

BRITISH COLUMBIA ENVIRONMENTAL LABORATORY MANUAL

2009 Edition

Prepared and published by:

**Water & Air Monitoring and Reporting Section
Environmental Quality Branch
Ministry of Environment
Province of British Columbia**

with the assistance of

The British Columbia Environmental Laboratory Technical Advisory Committee

July 14, 2009

© Her Majesty the Queen in
Right of the Province of British Columbia
2009
All Rights Reserved.

PREFACE

Stakeholder Representation

This manual was prepared in cooperation with stakeholders as represented by the British Columbia Environmental Laboratory Technical Advisory Committee.

The British Columbia Environmental Laboratory Technical Advisory Committee

Andrew Garrard, Exova

Rob Gilbert, Maxxam Analytics International Corp.

Dr. Glyn Fox, Environmental Management Branch, Ministry of Environment

Scott Hoekstra, Hazco

Steve Horvath, Water, Environmental Quality Branch, Ministry of Environment

Mark Hugdahl, ALS Environmental

Brent Mussato, CARO Analytical Services

Cindy Ott, URS Canada Inc.

Richard Strub, PESC, Environment Canada

Zhenyong Gao, Cantest Ltd.

Acknowledgements

The Ministry of Environment and the British Columbia Environmental Laboratory Technica Advisory Committee, wish to acknowledge the assistance provided the many individuals who gave of their time, effort, and expertise and without whose assistance this manual could not have been produced.

Recommended Citation

Horvath, S. (editor). 2009. British Columbia Environmental Laboratory Manual. Water and Air Monitoring and Reporting, Environmental Quality Branch, Ministry of Environment, Victoria, BC, Canada.

Superseded Documents

The British Columbia Environmental Laboratory Manual replaces and supersedes, in whole or in part, the following manuals previously published by the Ministry of Environment, Lands and Parks:

British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediments and Biological Materials, 2007 Edition

British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediments and Biological Materials, 2005 Edition

British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediments and Biological Materials, 2003 Edition

British Columbia Environmental Laboratory Manual, Supplement #2 to the 1994 Edition: Analysis of Discrete Ambient Air Samples, 1998

British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediments and Biological Materials, Supplement #1 to the 1994 Edition

British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediments and Biological Materials 1994 Edition

Notice of Copyright

All accompanying written materials of this Manual are protected by copyright laws and international treaty. Copyright in the information content of the Manual belongs to Her Majesty the Queen in right of the Province of British Columbia (the "Province").

This manual has been officially approved by the Director of Environmental Quality Branch. It may be cited in Waste Management permits, approvals and orders, as well as legislated requirements.

Canadian Cataloguing in Publication Data

Main entry under title:

British Columbia Environmental Laboratory Manual: for the analysis of water, wastewater, sediments, biological materials and discrete ambient air samples. 2009

Prepared in cooperation with the British Columbia Laboratory Quality Assurance Advisory Committee and the Technical Subcommittee. Cf. Preface.

ISBN

1. Water - Analysis - Laboratory manuals. 2. Sewage - Analysis - Laboratory manuals. 3. Suspended sediments - Analysis - Laboratory manuals. 4. Biological specimens - Analysis - Laboratory manuals. 5. Chemistry, Analytic - Laboratory manuals. I. BC Environment. Laboratory Services. II. British Columbia Quality Assurance Users Committee. III. McQuaker, N. R., 1943-. A laboratory manual for the chemical analysis of waters, wastewaters, sediments and biological materials. IV. Title: Laboratory manual for the chemical analysis of waters, wastewaters, sediments and biological materials.

QD142.B73 1994

546'.226'0287

C94-960156-X

TABLE OF CONTENTS

SECTION A:	Laboratory Quality Assurance/Quality Control
SECTION B:	Physical, Inorganic and Miscellaneous Constituents
SECTION C:	Metals
SECTION D:	Organic Constituents and Compounds
SECTION E:	Microbiological Examination
SECTION F:	Toxicity Test Methods
SECTION G:	Air Constituents - Inorganic
SECTION H:	Air and Vapour Constituents - Organic