

Table of Contents:

1. [Data Set Description](#)
2. [Sample Data Record/Data Format](#)
3. [References](#)
4. [Contact Information](#)
5. [Acknowledgement](#)

1. Data Set Description:

The **Pacific 2001 Air Quality Study (PAC2001)** was conducted from 1 August to 31 September, 2001 in the Lower Fraser Valley (LFV), British Columbia, Canada. The study consisted of individual research projects organized to address several issues on ambient particulate matter and ozone that are important to policy makers. A special issue of Atmospheric Environment [Vol. 38(34), Nov 2004] describes specific study objectives (Li, 2004) and presents a series of results papers from the field study. The ground sampling sites during the study were (1) Cassiar Tunnel, (2) Slocan Park, (3) Langley Ecole Lochiel, (4) Sumas Eagle Ridge, and (5) Golden Ears Provincial Park and aloft measurements were taken from a Convair 580 and a Cessna 188. Air quality monitoring data routinely collect by the Greater Vancouver Regional District (GVRD) and Canadian Air and Precipitation Monitoring Network (CAPMoN) during the sampling period of PAC2001, are included as supplemental data.

This data set contains the measurement data collected by the GVRD and CAPMoN air quality monitoring programs.

The **Greater Vancouver Regional District (GVRD)** monitoring network of 20 sites (GVRD, 2002b) continued operation during the Pacific 2001 field study period, with enhanced QA and QC activities. At all sites, meteorological measurements were carried out at a 5-min time resolution. At a few specially equipped sites, particle mass PM10 were measured using TEOMs. The network data complements the special study sites and form a spatial distribution of the pollutants. [[GVRD, Greater Vancouver Regional District, 2002b, Lower Fraser Valley Air Quality Report 2001, October 2002.](#)]

2001 GVRD Air Quality Monitoring Stations and Measurements

Stations		Continuous Monitors								Non-continuous Monitors				Meteorological Monitors						
ID	Name	SO2	TRS	NO2	CO	O3	PM10	PM2.5	COH	VOC	TSP	Metal s	DF	Wind	T	SR	RH	B	P	
T1	Downtown Vancouver	M		M	M	M			M	M										M
T2	Kitsilano	M		M	M	M	M							M	M					M
T4	Kensington Park	M	M	M	M	M	M							M						
T6	Second Narrows	M		M	M	M								M						
T9	Rocky Point Park	M	M	M	M	M	M			M	M	M	M	M	M	M				M
T12	Chilliwack			M	M	M	M	M		M				M	M	M	M	M		M
T13	North Delta			M		M								M	M					M
T14	Burnaby Mountain			M		M								M	M					M
T15	Surrey			M	M	M	M			M				M	M					M

	y East																		
T17	Richmond South	M		M	M	M	M			M	M			M	M				
T18	Burnaby South	M		M	M	M	M		M	M	M	M	M	M	M			M	M
T20	Pitt Meadows	M		M	M	M	M	M						M	M		M	M	M
T22	Burnout (***)		M							M				M	M				
T23	Capitol Hill	M	M											M	M				
T24	Burnaby North	M	M							M				M	M				
T25	Seymour Falls (S)					M					M								
T26	Mahon Park	M		M	M	M	M							M	M	M		M	M
T27	Langley			M	M	M	M				M	M		M	M		M	M	M
T29	Hope Airport			M	M	M	M			M				M	M		M		M
T30	Maple Ridge			M	M	M	M							M	M				M
T31	Vancouver Airport			M	M	M	M	M		M				M	M	M	M	M	M
T32	Coquitlam			M	M	M								M	M				M
T33	Abbotsford	M		M	M	M	M							M	M				M
T34	Aldergrove (*)							M						M	M	M	M	M	M

SO2 = sulphur dioxide; TRS = total reduced sulphur; NO2 = nitrogen dioxide; CO = carbon monoxide; O3 = ozone;

PM10 = inhalable particulate matter; PM2.5 = fine particulate matter; COH = coefficient of haze.

VOC = volatile organic compounds; TSP = total suspended particulate; Metals = metals in TSP; DF = dust fall.

Wind = wind speed and wind direction; T = air temperature; SR = solar radiation; RH = relative humidity;

B = barometric pressure; P = precipitation.

M = monitored at this location.

(*) Station started-up during 2001; (**) Station discontinued during 2001; (***) Special study station; (S) Seasonal station.

The **Canadian Air and Precipitation Monitoring Network (CAPMoN)** is a non-urban air quality monitoring network with siting criteria designed to ensure that the measurement locations are regionally representative (not affected by local sources of air pollution). The objectives are to determine the spatial patterns and establish the temporal trends of pollutants related to acid rain, to provide for long-range transport model evaluations and effects research (aquatic, terrestrial, building materials and health), to ensure the compatibility of federal, provincial and U.S. measurements, to study atmospheric processes. Scientists involved with the measurement of atmospheric pollution in urban centres would consider most CAPMoN sites to be remote and pristine. There are currently 19 measurement sites in Canada and 1 in the U.S. The Saturna Island site is located in the PAC2001 area of interest.

For more information about CAPMoN, visit the [Canadian Air and Precipitation Monitoring Network](http://www.ec.gc.ca/capmon).



The Saturna site is located in the Lower Fraser Valley.

ID	Station Name	Province	Latitude (N)	Longitude (W)	Elevation (m)
SAT	Saturna	BC	48°47'00"	123°08'00"	178

2001 CAPMoN Measurements taken at Saturna Island, BC

Measurement Type	Frequency	Species
Precipitation chemistry	24 hour integrated samples	Cl ⁻ , NO ₃ ⁻ , SO ₄ ⁼ , NH ₄ ⁺ , Na ⁺ , K ⁺ , Ca ⁺⁺ , and Mg ⁺⁺
Particles and related trace gases	24 hour integrated filter samples	Particulate Cl ⁻ , NO ₃ ⁻ , SO ₄ ⁼ , NH ₄ ⁺ , Na ⁺ , K ⁺ , Ca ⁺⁺ , and Mg ⁺⁺ Gaseous HNO ₃ and SO ₂
Ground-level ozone measurements	Hourly averages	O ₃

The data set should be cited as follows:

Li, Shao-meng. 2004. NARSTO PAC2001 GVRD and CAPMoN Supplemental Air Quality Data. Available on-line from [NARSTO Data and Information](#) at the Atmospheric Science Data Center at NASA Langley Research Center, Hampton, Virginia, U.S.A.

2. Sample Data Record/Data Format:

Data files are in the NARSTO Data Exchange Standard (DES) format that is described in detail on the [NARSTO Quality Systems Science Center \(QSSC\) web site](#). The files follow a tabular layout and are stored as ASCII comma-separated values files (.csv). The DES does not rely on row position to identify specific information, but uses a tag to describe the information contained in the row. The DES is a self-documenting format with three main sections: the header contains information about the contents of the file and the data originator; the middle section contains metadata tables that describe/define sites, flags, and other codified fields; and the final section is the main data table that contains key sampling and analysis information and the data values. Descriptions of the standardized metadata fields are also available on the QSSC web site.

Archived GVRD and CAPMoN Data Files

Data File Names	Time Series Plots of Reported Variables (PDF)
Greater Vancouver Regional District (GVRD)	
NARSTO_PAC2001_GVRD_UNK_GAS_MET_20010801D31_V1.csv	View GVRD_UNK_GAS_MET_20010801D31
Canadian Air and Precipitation Monitoring Network (CAPMoN)	
NARSTO_PAC2001_SAT_AIR-FILTER_DAILY_47MM-FP_20010101D365_V1.csv	View AIR-FILTER_DAILY_47MM-FP_20010101D365
NARSTO_PAC2001_SAT_OZONE_HOURLY_TECO_20010101D365_V1.csv	View OZONE_HOURLY_TECO_20010101D365

3. References:

Li, Shao-Meng. 2004. A concerted effort to understand the ambient particulate matter in the Lower Fraser Valley: the Pacific 2001 Air Quality Study. Atmospheric Environment, Volume, 38(34), pp. 5719-5731. (Pacific 2001 Special Issue)

4. Contact Information:

Investigator(s) Name and Title:

Name: Li, Shao-meng
E-mail: shao-meng.li@ec.gc.ca

Data Center:



Distributed by the Atmospheric Science Data Center
<http://eosweb.larc.nasa.gov>



The User and Data Services Office at the Langley Atmospheric Science Data Center is involved throughout the system to monitor the quality of data on ingest, to ensure prompt replies to user questions, to verify media orders prior to filling them, and to ensure that the needs of the users are being met.

If you have a problem finding what you need, trouble accessing the system, or need an answer to a question concerning the data or how to obtain data, please contact the User and Data Services staff.

Telephone: (757) 864-8656

FAX: (757) 864-8807

E-mail: support-asdc@earthdata.nasa.gov

URL: <http://eosweb.larc.nasa.gov>

5. Acknowledgement:

When data from the Langley Atmospheric Science Data Center are used in a publication, we request the following acknowledgment be included: "These data were obtained from the NASA Langley Research Center Atmospheric Science Data Center".

The Langley Data Center requests a reprint of any published papers or reports or a brief description of other uses (e.g., posters, oral presentations, etc.) of data that we have distributed. This will help us determine the use of data that we distribute, which is helpful in optimizing product development. It also helps us to keep our product-related references current.

Please contact us at support-asdc@earthdata.nasa.gov for instructions on mailing reprints.

Document Information:

Document Creation Date: November 15, 2004

Review Date:

Last Date Modified:

Document ID: TBD

Author: Langley Data Center User and Data Services Office

Langley DAAC Help Desk: Phone (757) 864-8656; E-mail support-asdc@earthdata.nasa.gov

