SPECIATE – EPA's Database of Speciated Emission Profiles

Emission Inventory Conf 2008
Webcast Course

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What is SPECIATE?

- Database Of Speciated Emissions
- Disaggregated Into PM And Gases (TOG/VOC)
- Compounds, Elements And PM Size (Species)
- Defined By Source (Profiles)

Why Do We Need A Speciated Emissions Database?

- Modeling
  - Source-receptor
  - Atmospheric reactivity
- Source Apportionment
- Searchable Repository
- Tool For Data Processing
  - Can integrate with spreadsheets
  - Export to other programs (e.g., GIS)

Brief History

- Paper Version Available In 1988
- First Computerized Version In 1993
- Speciate 3.2 Posted To EPA's CHIEF Website In November 2002
- 4.0 Posted to EPA's CHIEF Website January 2007
- Current Update (SPECIATE 4.2) Began In Spring 2007

Development of SPECIATE 4.2

- Managed and Funded by 4 EPA Organizations
  - National Risk Management Research Laboratory (ORD)
  - National Exposure Research Laboratory (ORD)
  - Office of Air Quality Planning and Standards (OAR)
  - Office of Transportation and Air Quality (OAR)
- Priorities Established By EPA SPECIATE Workgroup

Development of SPECIATE 4.2 (Cont.)

- Literature Search
- Comprehensive Spreadsheet Used To Prioritize Data For Inclusion
  - Source Category
  - Emissions, Vintage, Reference
  - Estimate Of Resources Needed
- Formal Quality Assurance Procedures

Database Changes

- SPECIATE 3.2
  - Has user friendly front-end
  - 1503 PM profiles
  - 565 gas profiles
- SPECIATE 4.0
  - Housed in MS Access®
  - 2,865 PM profiles
  - 1,215 gas profiles
  - 1,902 unique species

Database Changes (Cont.)

- SPECIATE 4.1
  - Added Canadian Data
  - 100 new VOC profiles from EC NPRI Database
  - Still in peer review
- SPECIATE 4.2
  - Housed in MS Access®
  - 290 new VOC and 461 new PM profiles
  - New category “other gases” added to accommodate speciated Hg, speciated NOx, and SVOC
  - In final editing. Publication expected Fall ’08

Ancillary Activities

- Composite Profiles
- New SCC-to-profile Mapping
- PM-simplified Profiles
- VOC To TOG Conversion Factors
- Protocol For Database Expansion

Composite Profiles

- 48 Source Categories
- A Single Number To Be Used For The Source
- Addresses Large Disparate Datasets (e.g., Solid Waste Combustion)
- Documentation Is Provided To Explain Rationale For The Number

PM-Simplified Profiles

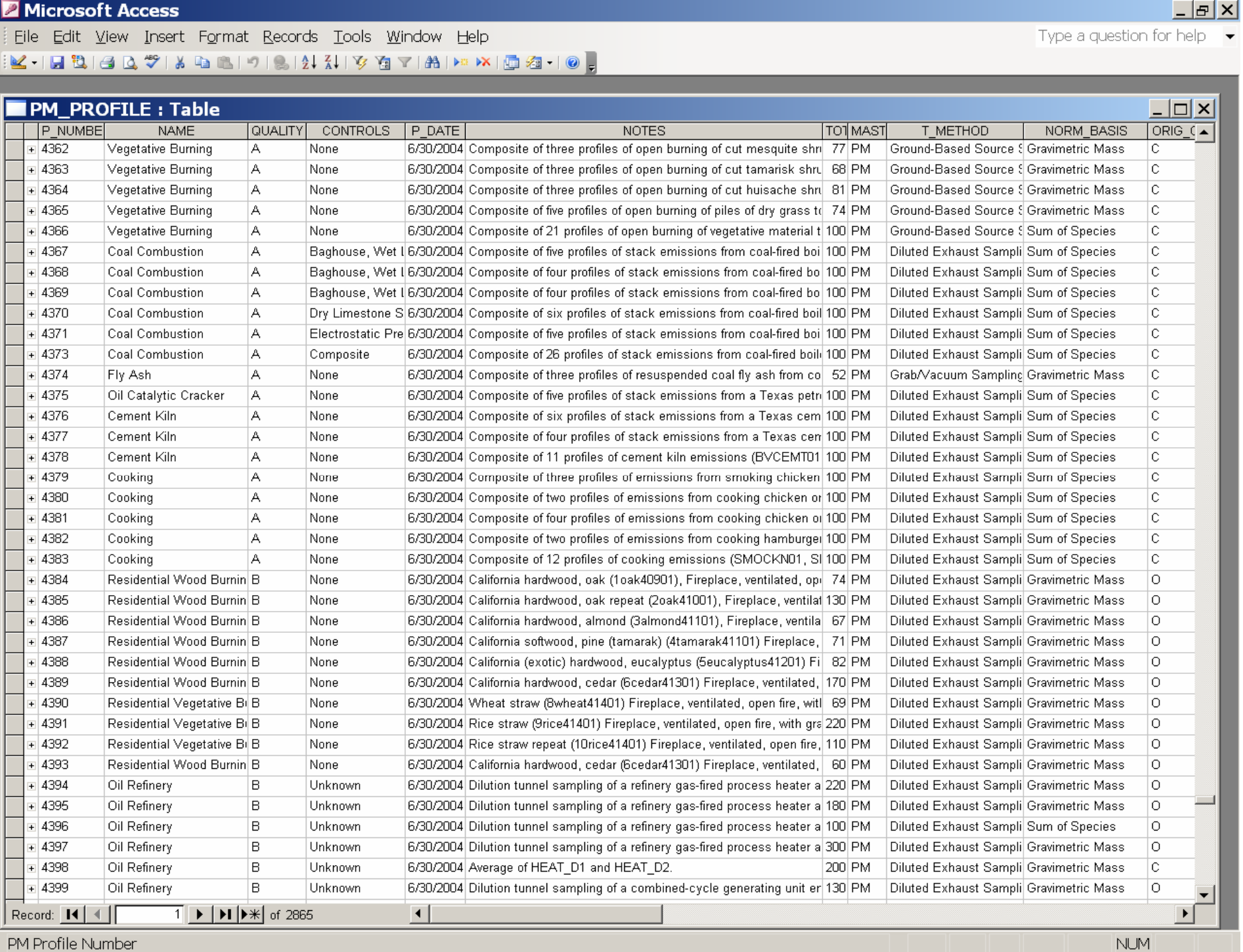
- 95 Simplified Profiles Added To Database
- Provides EC/OC, Sulfate, Nitrate, And PM-other
- Used By Air Quality Models (e.g., CMAQ)

SCC-to-profile Mapping

- Separate From Database
- Allows Correlation Of Profiles To Individual Source Categories
- Covers 80% of 2002 NEI VOCs

Example Fields in PM_Profile and Gas_Profile Tables

- Profile Number And Name
- Data Quality Rating
- Emission Controls
- Particle Size Information (PM)
- OC/EC, Speciated Organics
- Test Year, Notes



P_NUMBE	NAME	QUALITY	CONTROLS	P_DATE	NOTES	TOT	MAST	T_METHOD	NORM_BASIS	ORIG_C
4362	Vegetative Burning	A	None	6/30/2004	Composite of three profiles of open burning of cut mesquite shr	77	PM	Ground-Based Source S	Gravimetric Mass	C
4363	Vegetative Burning	A	None	6/30/2004	Composite of three profiles of open burning of cut tamarisk shr	68	PM	Ground-Based Source S	Gravimetric Mass	C
4364	Vegetative Burning	A	None	6/30/2004	Composite of three profiles of open burning of cut huisache shr	81	PM	Ground-Based Source S	Gravimetric Mass	C
4365	Vegetative Burning	A	None	6/30/2004	Composite of five profiles of open burning of piles of dry grass t	74	PM	Ground-Based Source S	Gravimetric Mass	C
4366	Vegetative Burning	A	None	6/30/2004	Composite of 21 profiles of open burning of vegetative material t	100	PM	Ground-Based Source S	Sum of Species	C
4367	Coal Combustion	A	Baghouse, Wet l	6/30/2004	Composite of five profiles of stack emissions from coal-fired boi	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4368	Coal Combustion	A	Baghouse, Wet l	6/30/2004	Composite of four profiles of stack emissions from coal-fired bo	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4369	Coal Combustion	A	Baghouse, Wet l	6/30/2004	Composite of four profiles of stack emissions from coal-fired bo	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4370	Coal Combustion	A	Dry Limestone S	6/30/2004	Composite of six profiles of stack emissions from coal-fired boil	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4371	Coal Combustion	A	Electrostatic Pre	6/30/2004	Composite of five profiles of stack emissions from coal-fired boi	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4373	Coal Combustion	A	Composite	6/30/2004	Composite of 26 profiles of stack emissions from coal-fired boil	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4374	Fly Ash	A	None	6/30/2004	Composite of three profiles of resuspended coal fly ash from co	52	PM	Grab/Vacuum Sampling	Gravimetric Mass	C
4375	Oil Catalytic Cracker	A	None	6/30/2004	Composite of five profiles of stack emissions from a Texas petr	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4376	Cement Kiln	A	None	6/30/2004	Composite of six profiles of stack emissions from a Texas cem	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4377	Cement Kiln	A	None	6/30/2004	Composite of four profiles of stack emissions from a Texas cen	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4378	Cement Kiln	A	None	6/30/2004	Composite of 11 profiles of cement kiln emissions (BVCEMT01	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4379	Cooking	A	None	6/30/2004	Composite of three profiles of emissions from smoking chicken	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4380	Cooking	A	None	6/30/2004	Composite of two profiles of emissions from cooking chicken or	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4381	Cooking	A	None	6/30/2004	Composite of four profiles of emissions from cooking chicken or	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4382	Cooking	A	None	6/30/2004	Composite of two profiles of emissions from cooking hamburger	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4383	Cooking	A	None	6/30/2004	Composite of 12 profiles of cooking emissions (SMOCKN01, SI	100	PM	Diluted Exhaust Sampli	Sum of Species	C
4384	Residential Wood Burnin	B	None	6/30/2004	California hardwood, oak (1oak40901), Fireplace, ventilated, op	74	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4385	Residential Wood Burnin	B	None	6/30/2004	California hardwood, oak repeat (2oak41001), Fireplace, ventilat	130	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4386	Residential Wood Burnin	B	None	6/30/2004	California hardwood, almond (3almond41101), Fireplace, ventila	67	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4387	Residential Wood Burnin	B	None	6/30/2004	California softwood, pine (tamarak) (4tamarak41101) Fireplace,	71	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4388	Residential Wood Burnin	B	None	6/30/2004	California (exotic) hardwood, eucalyptus (5eucalyptus41201) Fi	82	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4389	Residential Wood Burnin	B	None	6/30/2004	California hardwood, cedar (6cedar41301) Fireplace, ventilated,	170	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4390	Residential Vegetative Bu	B	None	6/30/2004	Wheat straw (8wheat41401) Fireplace, ventilated, open fire, witl	69	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4391	Residential Vegetative Bu	B	None	6/30/2004	Rice straw (9rice41401) Fireplace, ventilated, open fire, with gra	220	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4392	Residential Vegetative Bu	B	None	6/30/2004	Rice straw repeat (10rice41401) Fireplace, ventilated, open fire,	110	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4393	Residential Wood Burnin	B	None	6/30/2004	California hardwood, cedar (6cedar41301) Fireplace, ventilated,	60	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4394	Oil Refinery	B	Unknown	6/30/2004	Dilution tunnel sampling of a refinery gas-fired process heater a	220	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4395	Oil Refinery	B	Unknown	6/30/2004	Dilution tunnel sampling of a refinery gas-fired process heater a	180	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4396	Oil Refinery	B	Unknown	6/30/2004	Dilution tunnel sampling of a refinery gas-fired process heater a	100	PM	Diluted Exhaust Sampli	Sum of Species	O
4397	Oil Refinery	B	Unknown	6/30/2004	Dilution tunnel sampling of a refinery gas-fired process heater a	300	PM	Diluted Exhaust Sampli	Gravimetric Mass	O
4398	Oil Refinery	B	Unknown	6/30/2004	Average of HEAT_D1 and HEAT_D2.	200	PM	Diluted Exhaust Sampli	Gravimetric Mass	C
4399	Oil Refinery	B	Unknown	6/30/2004	Dilution tunnel sampling of a combined-cycle generating unit er	130	PM	Diluted Exhaust Sampli	Gravimetric Mass	O

Example Fields in PM_Specie and Gas_Specie Tables

- Analytical Method
- Weight Percent
- Uncertainty

Example of a Profile Query

- Following Slide from PM_Profile Query
  - Profile Number 1120430
  - Coal-fired Power Plant with ESP
  - Sampled using SASS; XRF Analysis
  - 0-30 Micron Size
  - Weight Percents of Species as Shown
- Reference Provided on Reference Table

Microsoft Access - [VIEW_PM_PROFILES : Select Query]

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P_NUMBE	PM_PROFILE.NAME	QUALITY	CONTROLS	P_DATE	NOTES	TOTAL	MASTE	LOWEI	UPPER	WEIGHT_P	SPECIE_F
112042.5	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	55.57	PM	0	2.5	0.002	Scandium
112042.5	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	55.57	PM	0	2.5	0.002	Thorium
112042.5	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	55.57	PM	0	2.5	0.001	Tungsten
112042.5	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	55.57	PM	0	2.5	0.015	Cerium
112042.5	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	55.57	PM	0	2.5	0.001	Cesium
112042.5	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	55.57	PM	0	2.5	0.018	Germaniur
112042.5	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	55.57	PM	0	2.5	0	Hafnium
112042.5	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	55.57	PM	0	2.5	0.001	Ytterbium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	11.579	Aluminum
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.002	Antimony
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0	Arsenic
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.434	Barium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0	Cadmium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	8.273	Calcium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.019	Chromium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.003	Cobalt
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.009	Copper
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.007	Gallium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	10.731	Iron
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.008	Lanthanum
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.078	Lead
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.078	Manganes
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.012	Nickel
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	1.756	Potassium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.01	Rubidium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0	Selenium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	21.683	Silicon
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.864	Sodium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.136	Strontium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	1.339	Sulfur
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.002	Tin
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.717	Titanium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.001	Uranium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.143	Zinc
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.001	Samarium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.002	Scandium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.002	Thorium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.001	Tungsten
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.013	Cerium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.001	Cesium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.013	Germaniur
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0.001	Hafnium
1120430	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	57.918	PM	0	30	0	Ytterbium
11204C	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	58.132	PM	2.5	10	11.597	Aluminum
11204C	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	58.132	PM	2.5	10	0.002	Antimony
11204C	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	58.132	PM	2.5	10	0.005	Arsenic
11204C	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	58.132	PM	2.5	10	0.41	Barium
11204C	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	58.132	PM	2.5	10	0.001	Cadmium
11204C	Coal-Fired Power Plant	3	Electrostatic Precipitator	1/5/1989	Sampled with a SASS train. Analyzed using XRF, INAA, and FAA	58.132	PM	2.5	10	8.418	Calcium

Record: 627 of 109802

PM Profile Number

NUM

Microsoft Access - [REFERENCE : Table]

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ID	P_TYPE	P_NUMBER	DATA_ORIGN	PRIMARY	DESCRIP	DOCUMENT
5014	P	1120330		☑		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Davison, R. L., et. al. Environ. Sci. Technol. 13:1107-1113. (1974).
5015	P	11203C		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Davison, R. L., et. al. Environ. Sci. Technol. 13:1107-1113. (1974).
5016	P	1120410		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Norton, G. A., E. L. Dekalb, and K. L. Malaby. Environ. Sci. Technol. 20:604-609. (1986).
5017	P	112042.5		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Norton, G. A., E. L. Dekalb, and K. L. Malaby. Environ. Sci. Technol. 20:604-609. (1986).
5018	P	1120430		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Norton, G. A., E. L. Dekalb, and K. L. Malaby. Environ. Sci. Technol. 20:604-609. (1986).
5019	P	11204C		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Norton, G. A., E. L. Dekalb, and K. L. Malaby. Environ. Sci. Technol. 20:604-609. (1986).
5020	P	1120510		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Baker, G., et. al. Emission Characterization of Major Fossil Fuel Power Plants in the Ohio River Valley. Prepared f
5021	P	112052.5		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Baker, G., et. al. Emission Characterization of Major Fossil Fuel Power Plants in the Ohio River Valley. Prepared f
5022	P	1120530		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Baker, G., et. al. Emission Characterization of Major Fossil Fuel Power Plants in the Ohio River Valley. Prepared f
5023	P	11205C		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Baker, G., et. al. Emission Characterization of Major Fossil Fuel Power Plants in the Ohio River Valley. Prepared f
5024	P	1120610		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Baker, G., et. al. Emission Characterization of Major Fossil Fuel Power Plants in the Ohio River Valley. Prepared f
5025	P	112062.5		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Baker, G., et. al. Emission Characterization of Major Fossil Fuel Power Plants in the Ohio River Valley. Prepared f
5026	P	1120630		☐		Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College Park, MD. April 27, 1987. □□Baker, G., et. al. Emission Characterization of Major Fossil Fuel Power Plants in the Ohio River Valley. Prepared f
5027	P	11206C				Gordon, G. E. and A. E. Sheffield, University of Maryland. University of Maryland Source Library. College

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Datasheet View

SPECIATE Data Browser

- Web-based application
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- Simplifies data searches
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RESEARCH & DEVELOPMENT

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Filter by: [PAMS]

[# A B C **D** L M N O P S]

Name	Symbol	HAPS	PAMS
Di(2-ethylhexyl)phthalate		Yes	No
Dibenzofuran , also noted as "DBZFUR"	DBZF	Yes	No
Dibutyl phthalate		Yes	No
Dimethyl phthalate		Yes	No

[# A B C **D** L M N O P S]

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Last updated on Wednesday, April 2nd, 2008.
http://projects.pechan.com/ttn/speciate/ehpa_speciate_browse_pollutant.cfm?pType=P&bHAPS=1&strBrowseFilter=D
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Results for Dibenzofuran

View [4400]	Oil Refinery	Unknown	Dilution tunnel sampling of a combined-cycle generating unit employing a General Electric Frame 7FA gas turbine with steam augmentation at Site E. The unit is a single shaft design, with the single generator driven by a shaft common to both the gas and the steam turbine. Hot exhaust gases from the turbine pass through a heat recovery steam generator (HRSG) before venting into the atmosphere via the stack. The total nominal capacity of the cogeneration facility is 240 MW. The unit fired natural gas for these tests. #2 run (9/7/01).	Add to Cart
View [4401]	Oil Refinery	Unknown	Dilution tunnel sampling of a combined-cycle generating unit employing a General Electric Frame 7FA gas turbine with steam augmentation at Site E. The unit is a single shaft design, with the single generator driven by a shaft common to both the gas and the steam turbine. Hot exhaust gases from the turbine pass through a heat recovery steam generator (HRSG) before venting into the atmosphere via the stack. The total nominal capacity of the cogeneration facility is 240 MW. The unit fired natural gas for these tests. #3 run (9/8/01).	Add to Cart
View [4403]	Oil Refinery	Unknown	Average of CCGU_E1, CCGU_E2 and CCGU_E3.	Add to Cart
View [4558]	Vehicle exhaust - gasoline - Catalyst	Catalytic converter	Weight percentages are from the undenuded sampling train. Downstream of the organics denuder, OC = 31.8% of the fine particle mass.	Add to Cart
View [4559]	Vehicle exhaust - gasoline - Noncatalyst	None	Weight percentages are from the undenuded sampling train. Downstream of the organics denuder, OC = 58.3% of the fine particle mass.	Add to Cart
View [4675]	Medium duty trucks - diesel	Catalytic converter	Weight percentages are from the filter downstream of an organics denuder. On the undenuded filter, OC = 30.4% of the fine particle mass.	Add to Cart

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Results for Profile 4400

U.S. ENVIRONMENTAL PROTECTION AGENCY

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Browse Details

Profile Information	
Number	4400 Add to Cart
Name	Oil Refinery
Master Pollutant	PM
Region	United States
Controls	Unknown
Notes	Dilution tunnel sampling of a combined-cycle generating unit employing a General Electric Frame 7FA gas turbine with steam augmentation at Site E. The unit is a single shaft design, with the single generator driven by a shaft common to both the gas and the steam turbine. Hot exhaust gases from the turbine pass through a heat recovery steam generator (HRSG) before venting into the atmosphere via the stack. The total nominal capacity of the cogeneration facility is 240 MW. The unit fired natural gas for these tests. #2 run (9/7/01).
Test Year	2001
Entry Date	Jun 30, 2004
Version	SPECIATE 4.0
Particle Size Range	0 µm to 2.5 µm

Name	Weight %	Uncertainty %	Analytical Method	Uncertainty Method
1&2-ethylnaphthalene (ENAP)	0.146150023	0.007767115	Filter/PUF/XAD/PUF Cartridges; GC/MS	Standard

139 Additional Compounds

Profile Rating Criteria

- V-rating (Profile Vintage)
  - Score of 1-5 based on date of measurements
  - Reflects measurement technology and methodology
- D-rating (Number of Samples)
  - Score of 1-4 based on number of samples
  - Can be used for statistical analysis and precision

Profile Rating Criteria (Cont.)

- Total Score = (V-rating)x(D-rating)
  - 17-20 = A
  - 13-16 = B
  - 9-12 = C
  - 5-8 = D
  - <5 = E
- J (Judgment) Rating Also Provided To Account For e.g.
  - Suspect profile composition
  - Ratios of species within profile
  - Sum of speciated mass fractions
  - Supporting documentation
- J-rating Not Used In Profile Quality Rating Score Due To Subjectivity

Speciate 4.0

- Database available at http://www.epa.gov/ttn/chief/software/speciate/index.html
- Requires MS Access®
- Website also has PDF Documentation and other pertinent information
  - VOC-to-TOG Conversion Factors
  - SCC-Profile Cross Reference Table
  - Protocol for Expansion of the SPECIATE Database

Future Plans

- SPECIATE 4.1Includes Canadian Data
  - Assisted by Environment Canada
  - Currently in EPA peer review
  - Probably available Fall, 2008
- Additional Periodic Updates
  - 4.2 available Fall, 2008
  - Future updates depend on client interest (you)

Future Plans (Cont.)

- New Profiles Will Be Added In Future Revisions
- You Can Help By Supplying Data
  - Full References Are Needed
  - Electronic Data Preferred
  - Send to beck.lee@epa.gov