

**NARSTO Quality Systems Science Center
2004 - 2005 Annual Report to the
NARSTO Executive Assembly**

April 11, 2005

Las Vegas, Nevada



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QSSC Activities for 2004-2005

Data Management and Archiving

- Updated Data Exchange Standard (DES) archive file format template with better instructions and examples, updated pick-list, and enhanced quality assurance Read & Verify Code.
- 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
- 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)
 - Public and secure FTP sites for staging and interim data set access

Data Management and Archiving, continued

Archived Data Sets for March 2004-February 2005

EPA Supersites

EPA_SS_BALTIMORE JHU Meteorological Data

EPA_SS_HOUSTON TEXAQS2000 TNRCC CAMS Air Quality Data

Environment Canada

Supersite Transboundary Intensive Field Study Data, Canada, 2001-2002

SHEMP Particulate Matter Composition Data, Canada, 2000-2002

PAC2001 CFS Cessna VOC, Particle Count, Ozone, and Meteorological Data

PAC2001 NRC-IAR Convair 580 Particle Count, Ozone, Meteorological Data

PAC2001 Cassiar Tunnel Gaseous and Particle Mass and Composition Data

PAC2001 Golden Ears Provincial Park Gaseous and Particle Data

PAC2001 Langley Site Gaseous, Particle, and Meteorological Data

PAC2001 Slocan Park Site Gaseous, Particle, and Meteorological Data

PAC2001 Sumas Eagle Ridge Gaseous, Particle, and Meteorological Data

PAC2001 GVRD and CAPMoN Supplemental Air Quality Data

External Interactions

- Continued interactions with Bill Sukloff (Environment Canada, Meteorological Service of Canada) at the Meteorological Service of Canada offices in Toronto in August 2004. This was the sixth QSSC and Environment Canada work exchange.
- Les Hook presented a poster “Accessing EPA PM Supersites Data in the NARSTO Data Archive.”, [Les A. Hook, Sigurd W. Christensen, Tammy W. Beaty (ORNL) and Kathleen L. Morris (Atmospheric Sciences Data Center, NASA Langley Research Center)] at the Particulate Matter Supersites Program and Related Studies, An AAAR International Specialty Conference, February 7-11, 2005, Sheraton Atlanta Hotel, Atlanta, GA.

QSSC Support for NARSTO Projects

- Continued data management support to the U.S. Environmental Protection Agency (EPA) Particulate Matter (PM) Supersites Program through monthly conference calls and working with the project coordinators to review and archive data sets.
- Continued interactions with the Mexico City Metropolitan Area Program providing assistance with formatting the data in the DES format.
- Continued interactions with Pacific 2001 Project. Data files have been compiled and archived.
- Continued interactions with NEOPS data providers to facilitate data and metadata submission to the Permanent Data Archive.
- Initiated interactions with the BRACE (Bay Regional Atmospheric Chemistry Experiment) project. We provided a copy of the Read & Verify (SAS) code to the data management coordinator.

QSSC Plans for 2005

- Continue “Activities” on previous slides.
- Update NARSTO Program quality management and planning documents including a new compilation of data management guidance documents for program and project use.
- Sources of Data to Archive
 - EPA PM Supersites project data
 - Mexico City Metropolitan Area Program
 - EPA Supersites Integrated Relational Database
 - DOE-NETL Air Quality Database
 - Central California Ozone Study (CCOS)
 - BRACE

Annual Web Site Summary Information

- An overview the QSSC Web Site,
- QSSC Web Site user statistics for past three years,
- QSSC Public FTP Site user statistics for past three years,
- NARSTO Permanent Data Archive user statistics for past two years,



Welcome to the NARSTO Quality Systems Science Center

Direct Links:

[NARSTO Data Policy](#)

[Data ^{NEW}
Exchange
Standard
Template](#)

[Template News ^{NEW}](#)

[Search for
NARSTO
Data](#)

[Data Set ^{UPDATED}
Archiving
Status](#)

[NARSTO
Permanent
Data Archive](#)

[Contact
QSSC](#)

WHAT DO YOU WANT TO DO ?

- [Send Data to QSSC for Permanent Archiving](#)
- [Access NARSTO Data](#)
- [Find NARSTO/EPA Supersites Data & Metadata Reporting Guidance](#)
- [Send Data to Limited Access FTP site](#)
- [Learn 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](#)
- [Links to Other Atmospheric Chemistry data sites](#)

QSSC Web Site User Statistics: QSSC Home Page

	Period of Interest		
	2002 – 2003	2003-2004	2004-2005
Unique Visitors	~ 7,767	~ 2,750	~ 5900
Total Visits	~ 12,000	~ 5,000	~10,000
Visits / Month	~ 1,000	~ 425	~ 825

Domains Represented 2004-2005

- .edu, .gov, .org (.us) 13 %
 - .com, .net 30 %
 - unidentified 33 %
 - identified (other than .us) 24 %
- [Includes 60-plus foreign countries]

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Direct Links:

- [NARSTO Data Policy](#)
- [Data Exchange Standard Template](#)
- [Template News](#)
- [Search for NARSTO Data](#)
- [Data Set Archiving Status](#)
- [NARSTO Permanent Data Archive](#)
- [Contact QSSC](#)

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 1 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
Unique Visitors	~ 365	~350	~ 360
Total Visits	~ 750	~425	~ 475
Visits / Month	~ 65	~ 35	~ 40

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Direct Links:

- [NARSTO Data Policy](#)
- [Data Exchange Standard Template](#)
- [Template History](#)
- [Search for NARSTO Data](#)
- [Data Set](#)

*DATA EXCHANGE STANDARD VERSION	NARSTO 2002.05/28 (2.301)			
*COMMENT	Detailed instructions on how to fill in this template are provided at http://cdiac.ornl.gov/programs/NARSTO/narsto.html			
*QUALITY CONTROL LEVEL				
*DATE THIS FILE GENERATED ARCHIVE VERSION NUMBER	2003/03/24	1		
*ORGANIZATION ACRONYM				
*ORGANIZATION NAME				
*STUDY OR NETWORK ACRONYM				
*STUDY OR NETWORK NAME				
*FILE CONTENTS DESCRIPTION - SHORT/LONG				
*PRINCIPAL INVESTIGATOR NAME - LAST/FIRST				
*PRINCIPAL INVESTIGATOR AFFILIATION				
*CO-INVESTIGATOR NAME - LAST/FIRST				
*CO-INVESTIGATOR AFFILIATION				
*COUNTRY CODE				
*STATE OR PROVINCE CODE				
*SAMPLING INTERVAL AS REPORTED IN MAINTABLE				
*SAMPLING FREQUENCY OF DATA IN MAINTABLE				
*PRINCIPAL INVESTIGATOR CONTACT INFORMATION				
*DATA USAGE ACKNOWLEDGEMENT				
*NAME AND AFFILIATION OF PERSON WHO GENERATED THIS FILE				
*DATE OF LAST MODIFICATION TO DATA IN MAINTABLE				
*FILE CHANGE HISTORY -- VERSION NUMBER/DESCRIPTION				
*NAME AND VERSION OF SOFTWARE USED TO CREATE THIS FILE				
STANDARD CHARACTERS	#\$%&'()+,-:;<=>?@ABCDEFGHIJKLM			qrstuvwxyz{ }
*COMPANION FILE NAME/FORMAT AND VERSION				
*TABLE NAME	NARSTO standard flags			
*TABLE FOCUS	Metadata			
*TABLE COLUMN NAME	Flag: NARSTO	Description		
*TABLE COLUMN UNITS	None	None		

QSSC Web Site Data & Metadata Reporting Guidance Page

User Statistics:

	Period of Interest		
	2002 – 2003	2003-2004	2004-2005
Unique Visitors	~ 450	~350	~310
Total Visits	~ 715	~450	~675
Visits / Month	~ 65	~37	~56

The screenshot displays the NARSTO Quality Systems Science Center website. The main heading reads "Welcome to the NARSTO Quality Systems Science Center". Below this, a section titled "WHAT DO YOU WANT TO DO ?" contains three checked options: "Send Data to QSSC for Permanent Archiving", "Access NARSTO Data", and "Find NARSTO/EPA Supersites Data & Metadata Reporting Guidance".

On the left side, there is a "Direct Links:" section with the following items: "NARSTO Data Policy", "Data Exchange Standard Template" (with a "new" tag), "Template News" (with a "new" tag), "Search for NARSTO Data", "Data Set Archiving Status" (with a "new" tag), "NARSTO Permanent Data Archive", and "Contact QSSC".

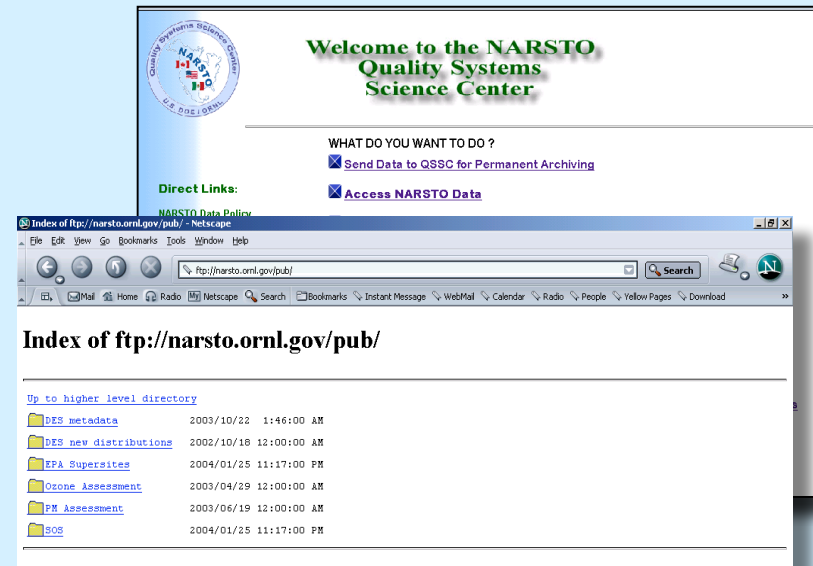
The main content area is titled "Guidance Documents for NARSTO and U.S. EPA Supersites Program". It includes sections for "Consensus Metadata Standards" with links to "CONSENSUS METADATA STANDARD: Site Identifier", "CONSENSUS METADATA STANDARD: Identifying Chemical and Physical Variables and Descriptive Metadata" (with a bulleted list of links: "Non-chemical variables name reference table", "Chemical variables name and CAS reference table", "Variable names for chemicals without CAS numbers"), and "CONSENSUS METADATA STANDARD: Data Quality Flags" (with links to "SS_detailed_Bagg_20010309.pdf", "SS_detailed_Bagg_20010309.csv", and "SS_detailed_Bagg_20010309.xls").

Other sections include "Data Exchange Standard and Site Information Templates" with a link to "Data Exchange Standard template - Excel 97", and "Data File and Data Set Naming and Archiving Guidance" with links to "Archiving NARSTO Data Sets" and "Submittal of Uncertainty Estimates Memorandum".

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>
Unique Users:	~ 142	~ 300	~ 190
Total Data Files:	~ 3,100	~ 1350	~ 2300
Projects:			
EPA Supersites—			
Atlanta	150	225	99
Baltimore		5	79
Fresno		220	158
Houston	225	425	560
Los Angeles	135	120	139
Env Canada			
PAC2001			15
SOS Nashville 1995	1,300	350	397
Nashville 1999	950	15	145
DES Metadata Tables	300	na	350



Permanent Data Archive User Statistics:



Period:	2003/ 2004	2004/ 2005
Total <u>Data Sets</u> Requested:	26	48

[Please note that these are “data sets” not “data files”. There are 1 to many data files in a data set.]

Projects: EPA Supersites—

Atlanta	2	3
Baltimore	*	2
Fresno	1	1
Houston	10	26
Los Angeles	3	1
Pittsburgh	*	1
Env Canada —		
PAC2001	*	1
STIFS	*	1
SOS—		
Nashville 1999	4	11
SOS_SC	*	1

**These orders add up
to 230 individual
data files.**

QSSC FTP Site User Statistics: PM Assessment Access

Period: 2004 – 2005 (partial year)

Unique Users:	~ 200
Total Files:	~ 680
Eng Exec Sum	55
Eng Synthesis	67
Fr Exec Sum	5
Fr Synthesis	8
Sp Synthesis	1
Part 1 - Eng	27
Part 2 Chapters 1 – 11	25 to 50 each

Ozone Assessment Access

Unique Users:	120
Exec Sum	6
Complete	12

The screenshot shows a web browser window titled "PM Assessment - Netscape". The main heading is "Particulate Matter Science for Policy Makers -- A NARSTO Assessment --". Below this, there is a note in three languages: English, French, and Spanish, stating that the page is a linked index to the contents of both Part 1 and Part 2. The page is divided into two main sections: "Part 1 -- Executive Summary and Synthesis" and "Part 2 -- Atmospheric Environment, Exposure and Impacts, Analysis and Public Policy". Each section has a list of links for document covers, title pages, and tables of contents, along with prefaces and summaries in English, French, and Spanish. There are also links for printer-friendly versions in multiple languages. At the bottom, there is a "Printing Information" section and a "How to cite this NARSTO Assessment:" section with the URL <http://www.cgemv.com/NARSTO/>.

Lessons Learned

- Dedicated Data Manager is essential
- An early commitment to standardize streamlines the process
- The use of standardized data file formats, such as the DES, simplifies relational database development
- Archiving does take time and should be a continuous process
- A commitment to archiving indicates a commitment to a well established quality assurance program
- An ideal system is not necessarily practical

New Directions

- Willing to accept other established data formats that meet minimum documentation requirements
- New compilation of data management guidance documents for program and project use.
- Coordinating with TexAQS II, Mexico City Metropolitan Area Program, and BRACE.