

QC Summary for Trace Metals and Mercury in Tissues

Prepared by Misty D. Kennard
Frontier Geosciences Inc.

Parameter	Units	Tissues					
		Sample Digestion	Analytical Method	Estimated MDL	MS/MSD/SRM Recoveries	MD/MS/MSD RPD	MD/MS/MSD Frequency
Aluminum	mg/kg	Conc. HNO ₃	ICP-MS	0.2	75-125%	+/- 25%	per 20 samples
Antimony	mg/kg	Conc. HNO ₃	ICP-MS	0.005	75-125%	+/- 25%	per 20 samples
Arsenic	mg/kg	Conc. HNO ₃	ICP-MS	0.05	75-125%	+/- 25%	per 20 samples
Barium	mg/kg	Conc. HNO ₃	ICP-MS	0.01	75-125%	+/- 25%	per 20 samples
Beryllium	mg/kg	Conc. HNO ₃	ICP-MS	0.02	75-125%	+/- 25%	per 20 samples
Cadmium	mg/kg	Conc. HNO ₃	ICP-MS	0.02	75-125%	+/- 25%	per 20 samples
Chromium	mg/kg	Conc. HNO ₃	ICP-MS	0.1	75-125%	+/- 25%	per 20 samples
Copper	mg/kg	Conc. HNO ₃	ICP-MS	0.01	75-125%	+/- 25%	per 20 samples
Iron	mg/kg	Conc. HNO ₃	ICP-MS (DRC)	0.2	75-125%	+/- 25%	per 20 samples
Lead	mg/kg	Conc. HNO ₃	ICP-MS	0.01	75-125%	+/- 25%	per 20 samples
Mercury	mg/kg	HNO ₃ /H ₂ SO ₄	CV-AFS	0.001	75-125%	+/- 25%	per 20 samples
Manganese	mg/kg	Conc. HNO ₃	ICP-MS	0.02	75-125%	+/- 25%	per 20 samples
Nickel	mg/kg	Conc. HNO ₃	ICP-MS	0.01	75-125%	+/- 25%	per 20 samples
Selenium	mg/kg	Conc. HNO ₃	HG-AFS	0.01	75-125%	+/- 25%	per 20 samples
Silver	mg/kg	Conc. HNO ₃	ICP-MS	0.01	75-125%	+/- 25%	per 20 samples
Tin	mg/kg	Conc. HNO ₃	ICP-MS	0.003	75-125%	+/- 25%	per 20 samples
Thallium	mg/kg	Conc. HNO ₃	ICP-MS	0.01	75-125%	+/- 25%	per 20 samples
Zinc	mg/kg	Conc. HNO ₃	ICP-MS	0.04	75-125%	+/- 25%	per 20 samples

ICP-MS = Inductively Coupled-Plasma Mass Spectrometry, Draft EPA Method 1638 (modified)

DRC = Dynamic Reaction Cell Technology

HG-AFS = Hydride Generation - Atomic Fluorescence Spectrometry, Draft EPA Method 1632 (modified)

CV-AFS = Cold Vapor-Atomic Fluorescence Spectrometry, EPA Method 1631 (modified)

MDL = Method detection limit

MS = Matrix spike

MSD = Matrix spike recovery

MD = Matrix duplicate

RPD = Relative Percent Difference

Parameter	Units	CCB/CCV	ICV	Preparation	Containers	Preservation
		Frequency	Frequency	Blanks	supplied by Frontier	
Aluminium	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Antimony	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Arsenic	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Barium	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Beryllium	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Cadmium	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Chromium	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Copper	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Iron	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Lead	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Mercury	mg/kg	per 10 samples	1 per analytical batch	3	plastic bags	frozen
Manganese	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Nickel	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Selenium	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Silver	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Tin	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Thallium	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen
Zinc	mg/kg	per 10 samples	1 per analytical batch	4	plastic bags	frozen

ICV = Initial calibration verification

CCV = Continued calibration verification

CCB = Continued calibration blank

Please note one analytical batch is a maximum of 20 samples.