Review Criteria and Detection Limits for Metals

(7/6/2010)

The target method detection limits in soil should be used for the totals analysis and the target method detection limit in water should be used for leachate analysis (TCLP or SPLP). If all the sample results for the totals analyses are below the statewide default background or site specific background concentration (Background), the sediments are considered to be uncontaminated. If one or more sample results are above the Background concentration, the 95% Upper Confidence Level (UCL) of all the samples is computed. If this result is equal to or less than Background the sediments are considered to be uncontaminated. If the UCl is above Background leachate testing is required. To be considered uncontaminated the UCl of the leachate testing must be below the groundwater criteria AND the totals testing must be below the soil criteria. If either of these criteria is exceeded restrictions will be placed on the disposal of the material. Guidance on developing a site specific background or assistance in computing the UCL can be found in the Sampling Strategies and Statistics Training Materials for Part 201, Cleanup Criteria found at http://www.michigan.gov/documents/deq/deq-erd-stats-s3tm_250015_7.pdf .

Chemical	Statewide Default Background (PPM)	Groundwater Criteria (µg/l)	Target Method Detection Limit in Water (µg/kg)	Soil Criteria (µg/kg)	Target Method Detection Limit in Soil (µg/kg)
Arsenic	5.8	0.02	1	720	100
Barium	75	630	200	1.8E+7	1,000
Cadmium	1.2	0.64	0.2	1.3E+5	50
Chromium	18	77	50	3.9E+8	2,500
Copper	32	18	25	9.8E+6	1,000
Lead	21	4	3	4E+5	1,000
Manganese	440	50	20	1.2E+6	2,000
Mercury (Inorganic)	0.13	0.0013	0.2	78,000	100
Nickel	21	57	50	2E+7	1,000
Selenium	0.41	5	5	1.3E+6	500
Silver	1	0.1	0.5	1.2E+6	500
Zinc	47	81	20	8.6E+7	1,000

Review Criteria and Detection Limits for PNAs and PCBs

(7/6/2010)

The target method detection limits (TMDL) in soil should be used for the totals analysis and the TMDL in water should be used for leachate analysis (TCLP or SPLP). If all the sample results for the totals analyses are below the TMDL in soil the sediments are considered to be uncontaminated. If one or more total analysis sample results are above the TMDL in soil, the 95% Upper Confidence Level (UCL) of all the samples is computed. If this result is equal to or less than the TMDL in soil the sediments are considered to be uncontaminated. If the UCl for the total analysis is above TMDL in soil leachate testing may be required. Many of the parameters have a NLL (not likely to leach) under the groundwater criteria and leachate testing is not required for these parameters. To be considered uncontaminated the UCl of the leachate testing must be below the groundwater criteria AND the totals testing must be below the soil criteria. If either of these criteria is exceeded restrictions will be placed on the disposal of the material. Guidance on developing a site specific background or assistance in computing the UCL can be found in the Sampling Strategies and Statistics Training Materials for Part 201, Cleanup Criteria found at http://www.michigan.gov/documents/deq/deq-erd-stats-s3tm_250015_7.pdf .

Chemical	Groundwater Criteria (µg/l)	Target Method Detection Limit in Water (µg/kg)	Soil Criteria (µg/kg)	Target Method Detection Limit in Soil (µg/kg)
Acenaphthene	1,200	5	4.5E+7	330
Acenaphthylene	25	5	9.3E+5	330
Anthracene	7,000	5	2.6E+8	330
Benzo(a)anthracene	NLL	5	1,800	330
Benzo(b)fluoranthene	NLL	5	1,800	330
Benzo(k)fluoranthene	NLL	5	18,000	330
Benzo(g,h,i)perylene	NLL	5	1.8E+5	330
Benzo(a)pyrene	NLL	5	180	330
Chrysene	NLL	5	1.8E+5	330
Dibenzo(a,h)anthracene	NLL	5	1,800	330
Fluoranthene	370	5	3.1E+7	330
Fluorene	840	5	3.1E+7	330
Indeno(1,2,3-cd)pyrene	NLL	5	1,800	330
2-Methylnaphthalene	5,700	5	8.1E+6	330
Naphthalene	29	5	9.3E+6	330
Phenanthrene	5	5	9.3E+5	330
Pyrene	520	5	1.9E+7	330
PCBs	NLL	0.2	1,000	330