556	48.626	0.2558	48.626	0.2561
50.9414	0.2512	50.9414	0.2513	50.9414	0.2514	50.9414	0.2515	50.9414	0.2516	50.9414	0.2518	50.9414	0.252