

Protocol for Sampling and Analysis of Environmental Media for Massachusetts Registered Medical Marijuana Dispensaries

Exhibit 4. Analysis Details - Soil and Solid Growing Media

May 7, 2015

This document was issued originally by the Department of Public Health (DPH). As part of the transfer of the medical-use of marijuana program on or before December 31, 2018, the Commission adopted this document. We suggest that before you rely on the contents of this document, you check the applicable medical-use marijuana laws, which include M.G.L. c. 94I and 935 CMR 501.000, as they may provide or clarify the legal requirements related to this document. We also suggest that you periodically check for revisions to this document. Questions with regards to this document may be directed to CannabisCommission@Mass.gov.

Method	Analytical Method	Analyte	CAS	Reporting Limit (mg/kg)	Acceptable Limits (mg/kg)
Metals	Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES) comparable to SW-846 6010C or ICP-Mass Spectrometry (ICP-MS) comparable to SW-846 6020B or other suitable validated method and Cold Vapor Atomic Absorption (CVAA) for Hg comparable to SW-846 7471B or other suitable validated method	Antimony	7440-36-0	6.0	31*
		Arsenic	7440-38-2	1.0	15
		Cadmium	7440-43-9	0.50	5
		Chromium (Hexavalent)	7440-47-3	1.0	45
		Copper	7440-50-8	2.5	3,100*
		Lead	7439-92-1	1.0	400*
		Nickel	7440-02-0	4.0	1,500*
		Zinc	7440-66-6	6.0	15,000
		Mercury (CVAA)	7439-97-6	0.2	9.4*
Pesticides	Gas chromatography Electron Capture Detector (GC-ECD) comparable to SW-846 8081B or other suitable validated method	alpha-BHC	319-84-6	0.0017	400
		beta-BHC	319-85-7	0.0017	0.39**
		delta-BHC	319-86-8	0.0017	0.39**
		gamma-BHC	58-89-9	0.0017	0.56*
		Heptachlor	76-44-8	0.0017	0.16**
		Aldrin	309-00-2	0.0017	1.5
		Heptachlor epoxide	1024-57-3	0.0017	0.077**
		Endosulfan I	959-98-8	0.0017	100
		Dieldrin	60-57-1	0.0033	2.5
		4,4'-DDE	72-55-9	0.0033	2.1**
		Endrin	72-20-8	0.0033	15
		Endosulfan II	33213-65-9	0.0033	100



Method	Analytical Method	Analyte	CAS	Reporting Limit (mg/kg)	Acceptable Limits (mg/kg)
		4,4'-DDD	72-54-8	0.0033	2.9**
		Endosulfan sulfate	1031-07-8	0.0033	100
		4,4'-DDT	50-29-3	0.0033	2.1**
		Methoxychlor	72-43-5	0.017	310*
		Endrin ketone	53494-70-5	0.0033	15
		Endrin aldehyde	7421-93-4	0.0033	15
		alpha-Chlordane	5103-71-9	0.0017	30
		gamma-Chlordane	5103-74-2	0.0017	30
PCBs	GC-ECD comparable to SW-846 8082A or other suitable validated method	Total PCBs (measured as Aroclors)	1336-36-3	0.1	1

Reporting limits are recommended based on the capabilities of appropriate methods. All soils/solids for cultivation must demonstrate that they meet the acceptable limits shown in Exhibit 4 on a dry weight basis.

*US EPA Regional Screening Level (US EPA 2014)

**Cancer Risk Evaluation Guidelines (ATSDR 2014)

Please note that these Protocols are continually evaluated and revised based upon new scientific and industry information.