ISBN 978-1-4606-8815-1 (CD)
ISBN 978-1-4606-8814-4 (zip file)

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Burke, H.E. 2016. Stream sediment and water geochemical data, Lake Erie tributaries, Ontario; Ontario Geological Survey, Miscellaneous Release Data—340.

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Miscellaneous Release—Data 340

Stream Sediment and Water Geochemical Data, Lake Erie Tributaries, Ontario

by H.E. Burke

This publication can be downloaded from
http://www.geologyontario.mndm.gov.on.ca/mndmaccess/mndm_dir.asp?type=pub&id=MRD340

This digital data release provides stream sediment and water geochemical data, limnological data and quality-control data, collected from a total of 208 sample sets from 102 sites during 4 different seasons along Lake Erie's north shore and Lake St. Clair's eastern shore by the Ontario Geological Survey in collaboration with the Ontario Ministry of Agriculture, Food and Rural Affairs. The data were collected between November 2012 and November 2013 as part of the author's MSc thesis work and constitutes part of the requirements of a Master of Science (Geology) thesis project at the Harquail School of Earth Sciences at Laurentian University under the supervision of Dr. Matthew Leybourne. Seasonal data are provided for 52 sites from 11 quaternary watersheds. This release includes a background document describing the sampling methodology, sample preparation protocols, geochemical analytical methods and quality-control regimes. Stream sediment and water samples were analyzed by inductively coupled plasma atomic emission spectroscopy and inductively coupled plasma mass spectrometry for more than 60 elements. Stream sediment samples were also analyzed for phosphorus fractions and stream waters for inorganic anions and nitrogen by ion chromatography. Colorimetric methods were used to determine phosphorus and nitrogen fractions. All location information is presented as geographic co-ordinates (latitude and longitude) in the World Geodetic System 1984 (WGS84) and Universal Transverse Mercator (UTM) co-ordinates using North American Datum 1983 (NAD83) in Zone 17. Data are available as 6 Microsoft® Excel® 2010 (*.xlsx*) workbook files, 1 Microsoft® Access® 2010 (*.accdb*) database file containing sample data and preformatted queries to facilitate data extraction and 1 background document in portable document format (*.pdf*).

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The data in this release are organized into 6 (*.xlsx*) workbook files and 1 (*.accdb*) database file. The readme file (this document) and the background document provide a description of the structure and content of the release.

FILE STRUCTURE

MRD340_readme.pdf

MRD340_metadata.pdf

MRD340_background.pdf

MRD340_Site_Information.xlsx

MRD340_Data_Stats.xlsx

MRD340_Water_Data.xlsx

MRD340_Water_QC.xlsx

MRD340_Sed_Data.xlsx

MRD340_Sed_QC.xlsx

MRD340_Erie_Streams.accdb

DESCRIPTION

MRD340_background.pdf
This file describes general information about the survey, site selection, sampling protocols and analytical methods as well as comments on data quality.

MRD340_Site_Information.xlsx
This file contains 2 worksheets describing sampling site locations;

Stations provides station codes and associated sample set field numbers as well as station locations (as WGS84 and UTM NAD83 coordinates).

Fieldnotes provides sample information and stream dimensions as well as comments and general observations.

MRD340_Data_Stats.xlsx
This file contains 3 worksheets which provide a summary of this survey's stream sediment and water data

Sed_ICP_Stats provides a summary of stream sediment ICP and LOI analytical and quality-control data, including estimates of precision and accuracy based on duplicate samples and certified reference material results.

Sed_P-fraction_Stats provides a summary of stream sediment phosphorus fractions analytical and quality-control data, including estimates of precision based on duplicate sample results.

Water_Stats provides a summary of stream water ICP, IC as well as nitrogen and phosphorus fraction analytical and quality-control data, including estimates of precision and accuracy based on duplicate samples and certified reference material results.

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MRD340_Water_Data.xlsx

This file contains 4 worksheets, providing data for all stream water samples by analysis type.

Water_ICP_Data provides ICP analytical data for 55 elements for each stream water sample.

Water_IC_Data provides IC analytical data on 8 nutrient parameters for stream water samples.

Water_NP_Data provides analytical data from EPA colorimetric analyses on 6 nitrogen and phosphorus fractions for stream water samples.

Water_YSI provides date and time each sample was taken as well as limnological data, such as water temperature, pH and specific (electrical) conductivity for all water samples, collected using a YSI multiparameter water quality instrument.

MRD340_Water_QC.xlsx

This file contains 8 worksheets, providing quality-control data for each type of analysis of stream water samples.

Water_ICP_CRM provides quality-control ICP analytical data for SLRS-5 certified reference material for stream water analytical sequence.

Water_ICP_DUPS provides quality-control ICP analytical data for duplicate stream water samples.

Water_ICP_Blanks provides quality-control ICP analytical data for filtered and acidified ultra-pure water (UPW) samples.

Water_IC_DUPS provides quality-control IC analytical data for duplicate stream water samples.

Water_IC_Blanks provides quality-control IC analytical data for filtered ultra-pure water (UPW) samples.

Water_NP_CRM provides quality-control EPA colorimetric analytical data for SLRS-5 and MOOS-2 NRC certified chemical reference materials inserted in the stream water analytical sequence.

Water_NP_DUPS provides quality-control EPA colorimetric analytical data for duplicate stream water samples.

Water_NP_Blanks provides quality-control EPA colorimetric analytical data for filtered ultra-pure water (UPW) samples.

MRD340_Sed_Data.xlsx

This file contains 4 worksheets, providing data for all stream sediment samples by analysis and sample preparation method.

Sed_Diss_ICP_Data provides ICP analytical data for 58 elements for each disaggregated stream sediment sample.

Sed_Pulv_ICP_Data provides ICP analytical data for 58 elements for each pulverized stream sediment sample.

Sed_P-fraction_Data provides analytical data on 7 phosphorus fractions for each stream sediment sample.

Sed_PSA_Data provides data on all sediment particle size fractions and summary values for each stream sediment sample.

MRD340_Sed_QC.xlsx

This file contains 5 worksheets, providing quality control data for each type of analysis of stream sediment samples.

Sed_ICP_CRM provides quality control ICP analytical data for STSD-2 and STSD-3 certified reference materials for stream sediment analytical sequence.

Sed_ICP_DUPS provides quality control ICP analytical data for duplicate stream sediment samples.

Sed_PSA_CRM provides quality control particle size analytical data for duplicate stream sediment samples.

Sed_PSA_DUPS provides quality control particle size analytical data for duplicate stream sediment samples.

Sed_P-fraction_DUPS provides quality control P-fraction analytical data for duplicate stream sediment samples.

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MRD340_Erie_Streams.accdb
This file contains 10 tables of site data (as described above) and 9 populated queries, providing data for all stream sediment and water samples by analysis, sample preparation method and the season that samples were collected as well as other site information.

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