

**MONTANA DIOXIN BACKGROUND
INVESTIGATION REPORT**

**Appendix A
Statistical Analysis**

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Table A-1. Upper confidence limits and background soil screening levels with computation methods listed for total data set.

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
2,3,7,8-TCDF	0.97	Maximum Detected Value	0.97	Maximum Detected Value
2,3,7,8-TCDD	1.6	Maximum Detected Value	1.6	Maximum Detected Value
1,2,3,7,8-PeCDF	0.128	95% KM (Percentile Bootstrap) UCL	0.25	95% KM UTL with 90% Coverage
2,3,4,7,8-PeCDF	0.541	95% KM (t) UCL	1.528	95% KM UTL with 90% Coverage
1,2,3,7,8-PeCDD	0.251	95% KM (t) UCL	0.68	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDF	0.442	95% KM (t) UCL	1.2	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDF	0.446	95% KM (t) UCL	1.096	95% KM UTL with 90% Coverage
2,3,4,6,7,8-HxCDF	0.481	95% KM (t) UCL	1.236	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDF	0.81	Maximum Detected Value	0.81	Maximum Detected Value
1,2,3,4,7,8-HxCDD	0.422	95% KM (% Bootstrap) UCL	1.194	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDD	1.567	95% KM (Chebyshev) UCL	3.339	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDD	0.785	95% KM (t) UCL	2.279	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF	6.197	95% KM (BCa) UCL	18.68	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF (2 Outliers Removed)	4.534	95% KM (BCa) UCL	11.47	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF	13	Maximum Detected Value	13	Maximum Detected Value
1,2,3,4,7,8,9-HpCDF (Outlier Removed)	3.9	Maximum Detected Value	3.9	Maximum Detected Value
1,2,3,4,6,7,8-HpCDD	41.22	95% KM (Chebyshev) UCL	92.98	95% KM UTL with 90% Coverage
OCDF	29.97	95% KM (Chebyshev) UCL	75.18	95% KM UTL with 90% Coverage
OCDF (Outlier Removed)	19.77	95% KM (Chebyshev) UCL	45.04	95% KM UTL with 90% Coverage
OCDD	476.9	97.5% KM (Chebyshev) UCL	941.4	95% KM UTL with 90% Coverage
OCDD (Outlier Removed)	357.2	97.5% KM (Chebyshev) UCL	676.5	95% KM UTL with 90% Coverage
TEQ	2.43	97.5% Chebyshev (Mean, Sd) UCL	3.719	95% BCa Bootstrap UTL with 90% Coverage

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Table A-2. Upper confidence limits and background soil screening levels with computation methods listed for total urban data set.

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
2,3,7,8-TCDF	0.32	95% KM (t) UCL	0.579	95% KM UTL with 90% Coverage
2,3,7,8-TCDD	0.261	95% KM (t) UCL	0.655	95% KM UTL with 90% Coverage
1,2,3,7,8-PeCDF	0.5	Maximum Detected Value	0.5	Maximum Detected Value
2,3,4,7,8-PeCDF	0.938	95% KM (t) UCL	2.204	95% KM UTL with 90% Coverage
1,2,3,7,8-PeCDD	0.375	95% KM (t) UCL	0.925	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDF	0.639	95% KM (t) UCL	1.468	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDF (Outlier Removed)	0.552	95% KM (t) UCL	1.16	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDF	0.726	95% KM (Percentile Bootstrap) UCL	1.507	95% KM UTL with 90% Coverage
2,3,4,6,7,8-HxCDF	0.8	95% KM (Percentile Bootstrap) UCL	1.722	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDF	0.226	95% KM (t) UCL	0.474	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDD	0.668	95% KM (t) UCL	1.703	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDD	2.062	95% KM (BCa) UCL	4.824	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDD	1.387	95% KM (BCa) UCL	3.284	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF	14.54	95% KM (Chebyshev) UCL	26.88	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF (Outlier Removed)	6.933	95% KM (BCa) UCL	14.55	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF	1.169	95% KM (BCa) UCL	3.35	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF (Outlier Removed)	0.571	95% KM (t) UCL	1.424	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDD	73.98	95% KM (Chebyshev) UCL	137.3	95% KM UTL with 90% Coverage
OCDF	51.73	95% KM (Chebyshev) UCL	107.2	95% KM UTL with 90% Coverage
OCDF (Outlier Removed)	21.99	95% KM (BCa) UCL	56.36	95% KM UTL with 90% Coverage
OCDF (3 Outliers Removed)	14.56	95% KM (BCa) UCL	31.06	95% KM UTL with 90% Coverage

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Table A-2. (continued)

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
OCDD	722.9	95% KM (Chebyshev) UCL	1412	95% KM UTL with 90% Coverage
OCDD (Outlier Removed)	541.4	95% KM (Chebyshev) UCL	1005	95% KM UTL with 90% Coverage
TEQ	3.884	97.5% Chebyshev (Mean, Sd) UCL	7.456	95% BCa Bootstrap UTL with 90% Coverage

Table A-3. Upper confidence limits and background soil screening levels with computation methods listed for urban commercial data set.

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
2,3,7,8-TCDF	0.425	95% KM (t) UCL	0.678	95% KM UTL with 90% Coverage
2,3,7,8-TCDF (Outlier Removed)	0.355	95% KM (t) UCL	0.48	95% KM UTL with 90% Coverage
2,3,7,8-TCDD	0.52	Maximum Detected Value	0.52	Maximum Detected Value
1,2,3,7,8-PeCDF	0.35	Maximum Detected Value	0.35	Maximum Detected Value
2,3,4,7,8-PeCDF	1.218	95% KM (t) UCL	2.47	95% KM UTL with 90% Coverage
1,2,3,7,8-PeCDD	0.402	95% KM (Percentile Bootstrap) UCL	0.704	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDF	1.085	95% KM (Percentile Bootstrap) UCL	2.332	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDF (Outlier Removed)	0.76	95% KM (t) UCL	1.44	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDF	0.931	95% KM (t) UCL	1.783	95% KM UTL with 90% Coverage
2,3,4,6,7,8-HxCDF	1.036	95% KM (Percentile Bootstrap) UCL	2.131	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDF	0.51	Maximum Detected Value	0.51	Maximum Detected Value
1,2,3,4,7,8-HxCDD	0.595	95% KM (Percentile Bootstrap) UCL	1.042	95% KM UTL with 90% Coverage

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Table A-3. (continued)

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
1,2,3,6,7,8-HxCDD	2.649	95% KM (BCa) UCL	5.128	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDD (Outlier Removed)	1.793	95% KM (t) UCL	3.339	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDD	1.25	95% KM (t) UCL	2.237	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF	29.46	95% KM (Chebyshev) UCL	45.35	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF (Outlier Removed)	8.174	95% KM (t) UCL	15.46	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF	2.673	95% KM (BCa) UCL	6.643	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF (Outlier Removed)	0.669	95% KM (t) UCL	1.272	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF (2 Outliers Removed)	0.535	95% KM (t) UCL	0.9	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDD	67.45	95% Approximate Gamma UCL	250	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDD (Outlier Removed)	40.78	Use 95% Student's-t UCL	94	95% UTL with 90% Coverage
OCDF	160.9	97.5% KM (Chebyshev) UCL	200.5	95% KM UTL with 90% Coverage
OCDF (Outlier Removed)	22.36	95% KM (BCa) UCL	42.34	95% KM UTL with 90% Coverage
OCDD	1804	97.5% KM (Chebyshev) UCL	2231	95% KM UTL with 90% Coverage
OCDD (Outlier Removed)	359.1	95% KM (BCa) UCL	691.5	95% KM UTL with 90% Coverage
OCDD (2 Outliers Removed)	282.1	95% KM (t) UCL	509.1	95% KM UTL with 90% Coverage
TEQ	2.839	95% Approximate Gamma UCL	7.86	95% BCa Bootstrap UTL with 90% Coverage
TEQ (Outlier Removed)	2.059	95% Student's-t UCL	3.818	95% BCa Bootstrap UTL with 90% Coverage

Table A-4. Upper confidence limits and background soil screening levels with computation methods listed for urban industrial data set.

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
2,3,7,8-TCDF	0.91	Maximum Detected Value	0.91	Maximum Detected Value
2,3,7,8-TCDF (Outlier Removed)	0.5	Maximum Detected Value	0.5	Maximum Detected Value
2,3,7,8-TCDD	1.3	Maximum Detected Value	1.3	Maximum Detected Value
2,3,7,8-TCDD (2 Outliers Removed)	0.2	Maximum Detected Value	0.2	Maximum Detected Value
1,2,3,7,8-PeCDF	0.43	Maximum Detected Value	0.43	Maximum Detected Value
2,3,4,7,8-PeCDF	0.98	95% KM (Percentile Bootstrap) UCL	2.118	95% KM UTL with 90% Coverage
2,3,4,7,8-PeCDF (2 Outliers Removed)	0.606	95% KM (t) UCL	1.107	95% KM UTL with 90% Coverage
1,2,3,7,8-PeCDD	0.536	95% KM (t) UCL	1.215	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDF	0.773	95% KM (Percentile Bootstrap) UCL	1.487	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDF	0.906	95% KM (Percentile Bootstrap) UCL	1.924	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDF (2 Outliers Removed)	0.583	95% KM (t) UCL	1.091	95% KM UTL with 90% Coverage
2,3,4,6,7,8-HxCDF	0.999	95% KM (Percentile Bootstrap) UCL	2.14	95% KM UTL with 90% Coverage
2,3,4,6,7,8-HxCDF (2 Outliers Removed)	0.617	95% KM (Percentile Bootstrap) UCL	1.103	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDF	0.313	95% KM (Percentile Bootstrap) UCL	0.448	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDD	1.176	95% KM (BCa) UCL	2.7	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDD (Outlier Removed)	0.743	95% KM (t) UCL	1.629	95% KM UTL with 90% Coverage

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Table A-4. (continued)

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
1,2,3,4,7,8-HxCDD (2 Outliers Removed)	0.577	95% KM (t) UCL	1.2	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDD	4.495	95% KM (Chebyshev) UCL	6.722	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDD	2.206	95% KM (BCa) UCL	4.917	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDD (Outlier Removed)	1.519	95% KM (BCa) UCL	3.021	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF	19.75	95% KM (Chebyshev) UCL	29.47	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF (Outlier Removed)	9.678	95% KM (BCa) UCL	20.25	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF	0.963	95% KM (t) UCL	2.287	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF (2 Outliers Removed)	0.478	95% KM (Percentile Bootstrap) UCL	0.689	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDD	89.74	95% Approximate Gamma UCL	280	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDD (3 Outliers Removed)	41.57	95% Approximate Gamma UCL	110	95% KM UTL with 90% Coverage
OCDF	80.42	97.5% KM (Chebyshev) UCL	99.25	95% KM UTL with 90% Coverage
OCDF (2 Outliers Removed)	16.31	95% KM (BCa) UCL	31.83	95% KM UTL with 90% Coverage
OCDD	1097	95% KM (Chebyshev) UCL	1693	95% KM UTL with 90% Coverage
OCDD (3 Outliers Removed)	286.1	95% KM (BCa) UCL	578.8	95% KM UTL with 90% Coverage
TEQ	4.822	95% Chebyshev (MVUE) UCL	5.84	95% BCa Bootstrap UTL with 90% Coverage

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Table A-5. Upper confidence limits and background soil screening levels with computation methods listed for urban residential data set.

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
2,3,7,8-TCDF	0.426	95% KM (Percentile Bootstrap) UCL	0.637	95% KM UTL with 90% Coverage
2,3,7,8-TCDD	1.6	Maximum Detected Value	1.6	Maximum Detected Value
2,3,7,8-TCDD (2 Outliers Removed)	0.37	Maximum Detected Value	0.37	Maximum Detected Value
1,2,3,7,8-PeCDF	0.5	Maximum Detected Value	0.5	Maximum Detected Value
2,3,4,7,8-PeCDF	1.25	95% KM (t) UCL	2.763	95% KM UTL with 90% Coverage
2,3,4,7,8-PeCDF (2 Outliers Removed)	0.762	95% KM (Percentile Bootstrap) UCL	0.984	95% KM UTL with 90% Coverage
1,2,3,7,8-PeCDD	0.447	95% KM (t) UCL	1.105	95% KM UTL with 90% Coverage
1,2,3,7,8-PeCDD (Outlier Removed)	0.283	95% KM (t) UCL	0.603	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDF	0.499	95% KM (t) UCL	0.91	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDF	0.684	95% KM (t) UCL	1.404	95% KM UTL with 90% Coverage
2,3,4,6,7,8-HxCDF	0.784	95% KM (Percentile Bootstrap) UCL	1.921	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDF	0.282	95% KM (t) UCL	0.602	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDD	0.636	95% KM (t) UCL	1.634	95% KM UTL with 90% Coverage
1,2,3,4,7,8-HxCDD (Outlier Removed)	0.396	95% KM (t) UCL	0.906	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDD	3.38	97.5% KM (Chebyshev) UCL	4.268	95% KM UTL with 90% Coverage
1,2,3,6,7,8-HxCDD (2 Outliers Removed)	0.794	95% KM (Percentile Bootstrap) UCL	1.393	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDD	2.635	97.5% KM (Chebyshev) UCL	3.346	95% KM UTL with 90% Coverage
1,2,3,7,8,9-HxCDD (2 Outliers Removed)	0.461	95% KM (Percentile Bootstrap) UCL	0.818	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF	6.038	95% KM (BCa) UCL	12.72	95% KM UTL with 90% Coverage

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Table A-5. (continued)

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
1,2,3,4,6,7,8-HpCDF (Outlier Removed)	4.955	95% KM (t) UCL	9.911	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF	0.533	95% KM (Percentile Bootstrap) UCL	1.047	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDD	95.85	97.5% KM (Chebyshev) UCL	123.9	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDD (2 Outliers Removed)	20.65	95% KM (Chebyshev) UCL	30.19	95% KM UTL with 90% Coverage
OCDF	12.55	95% KM (BCa) UCL	29.04	95% KM UTL with 90% Coverage
OCDD	582.9	97.5% KM (Chebyshev) UCL	745.8	95% KM UTL with 90% Coverage
OCDD (2 Outliers Removed)	171	95% KM (Chebyshev) UCL	250	95% KM UTL with 90% Coverage
TEQ	3.796	95% Chebyshev (MVUE) UCL	9.695	95% BCa Bootstrap UTL with 90% Coverage
TEQ (2 Outliers Removed)	1.375	95% Approximate Gamma UCL	2.556	95% BCa Bootstrap UTL with 90% Coverage

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Table A-6. Upper confidence limits and background soil screening levels with computation methods listed for total rural data set.

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
2,3,7,8-TCDF	0.83	Maximum Detected Value	0.83	Maximum Detected Value
2,3,7,8-TCDD	0.56	Maximum Detected Value	0.56	Maximum Detected Value
1,2,3,7,8-PeCDF	4.1	Maximum Detected Value	4.1	Maximum Detected Value
2,3,4,7,8-PeCDF	1.2	Maximum Detected Value	1.2	Maximum Detected Value
1,2,3,7,8-PeCDD	1	Maximum Detected Value	1	Maximum Detected Value
1,2,3,4,7,8-HxCDF	3.2	Maximum Detected Value	3.2	Maximum Detected Value
1,2,3,4,7,8-HxCDF (2 Outliers Removed)	0.32	Maximum Detected Value	0.32	Maximum Detected Value
1,2,3,6,7,8-HxCDF	1.5	Maximum Detected Value	1.5	Maximum Detected Value
2,3,4,6,7,8-HxCDF	1.1	Maximum Detected Value	1.1	Maximum Detected Value
1,2,3,7,8,9-HxCDF	1.0	Maximum Detection Limit	1.0	Maximum Detection Limit
1,2,3,4,7,8-HxCDD	1.2	Maximum Detected Value	1.2	Maximum Detected Value
1,2,3,6,7,8-HxCDD	2	Maximum Detected Value	2	Maximum Detected Value
1,2,3,7,8,9-HxCDD	1.9	Maximum Detected Value	1.9	Maximum Detected Value
1,2,3,7,8,9-HxCDD (Outlier Removed)	1.1	Maximum Detected Value	1.1	Maximum Detected Value
1,2,3,4,6,7,8-HpCDF	4.144	95% KM (Chebyshev) UCL	8.382	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF (3 Outliers Removed)	1.158	95% KM (t) UCL	2.823	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF	3.9	Maximum Detected Value	3.9	Maximum Detected Value
1,2,3,4,7,8,9-HpCDF (Outlier Removed)	1.2	Maximum Detected Value	1.2	Maximum Detected Value
1,2,3,4,6,7,8-HpCDD	9.422	95% KM (Chebyshev) UCL	17.37	95% KM UTL with 90% Coverage
OCDF	16.46	95% KM (Chebyshev) UCL	35.94	95% KM UTL with 90% Coverage
OCDF (Outlier Removed)	7.807	95% KM (Chebyshev) UCL	15.51	95% KM UTL with 90% Coverage
OCDD	67.55	95% KM (Chebyshev) UCL	126.6	95% KM UTL with 90% Coverage

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Table A-6. (continued)

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
TEQ	1.125	95% Chebyshev (Mean, Sd) UCL	1.817	95% BCa Bootstrap UTL with 90% Coverage

Table A-7. Upper confidence limits and background soil screening levels with computation methods listed for rural agricultural data set.

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
2,3,7,8-TCDF	0.62	Maximum Detected Value	0.62	Maximum Detected Value
2,3,7,8-TCDD	0.56	Maximum Detected Value	0.56	Maximum Detected Value
1,2,3,7,8-PeCDF	0.078	Maximum Detected Value	0.078	Maximum Detected Value
2,3,4,7,8-PeCDF	0.097	Maximum Detected Value	0.097	Maximum Detected Value
1,2,3,7,8-PeCDD	0.67	Maximum Detected Value	0.67	Maximum Detected Value
1,2,3,4,7,8-HxCDF	0.29	Maximum Detected Value	0.29	Maximum Detected Value
1,2,3,6,7,8-HxCDF	0.8	Maximum Detected Value	0.8	Maximum Detected Value
2,3,4,6,7,8-HxCDF	0.5	Maximum Detected Value	0.5	Maximum Detected Value
1,2,3,7,8,9-HxCDF	1.0	Maximum Detection Limit	1.0	Maximum Detection Limit
1,2,3,4,7,8-HxCDD	0.27	Maximum Detected Value	0.27	Maximum Detected Value
1,2,3,6,7,8-HxCDD	1.2	Maximum Detected Value	1.2	Maximum Detected Value
1,2,3,7,8,9-HxCDD	0.62	Maximum Detected Value	0.62	Maximum Detected Value
1,2,3,4,6,7,8-HpCDF	4.158	95% KM (t) UCL	11.91	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF (2 Outliers Removed)	1.231	95% KM (Percentile Bootstrap) UCL	2.164	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF	1.1	Maximum Detected Value	1.1	Maximum Detected Value
1,2,3,4,6,7,8-HpCDD	12.85	95% KM (Chebyshev) UCL	19.5	95% KM UTL with 90% Coverage

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Table A-7. (continued)

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
OCDF	80.87	99% KM (Chebyshev) UCL	68.13	95% KM UTL with 90% Coverage
OCDF (2 Outliers Removed)	2.961	95% KM (Percentile Bootstrap) UCL	5.859	95% KM UTL with 90% Coverage
OCDD	104.2	95% KM (Chebyshev) UCL	160.4	95% KM UTL with 90% Coverage
TEQ	1.366	95% Chebyshev (Mean, Sd) UCL	1.503	95% BCa Bootstrap UTL with 90% Coverage

Table A-8. Upper confidence limits and background soil screening levels with computation methods listed for rural forested data set.

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
2,3,7,8-TCDF	0.83	Maximum Detected Value	0.83	Maximum Detected Value
2,3,7,8-TCDF (Outlier Removed)	0.27	Maximum Detected Value	0.27	Maximum Detected Value
2,3,7,8-TCDD	0.34	Maximum Detected Value	0.34	Maximum Detected Value
1,2,3,7,8-PeCDF	0.27	Maximum Detected Value	0.27	Maximum Detected Value
2,3,4,7,8-PeCDF	1.2	Maximum Detected Value	1.2	Maximum Detected Value
1,2,3,7,8-PeCDD	1	Maximum Detected Value	1	Maximum Detected Value
1,2,3,4,7,8-HxCDF	2.1	Maximum Detected Value	2.1	Maximum Detected Value
1,2,3,4,7,8-HxCDF (Outlier Removed)	0.32	Maximum Detected Value	0.32	Maximum Detected Value
1,2,3,6,7,8-HxCDF	0.32	Maximum Detected Value	0.32	Maximum Detected Value
2,3,4,6,7,8-HxCDF	1	Maximum Detected Value	1	Maximum Detected Value
1,2,3,7,8,9-HxCDF	0.98	Maximum Detection Limit	0.98	Maximum Detection Limit
1,2,3,4,7,8-HxCDD	1.2	Maximum Detected Value	1.2	Maximum Detected Value
1,2,3,6,7,8-HxCDD	2	Maximum Detected Value	2	Maximum Detected Value

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Table A-8. (continued)

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
1,2,3,7,8,9-HxCDD	1.9	Maximum Detected Value	1.9	Maximum Detected Value
1,2,3,4,6,7,8-HpCDF	3.059	95% KM (BCa) UCL	7.183	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF (2 Outliers Removed)	0.958	95% KM (t) UCL	1.902	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF	1.2	Maximum Detected Value	1.2	Maximum Detected Value
1,2,3,4,6,7,8-HpCDD	9.142	95% KM (BCa) UCL	22.14	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDD (2 Outliers Removed)	3.304	95% KM (t) UCL	6.685	95% KM UTL with 90% Coverage
OCDF	7.075	95% KM (BCa) UCL	16.5	95% KM UTL with 90% Coverage
OCDF (Outlier Removed)	3.013	95% KM (t) UCL	6.93	95% KM UTL with 90% Coverage
OCDF (2 Outliers Removed)	1.953	95% KM (Percentile Bootstrap) UCL	3.344	95% KM UTL with 90% Coverage
OCDD	95.16	95% KM (Chebyshev) UCL	151.5	95% KM UTL with 90% Coverage
OCDD (Outlier Removed)	20.44	95% KM (Percentile Bootstrap) UCL	42.96	95% KM UTL with 90% Coverage
TEQ	1.179	95% Approximate Gamma UCL	2.095	95% BCa Bootstrap UTL with 90% Coverage
TEQ (2 Outliers Removed)	0.891	95% Approximate Gamma UCL	1.203	95% BCa Bootstrap UTL with 90% Coverage

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Table A-9. Upper confidence limits and background soil screening levels with computation methods listed for rural open space data set.

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
2,3,7,8-TCDF	0.59	Maximum Detection Limit	0.59	Maximum Detection Limit
2,3,7,8-TCDD	0.16	Maximum Detected Value	0.16	Maximum Detected Value
1,2,3,7,8-PeCDF	0.088	Maximum Detected Value	0.088	Maximum Detected Value
2,3,4,7,8-PeCDF	0.16	Maximum Detected Value	0.16	Maximum Detected Value
1,2,3,7,8-PeCDD	0.19	Maximum Detected Value	0.19	Maximum Detected Value
1,2,3,4,7,8-HxCDF	3.2	Maximum Detected Value	3.2	Maximum Detected Value
1,2,3,4,7,8-HxCDF (Outlier Removed)	0.18	Maximum Detected Value	0.18	Maximum Detected Value
1,2,3,6,7,8-HxCDF	1.5	Maximum Detected Value	1.5	Maximum Detected Value
2,3,4,6,7,8-HxCDF	1.1	Maximum Detected Value	1.1	Maximum Detected Value
1,2,3,7,8,9-HxCDF	1.0	Maximum Detection Limit	1.0	Maximum Detection Limit
1,2,3,4,7,8-HxCDD	0.67	Maximum Detected Value	0.67	Maximum Detected Value
1,2,3,6,7,8-HxCDD	1.3	Maximum Detected Value	1.3	Maximum Detected Value
1,2,3,7,8,9-HxCDD	0.8	Maximum Detected Value	0.8	Maximum Detected Value
1,2,3,4,6,7,8-HpCDF	7.584	97.5% KM (Chebyshev) UCL	9.508	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDF (2 Outliers Removed)	0.994	95% KM (Percentile Bootstrap) UCL	1.645	95% KM UTL with 90% Coverage
1,2,3,4,7,8,9-HpCDF	3.9	Maximum Detected Value	3.9	Maximum Detected Value
1,2,3,4,7,8,9-HpCDF (Outlier Removed)	0.14	Maximum Detected Value	0.14	Maximum Detected Value
1,2,3,4,6,7,8-HpCDD	14.16	97.5% KM (Chebyshev) UCL	17.56	95% KM UTL with 90% Coverage
1,2,3,4,6,7,8-HpCDD (Outlier Removed)	4.93	95% KM (BCa) UCL	10.73	95% KM UTL with 90% Coverage
OCDF	17.76	97.5% KM (Chebyshev) UCL	22.2	95% KM UTL with 90% Coverage

Table A-9. (continued)

Dioxin	Upper Confidence Limit (ng/kg)	Method	Upper Tolerance Limit (ng/kg)	Method
OCDF (3 Outliers Removed)	1.656	95% KM (Percentile Bootstrap) UCL	2.55	95% KM UTL with 90% Coverage
OCDD	95.86	97.5% KM (Chebyshev) UCL	119.4	95% KM UTL with 90% Coverage
OCDD (3 Outliers Removed)	24.5	95% KM (Chebyshev) UCL	33.82	95% KM UTL with 90% Coverage
TEQ	1.017	95% Approximate Gamma UCL	1.405	95% BCa Bootstrap UTL with 90% Coverage
TEQ (Outlier Removed)	0.844	95% Student's-t UCL	1.266	95% BCa Bootstrap UTL with 90% Coverage