

NARSTO Quality Systems Science Center

2006-2007 Annual Report

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NARSTO QSSC

Environmental Sciences Division

Oak Ridge National Laboratory

U.S. Department of Energy



NARSTO Executive Assembly/Executive Steering Committee Meeting

Washington, D. C., March 27-28, 2007

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QSSC Activities for 2006-2007

Data Management and Archiving

Maintained and Updated

“Guidelines for Archiving Data in the NARSTO Permanent Data Archive”.

“NARSTO encourages Projects to utilize the NARSTO Data Exchange Standard (DES) format for ease of data evaluation, analyses, and sharing. In addition, we recognize that there are other widely accepted data exchange formats suitable for archiving.”

NARSTO will encourage archiving of data in formats other than the DES that are supported by good metadata and documentation.

Data Management and Archiving, continued

Maintained variable names and units that are friendlier to software and data systems.

In response to feedback on the standard naming conventions for the Data Exchange Standard format, we developed a set of names and units that are friendly to most data user software and data systems (i.e., shorter, with no spaces or special characters).

- These names can be used in the ICARTT data file format.
- Include cross references to DES standard names and units, and
- Support a prototype ICARTT-DES Formatted Data File.

Visit the bullet item on the QSSC web site:

“Obtain MILAGRO-ICARTT Variable Names”

[http://cdiac.ornl.gov/programs/NARSTO/MILAGRO_ICARTT_Names_20060316.pdf]

Data Management and Archiving, continued

Data and Metadata Reporting Tools Provided on the QSSC Web Site

- Maintained **“Guidance for Projects to Develop Data Management Policies and Plans”**
- Maintained **reference tables for chemical and physical variable names:**
 - 1000+ chemical names and CAS RNs
 - 50+ other chemical constituents
 - 150+ variable names for physical and sampling measurements
- Maintained metadata reference tables for **the Data Exchange Standard** template pick lists.
- Maintained **Data and Information Sharing Tool (DIST)**
 - Web-based entry of metadata for archive documentation
 - Link data and documents in searchable index (e.g., data sets and special issue papers)
- Maintained **Public and restricted FTP sites** for staging and interim data set access

Data Archiving

NARSTO EPA_SS_FRESNO PM2.5 Particulate Nitrate and Sulfate Data (22 data files with plots)

NARSTO EPA_SS_FRESNO BAM Particulate Mass Concentration Data (10 data files with plots)

NARSTO EPA_SS_NY Air Chemistry, Particulate Matter, and Met Data
(108 data files with plots and documentation)

NARSTO MILAGRO MAX-Mex 2006 DOE G-1 Aerosol, Air Chem, Radiometric, and Met Data
(30 data files published on QSSC ftp site)

NARSTO EPA_SS_NY Air Chemistry, Particulate Matter, and Met Data
(54 additional data files with plots published on QSSC ftp site. **This completes archiving of NY data.**)

In the Queue to be Published

NARSTO EPA_SS_PITTSBURGH Gas Conc and PM Physical Properties Data (26 data files with plots)

NARSTO EPA_SS_PITTSBURGH Particulate Matter Composition Data (29 data files with plots)

NARSTO EPA_SS_LOS_ANGELES Aethalometer Elemental Carbon Data (6 data files with plots)

In the Near-Term Working Queue

EPA_SS_FRESNO data

EPA_SS_LOS_ANGELES data

EPA_SS_ST_LOIUS data

EPA_SS_BALTIMORE data

NEOPS data

External Interactions

- Continued interactions with the DOE Atmospheric Sciences Program to assist with development of a data policy and archiving approach to meet their needs.
- Interacted with Justin Walters, Southern Company, to published a Google Earth site file for SEARCH locations with link to SEARCH data archive.
(ftp://narsto.esd.ornl.gov/pub/Google_Earth_Site_Files/)
- Attended the East Tennessee Ozone Study (ETOS) Workshop, NOAA/ARL/ATDD, Oak Ridge, and gave an informational presentation and poster display.
- Continued our interactions with Bill Sukloff (Environment Canada, Meteorological Service of Canada) to ensure that the Data Exchange Standard template, the Read and Verify Program, and the accompanying reference tables are up to date and enhanced as needed to accommodate new data types.

Support for Projects

- Continued monthly teleconferences with Program and Project Data Coordinators
- Continued data archiving support to the U.S. Environmental Protection Agency (EPA) Particulate Matter (PM) Supersites Program. The QSSC will gladly continue to receive and process Supersites Project data and to work with Data Providers to archive these valuable products.
- Continued interactions and support for the Mexico City Metropolitan Area Programs 2003, and 2006 and components MCMA-2006 and MAX-Mex.
- Continued interactions with the TexAQS II Intensive Field Study Program.
- Continued interactions with the BRACE (Bay Regional Atmospheric Chemistry Experiment) project.

QSSC Plans for 2007-2008

- Archive data per the “Guidelines for Archiving Data in the NARSTO Permanent Data Archive”.
- Actively seek feedback from users of QSSC products and applications (e.g., data archive, FTP site, web site, documentation, DES template and format, reference tables, etc.).
- Develop a more convenient data search application and implement on QSSC web site.
- Continue “Activities” on previous slides.
- Sources of Archive Data (1 year timeframe)
 - EPA PM Supersites project data
 - Mexico City Metropolitan Area Program (2003)
- Future Sources of Archive Data (1-3 year timeframe)
 - Mexico City Metropolitan Area Program (MCMA-2006, MAX-Mex, MILAGRO)
 - EPA Supersites Integrated Relational Database
 - DOE-ASP
 - BRACE
 - TexAQS II

As resources permit.

**The following pages contain annual summary information through
February 2007.**

An overview of the QSSC Web Site

- NARSTO Permanent Data Archive user statistics:
 - The number of data sets archived and data files ordered continues to increase over the past 4 years.
 - QSSC Web Site user statistics:
 - Web site usage is up overall for past 5 years. New Google Earth files and interest in DES template contributed to increase.
 - QSSC Public FTP Site user statistics:
 - FTP site usage remains strong, with both the addition of new products and popularity of historical data, over the past 5 years.
 - Emission Inventory Assessment Access on FTP Site
 - PM Assessment Access on FTP Site
 - Ozone Assessment Access on FTP Site
- >> Interest in EI and PM Assessments was strong during their first full year on FTP site. Interest in Ozone Assessment remains at consistent level.

NARSTO QSSC home page - Netscape Browser
http://cdiac.ornl.gov/programs/NARSTO/



Welcome to the NARSTO Quality Systems Science Center

WHAT DO YOU WANT TO DO?

- [Send Data to QSSC for Permanent Archiving](#)
- [Access NARSTO Data](#)
- [Guidelines for Archiving NARSTO Data](#) **NEW**
- [Obtain MILAGRO-ICARTT Variable Names](#)
- [Obtain Google Earth Measurement Sites](#) **NEW**
- [Find Data & Metadata Reporting Guidance](#)
- [Develop Data Management Policy and Plans \(*.pdf or *.doc\)](#)

[Data to Limited Access FTP site](#)

[Data to Limited Access FTP site](#) [about NARSTO/QSSC](#)

- [View NARSTO Quality Systems Management Documentation](#)
- [Prepare Project Quality Documentation](#)
- [Software and Data Systems Development Information](#)
- [View the Compendium of Atmospheric Chemistry and Particles Analysis Methods](#)
- [View QSSC Posters/Presentations](#)
- [Link to Other Atmospheric Chemistry data sites](#)

Direct Links:
[NARSTO Data Policy](#)
[Improving Emission Inventory Assessment](#)
[PM Science for Policy Makers](#)
[Ozone Assessment](#)
[Data Exchange Standard Template](#)
[Template News](#)
[Search for NARSTO Data](#)
[Data Set Archiving Status](#) (May 2006)
[NARSTO Permanent Data Archive](#)
[Contact QSSC](#)

Annotations:

- PDA** points to the "Send Data to QSSC for Permanent Archiving" link.
- Public FTP Site** points to the "Data to Limited Access FTP site" link.
- ICARTT Variable Names** points to the "Obtain MILAGRO-ICARTT Variable Names" link.
- Google Earth Sites** points to the "Obtain Google Earth Measurement Sites" link.
- DES Template** points to the "Data Exchange Standard Template" link in the Direct Links section.

Permanent Data Archive User Statistics:

Period:	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007
Total <u>Data Sets</u> Requested: (Data Files Requested)	26	28 (230)	42 (656)	129 (1640)



<u>Projects:</u>	<u>Number of Data Sets (data files)</u>			
EPA Supersites—				
Atlanta	2	3	1 (3)	5 (122)
Baltimore		2	1 (18)	6 (72)
Fresno	1	1	1 (11)	24 (221)
Houston	10	26	24 (248)	27 (332)
Los Angeles	3	1	5 (22)	21 (66)
Pittsburgh		1	1 (4)	7 (66)
Env Canada —				
PAC2001		1	8 (288)	17 (601)
STIFS/SHEMP			1 (12)	5 (71)
SOS—				
Nashville 1999	11	1	3 (5)	2 (12)
SOS_SC		1	2 (2)	1 (1)
DOE G-1—				
ICARTT_NEAX_2004			1 (33)	1(30)



These orders add up to 1640 individual data files.

QSSC Web Site User Statistics:

	Period of Interest				
	2002 – 2003	2003-2004	2004-2005	2005-2006	2006-2007
Unique Visitors	~3,647	~3,364	~3,060	~4,073	~4,588
Total Visits	~ 4,358	~3,982	~3,685	~4,981	~6,060
Visits / Month	~360	~330	~310	~414	~505

QSSC Home Page



Welcome to the NARSTO Quality Systems Science Center

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Direct Links:
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[Ozone Assessment](#)
[Data Exchange Standard Template](#)
[Template News](#)
[Search for NARSTO Data](#)
[Data Set Archiving Status](#) (New items)

Domains Represented in February 2007

- .edu, .gov, .org, .mil, .state (.us) 12 %
- .com, .net 30 %
- unidentified 32%
- identified (other than .us) 25 %

[Includes ~30 foreign countries]

<http://cdiac.ornl.gov/programs/NARSTO/>

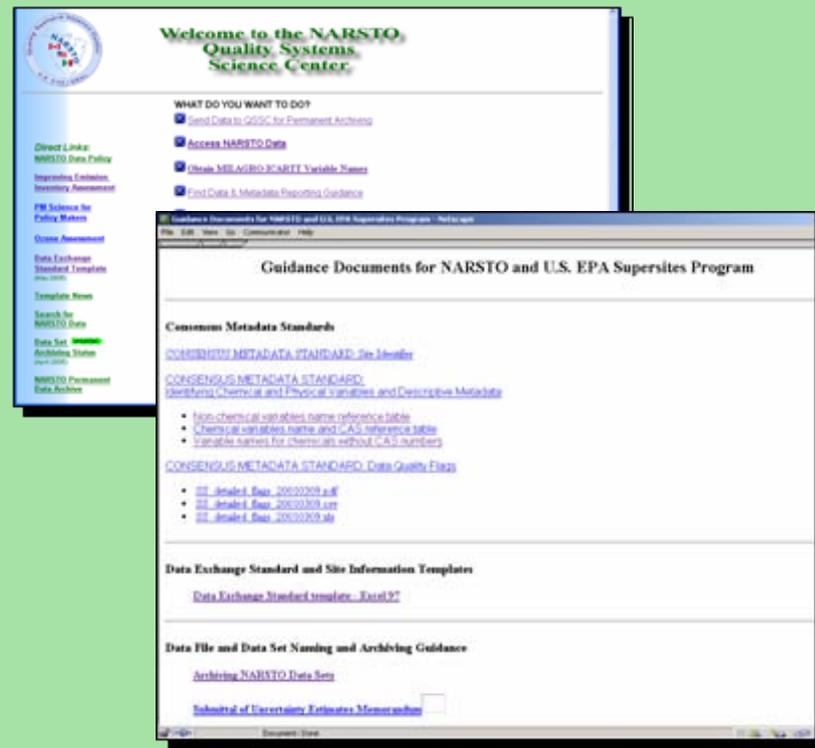
QSSC Web Site

User Statistics:

	Period of Interest				
	2002 – 2003	2003- 2004	2004- 2005	2005- 2006	2006- 2007
Unique Visitors	~388	~329	~299	~361	~319
Total Visits	~445	~374	~341	~399	~364
Visits / Month	~ 37	~ 31	~ 28	~ 33	~ 30

Data & Metadata Reporting Guidance

Page



<http://cdiac.ornl.gov/programs/NARSTO/epasupersites.htm>

Unique visitor = host = an IP address

A visit is defined as a series of consecutive views of a web site by the same visitor.

All visits by a visitor in a 24 hour period are counted as 1 visit.

QSSC Web Site

User Statistics:

Data Exchange Standard Template

	Period of Interest				
	2002 – 2003	2003- 2004	2004- 2005	2005- 2006	2006- 2007
Unique Visitors	~366	~434	~361	~497	~1066
Total Visits	~560	~624	~510	~703	~1305
Visits / Month	~ 47	~ 52	~ 43	~ 59	~ 109

The image shows two screenshots. The top one is the NARSTO Quality Systems Science Center website, featuring a navigation menu with options like 'Direct Links', 'Impressus', 'Data Exchange Standard Template', and 'Data Set Archiving Status'. A red circle highlights the 'Data Exchange Standard Template' link. The bottom screenshot is a spreadsheet titled 'DATA EXCHANGE STANDARD VERSION' with columns A through F. It contains a list of fields for data entry, such as 'DATA EXCHANGE STANDARD VERSION', 'COMMENT', 'QUALITY CONTROL LEVEL', and 'PRINCIPAL INVESTIGATOR NAME'. Several yellow callout boxes provide instructions and warnings, such as 'This is an optional key phrase', 'Comments up to 1000 characters...', and 'The sampling frequency of the data in the main data table in the file...'. The spreadsheet also includes a 'YEAR' section with fields for 'YEAR NAME', 'YEAR POOL', 'YEAR COLUMN NAME', 'YEAR COLUMN LABELS', 'YEAR COLUMN FORMAT TYPE', 'YEAR COLUMN FORMAT FOR DISPLAY', and 'YEAR BEING'.

http://cdiac.esd.ornl.gov/programs/NARSTO/NARSTO_template_atmospheric_measurements.xls

QSSC FTP Site

User Statistics for Data Files Downloaded

Period:	<u>2002/</u> <u>2003</u>	<u>2003/</u> <u>2004</u>	<u>2004/</u> <u>2005</u>	<u>2005/</u> <u>2006</u>	<u>2006/</u> <u>2007</u>
Unique Users:		~ 142	~ 300	~ 190	~ 235
Total Data Files:		~ 3,100	~ 1350	~ 2300	~2500
Projects:					
EPA Supersites—					
Atlanta	150	225	99	305	173
Baltimore		5	79	62	40
Fresno		220	158	108	77
Houston	225	425	560	786	245
Los Angeles	135	120	139	63	15
New York					15
Pittsburgh				22	40
Environment Canada					
PAC2001			15	448	PDA
SHEMP				34	
STIFS				54	
DOE G-1					
ICARTT NEAX 2004					30
MAX-Mex					12
SOS Nashville 1995	1,300	350	397	459	979
Nashville 1999	950	15	145	200	192
DES Metadata Tables	300		350	310	100
MILAGRO-ICARTT Names Files					44
Google Earth Site Files					165



QSSC FTP Site User Statistics:

Emission Inventory Assessment Access

Period: 2006 – 2007

Total Files: ~ 195

Exec Sum 20

Chapters 1 – 9 10 to 20 of each

This is the published version available August 2005.

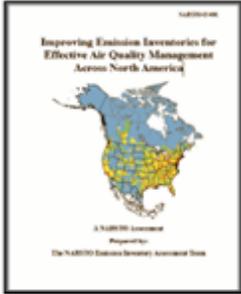
Improving Emission Inventories for Effective Air Quality Management Across North America

-- A NARSTO Assessment --

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CHAPTER 9	CHAPTER 9. RECOMMENDATIONS AND CONCLUSIONS
	LIST OF TERMS AND GLOSSARY
APPENDIX A	APPENDIX A. LISTS OF AGENCIES AND CONTACTS
APPENDIX B	APPENDIX B. SOURCE TEST METHODS
APPENDIX C	APPENDIX C. CONCEPTS AND METHODS FOR UNCERTAINTY AND SENSITIVITY ANALYSIS OF EMISSION INVENTORIES

Please cite this document as:
NARSTO. 2005. Improving Emission Inventories for Effective Air Quality Management Across North America. NARSTO 05-001. Pasco, Washington, U.S.A.



Posted on the QSSC web site November 11, 2005

QSSC FTP Site User Statistics:

PM Assessment Access

Period: 2006 – 2007

Total Files: ~ 510

Exec Sum 30
Synthesis 45

Chapters 1 – 11 20 to 30 of each

Ozone Assessment Access

Period: 2006 – 2007

Total Files: ~ 140

Exec Sum 26
Complete 18

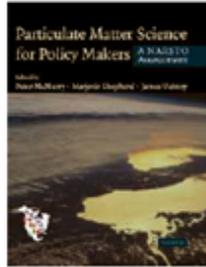
Chapters 1 -6 7 to 15 of each

Particulate Matter Science
for Policy Makers
-- A NARSTO Assessment --
Second Printing, April 2004
Table of contents with links to sections.

[TITLE PAGE, TOC, LIST OF FIGURES, and LIST OF TABLES](#)
[PREFACE, AUTHORS, and ACKNOWLEDGEMENTS](#)
[EXECUTIVE SUMMARY](#)
[SYNTHESIS](#) PARTICULATE MATTER SCIENCE FOR POLICY MAKERS (10 MB file)
[CHAPTER 1](#) PERSPECTIVE FOR MANAGING PM
[CHAPTER 2](#) HEALTH AND PARTICULATE MATTER
[CHAPTER 3](#) ATMOSPHERIC PARTICULATE MATTER
[CHAPTER 4](#) EMISSIONS OF PARTICULATE MATTER
[CHAPTER 5](#) PARTICULATE MATTER AND CLIMATE
[CHAPTER 6](#) SPATIAL AND TEMPORAL VARIATION OF PARTICULATE MATTER
[CHAPTER 7](#) RECEPTION OF PARTICULATE MATTER
[CHAPTER 8](#) CHEMISTRY OF PARTICULATE MATTER
[CHAPTER 9](#) VISIBILITY IMPACTS OF PARTICULATE MATTER
[CHAPTER 10](#) CONCENTRATIONS OF PARTICULATE MATTER IN AMERICA
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[APPENDIX B](#) MEASUREMENTS
[APPENDIX C](#) MONITORING DATA: AVAILABILITY, LIMITATIONS, AND NETWORK ISSUES
[APPENDIX D](#) GLOBAL AEROSOL TRANSPORT (11 MB file)
[APPENDIX E](#) PREPARATION OF THIS ASSESSMENT (Volume of all files is 85 MB.)

Please cite this document as:
NARSTO. 2004. Particulate Matter Assessment for Policy Makers: A NARSTO Assessment. P. McMurry, M. Shepherd, and J. Vicky, eds. Cambridge University Press, Cambridge, England. ISBN 0 52 184287 5.



The PM Assessment, published by Cambridge University Press, is available for purchase in bookstores or online at <http://www.cambridge.org/9780521842875>.

Posted on the QSSC web site November 11, 2005