



TNI PT for Accreditation
Fields of Proficiency Testing with PTRLs
Non-Potable Water (NPW)
Effective: October 1, 2020

Blue = New Analyte Magenta = Changes

Matrix	EPA Analyte Code	TNI Analyte Code	CAS Number	Analyte ^{1,2}	Conc Range	Acceptance Criteria ^{3,4,5,6}				TNI PTRL ⁷
						a	b	c	d	
Microbiology					CFU/100 mL					CFU/100 mL
NPW	0233	2500	NA	Total Coliform, MF ⁸	20 to 2400	Log transform; ±3 SD				2
NPW	0235	2530	NA	Fecal Coliform, MF ⁸	20 to 2400	Log transform; ±3 SD				2
NPW		2525	NA	E.coli, MF ⁸	20 to 2400	Log transform; ±3 SD				2
NPW		2520	NA	Enterococci, MF ⁸	20 to 1000	Log transform; ±3 SD				2
					MPN/100 mL					MPN/100 mL
NPW	0234	2500	NA	Total Coliform (MPN-Multiple Tube) ⁹	20 to 2400	Log transform; ±3 SD				2
NPW	0234	2500	NA	Total Coliform (MPN-Multiple Well) ⁹	20 to 2400	Log transform; ±3 SD				2
NPW	0236	2530	NA	Fecal Coliform (MPN-Multiple Tube) ⁹	20 to 2400	Log transform; ±3 SD				2
NPW	0236	2530	NA	Fecal Coliform (MPN-Multiple Well) ⁹	20 to 2400	Log transform; ±3 SD				2
NPW		2525	NA	E.coli (MPN-Multiple Tube) ⁹	20 to 2400	Log transform; ±3 SD				2
NPW		2525	NA	E.coli (MPN-Multiple Well) ⁹	20 to 2400	Log transform; ±3 SD				2
NPW		2520	NA	Enterococci (MPN-Multiple Tube) ⁹	20 to 1000	Log transform; ±3 SD				2
NPW		2520	NA	Enterococci (MPN-Multiple Well) ⁹	20 to 1000	Log transform; ±3 SD				2
Trace Metals					µg/L					µg/L
NPW	0001	1000	7429-90-5	Aluminum	200 to 4000	0.9823	9.5889	0.0471	11.2110	144
NPW	0016	1005	7440-36-0	Antimony	90 to 900	0.9864	-1.1174	0.0471	6.1230	57
NPW	0002	1010	7440-38-2	Arsenic	90 to 900	0.9916	1.2647	0.0422	5.1741	64
NPW	0237	1015	7440-39-3	Barium	100 to 2500	±15% fixed acceptance limit				85
NPW	0003	1020	7440-41-7	Beryllium	50 to 500	±15% fixed acceptance limit				42
NPW		1025	7440-42-8	Boron	800 to 2000	±15% fixed acceptance limit				680
NPW	0004	1030	7440-43-9	Cadmium	100 to 1000	±15% fixed acceptance limit				85
NPW	0006	1040	7440-47-3	Chromium	100 to 1000	±15% fixed acceptance limit				85
NPW	0238	1045	18540-29-9	Chromium (VI)	90 to 900	0.9917	1.0232	0.0476	2.2011	71
NPW	0005	1050	7440-48-4	Cobalt	100 to 1000	±15% fixed acceptance limit				85
NPW	0007	1055	7440-50-8	Copper	100 to 1000	±15% fixed acceptance limit				85
NPW	0008	1070	7439-89-6	Iron	200 to 4000	±15% fixed acceptance limit				170
NPW	0012	1075	7439-92-1	Lead	100 to 1500	±15% fixed acceptance limit				85
NPW	0010	1090	7439-96-5	Manganese	200 to 2000	±15% fixed acceptance limit				170
NPW	0009	1095	7439-97-6	Mercury ^{10a}	3.0 to 30	±30% fixed acceptance limit				0.9
NPW	0074	1100	7439-98-7	Molybdenum	60 to 600	0.9953	-0.1614	0.0372	2.5555	45
NPW	0011	1105	7440-02-0	Nickel	200 to 2000	1.0012	1.5795	0.0368	3.8151	168
NPW	0013	1140	7782-49-2	Selenium	100 to 1000	±15% fixed acceptance limit				85
NPW	0017	1150	7440-22-4	Silver	100 to 1000	±15% fixed acceptance limit				85
NPW	0075	1160	7440-24-6	Strontium	50 to 500	±15% fixed acceptance limit				42
NPW	0018	1165	7440-28-0	Thallium	80 to 800	0.9932	-0.9634	0.0479	4.2361	54
NPW	0239	1175	7440-31-5	Tin	200 to 2000	±30% fixed acceptance limit				140
NPW	0076	1180	7440-32-6	Titanium	60 to 300	±15% fixed acceptance limit				51
NPW	0014	1185	7440-62-2	Vanadium	50 to 2000	±15% fixed acceptance limit				42
NPW	0015	1190	7440-66-6	Zinc	300 to 2000	±15% fixed acceptance limit				255



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						a	b	c	d	
Demands ^{10b}					mg/L					mg/L
NPW	0038	1530	NA	Biochemical oxygen demand ^{10c}	18 to 230	0.6237	0.7022	0.0928	0.6636	4.9
NPW	0102	1555	NA	Carbonaceous BOD (CBOD) ^{10c}	18 to 230	0.5648	0.6665	0.0965	0.8253	3.1
NPW	0036	1565	NA	Chemical Oxygen Demand (COD) ^{10d}	30 to 250	0.9843	-0.3171	0.0432	3.0191	16
NPW	0037	2040	NA	Total Organic Carbon (TOC) ^{10e}	6.0 to 100	0.9926	0.1680	0.0473	0.3536	4.2
Minerals					mg/L					mg/L
NPW	0027	1505	NA	Alkalinity as CaCO ₃	25 to 400	±20% at < 40; ±15% at ≥ 40 fixed acceptance limit				20
NPW		1540	24959-67-9	Bromide	1.0 to 10	1.0098	-0.0533	0.0400	0.0912	0.56
NPW	0023	1035	7440-70-2	Calcium	10 to 100	±15% fixed acceptance limit				8.5
NPW	0028	1575	16887-00-6	Chloride	35 to 275	1.0005	0.0490	0.0376	0.3716	30
NPW	0029	1730	16984-48-8	Fluoride	0.4 to 4	0.9748	0.0156	0.0487	0.0277	0.26
NPW		1550	NA	Calcium hardness as CaCO ₃	25 to 250	±15% fixed acceptance limit				21
NPW	0022	1755	NA	Total hardness as CaCO ₃	40 to 415	±15% fixed acceptance limit				34
NPW	0024	1085	7439-95-4	Magnesium	4.0 to 40	±15% fixed acceptance limit				3.4
NPW	0026	1125	7440-09-7	Potassium	4.0 to 40	±20% fixed acceptance limit				3.2
NPW	0025	1155	7440-23-5	Sodium	10 to 100	±20% fixed acceptance limit				8.0
NPW	0020	1610	NA	Conductivity	200 to 1200 µmhos/cm	±10% fixed acceptance limit				180 µmhos/cm
NPW	0030	2000	14808-79-8	Sulfate	5.0 to 125	0.9880	-0.2130	0.0473	0.3309	3.0
NPW		2005	18496-25-8	Sulfide	2.0 to 10	0.9657	-0.1271	0.1205	0.2816	0.20
NPW	0021	1955	NA	Residue-filterable (TDS)	140 to 800	1.0000	0.0000	0.0000	15.0000	95
NPW	0105	1950	NA	Residue-total (TS)	140 to 800	1.0000	0.0000	0.0000	15.0000	95
Nutrients					mg/L					mg/L
NPW	0031	1515	NA	Ammonia as N	1.0 to 20	0.9923	0.0567	0.0583	0.0914	0.60
NPW	0032	1810	NA	Nitrate as N	2.0 to 25	0.9975	-0.0005	0.0506	0.0642	1.50
NPW		1820	NA	Nitrate plus Nitrite as N	2.5 to 25	0.9957	-0.0010	0.0509	0.0400	1.99
NPW		1840	NA	Nitrite as N	0.4 to 4.0	1.0017	-0.0030	0.0377	0.0250	0.28
NPW	0033	1870	264888-19-9	Orthophosphate as P	0.5 to 5.5	±15% fixed acceptance limit				0.42
NPW	0034	1795	NA	Total Kjeldahl-Nitrogen ^{10f}	3.0 to 35	0.9701	0.2283	0.0680	0.1906	1.95
NPW	0035	1910	NA	Total Phosphorus	0.5 to 10	0.9932	0.0084	0.0506	0.0254	0.35



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Misc. Analytes										
					mg/L					mg/L
NPW		1500	NA	Acidity, as CaCO ₃	650 to 1800		±10% fixed acceptance limit			585
NPW		1605	NA	Color	10 to 75 PC units	0.9474	0.6098	0.0367	2.4407	1.7 PC units
NPW	0072	1960	NA	Residue-nonfilterable (TSS)	20 to 100	0.9728	-0.6338	0.0300	1.5793	12
NPW	0019	1900	NA	pH ^{10g}	5.0 to 10 units		± 0.2 units fixed acceptance limit			Not applicable
NPW	0071	1645	NA	Total Cyanide ^{10h}	0.1 to 1		±35% fixed acceptance limit			0.065
NPW	0097	1905	NA	Total Phenolics ¹⁰ⁱ	0.5 to 5	0.6408	0.0250	0.1038	0.0082	0.16
NPW	0098	1940	NA	Total Residual Chlorine	0.5 to 3.0	0.9345	0.0392	0.0688	0.0073	0.38
NPW		1965	NA	Residue-settleable	5.0 to 50 mL/L	1.0436	-0.0108	0.0597	0.4546	2.9 mL/L
NPW		1990	NA	Silica as SiO ₂	50 to 250		±25% fixed acceptance limit			38
NPW		2025	NA	Surfactants - MBAS	0.2 to 1.0	1.0421	-0.0068	0.1326	0.0046	0.10
NPW		2055	NA	Turbidity ^{10j}	2.0 to 30 NTU	1.0040	-0.0368	0.0475	0.1575	1.2 NTU
NPW		1970	NA	Residue-volatile	100 to 500	0.9644	-4.7559	0.0182	14.9450	41
Low Level Analytes ¹¹										
NPW		1095	7439-97-6	Mercury ^{10a}	20 to 100 ng/L	0.9910	0.2064	0.0432	2.5774	9.7
NPW		1940	NA	Total Residual Chlorine	50 to 250 µg/L	1.0000	0.0000	0.0000	20.0000	5.0



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Volatile Aromatics¹					µg/L					µg/L
NPW	0065	4375	71-43-2	Benzene	10 to 120	±30% fixed acceptance limit				7.0
NPW	0094	4610	95-50-1	1,2-Dichlorobenzene (o-Dichlorobenzene)	10 to 120	±30% fixed acceptance limit				7.0
NPW	0096	4615	541-73-1	1,3-Dichlorobenzene (m-Dichlorobenzene)	10 to 120	±30% fixed acceptance limit				7.0
NPW	0095	4620	106-46-7	1,4-Dichlorobenzene (p-Dichlorobenzene)	10 to 120	±30% fixed acceptance limit				7.0
NPW	0066	4765	100-41-4	Ethylbenzene	10 to 120	±30% fixed acceptance limit				7.0
NPW	0222	5005	91-20-3	Naphthalene	15 to 150	0.8785	1.4343	0.1335	0.7561	6.3
NPW		5100	100-42-5	Styrene	20 to 120	±35% fixed acceptance limit				13.0
NPW	0067	5140	108-88-3	Toluene	10 to 120	±30% fixed acceptance limit				7.0
NPW	0092	5155	120-82-1	1,2,4-Trichlorobenzene	15 to 150	0.9160	-1.3028	0.1473	0.5100	4.3
NPW		5210	95-63-6	1,2,4-Trimethylbenzene	10 to 120	±35% fixed acceptance limit				6.5
NPW		5215	108-67-8	1,3,5-Trimethylbenzene	10 to 120	±35% fixed acceptance limit				6.5
NPW		5240	NA	m+p-xylene	10 to 150	±40% fixed acceptance limit				6.0
NPW		5250	95-47-6	o-Xylene	10 to 150	±40% fixed acceptance limit				6.0
NPW	0242	5260	1330-20-7	Xylene (total) ¹²	20 to 300	±40% fixed acceptance limit				12
Volatile Ketones/Ethers¹					µg/L					µg/L
NPW		4315	67-64-1	Acetone	20 to 200	0.8856	3.5838	0.2028	1.7474	3.9
NPW		4860	591-78-6	2-Hexanone	20 to 200	1.0054	-1.1748	0.1534	1.7764	4.4
NPW		4995	108-10-1	4-Methyl-2-pentanone (MIBK)	20 to 200	1.0022	-1.0337	0.0934	4.1819	2.0
NPW		5000	1634-04-4	Methyl tert-butyl ether (MTBE)	15 to 150	1.0233	-0.3620	0.1112	0.3083	9.0



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Volatile Halocarbons ¹					µg/L					µg/L
NPW	0060	4395	75-27-4	Bromodichloromethane	10 to 100	±40% fixed acceptance limit				6.0
NPW	0062	4400	75-25-2	Bromoform	10 to 100	±40% fixed acceptance limit				6.0
NPW	0243	4950	74-83-9	Methyl bromide (Bromomethane)	20 to 120	± 60% fixed acceptance limit				8.0
NPW	0058	4455	56-23-5	Carbon tetrachloride	15 to 150	0.9577	0.0612	0.1269	0.3443	7.7
NPW	0064	4475	108-90-7	Chlorobenzene	10 to 120	±30% fixed acceptance limit				7.0
NPW	0244	4485	75-00-3	Chloroethane (Ethyl chloride)	20 to 120	± 60% fixed acceptance limit				8.0
NPW	0055	4505	67-66-3	Chloroform	10 to 100	±30% fixed acceptance limit				7.0
NPW	0245	4960	74-87-3	Methyl chloride (Chloromethane)	20 to 120	± 60% fixed acceptance limit				8.0
NPW	0061	4575	124-48-1	Chlorodibromomethane	10 to 100	±40% fixed acceptance limit				6.0
NPW		4570	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	15 to 150	±40% fixed acceptance limit				9.0
NPW		4585	106-93-4	1,2-Dibromoethane (EDB, Ethylene dibromide)	10 to 120	±35% fixed acceptance limit				6.5
NPW		4595	74-95-3	Dibromomethane (Methylene bromide)	10 to 120	±35% fixed acceptance limit				6.5
NPW		4630	75-34-3	1,1-Dichloroethane	10 to 150	0.9977	0.2117	0.1227	0.0174	6.4
NPW	0054	4635	107-06-2	1,2-Dichloroethane (Ethylene dichloride)	15 to 150	0.9843	1.3728	0.0912	0.4693	10.6
NPW	0246	4640	75-35-4	1,1-Dichloroethylene	10 to 150	1.0034	0.6630	0.1447	0.0521	6.2
NPW		4645	156-59-2	cis-1,2-Dichloroethylene	10 to 150	0.9973	0.3699	0.1095	0.0036	7.0
NPW	0247	4700	156-60-5	trans-1,2-Dichloroethylene	10 to 120	±40% fixed acceptance limit				6.0
NPW	0248	4655	78-87-5	1,2-Dichloropropane	10 to 150	±30% fixed acceptance limit				7.0
NPW		4680	10061-01-5	cis-1,3-Dichloropropane	10 to 120	±35% fixed acceptance limit				6.5
NPW	0249	4685	10061-02-6	trans-1,3-Dichloropropylene	10 to 120	±35% fixed acceptance limit				6.5
NPW	0063	4975	75-09-2	Methylene chloride (Dichloromethane)	10 to 120	±40% fixed acceptance limit				6.0
NPW		5105	630-20-6	1,1,1,2-Tetrachloroethane	15 to 150	±35% fixed acceptance limit				9.8
NPW	0250	5110	79-34-5	1,1,2,2-Tetrachloroethane	15 to 150	±35% fixed acceptance limit				9.8
NPW	0059	5115	127-18-4	Tetrachloroethylene (Perchloroethylene)	10 to 150	0.9416	-0.5063	0.1189	0.3441	4.3
NPW	0056	5160	71-55-6	1,1,1-Trichloroethane	10 to 100	±40% fixed acceptance limit				6.0
NPW	0251	5165	79-00-5	1,1,2-Trichloroethane	15 to 150	±30% fixed acceptance limit				10.5
NPW	0057	5170	79-01-6	Trichloroethene (Trichloroethylene)	10 to 100	0.9611	0.5720	0.1077	0.2478	6.2
NPW	0252	5175	75-69-4	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	20 to 120	± 60% fixed acceptance limit				8.0
NPW		5180	96-18-4	1,2,3-Trichloropropane	15 to 150	0.9867	-0.4721	0.1630	0.9605	4.1
NPW	0253	5235	75-01-4	Vinyl chloride (Chloroethene)	20 to 120	± 60% fixed acceptance limit				8.0
Low-Level Halocarbons ¹¹					µg/L					µg/L
NPW		4570	96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	0.2 to 2.0	0.9542	0.0359	0.1200	0.0161	0.11
NPW		4585	106-93-4	1,2-Dibromoethane (EDB, Ethylene dibromide)	0.2 to 2.0	0.9341	0.0293	0.1090	0.0239	0.08
NPW		5180	96-18-4	1,2,3-Trichloropropane	0.2 to 2.0	0.9284	0.0534	0.1257	0.0117	0.13



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Volatile Petroleum Hydrocarbons					µg/L					µg/L
NPW		9408	8006-61-9	Gasoline Range Organics (GRO) ¹³	400 to 4000	1.0683	-7.7234	0.2162	35.0439	55
Base/Neutrals ¹					µg/L					µg/L
NPW	0189	5500	83-32-9	Acenaphthene	10 to 200	0.7748	0.8506	0.1427	0.1159	4.0
NPW	0190	5505	208-96-8	Acenaphthylene	10 to 200	0.8029	-0.2974	0.1485	0.1111	2.9
NPW	0192	5555	120-12-7	Anthracene	10 to 200	0.7986	1.7870	0.1229	0.7303	3.9
NPW	0177	5575	56-55-3	Benzo(a)anthracene	10 to 200	0.8381	0.5699	0.1162	0.6075	3.6
NPW	0254	5670	85-68-7	Butyl benzyl phthalate	50 to 200	0.8496	-2.1863	0.1776	0.0752	13.4
NPW	0178	5585	205-99-2	Benzo(b)fluoranthene	20 to 200	0.8327	0.1531	0.1497	0.1078	7.5
NPW	0179	5600	207-08-9	Benzo(k)fluoranthene	20 to 200	0.8223	1.996	0.1862	1.126	7.7
NPW	0180	5590	191-24-2	Benzo(g,h,i)perylene	10 to 200	0.8261	1.5562	0.1556	0.0166	5.1
NPW	0255	5580	50-32-8	Benzo(a)pyrene	10 to 200	0.8207	-0.0550	0.1484	0.4349	2.4
NPW	0198	5660	101-55-3	4-Bromophenyl phenyl ether (BDE-3)	20 to 200	0.8081	3.0645	0.1325	0.8996	8.6
NPW	0195	5760	111-91-1	bis(2-Chloroethoxy)methane	20 to 200	0.7615	0.4890	0.1193	1.5633	3.9
NPW	0196	5765	111-44-4	bis(2-Chloroethyl)ether	20 to 200	0.7090	2.3607	0.1529	0.4801	5.9
NPW	0197	4659	108-60-1	2,2'-Oxybis(1-chloropropane), bis(2-Chloro-1-methylethyl)ether ¹⁸	30 to 200	0.7285	1.6917	0.1303	2.9025	3.1
NPW	0256	6065	117-81-7	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	20 to 200	0.8065	2.5761	0.1474	1.6124	5.0
NPW	0204	5825	7005-72-3	4-Chlorophenyl phenylether	20 to 200	0.7669	3.7466	0.1417	0.2303	9.9
NPW	0203	5795	91-58-7	2-Chloronaphthalene	20 to 200	0.7102	2.4854	0.1477	0.5079	6.3
NPW	0181	5855	218-01-9	Chrysene	10 to 200	0.8180	2.3274	0.1351	0.2137	5.8
NPW	0182	5895	53-70-3	Dibenzo(a,h)anthracene	20 to 200	0.8079	2.3890	0.1497	0.8729	6.9
NPW		5905	132-64-9	Dibenzofuran	30 to 200	0.7411	2.7181	0.1159	1.0735	11.3
NPW		4610	95-50-1	1,2-Dichlorobenzene (o-Dichlorobenzene)	20 to 200	0.6365	0.7906	0.1517	2.2155	2.0
NPW		4615	541-73-1	1,3-Dichlorobenzene (m-Dichlorobenzene)	20 to 200	0.5921	3.0260	0.1787	0.3464	3.1
NPW		4620	106-46-7	1,4-Dichlorobenzene (p-Dichlorobenzene)	20 to 200	0.5671	3.6005	0.1640	0.4826	3.7
NPW	0208	6070	84-66-2	Diethyl phthalate	50 to 200	0.7492	3.3637	0.1805	2.0213	8.9
NPW	0209	6135	131-11-3	Dimethyl phthalate	50 to 200	0.6375	3.9631	0.2524	0.8174	11.5
NPW	0205	5925	84-74-2	Di-n-butyl phthalate	40 to 200	0.7797	5.1233	0.1490	0.8776	15.8
NPW	0186	6185	121-14-2	2,4-Dinitrotoluene (2,4-DNT)	20 to 200	0.8219	0.4137	0.1183	1.7449	4.5
NPW	0210	6190	606-20-2	2,6-Dinitrotoluene (2,6-DNT)	20 to 200	0.7999	0.4770	0.1316	0.1368	8.2
NPW	0211	6200	117-84-0	Di-n-octyl phthalate	30 to 200	0.8186	2.8779	0.1724	1.2382	8.2
NPW	0212	6265	206-44-0	Fluoranthene	30 to 200	0.8087	2.9863	0.1272	0.0642	15.6
NPW	0213	6270	86-73-7	Fluorene	10 to 200	0.7619	3.7583	0.1165	1.0349	4.8
NPW	0214	6275	118-74-1	Hexachlorobenzene	20 to 200	0.8202	0.2263	0.1238	0.1297	8.8
NPW	0215	4835	87-68-3	Hexachlorobutadiene	50 to 200	0.6286	2.6591	0.1616	1.9082	4.3
NPW	0216	6285	77-47-4	Hexachlorocyclopentadiene	50 to 200	0.6216	-4.4226	0.2049	4.3222	5.0
NPW	0217	4840	67-72-1	Hexachloroethane	50 to 200	0.5921	-0.0657	0.1640	0.5308	3.3
NPW	0218	6315	193-39-5	Indeno(1,2,3, cd)pyrene	30 to 200	0.7115	5.0289	0.1430	1.4299	9.2
NPW	0219	6320	78-59-1	Isophorone	20 to 200	0.7981	0.7053	0.1437	0.3000	7.1
NPW		6385	91-57-6	2-Methylnaphthalene	20 to 200	0.6983	2.0844	0.1361	2.1436	2.0



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						a	b	c	d	
Base/Neutrals ¹ cont'					µg/L					µg/L
NPW	0222	5005	91-20-3	Naphthalene	20 to 200	0.6749	3.5514	0.1441	1.2975	4.5
NPW	0226	5015	98-95-3	Nitrobenzene	20 to 200	0.7463	0.9864	0.1388	0.4589	6.2
NPW	0227	6530	62-75-9	N-Nitrosodimethylamine	75 to 200	0.4665	7.3433	0.1652	3.9997	7.5
NPW	0230	6545	621-64-7	n-Nitrosodi-n-propylamine	30 to 200	0.7913	-0.0510	0.1541	0.1328	9.4
NPW	0229	6535	86-30-6	N-Nitrosodiphenylamine	30 to 200	0.7740	0.6711	0.2016	0.0494	5.6
NPW	0231	6615	85-01-8	Phenanthrene	10 to 200	0.8001	2.8698	0.1110	0.9485	4.7
NPW	0187	6665	129-00-0	Pyrene	10 to 200	0.8476	1.0097	0.1490	0.0530	4.9
NPW	0092	5155	120-82-1	1,2,4-Trichlorobenzene	20 to 200	0.6769	1.1166	0.1493	1.8128	2.0
Acids ¹					µg/L					µg/L
NPW	0161	5700	59-50-7	4-Chloro-3-methylphenol	30 to 200	0.7998	0.6264	0.1421	0.0397	11.7
NPW	0162	5800	95-57-8	2-Chlorophenol	30 to 200	0.7292	1.4640	0.1518	0.0174	9.6
NPW	0163	6000	120-83-2	2,4-Dichlorophenol	30 to 200	0.7362	2.8458	0.1433	0.0585	11.9
NPW		6005	87-65-0	2,6-Dichlorophenol	30 to 200	0.7512	3.7563	0.1564	0.0312	12.1
NPW	0165	6130	105-67-9	2,4-Dimethylphenol	40 to 200	0.7496	1.4509	0.1601	0.0953	11.9
NPW	0167	6175	51-28-5	2,4-Dinitrophenol	100 to 200	0.6531	3.5920	0.1695	8.5727	10
NPW	0168	6360	534-52-1	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	40 to 200	0.8108	3.6290	0.1573	2.1683	10.7
NPW		6400	95-48-7	2-Methylphenol (o-Cresol)	40 to 200	0.6821	2.2126	0.1529	0.5485	9.5
NPW		6410	106-44-5	4-Methylphenol (p-Cresol) ¹⁴	50 to 200	0.6531	2.1854	0.2008	0.7807	5.0
NPW	0171	6490	88-75-5	2-Nitrophenol	50 to 200	0.7631	1.1486	0.1272	2.4547	12.9
NPW	0173	6500	100-02-7	4-Nitrophenol	100 to 200	0.5591	-1.0075	0.2511	1.9409	10
NPW	0174	6625	108-95-2	Phenol	100 to 200	0.557	0.5929	0.253	1.0269	10
NPW	0158	6605	87-86-5	Pentachlorophenol	40 to 200	0.8469	-0.7338	0.1561	1.5178	9.9
NPW	0175	6835	95-95-4	2,4,5-Trichlorophenol	30 to 200	0.7726	3.2199	0.1362	0.9916	11.2
NPW	0159	6840	88-06-2	2,4,6-Trichlorophenol	30 to 200	0.7880	0.8051	0.1406	0.0280	11.7



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						a	b	c	d	
PCBs in Water ²										
					µg/L					µg/L
NPW	0040	8880	12674-11-2	Aroclor-1016 (PCB-1016)	2.0 to 10	0.8318	0.1991	0.1591	0.0384	0.8
NPW	0041	8885	11104-28-2	Aroclor-1221 (PCB-1221)	2.0 to 10	0.8318	0.1991	0.1591	0.0384	0.8
NPW	0042	8890	11141-16-5	Aroclor-1232 (PCB-1232)	2.0 to 10	0.8318	0.1991	0.1591	0.0384	0.8
NPW	0040	8895	53469-21-9	Aroclor-1242 (PCB-1242)	2.0 to 10	0.8318	0.1991	0.1591	0.0384	0.8
NPW	0044	8900	12672-29-6	Aroclor-1248 (PCB-1248)	2.0 to 10	0.8318	0.1991	0.1591	0.0384	0.8
NPW	0045	8905	11097-69-1	Aroclor-1254 (PCB-1254)	2.0 to 10	0.8318	0.1991	0.1591	0.0384	0.8
NPW	0046	8910	11096-82-5	Aroclor-1260 (PCB-1260)	2.0 to 10	0.8318	0.1991	0.1591	0.0384	0.8
Organochlorine Pesticides ¹										
					µg/L					µg/L
NPW	0047	7025	309-00-2	Aldrin	1.0 to 15	0.8524	-0.0159	0.1655	0.0002	0.34
NPW	0079	7110	319-84-6	alpha-BHC (alpha-Hexachlorocyclohexane)	2.0 to 20	0.8996	0.0151	0.1505	0.0349	0.81
NPW	0080	7115	319-85-7	beta-BHC (beta-Hexachlorocyclohexane)	2.0 to 20	0.8889	0.1961	0.1372	0.0777	0.92
NPW	0081	7105	319-86-8	delta-BHC	2.0 to 20	0.9031	0.1036	0.1525	0.0673	0.79
NPW	0082	7120	58-89-9	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	2.0 to 20	0.8959	0.1095	0.1528	0.0189	0.93
NPW		7240	5103-71-9	cis-Chlordane (alpha-Chlordane)	1.0 to 10	0.8842	0.0542	0.1423	0.0348	0.41
NPW		7245	5566-34-7	gamma-Chlordane	1.0 to 10	0.8617	0.1041	0.1323	0.0716	0.35
NPW	0053	7250	12789-03-6	Chlordane (tech.)	3.0 to 25	0.8501	0.4121	0.1540	0.0381	1.46
NPW	0049	7355	72-54-8	4,4'-DDD ^{19a}	2.0 to 10	0.9271	0.03839	0.1227	0.1763	0.63
NPW	0050	7360	72-55-9	4,4'-DDE ^{19a}	1.0 to 10	0.8793	0.0718	0.1468	0.0395	0.39
NPW	0051	7365	50-29-3	4,4'-DDT ^{19a}	1.0 to 10	0.8987	0.1076	0.1680	0.0337	0.40
NPW	0048	7470	60-57-1	Dieldrin	1.0 to 15	0.9126	0.0323	0.1327	0.0240	0.47
NPW	0083	7510	959-98-8	Endosulfan I	4.0 to 20	0.8698	-0.0604	0.1548	0.0549	1.40
NPW	0084	7515	33213-65-9	Endosulfan II	4.0 to 20	0.8765	0.0994	0.1490	0.0912	1.54
NPW	0085	7520	1031-07-8	Endosulfan sulfate	4.0 to 20	0.8752	0.5312	0.1348	0.2091	1.79
NPW	0086	7540	72-20-8	Endrin ^{19b}	2.0 to 20	0.9183	0.0706	0.1594	0.0277	0.87
NPW	0087	7530	7421-93-4	Endrin aldehyde ^{19b}	4.0 to 20	0.8585	0.4845	0.1571	0.2054	1.42
NPW		7535	53494-70-5	Endrin ketone ^{19b}	4.0 to 20	0.8951	0.3702	0.1135	0.1902	2.0
NPW	0052	7685	76-44-8	Heptachlor	1.0 to 10	0.8470	0.0457	0.1596	0.0402	0.29
NPW	0078	7690	1024-57-3	Heptachlor epoxide	1.0 to 10	0.9176	0.0041	0.1342	0.0268	0.44
NPW	0234	7810	72-43-5	Methoxychlor	2.0 to 20	0.9115	0.2801	0.1467	0.2290	0.54
NPW	0241	8250	8001-35-2	Toxaphene (Chlorinated Camphene)	20 to 100	0.8087	1.8908	0.1991	0.5080	4.59



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						a	b	c	d	
Herbicides ¹										
					µg/L					µg/L
NPW	0257	8545	94-75-7	2,4-D	2 to 10	0.7204	0.2995	0.2543	0.0297	0.20
NPW	0258	8595	1918-00-9	Dicamba	2 to 10	0.7848	0.2788	0.1754	0.1455	0.40
NPW	0140	8655	93-76-5	2,4,5-T	2 to 10	0.8132	0.1393	0.1850	0.1353	0.20
NPW	0259	8650	93-72-1	Silvex (2,4,5-TP)	2 to 10	0.8349	0.1516	0.2046	0.0195	0.50
Low Level PAHs ¹										
					µg/L					µg/L
NPW		5500	83-32-9	Acenaphthene	2.0 to 20	0.7600	0.1476	0.1456	0.0021	0.79
NPW		5505	208-96-8	Acenaphthylene	2.0 to 20	0.7856	0.0418	0.1133	0.0687	0.73
NPW		5555	120-12-7	Anthracene	0.5 to 5.0	0.8151	0.0194	0.1714	0.0115	0.14
NPW		5575	56-55-3	Benzo(a)anthracene	0.5 to 5.0	0.9012	-0.0236	0.0614	0.0462	0.20
NPW		5580	50-32-8	Benzo(a)pyrene	0.5 to 5.0	0.7745	0.0824	0.1162	0.0270	0.21
NPW		5585	205-99-2	Benzo(b)fluoranthene	0.5 to 5.0	0.8217	0.0544	0.1167	0.0144	0.25
NPW		5590	191-24-2	Benzo(g,h,i)perylene	0.5 to 5.0	0.7683	0.0737	0.1641	0.0088	0.18
NPW		5600	207-08-9	Benzo(k)fluoranthene	0.5 to 5.0	0.8943	-0.0069	0.1245	0.0108	0.22
NPW		5855	218-01-9	Chrysene	0.5 to 5.0	0.8883	0.0132	0.1046	0.0235	0.23
NPW		5895	53-70-3	Dibenz(a,h)anthracene	0.5 to 5.0	0.7914	0.0640	0.1377	0.0520	0.10
NPW		6265	206-44-0	Fluoranthene	0.5 to 5.0	0.8565	0.0211	0.1064	0.0128	0.25
NPW		6270	86-73-7	Fluorene	2.0 to 10	0.7863	0.0472	0.1153	0.0631	0.74
NPW		6315	193-39-5	Indeno(1,2,3-cd)pyrene	0.5 to 5.0	0.8224	0.0623	0.1316	0.0267	0.20
NPW		5005	91-20-3	Naphthalene	2.0 to 10	0.7279	0.0977	0.1251	0.0803	0.56
NPW		6615	85-01-8	Phenanthrene	0.5 to 5.0	0.8332	0.0256	0.1099	0.0118	0.24
NPW		6665	129-00-0	Pyrene	0.5 to 5.0	0.8468	0.0435	0.1023	0.0095	0.28
Petroleum Hydrocarbons										
NPW		9369	68334-30-5	Diesel Range Organics (DRO) ¹⁵	800 to 6000 µg/L	0.7790	-96.0467	0.1386	109.1897	80 µg/L
NPW	0104	1803	NA	n-Hexane Extractable Material (O&G) ^{10k,16}	20 to 200 mg/L	0.9400	-0.4116	0.0545	2.0789	8.8 mg/L
NPW		1853	NA	Non-Polar Extractable Material (TPH) ¹⁷	20 to 200 mg/L	0.9692	-1.1573	0.1586	0.3709	7.6 mg/L



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						a	b	c	d	

1) For volatiles, base/neutrals, acids, organochlorine pesticides, herbicides, and low level PAHs, providers must include a minimum number of analytes using the criteria described below:

PT samples that are to be scored for one to ten analytes must include all of these analytes.

PT samples that are to be scored for ten to twenty analytes must include at least ten of these analytes or 80% of the total, whichever number is greater.

PT samples that are to be scored for more than twenty analytes must include at least sixteen of these analytes or 60% of the total, whichever number is greater.

If the calculated percentage of the total number of analytes in the PT sample is a fraction, the fraction shall be rounded up to the next whole number.

2) One sample (minimum) in every study, containing one Aroclor, selected at random from among the Aroclors listed above.

3) Acceptance limits are set at the Mean \pm 3 SD

Where the a, b, c and d factors are presented, Mean = $a \cdot T + b$; SD = $c \cdot T + d$ where T is the assigned value.

Where only the c and d factors are presented, Mean = Robust Study Mean; SD = $c \cdot X + d$ where X is the Robust Study Mean.

Where no factors are presented (Study Mean \pm 3SD), Mean = Robust Study Mean, SD = Robust Study Standard Deviation.

Robust Study Mean and Standard Deviation are generated using statistical analysis of study data set. (ie. Bi-weight, Grubbs, Dixon, etc.)

Quantitative Microbiology acceptance criteria are based on the robust participant Mean and SD determined from each respective PT study

4) If the lower acceptance limit generated using the criteria contained in this table is less than (<) 10% of the assigned value, the lower acceptance limits are set at 10% of the assigned value with the exception of microbiology analytes.

5) If the lower acceptance limit generated using the criteria contained in this table is greater than 90% of the assigned value, the lower acceptance limits are set at 90% of the assigned value with the exception of microbiology analytes.

6) If the upper acceptance limit generated using the criteria contained in this table is less than 110% of the assigned value, the upper acceptance limits are set at 110% of the assigned value with the exception of microbiology analytes.

7) TNI Proficiency Testing Reporting Limits (PTRLs) are provided as guidance to laboratories analyzing TNI PT samples. These levels are the lowest acceptable results that could be obtained from the lowest spike level for each analyte. The laboratory should report any positive result down to the PTRL. It is recognized that in some cases (especially for analytes that typically exhibit low recovery) the PTRL may be below the standard laboratory reporting limit. However, the laboratory should use a method that is sensitive enough to generate results at the PTRL shown. TNI PTRLs are also provided as guidance to PT Providers. At a minimum for all analytes with an assigned value equal to "0", the PT Provider should verify that the sample does not contain the analyte at a concentration greater than or equal to the PTRL.

8) These limits are for quantitative methods using membrane filtration techniques.

9) These limits are for quantitative methods using most probable number techniques.



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10) The following recommended sample designs, which were used in past USEPA studies, should be used as model designs because other designs may not give equivalent statistics. PT study providers may vary their sample designs from those shown. The specifics within each sample are within the discretion of the PT study Provider.

- a) Design criterion for Mercury – 1:1 (mole:mole as Hg) Mercuric Oxide and Methyl Mercuric Chloride.
- b) Design criteria for Demands – 1:1 Glucose and Glutamic Acid.
- c) Design criteria for 5-Day BOD and Carbonaceous BOD – The assigned value used for BOD and CBOD is derived from the linear relationship between the BOD or CBOD value and the concentration of Glucose-Glutamic Acid (GGA) or Potassium Hydrogen Phthalate (KHP) used for the formulation. For example, 150 mg/L each of Glucose & of Glutamic Acid produces a BOD of 198 mg/L, and 300 mg/L KHP produces a BOD of 240 mg/L. 0 mg/L GGA or KHP would produce a BOD value of 0 mg/L.
- d) Design criterion for Chemical Oxygen Demand – The assigned value of COD is (1.066 times mg Glucose plus 0.9787 times mg Glutamic Acid) divided by total liters of sample adjusted for required dilutions.
- e) Design criterion for Total Organic Carbon – The assigned value of TOC is (0.4000 times mg Glucose plus 0.4082 times mg Glutamic Acid) divided by total liters of sample adjusted for required dilutions.
- f) Design criterion for Total Kjeldahl Nitrogen – Glycine is the source of TKN.
- g) Design criterion for pH – in separate solution (use buffer formulation from [the CRC](#) chemical handbook).
- h) Design criterion for Total Cyanide – Potassium Ferricyanide.
- i) Design criterion for Total Phenolics (4AAP) – 40% Phenol, 20% 2-Chlorophenol, 20% 2,4-Dinitrophenol, 20% 2,4-Dichlorophenol (mole %), calculated as mg/L Phenol.
- j) Design criterion for Turbidity - Formazin is the source for Turbidity.
- k) Design criterion for Oil and Grease – 1:1 Paraffin oil and cooking oil, vacuum pump oil, or similar mixture that does not contain volatile organics.

11) The Low Level Analytes' concentration ranges and acceptance criteria are specifically intended for technologies/methods that can achieve the listed PTRL.

12) Volatiles Aromatics must contain all three Xylene isomers. The concentration range of o-Xylene and m&p-Xylene is 10-150 µg/L each.

13) Gasoline Range Organics (GRO) per purge-and-trap extraction followed by chromatographic analysis. GRO is defined as the carbon range between n-C5 and n-C10.



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						a	b	c	d	

14) Laboratories seeking or maintaining TNI accreditation for Non-Potable Water 4-Methylphenol or the coeluting isomer pair of 3-Methylphenol and 4-Methylphenol must meet the TNI PT requirements for this Field of Proficiency Testing (4-Methylphenol).

15) Diesel Range Organics (DRO) per solvent extraction followed by chromatographic analysis. DRO is defined as the carbon range between n-C₁₀ and n-C₂₈.

16) n-Hexane Extractable Material (HEM) per solvent extraction followed by gravimetric or infrared spectrometric analysis (Oil & Grease).

17) non-Polar Extractable Material per solvent extraction and Silica Gel Treated (SGT) followed by gravimetric or infrared spectrometric analysis (Total Petroleum Hydrocarbons).

18) Also known as Bis(2-chloro-1-methylethyl) Ether, formerly known as Bis(2-chloroisopropyl) Ether.

19) These analytes are specified as part of a method defined and evaluated degradation process. PT sample designs for these analytes must conform to the following:

a) If the parent compound 4,4'-DDT is spiked into the PT sample, then its degradation products, 4,4'-DDD and 4,4'-DDE, must also be spiked into that PT sample.

b) If the parent compound Endrin is spiked into the PT sample, then its degradation products, Endrin aldehyde and Endrin ketone, must also be spiked into that PT sample.