



# EIS and the Making of the NEI

2017 International Emissions Inventory Conference

Baltimore, MD

August 14, 2017



# Outline

- 8:30 – 8:35 Introduction on NEI and EIS & Communication to submitters
- 8:35 – 9:45 The Emissions Inventory System (EIS)
  - New EIS Features
  - New EIS Reports
- 9:45 – 10:05 HAP Augmentation and Chromium Speciation
- 10:05 – 10:20 Break
- 10:20 – 10:35 PM Augmentation + PM2.5 Speciation
- 10:35 – 10:40 Other non-SLT Datasets
- 10:40 – 10:55 NEI Selection Process
- 10:55 – 11:20 2017 NEI Plan
- 11:20 – 12:00 Viewing NEI Data and Q&A
- Optional (time-dependent at end of class): How to Use SharePoint



# What is the EIS and NEI?



- Emission Inventory System (EIS)
  - Data repository for air emissions data used to create the NEI
  - Contains State, Local, Tribal (SLT) and EPA-submitted data
  - Can be multiple emissions values for the same unit/process or SCC/county
  - Annual, monthly, daily data
  - Data available via a password-protected web site
    - EIS Gateway <https://eis.epa.gov/eis-system-web/welcome.html>
- National Emission Inventory (NEI)
  - Snapshot in time from EIS
  - Inventory version shared with the public every 3 years, 2014 most-recent
  - One emissions value per process or SCC/county selected
  - Annual emissions values



# S/L/T Reporting Requirements



- Air Emissions Reporting Requirement (AERR)

<https://www.epa.gov/air-emissions-inventories/air-emissions-reporting-requirements-aerr>

- Complete criteria pollutant inventory every 3 years
  - All point sources (100 tpy potential to emit threshold)
  - Nonpoint sources
  - Onroad and Nonroad sources
  - Events (wildfires and prescribed fires)
  - 2017 Emissions due 12/31/2018, EIS window opens 6/1/2018
- Annual reporting for Type A point source facilities
  - SO<sub>2</sub>, NO<sub>x</sub>, CO with potential to emit  $\geq 2,500$  tpy
  - VOC, PM, NH<sub>3</sub> with potential to emit  $\geq 250$  tpy
  - Pb with potential to emit  $\geq 5$  tpy (amended to agree with Lead NAAQS level of  $\geq 0.5$  tpy)
- HAPs are submitted voluntarily by many SLTs and are encouraged as part of an integrated report



# Uses for the NEI

- The NEI is one of the key inputs for :
  - Modeling of national rules – NAAQS reviews, CSAPR, etc
  - Non-attainment designations
  - NATA Review – toxics risk modeling
  - Trends reports and analyses

# Communication with data submitters (1)



## 1) General NEI/EIS Email Listserv

- Updates roughly every 2-4 weeks
- Imminent NEI-related overall and detailed milestones and planning
- Recent EIS updates or near-term EIS needs
- Points to SharePoint site, public NEI websites
- Other useful information such as conferences, guidance, ongoing analysis
- Summary of Nonpoint Method Advisory (NOMAD) committee developments



# Communication with data submitters (2)

## 2) NOMAD Committees

- By-definition, covers only the nonpoint data category
- Hosted by EPA with some committees led via joint EPA/SLT
- Overall NOMAD team calls are monthly
- More-specific teams meet as-needed for “priority” sector(s) such as: Dust, Agricultural NH<sub>3</sub>, Residential Wood Combustion (RWC), Industrial and Commercial/Institutional (ICI) fuel combustion, Solvents, others
- Calls open to all SLT data submitters, RO and RPO staff, and others involved in EPA Tool development or use in NEI

## 3) Oil and Gas Committee

- National, monthly calls to discuss latest oil and gas tool developments
- Led by EPA, SLTs and Regional Office staff



# Communication with data submitters (3)



## 4) EIS Gateway Announcements

## 5) SharePoint sites

- Main NEI Site open to all “data submitters and collaborators”
  - Calendar, list of tasks, schedule, announcements, newsfeed
  - Much of this is a work in progress -yet to be updated for 2014v2 NEI or 2017 NEI
- “Shared with SLTs” folder for all other NEI work
- NOMAD Sub-site for Nonpoint data category work:
  - Latest and archived EPA Tools
  - NOMAD meeting minutes

# The Emissions Inventory System (EIS)

- Move to EIS PowerPoint





# HAP Augmentation & Chromium Speciation

## Is it 9:45?

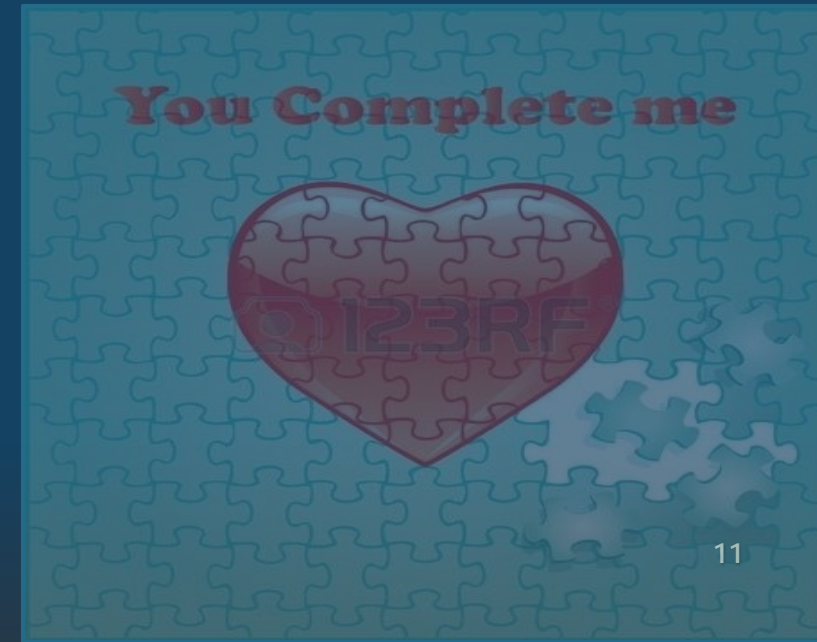






# Why Augment (include additional data sets)?

- In addition to SLT-submitted data, EPA uses augmentation and additional EPA datasets in order to have the most complete inventory for our end users.
  - National Scale Air Toxics Assessment (NATA)
  - Air quality modeling
  - Criteria Modeling Platform – National Rule Assessments
  - EPA Public Affairs
  - International reporting
  - EPA’s “Report on the Environment”





# Why Augment (cont.)?

- Augmenting, or the addition of EPA datasets, is to include additional data not already received from SLTs
  - Augmentation does not change a submitted SLT value in EIS
  - PM, HAP and Chrome augmentation is calculated on SLT submitted data (VOC, PM, Total Chromium)
  - Filling Gaps via independent sources like TRI (Toxics Release Inventory) and EPA EGU estimates



# HAP Aug and Cr Speciation: Overview

- HAP Augmentation: works on SLT-reported CAPs
- Chromium Speciation: Allocates total Chromium to hexavalent and trivalent components.
- Underlying factors, profiles, and assignments for both HAP Augmentation and Chromium Speciation are stored in the same EIS tables
- HAP aug factors are generally based on measured emission factors and/or peer-reviewed literature
- The resulted augmented data is created in EIS as an EPA dataset

# Process-level Report of NEI Selection:

## See what processes are Augmented or derived from Cr Speciation



eis_facilit y_site_id	program_s ystem_cd	alt_agenc y_id	eis_emissio ns_unit_id	agency_u nit_id	unit_type _cd	eis_emission s_process_id	agency_p rocess_id	scc	facility_site_na me	emissions_c omment	data_set_short_name	pollutant_ cd	descriptio n	total_emi ssions	uom
16323811	AZDEQ	6081	103915513	2	999	149324914	1	20100201	GRIFFITH ENEI	Emission mul	2014EPA_HAPAug	100414	Ethyl Ben:	59.1238	LB
16323811	AZDEQ	6081	103915413	1	999	149324814	1	20100201	GRIFFITH ENEI	Emission mul	2014EPA_HAPAug	100414	Ethyl Ben:	37.7904	LB
16323811	AZDEQ	6081	103915413	1	999	149324814	1	20100201	GRIFFITH ENEI	Emission mul	2014EPA_HAPAug	107028	Acrolein	7.55804	LB
16323811	AZDEQ	6081	103915513	2	999	149324914	1	20100201	GRIFFITH ENEI	Emission mul	2014EPA_HAPAug	107028	Acrolein	11.82468	LB
16323811	AZDEQ	6081	103915413	1	999	149324814	1	20100201	GRIFFITH ENEI	Emission mul	2014EPA_HAPAug	108883	Toluene	153.524	LB
16323811	AZDEQ	6081	103915513	2	999	149324914	1	20100201	GRIFFITH ENEI	Emission mul	2014EPA_HAPAug	108883	Toluene	240.19	LB
16323811	AZDEQ	6081	103915513	2	999	149324914	1	20100201	GRIFFITH ENERGY LLC		2014AZDEQ	120127	Anthracen	0.0024	LB
16323811	AZDEQ	6081	103915613	3	999	149325014	1	10300602	GRIFFITH ENERGY LLC		2014AZDEQ	120127	Anthracen	0.000036	LB
16323811	AZDEQ	6081	103916013	7	999	147210614	1	20200102	GRIFFITH ENERGY LLC		2014AZDEQ	120127	Anthracen	0	LB
16323811	AZDEQ	6081	103915413	1	999	149324814	1	20100201	GRIFFITH ENERGY LLC		2014AZDEQ	120127	Anthracen	0.0056	LB
16323811	AZDEQ	6081	103915413	1	999	149324814	1	20100201	GRIFFITH ENERGY LLC		2014AZDEQ	129000	Pyrene	0.0116	LB
16323811	AZDEQ	6081	103915613	3	999	149325014	1	10300602	GRIFFITH ENERGY LLC		2014AZDEQ	129000	Pyrene	0.000074	LB
16323811	AZDEQ	6081	103915513	2	999	149324914	1	20100201	GRIFFITH ENERGY LLC		2014AZDEQ	129000	Pyrene	0.005	LB
16323811	AZDEQ	6081	103916013	7	999	147210614	1	20200102	GRIFFITH ENERGY LLC		2014AZDEQ	129000	Pyrene	0.000118	LB
16323811	AZDEQ	6081	103915513	2	999	149324914	1	20100201	GRIFFITH ENEI	Emission mul	2014EPA_HAPAug	1330207	Xylenes (M	118.2476	LB
16323811	AZDEQ	6081	103915413	1	999	149324814	1	20100201	GRIFFITH ENEI	Emission mul	2014EPA_HAPAug	1330207	Xylenes (M	75.581	LB
16323811	AZDEQ	6081	106460413	8	999	150732714	8	38500110	GRIFFITH ENEI	Emission mul	2014EPA_Cr_Aug	16065831	Chromium	0	LB
16323811	AZDEQ	6081	106460413	8	999	150732714	8	38500110	GRIFFITH ENEI	Emission mul	2014EPA_Cr_Aug	18540299	Chromium	0.028	LB
16323811	AZDEQ	6081	103915413	1	999	149324814	1	20100201	GRIFFITH ENERGY LLC		2014AZDEQ	206440	Fluoranthr	0.007	LB

Note: there are separate data sets for the HAP aug records, chromium speciation records, TRI augmented records, etc.

# HAP Aug & Cr Speciation: General Approach

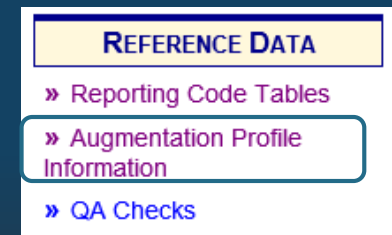


$$\textit{Augmented Emissions}_{\textit{Output pollutant}} = \textit{SLT\_Reported Emissions}_{\textit{Input Pollutant}} \times \textit{Factor}$$

**Factor** is a value from a speciation profile or emissions factor ratio and is based on the emissions source (i.e., SCC, NAICS, specific facility or process)

**Input Pollutant** is chromium for chromium augmentation, or a criteria air pollutant (CAP) for HAP augmentation

- EIS performs this computation & creates separate augmented datasets in EIS
- Factors and their mapping to sources are provided in EIS: “REFERENCE DATA” Section







# About HAP and Chromium Factors



- The Factors are grouped into “profiles” that reflect a type of source
  - Profile assignments depend on source attributes -primarily SCC, but could be facility or process-specific
  - If multiple SCCs share the same set of factors, then could be a named group
  - HAP Aug factors for point sources primarily from WebFire
    - Factor is a HAP to CAP ratio, was computed outside of EIS



# Example profile— computed based on WebFIRE EFs: “combust-natgas”

HAP	HAP EF Lbs/million cubic feet gas (WebFIRE)	VOC EF Lbs/million cubic feet gas (WebFIRE)	HAP Aug Factor  (this is the value in EIS)
toluene	0.0034	5.5	0.0006182
hexane	1.8	5.5	0.3272727
formaldehyde	0.075	5.5	0.0136364
benzene	0.0021	5.5	0.0003818
naphthalene	0.0061	5.5	0.001109



# Chromium Speciation: Why?

- We allow several chromium compounds to be reported in EIS

Pollutant Code	Description
1333820	Chromium Trioxide
7738945	Chromic Acid (VI)
18540299	Chromium (VI)
16065831	Chromium III
7440473	Chromium

Focus here is on **yellow- highlighted** pollutants

**← unspciated**

- Chromium OR Chromium VI and/or Chromium III can be reported (EIS will reject the submittal if you submit Chromium with Chromium VI or with Chromium III)
- Chromium VI and Chromium III are preferred over Chromium
- If Chromium is provided, then we need to speciate it to get Chromium VI and Chromium III
- Need Chromium VI (hexavalent Chromium) for NATA/risk /toxicity weighting
  - Hexavalent Chromium has health benchmark for cancer and noncancer impacts; trivalent does not





# Chromium Speciation: How it works

- Assign source record that contains chromium to a “profile”
  - E.g. “fuel combustion natural gas, process gas, liquid propellant”
  - Mapping uses hierarchy of source attributes (e.g., SCC, NAICS) but could also be mapped to a specific process id or facility id. EIS provides assignment file.
- Get factor for each output pollutant (Cr-VI & Cr-III) from profile
  - E.g.: “fuel combustion natural gas, process gas, liquid propellant”: 0.04 hex; 0.96 tri
- Multiply SLT Chromium emissions by each factor for each output pollutant
  - E.g. for “fuel combustion natural gas, process gas, liquid propellant”

$$\text{Emissions}_{hex} = \text{Reported Emissions}_{chromium} \times 0.04$$

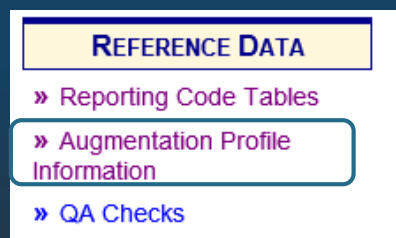
$$\text{Emissions}_{tri} = \text{Reported Emissions}_{chromium} \times 0.96$$

- Put output pollutants/emissions into the EPA Chromium Augmentation dataset for that source

# Chromium Speciation: How it works (cont.)



- Every chromium record must be speciated
  - You will not find pollutant code 7440473 (Chromium) in the NEI!
- Overall default (for processes not assigned to profiles) is 0.34 (34%) Cr-VI & 0.66 (66%) Cr-III
- Underlying data for mapping and profiles are at: [Augmentation Profile Information](#) in EIS (under Reference data), filter on Augmentation Type=Chromium



View Augmentation Profile Name

Augmentation Profile Name

Show 25 entries

Augmentation Type	Profile Name	Profile Source	Input Pollutant Code	Input Pollutant Description
HAP	<a href="#">10100102</a>	Ratio of uncontrolled output pollutant to uncontrolled input pollutant emission factors from EPA's Webfire database, downloaded October 2012	PM10-FIL	PM10 Filterable
HAP	<a href="#">10100201</a>	Ratio of uncontrolled output pollutant to uncontrolled input pollutant emission factors from EPA's Webfire database, downloaded October 2012	PM10-FIL	PM10 Filterable
HAP	<a href="#">10100202</a>	Ratio of uncontrolled output pollutant to uncontrolled input pollutant emission factors from EPA's Webfire database, downloaded October 2012	PM10-FIL	PM10 Filterable

# HAP Augmentation



- Compute HAPs based on HAP to CAP ratios applied to S/L/T-submitted CAP emissions
  - E.g., compute formaldehyde from VOC for natural gas combustion SCC
- Key differences from chromium speciation:
  - Input pollutant is an S/L/T-submitted CAP – we are using VOC, PM10-FIL, PM10-PRI, PM25-PRI, SO2
  - Could result in a single output pollutant or a full suite of output pollutants
  - Not every source that has a CAP is augmented (i.e., there is no overall default)
  - Sum of the factors for a particular profile/input pollutant does not need to equal 1 (or 100%)
  - If output pollutants are all HAP VOC and input pollutant is VOC, then the sum of the factors should be less than 1 (or 100%)

# HAP Augmentation



- Compute HAPs based on HAP to CAP ratios applied to S/L/T-submitted CAP emissions
  - E.g., compute formaldehyde from VOC for natural gas combustion SCC
- Key differences from chromium speciation:
  - Input pollutant is an S/L/T-submitted CAP – we are using VOC, PM10-FIL, PM10-PRI, PM25-PRI, SO2
  - Could result in a single output pollutant or a full suite of output pollutants
  - Not every source that has a CAP is augmented (i.e., there is no overall default)
  - Sum of the factors for a particular profile/input pollutant does not need to equal 1 (or 100%)
  - If output pollutants are all HAP VOC and input pollutant is VOC, then the sum of the factors should be less than 1 (or 100%)





# HAP Augmentation 2014 NEI Business Rules



- If a S/L/T-reported data or TRI data exists for a HAP at any process within a facility, the HAP aug value is not used for that particular HAP anywhere at the facility
  - It is created, but it is tagged (so not used in the selection)
- Augmented values that exceed the maximum S/L/T reported value across all facilities for the same HAP/SCC are not used at any facility
  - E.g., if the max S/L/T-reported selenium value for SCC 10200601 is 100 lbs then a HAP aug value of 101 lbs at SCC 10200601 will be tagged



# HAP Augmentation: Important!

- Example for Fuel Combustion, Natural Gas
- Scenario where SLT submits Point VOC but no VOC HAPs:
  - HAP Augmentation creates VOC HAPs for Point
  - SLT reports all VOC HAPs to NP, but does PT subtraction for VOC
  - Results in NP VOC HAPs > NP VOC
- SLT reconciling (NP-PT) CAPs but not HAPs: EPA will tag-out SLT HAPs and use HAP augmentation consistently

# Augmentation Profile Information in EIS



General Information



Assignment hierarchy



Augmentation Data

- Profiles
- Factors
- Profile Assignments
- Composite Table (all of it expanded)



## About Augmentation

The term "augmentation" from an EIS point of view describes a method of taking data from a source data set, usually from a State, Local, or Tribal (SL/T) organization, and creating a resulting data set that "gap fills" any needed pollutants that may be missing from the source data set. The resulting data set is used in National Emissions Inventory selections to provide a more comprehensive set of data.

## Types of Augmentation

Of the various augmentation processes done by EPA, only HAP and Chromium are currently available within EIS. HAP augmentation creates emission estimates for HAPs based on CAP emissions from an existing EIS dataset (usually SL/T). For example, toluene from a wood combustion process can be created by multiplying the VOC emissions by 0.05, which is the ratio of the toluene emission factor to the VOC emission factor. Chromium augmentation speciates "total" chromium (i.e., emissions from pollutant 7440473) into hexavalent and trivalent forms. For example, hexavalent chromium emissions from natural gas combustion is obtained from multiplying chromium by 0.04, since the natural gas combustion emissions have been estimated to be comprised of 4% hexavalent chromium and 96% trivalent chromium.

## Augmentation Approach

Augmentation is performed by applying a "best available" multiplication factor to generate a set of pollutants (i.e., "output" pollutants) based on the value of the "input" pollutant from a source data record. The output pollutant multiplication factors are based on characteristics of the source emissions records. These factors are grouped together for a specific source type and input pollutant into an augmentation profile. An augmentation profile is assigned to sources based on at least one of the following criteria (shown in priority order):

1. EIS Emissions Process ID (Point Only)
2. EIS Facility Site ID (Point Only)
3. County
4. State
5. Emissions type Code (Non-Point, On-Road, and Non-Road only)
6. Source Classification Code (SCC)
7. Regulatory Code
8. NAICS Code (Point Only)
9. Default if none of the other characteristics apply (used for chromium augmentation only)

A default augmentation profile is used for chromium augmentation in order that every chromium emission record is speciated to hexavalent and trivalent chromium.

Each augmentation profile consists of a set of factors for each output pollutant (i.e., each HAP, for HAP augmentation or Chromium in hexavalent and trivalent forms for Chromium augmentation).

The formulas used to compute emissions for HAP augmented records is:  
 $\text{Emissions (From Input Pollutant)} \times \text{FACTOR} = \text{Emissions (For the Output Pollutant)}$

Where:

Emissions (From Input Pollutant) is the emissions of the input pollutant from the source dataset.  
FACTOR is the multiplicative factor specific to the source (e.g., specific process, facility SCC, etc.) and output pollutant from the augmentation profile assigned to the source;  
Emissions (For the Output Pollutant) is the emissions of the output pollutant from the source dataset.

For chromium, the input pollutant is always chromium (7440473) and the output pollutant is either hexavalent chromium or trivalent chromium, and the hexavalent and trivalent factor from the same augmentation "profile" sum to 1.

## Links to Augmentation Factors

Augmentation factor information may be found in EIS via the following links:

[Augmentation Profile Names and Input Pollutants](#) - Displays general information about the profile and source of the profile names and factors.

[Augmentation Multiplication Factors](#) - Displays all the output pollutants and multiplication factors associated with a given Augmentation Profile and input pollutant.

[Augmentation Assignments](#) - Displays the characteristics of the data record for which the profile is based (the list of 9 items above).

[Augmentation Multiplication Factors and Assignments](#) - A composite table that provides a comprehensive view of all the combinations of output pollutants and assignment information associated with a given profile. Each of these views of the factors has the following capabilities:

Each of these views of the factors has the following capabilities:

1. Filtering by Augmentation Type
2. Filtering by entries in each column
3. Sorting results by column
4. Creating a CSV download of the data
5. Provides a link from the profile name to a detail view for that profile showing all the profile information about that profile name in a single view.

# Chromium Speciation Screenshots: SCC-level assignment

View Augmentation Profile Assignments and Factors

▼ Augmentation Profile Assignments and Factors

Show 25 entries

Augmentation Type: All

Search augment	Search profile	7440473	Search input	Search output	Search output	Search multiplic	30500110	Search scc de	Search scc de	Search scc de	Search scc de	Search sector	Search
Augmentation Type	Profile Name	Input Pollutant Code	Input Pollutant Description	Output Pollutant Code	Output Pollutant Description	Multiplication Factor	SCC Assignment	SCC Description Level 1	SCC Description Level 2	SCC Description Level 3	SCC Description Level 4	Sector Description	St
Chromium	Asphalt Concrete and Roofing	7440473	Chromium	16065831	Chromium III	0.95	30500110	Industrial Processes	Mineral Products	Asphalt Roofing Manufacture	Blowing (Use 3-05-050-01 for MACT)	Industrial Processes - NEC	
Chromium	Asphalt Concrete and Roofing	7440473	Chromium	18540299	Chromium (VI)	0.05	30500110	Industrial Processes	Mineral Products	Asphalt Roofing Manufacture	Blowing (Use 3-05-050-01 for MACT)	Industrial Processes - NEC	

Showing 1 to 2 of 2 entries (filtered from 344092 total entries)

Download Results: CSV

First Previous 1 Next Last



# Chromium Speciation Screenshots: Facility-level assignment



## View Augmentation Profile Assignments and Factors

### ▼ Augmentation Profile Assignments and Factors

Show 25 entries

Search augment	Search profile name	7440473	Search input pollut	Search output p	Search output pollut	Search multiplic	Search scc as	Search scc desc	Search scc desc	Search scc desc	Search scc desc	Search scc desc	Search sector	Search state ab	Search naics z	Search naics c	Search data ca	Search emissio	354	Search eis proces
Augmentation Type	Profile Name	Input Pollutant Code	Input Pollutant Description	Output Pollutant Code	Output Pollutant Description	Multiplication Factor	SCC Assignment	SCC Description Level 1	SCC Description Level 2	SCC Description Level 3	SCC Description Level 4	Sector Description	State Abbreviation	NAICS Assignment	NAICS Description	Data Category Code	Emission Type Assignment	EIS Facility Assignment	EIS Process Assignment	
Chromium	facility_specific_nohex	7440473	Chromium	16065831	Chromium III	1													3547511	
Chromium	facility_specific_nohex	7440473	Chromium	18540299	Chromium (VI)	0													3547511	

Showing 1 to 2 of 2 entries (filtered from 344092 total entries)

Download Results: CSV

First Prev

# HAP Augmentation Screenshot: SCC-level



VIEW/ADD/EDIT

- » Facility Inventory and Point Emissions
- » Potential Duplicate Facilities
- » Merge Processes
- » Nonpoint/ Onroad/ Nonroad Emissions
- » Event Emissions
- » NCD Activity Data
- » CDB Activity Data
- » Inventory Selection
- » Schedule Augmentation
- » Data Tagging

REPORTS

- » Request Reports
- » Report Downloads
- » Large File Download
- » Feedback Reports
- » Agency Submission History Report
- » Data Tagging Administration Report

REFERENCE DATA

- » Reporting Code Tables
- » Augmentation Profile Information
- » QA Checks

View Augmentation Profile Assignments and Factors

Augmentation Profile Assignments and Factors

Show 10 entries

Augmentation Type: HAP

Augmentation Type	Profile Name	Input Pollutant Code	Input Pollutant Description	Output Pollutant Code	Output Pollutant Description	Multiplication Factor	SCC Assignment	SCC Description Level 1	SCC Description Level 2	SCC Description Level 3	SCC Description Level 4
HAP	<a href="#">2102002000</a>	VOC	Volatile Organic Compounds	75003	Ethyl Chloride	0.00004	2102002000	Stationary Source Fuel Combustion	Industrial	Bituminous/Subbituminous Coal	Total Boilers Type
HAP	<a href="#">2102002000</a>	VOC	Volatile Organic Compounds	50000	Formaldehyde	0.0047999998	2102002000	Stationary Source Fuel Combustion	Industrial	Bituminous/Subbituminous Coal	Total Boilers Type
HAP	<a href="#">2102002000</a>	PM25-PRI	PM2.5 Primary (Filt + Cond)	85018	Phenanthrene	0.0000011065574	2102002000	Stationary Source Fuel Combustion	Industrial	Bituminous/Subbituminous Coal	Total Boilers Type
HAP	<a href="#">2102002000</a>	PM25-PRI	PM2.5 Primary (Filt + Cond)	50328	Benzo[a]Pyrene	1.557377e-8	2102002000	Stationary Source Fuel Combustion	Industrial	Bituminous/Subbituminous Coal	Total Boilers Type

Showing 1 to 4 of 4 entries (filtered from 344092 total entries)

Download Results: [CSV](#)

First

Previous

1

Next

Last

# HAP Augmentation Screenshot: Facility-specific



## View Augmentation Profile Assignments and Factors

Augmentation Profile Assignments and Factors																			
Show 25 entries		Augmentation Type: HAP																	
Augmentation Type	Profile Name	Input Pollutant Code	Input Pollutant Description	Output Pollutant Code	Output Pollutant Description	Multiplication Factor	SCC Assignment	SCC Description Level 1	SCC Description Level 2	SCC Description Level 3	SCC Description Level 4	Sector Description	State Abbreviation	NAICS Assignment	NAICS Description	Data Category Code	Emission Type Assignment	EIS Facility Assignment	EIS Process Assignment
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	100414	Ethyl Benzene	0.0003364	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	106990	1,3-Butadiene	0.0022627	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	107028	Acrolein	0.008852	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	108883	Toluene	0.0034576	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	108952	Phenol	0.0002034	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	50000	Formaldehyde	0.002127	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	127184	Tetrachloroethylene	0.000021	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	75070	Acetaldehyde	0.0144	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	67561	Methanol	0.0211864	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	71432	Benzene	0.0007578	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	75014	Vinyl Chloride	0.0001263	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	75092	Methylene Chloride	0.0001695	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	
HAP	<a href="#">facility15080211_scc20200254</a>	VOC	Volatile Organic Compounds	540841	2,2,4-Trimethylpentane	0.0021186	20200254	Internal Combustion Engines	Industrial	Natural Gas	4-cycle Lean Burn	Fuel Comb - Industrial Boilers, ICES - Natural Gas				P		15080211	



# Break!





# PM Augmentation + PM<sub>2.5</sub> Speciation

- Time check: 10:20



# PM Augmentation: What PM Pollutants are needed in the NEI?



- Air quality models use primary PM<sub>10</sub> and PM<sub>2.5</sub> (PM<sub>10</sub>-PRI and PM<sub>25</sub>-PRI)
  - Derive PM-coarse by subtraction of PM<sub>25</sub>-PRI from PM<sub>10</sub>-PRI
  - While filterable and condensable components are required....
  - Black Carbon (EC), Organic Carbon (OC), PM-nitrate (NO<sub>3</sub>), PM-sulfate (SO<sub>4</sub>) and “Other PM” (PMFINE) are derived from PM<sub>25</sub>-PRI
- HAP Augmentation currently uses PM<sub>10</sub>-FIL for all point sources and primarily\* PM<sub>25</sub>-PRI for nonpoint sources as an input (SLT-reported) pollutant to derive HAPs by ratio

\* exception is PM<sub>10</sub>-PRI for some oil and gas, commercial marine vessel and rail sources

# What PM Pollutants are Allowed in EIS?



- AERR: Any combination of PM10-PRI, PM25-PRI, PM-CON, PM10-FIL, PM25-FIL
- Filterable PM components\* (PM10-FIL, PM25-FIL) refer to particulate matter that may be physically captured on a filter during sampling
- Condensable PM (PM-CON) is gas-phase at stack conditions but condenses to sub-micron liquids or particles after exiting the stack and cooling to ambient conditions
- A few consistency QA checks in the EIS will reject all emissions:
  - PM10-PRI must be  $\geq$  each of these individual components: PM10-FIL, PM25-PRI and PM-CON
  - PM25-PRI must be  $\geq$  each of these individual components: PM25-FIL and PM-CON
  - PM10-FIL must be  $\geq$  PM25-FIL



# The PM Augmentation Tool

- Current PM Augmentation process goal is to create all five PM pollutants, consistent with each other
- Another goal is to also preserve SLT PM-PRI estimates, and add missing PM-CON and PM-FIL components only
  - For 2014 NEI: Short-term: Cleaned up (v1.2) and posted at:  
<https://www.epa.gov/air-emissions-inventories/pm-augmentation>
  - Longer-term (2017 NEI): Simplify tool, update ratios (emission factors), incorporate into the EIS that also generates specific “Emissions Method Code”





# What does the PM Augmentation Tool do?



- Uses SLT-reported PM values and control devices for SCCs
- Uses large set of look-up tables of ratios of PM species by SCC and up to 2 control devices
- Ratios are largely based on AP-42 EFs and size distribution graphs, with some mapping to similar SCCs and controls
- Sequence of math steps and ratios to be used depends upon which PM species have been reported by SLT
  - 31 possible permutations. Common ones are both PM-PRIs reported; both PM-FILs reported; All 5 reported; Only PM10-PRI reported
  - See link to 2013 CMAS paper within PM Aug “Tool Description” for all conditional logic steps



# PM Aug Tool: How to Look at Calculations

- Generate EIS process level report
- See Module 1 “Overview” webinar for more details on this report
- Provides dataset name for each process (county/SCC for nonpoint sources)
- PM Aug Tool-generated data reflected as “2014EPA\_NonPt\_PM-Aug” for nonpoint sources
- In this example, PM-CON, PM10-FIL and PM25-FIL are output from PM Augmentation via state-provided (AZ) PM10-PRI and PM25-PRI data.

State							data_set_short_name	Pollutant		Total		
EIS	Facility	EIS Unit	State	EIS	State							
Facility ID	PSC	ID	ID	Unit ID	Process ID	Process ID		SCC	Code	Description	Emissions	UOM
1013311	AZDEQ	492	48095013	1	61072414	1	20300203	2011AZDEQ	PM10-PRI	PM10 Primary (Filt + Cond)	2.74543	TON
1013311	AZDEQ	492	48095013	1	61072414	1	20300203	2011AZDEQ	PM25-PRI	PM2.5 Primary (Filt + Cond)	2.74543	TON
1013311	AZDEQ	492	48095013	1	61072414	1	20300203	2011EPA_PM-Aug	PM-CON	PM Condensible	1.23544	TON
1013311	AZDEQ	492	48095013	1	61072414	1	20300203	2011EPA_PM-Aug	PM10-FIL	PM10 Filterable	1.50999	TON
1013311	AZDEQ	492	48095013	1	61072414	1	20300203	2011EPA_PM-Aug	PM25-FIL	PM2.5 Filterable	1.50999	TON



# PM Augmentation Tool Results

- Two Output tables : Adds and Overwrites
- Adds are new PM species that didn't appear in the SLT-reported set, which gap-fill where one or more of the five PM pollutants were not reported
- Overwrites are for PM species that are in the SLT dataset, but where the logic sequence of the PM Augmentation routines found inconsistencies that are corrected by supplying a value that will be used preferentially over the SLT value
- The Overwrites are why EPA PM Aug dataset is above SLT data in the selection hierarchy



# PM Augmentation Tool: Caveats

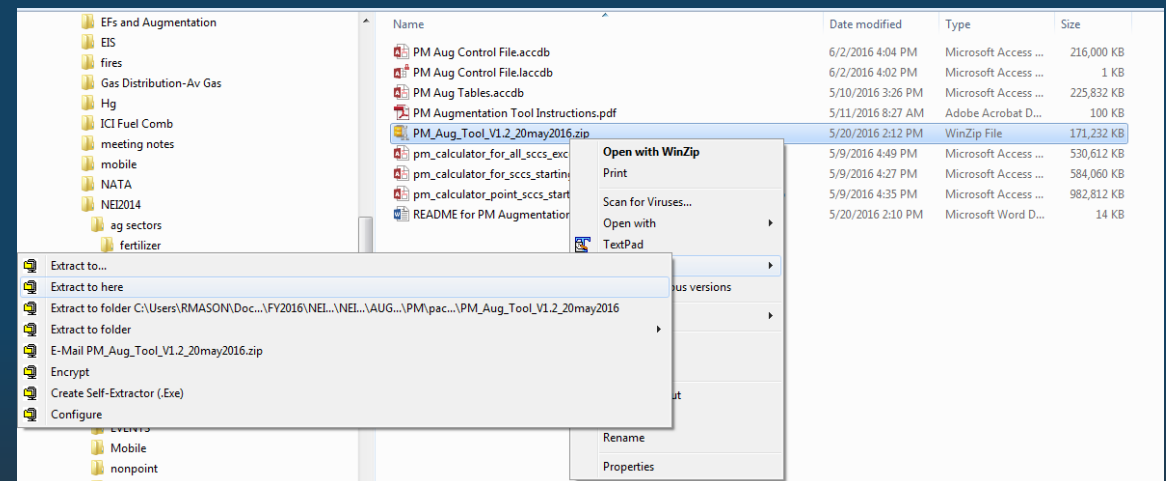
- While EPA provides the PM Augmentation Tool, we discourage using it as-is for several reasons, as documented in the README Word file in the zip package:
  - For technical reasons, no augmentation was performed on several sectors such as railways, commercial marine vessels and agricultural field burning
  - Overall, do not want to replace (Overwrite) SLT PM estimates with those from the PM Aug tool unless these overrides were “significant” (e.g., 0.01 ton) –particularly when primary PM species were reported and sensible.
  - Do not include zero-emissions “adds”; however, this had some undesirable results in 2014v1 NEI -EPA tool non-zero PM gap-filled! Oops!
- **NOTE:** Because of these caveats, we stripped out the “Input PM Data – Nonpoint” in the PM Aug Control File –this is contrary to Step 4 in the “PM Augmentation Tool Instructions” PDF



# PM Augmentation Tool: Nonpoint Screenshots Demo



- Download tool, extract all files to common directory, open README (Word) and Instructions (PDF)
- Open “PM Aug Control File”
- Continue following PDF Instructions steps 5 through 7, with care taken to load (or append) only PM data and sources that you wish to augment.





# PM Aug Tool Screenshots (cont.)



- Example of PM Aug Overwrite data we decided NOT to use:
- Only PM-CON missing, computed as PM10-PRI – PM10-FIL (0.0009) –see Trivial Update step 3.
- However, PM25-PRI – PM25-FIL = 0.0008...

PM Augmentation Tool

TABLE TOOLS: TABLE

FILE HOME CREATE EXTERNAL DATA DATABASE TOOLS FIELDS TABLE

View Paste Cut Copy Format Painter Filter Sort & Filter: Ascending, Descending, Remove Sort, Selection, Advanced, Toggle Filter

Records: Refresh All, New, Save, Delete, Totals, Spelling, More

Find: Replace, Go To, Select

Text Formatting: Calibri, 11, Bold, Italic, Underline, Color, Background Color, Indent, Decrease Indent, Increase Indent, Paragraph, Styles

Custom Search...

Inputs: Input PM Data - Nonpoint, Input PM Data - Point, ControlMeasure

Input Templates: Input PM Data - Nonpoint\_template, Input PM Data - Point\_template, ControlMeasure\_template

Outputs: EISData Additions - Nonpoint, EISData Additions - Point, **EISData Overwrites - Nonpoint**, EISData Overwrites - Point

Forms

RESP_AGENCY	FIPS	SCC	PollutantCode	emission-num-std	EmissionsUnitofMeasure
2014AZDEQ	04001	2102007000	PM25-PRI	0.00010645	TON
2014AZDEQ	04001	2102007000	PM25-FIL	0.0000266	TON
2014AZDEQ	04001	2102007000	PM10-PRI	0.00013305	TON
2014AZDEQ	04001	2102007000	PM10-FIL	0.0000532	TON
2014AZDEQ	04001	2102007000	PM-CON	0.0000798	TON
2014AZDEQ	04001	2103007000	PM25-PRI	0.0011635	TON
2014AZDEQ	04001	2103007000	PM25-FIL	0.00029085	TON
2014AZDEQ	04001	2103007000	PM10-PRI	0.00145435	TON
2014AZDEQ	04001	2103007000	PM10-FIL	0.00058175	TON
2014AZDEQ	04001	2103007000	PM-CON	0.0008726	TON
2014AZDEQ	04001	2104004000	PM25-PRI	0.0013	TON
2014AZDEQ	04001	2104004000	PM25-FIL	0.0005	TON
2014AZDEQ	04001	2104004000	PM10-PRI	0.0015	TON
2014AZDEQ	04001	2104004000	PM10-FIL	0.0006	TON

# PM Aug Tool Screenshots (cont.)



- Only PM-CON missing, computed (Additions output table) as PM10-PRI – PM10-FIL (0.0009)

Sort & Filter			Records			Find		Text Formatting		
Input PM Data - Nonpoint			EISData Additions - Nonpoint			EISData Overwrites - Nonpoint				
Pro	RESP	Repr	Emi	FIPS	SCC	Pollutant	TotalEmissic	EmissionsUr	EmissionsCa	EmissionsComment
EIS		A	R	04001	2104004000	PM-CON	0.0009	TON	2	PM-CON was determined using data speciated from the PM Calculator.

- However,  $PM_{25}\text{-PRI} - PM_{25}\text{-FIL} = 0.0008$ , but  $PM_{25}\text{-FIL} + PM\text{-CON}$  now does not equal  $PM_{25}\text{-PRI}$ , so, PM Aug Tool generates an OVERWRITE! We deemed  $PM_{25}\text{-PRI}$  difference of 0.0001 insignificant

Input PM Data - Nonpoint			EISData Additions - Nonpoint			EISData Overwrites - Nonpoint				
Progr	RESP_AGEN	R	En	FIPS	SCC	Pollutant	TotalEmissic	Emis	Emissi	EmissionsComment
EIS	2014AZDEQ	A	R	04001	2104004000	PM25-PRI	0.0014	TON	2	2014AZDEQ-reported emissions for PM2.5-PRI were replaced with 2014AZDEQ-reported PM2.5-FIL+PM-CON because 2014AZDEQ reported PM2.5-FIL+PM-CON>PM2.5-PRI.
EIS	2014AZDEQ	A	R	04001	2103004002	PM25-FIL	0.01766905	TON	2	2014AZDEQ-reported emissions for PM25-FIL were replaced with 2014AZDEQ-reported PM25-PRI minus PM-CON because 2014AZDEQ-reported PM25-FIL was not equal to but within 1% of PM25-PRI minus PM-CON. The difference is assumed to be a rounding error.
EIS	2014AZDEQ	A	R	04001	2103004002	PM10-FIL	0.01766905	TON	2	2014AZDEQ-reported emissions for PM10-FIL were replaced with 2014AZDEQ-reported PM10-PRI minus PM-CON because 2014AZDEQ-reported PM10-FIL was not equal to but within 1% of PM10-PRI minus PM-CON. The difference is assumed to be a rounding error.
EIS	2014AZDEQ	A	R	04001	2102007000	PM25-FIL	0.00002665	TON	2	PM25-FIL was speciated from agency provided data using PM Calculator.
EIS	2014AZDEQ	A	R	04001	2102007000	PM10-FIL	0.00005325	TON	2	2014AZDEQ-reported emissions for PM10-FIL were replaced with 2014AZDEQ-reported PM10-PRI minus PM-CON because 2014AZDEQ-reported PM10-FIL was not equal to but within 1% of PM10-PRI minus PM-CON. The difference is assumed to be a rounding error.

# PM2.5 Speciation



- Starting with the 2014 NEI, EPA provides 5 PM species based on PM2.5 from a “penultimate” NEI selection:
  - Elemental/black carbon (EC), organic carbon (OC), nitrate (NO<sub>3</sub>), sulfate (SO<sub>4</sub>), and the remainder of PM<sub>25</sub>-PRI called PMFINE (a.k.a. “crustal” or “other PM”)
- Also provide a copy of PM<sub>25</sub>-PRI and PM<sub>10</sub>-PRI from diesel engines, labeled as DIESEL-PM<sub>25</sub> and DIESEL-PM<sub>10</sub>
- For 2014 NEI, all 7 “pollutants” reside in stand-alone EPA dataset “2014EPA\_PMspecies”
- None of these pollutants are reportable to NEI by SLT submitters

# PM Speciation EIS Screenshot



## VIEW/ADD/EDIT

- » Facility Inventory and Point Emissions
- » Potential Duplicate Facilities
- » Merge Processes
- » Nonpoint/ Onroad/ Nonroad Emissions
- » Event Emissions
- » NCD Activity Data
- » CDB Activity Data
- » Inventory Selection
- » Schedule Augmentation
- » Data Tagging

## REPORTS

- » Request Reports
- » Report Downloads
- » Large File Download
- » Feedback Reports
- » Agency Submission History Report
- » Data Tagging Administration Report

## REFERENCE DATA

- » Reporting Code Tables
- » Augmentation Profile Information
- » QA Checks
- » View Dataset Identifiers
- » Inventory Cycle Management
- » Software and Tools

## View Augmentation Profile Assignments and Factors

Augmentation Profile Assignments and Factors													
Show 25 entries													
Search augment	Search pl	Search inp	Search input	Search out	Search output	Search multi	210400823	Search scc des	Search scc de	Search scc de	Search scc de	Search sector	Search
Augmentation Type	Profile Name	Input Pollutant Code	Input Pollutant Description	Output Pollutant Code	Output Pollutant Description	Multiplication Factor	SCC Assignment	SCC Description Level 1	SCC Description Level 2	SCC Description Level 3	SCC Description Level 4	Sector Description	Sta
PM Speciation	91105	PM25-PRI	PM2.5 Primary (Filt + Cond)	EC	Elemental Carbon portion of PM2.5-PRI	0.0558	2104008230	Stationary Source Fuel Combustion	Residential	Wood	Woodstove: fireplace inserts; EPA certified; catalytic	Fuel Comb - Residential - Wood	
PM Speciation	91105	PM25-PRI	PM2.5 Primary (Filt + Cond)	NO3	Nitrate portion of PM2.5-PRI	0.0019	2104008230	Stationary Source Fuel Combustion	Residential	Wood	Woodstove: fireplace inserts; EPA certified; catalytic	Fuel Comb - Residential - Wood	
PM Speciation	91105	PM25-PRI	PM2.5 Primary (Filt + Cond)	OC	Organic Carbon portion of PM2.5-PRI	0.5282	2104008230	Stationary Source Fuel Combustion	Residential	Wood	Woodstove: fireplace inserts; EPA certified; catalytic	Fuel Comb - Residential - Wood	
PM Speciation	91105	PM25-PRI	PM2.5 Primary (Filt + Cond)	PMFINE	Remaining PMFINE portion of PM2.5-PRI	0.410028	2104008230	Stationary Source Fuel Combustion	Residential	Wood	Woodstove: fireplace inserts; EPA certified; catalytic	Fuel Comb - Residential - Wood	
PM Speciation	91105	PM25-PRI	PM2.5 Primary (Filt + Cond)	SO4	Sulfate Portion of PM2.5-PRI	0.0041	2104008230	Stationary Source Fuel Combustion	Residential	Wood	Woodstove: fireplace inserts; EPA certified; catalytic	Fuel Comb - Residential - Wood	

Showing 1 to 5 of 5 entries (filtered from 344092 total entries)

Download Results: [CSV](#)

First Previous



# PM Speciation: References

- Section 2.2.5 in the 2014v1 NEI TSD:

[https://www.epa.gov/sites/production/files/2016-12/documents/nei2014v1\\_tsd.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/nei2014v1_tsd.pdf)

- Section 3.3.2 in the 2011v6.3 Emissions Modeling Platform TSD:

[https://www.epa.gov/sites/production/files/2016-09/documents/2011v6\\_3\\_2017\\_emismod\\_tsd\\_aug2016\\_final.pdf](https://www.epa.gov/sites/production/files/2016-09/documents/2011v6_3_2017_emismod_tsd_aug2016_final.pdf)





# Other non-SLT Datasets

- Toxics Release Inventory (TRI)
- EPA EGUs, Landfills, Nonpoint Mercury
- Airports, Rail, Commercial Marine Vessels
- Bureau of Ocean Energy Management (BOEM): Offshore oil platforms
- “Carry Forward”: Sources carried forward from 2011v2 NEI –EPA did not estimate for 2014



# TRI Dataset

- Why do we add Toxics Release Inventory (TRI) data to the NEI?
  - To have a more complete inventory for HAPs, where SLT data not available
  - Needed for presumably more-accurate risk modeling (e.g., NATA)
- How do we add the data?
  - TRI reports for Air emissions are a single total per facility for Stack emissions, and a single total per facility for Fugitive emissions, per pollutant
  - EIS contains two Emission Processes for each EIS facility that has been matched to a TRI facility, one for Stack, one for Fugitive
  - TRI data is Tagged and not used in the NEI if the SLT has reported that HAP (or one of its related HAPs) anywhere within the EIS Facility –goal is to avoid potential double-counting of TRI with other sources of data (primarily SLT)



# TRI dataset (cont.)



- TRI data for 2014 Inventory Year were added to EIS March 15, 2016
- The TRI data proposed to be added to EIS for 2014 was posted on the 2014 NEI website in October 2015
- The TRI facility IDs that have been matched to EIS facilities are stored in EIS as an Alternate Facility ID, and are available at any time from EIS
- There is no adjustment done at EPA to nonpoint estimates (either SLTs or EPAs) due to use of TRI at a facility
- The EIS Operating Status of a facility does not impact the TRI use

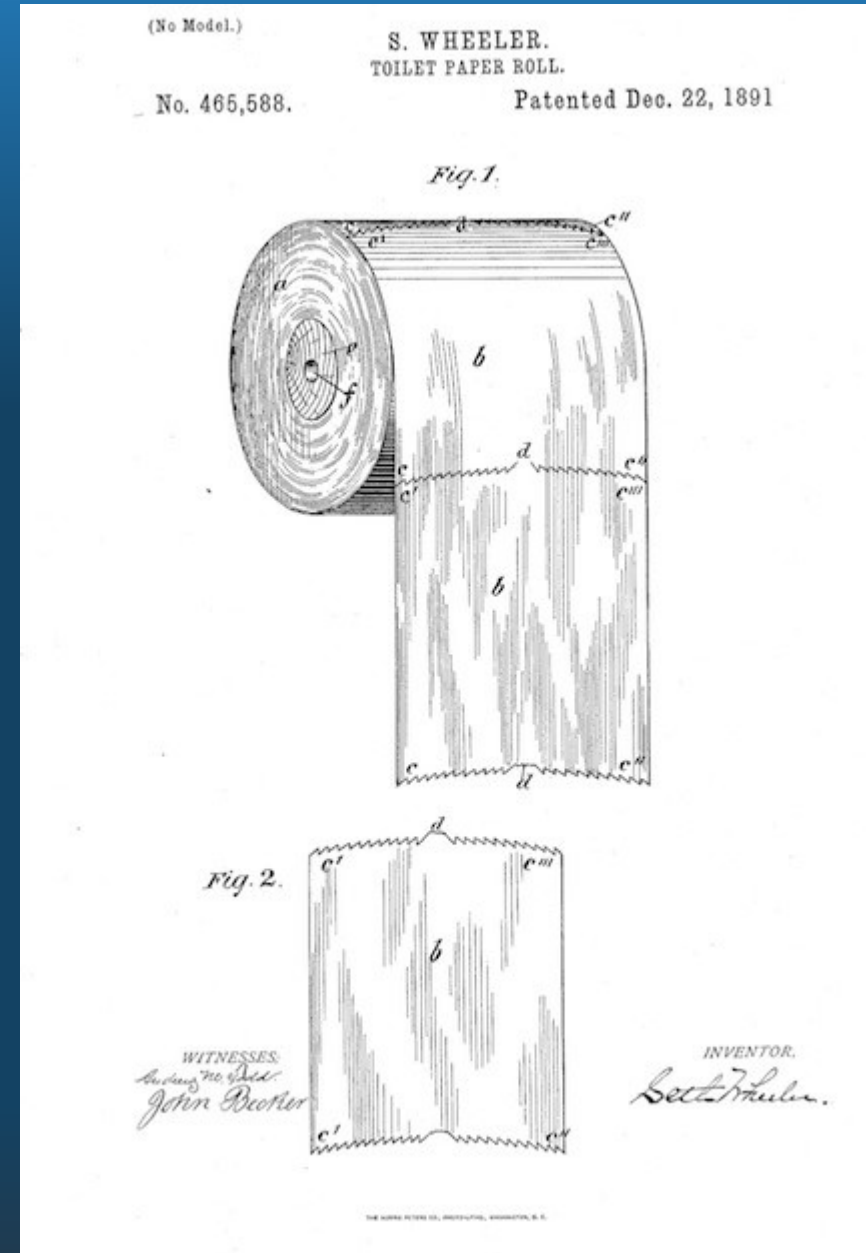


# NEI Selection Process

- Time Check: 10:40am

# In a perfect world...

- Global warming would be halted
- World Peace would prevail
- Everyone would put the toilet paper on the roll the right way round
- Every agency would submit a complete nonpoint inventory





# But since we can't always get what we want...

- EPA assists states by developing its own estimates
- A merge of data needs to happen, selecting the best pieces of data to go in the final NEI.
- We call this the Selection Process





# What happens after SLTs submit their data?

- EPA does quality analysis on the SLT data
- EPA contacts the SLT to start a conversation about any findings
- If SLT provides adequate response, then SLT data remains
- If not, SLT data is “tagged,” which means it won’t be used in the final selection (which ultimately becomes the NEI)





# QA: Outlier Check

- Create comparison file—2011v2, RAS, & EPA datasets. Compare by ratio and difference.
- Graph total (main criteria pollutant?) by state comparing 2011 to 2014. Look for trends and anomalies.
- Mark records with emissions values more than 10 times higher than EPA estimates (if greater than 10 tons?)
- Mark HAPs that are 10 times higher than EPA estimates (if greater than 100 lb?)
- Sort high to low on pollutants



# QA: Missing Data

- Look for missing states, missing pollutants, missing counties. Maps are helpful for this for geographical issues.
- Look for Bedford City VA—there shouldn't be one.
- Check for Puerto Rico and Virgin Islands, Hawaii & Alaska
- Make sure that the state did what they reported they'd do on the NP survey.
- Look for zeroes that probably shouldn't be zeroes.

# QA: Nonsensical Data

- Look for HAPs in odd places (commercial cooking lead, for example)
- Look for criteria pollutants in odd places (VOC in dust showed up in 2011)
- Check that HAP VOC sum less than VOC







# QA: Sector Level

- Look at point and nonpoint contributions both, if point is small or vice versa.
- Look for holes
- Sum up all VOC or NO<sub>x</sub> or key pollutant for sector, see if it's what we expect
- Group by pollutant/sector for whole RAS. See if there are pollutants where there shouldn't be.

# Tagging Data

*Used to prevent data from being part of a selection*



- Mistake submissions from SLTs (bad data) –used to modify the selection hierarchy
- To prevent EPA data from backfilling, inappropriately
  - SLT covers the category all in point
  - SLT doesn't have that **SCC/pollutant/county** combination in their state
  - SLT uses a different SCC for that source (either a more general or several more specific)



# Nonpoint Survey

- Tagging for 2014 relied heavily on the nonpoint survey
  - 2017 NP survey will be greatly simplified, only asking a few simple questions to help EPA know whether or not to backfill with EPA data
    - Is this emission source covered solely in your point source inventory?
    - Do you not have this emission source in your area?
  - Eliminate overlapping SCC issue by using Option Group/Option Set

# Option Group/Option Set Example

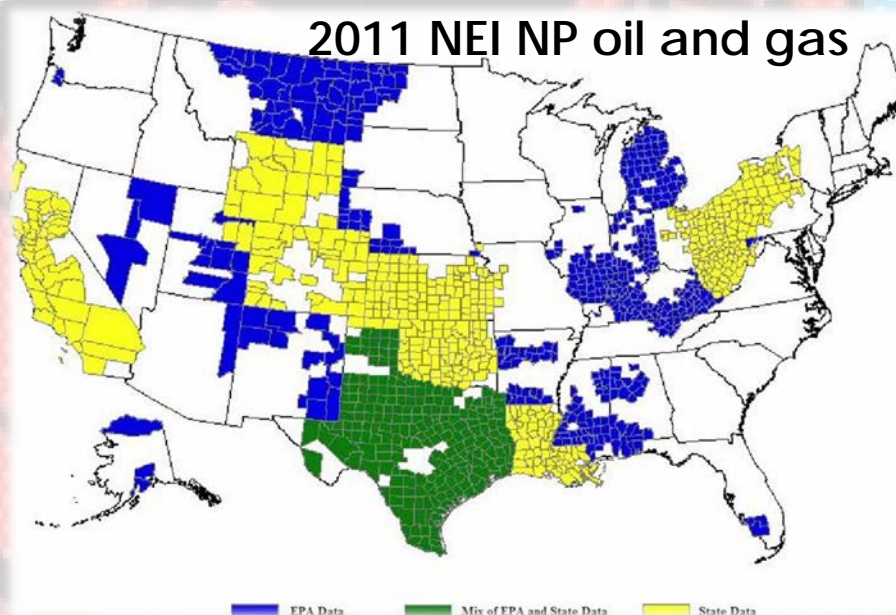
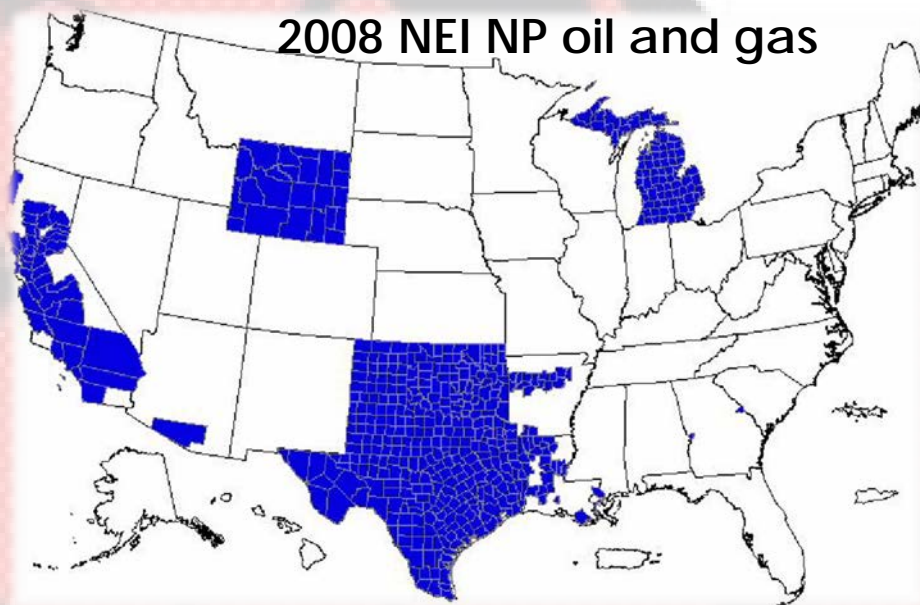


- EPA calculates
  - Onshore gas production; fugitives: connectors
  - Onshore gas production; fugitives: flanges
  - Onshore gas production; fugitives, open ended lines
  - Onshore gas production; fugitives: valves
  - Onshore gas production; fugitives: other
- State submits
  - Onshore gas production; fugitives: all processes



# Role of SLTs vs. EPA

- States are responsible for the emissions estimates
- SLTs can choose to accept EPA estimates; however, states choose method to apply
  - EPA methods are assumptions about activity and emissions rates that can be improved with local understanding
- In the absence of SLT data, EPA still has to create a complete inventory.





# Selection Hierarchy



- Much like natural selection, only the best data will prevail
- SLT data gets a leg up, since EPA's policy is to give it precedence
- PM Augmentation actually takes first priority, because it correct minor errors

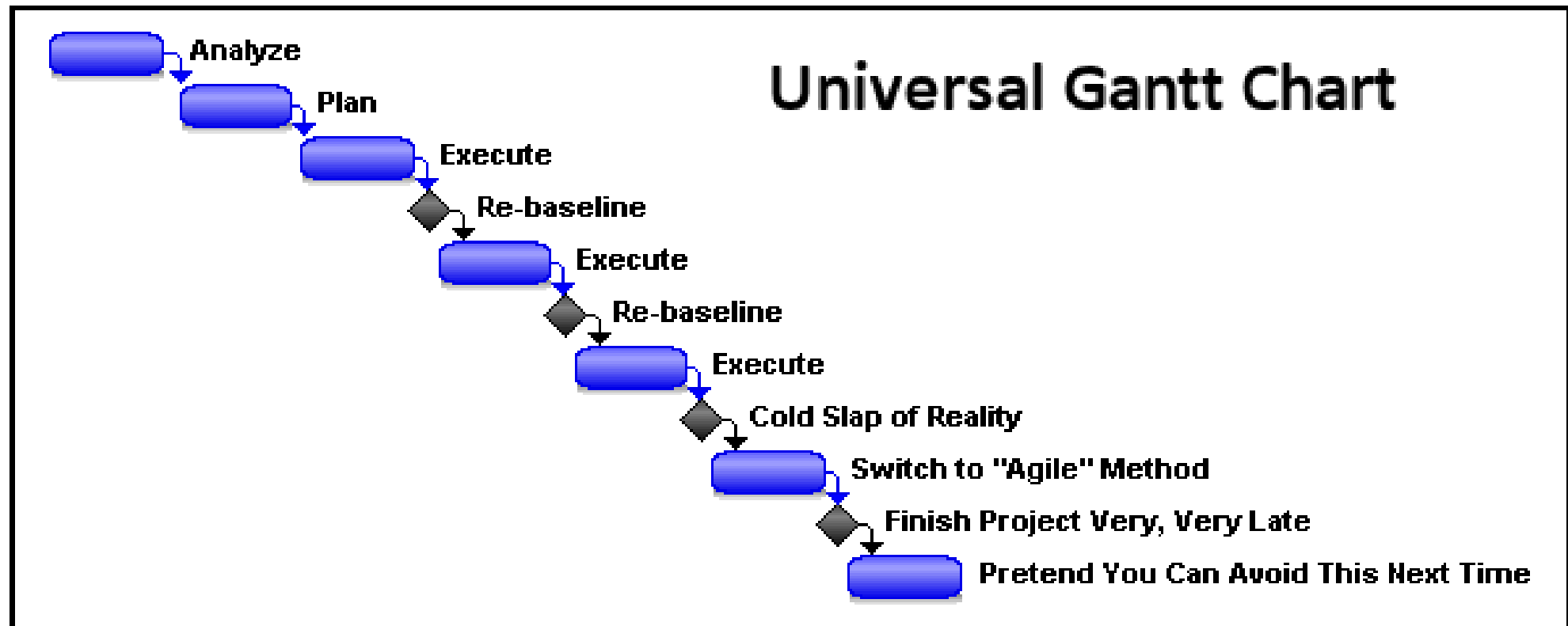


# The Selection Hierarchy: Nonpoint Example

Dataset Name	Description and Rationale	Rank
PM Speciation	Calculated by offline method splitting into 5 PM species: elemental carbon, organic carbon, nitrate, sulfate, and PM fine	1
PM Augmentation	Fills in missing or inconsistent SLT PM	2
SLT Data	Also called Responsible Agency Selection, merged into one dataset	3
Chromium Augmentation	Hexavalent and Trivalent Chromium speciated from SLT reported chromium	4
HAP Augmentation	Hazardous Air Pollutants speciated from SLT reported VOC and PM	5
EPA CMV & Rail	Commercial Marine Vehicle and Locomotive data generated by EPA	6
EPA Nonpoint	EPA's nonpoint datasets, generated with vetting by SLTs in NOMAD Committee	7
Other miscellaneous	ICI PM, NP mercury, 2011 data (when we're really desperate), MOVES	8

# 2017 NEI Plan

time check 10:55am





# 2017 NEI Plan

- Available on 2017 NEI Documentation site:  
<https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-documentation>
- As of August 2017: includes PDF Plan document and 4 appendices
- Draft Plan released June 30<sup>th</sup>
- Comments due September 1, 2017



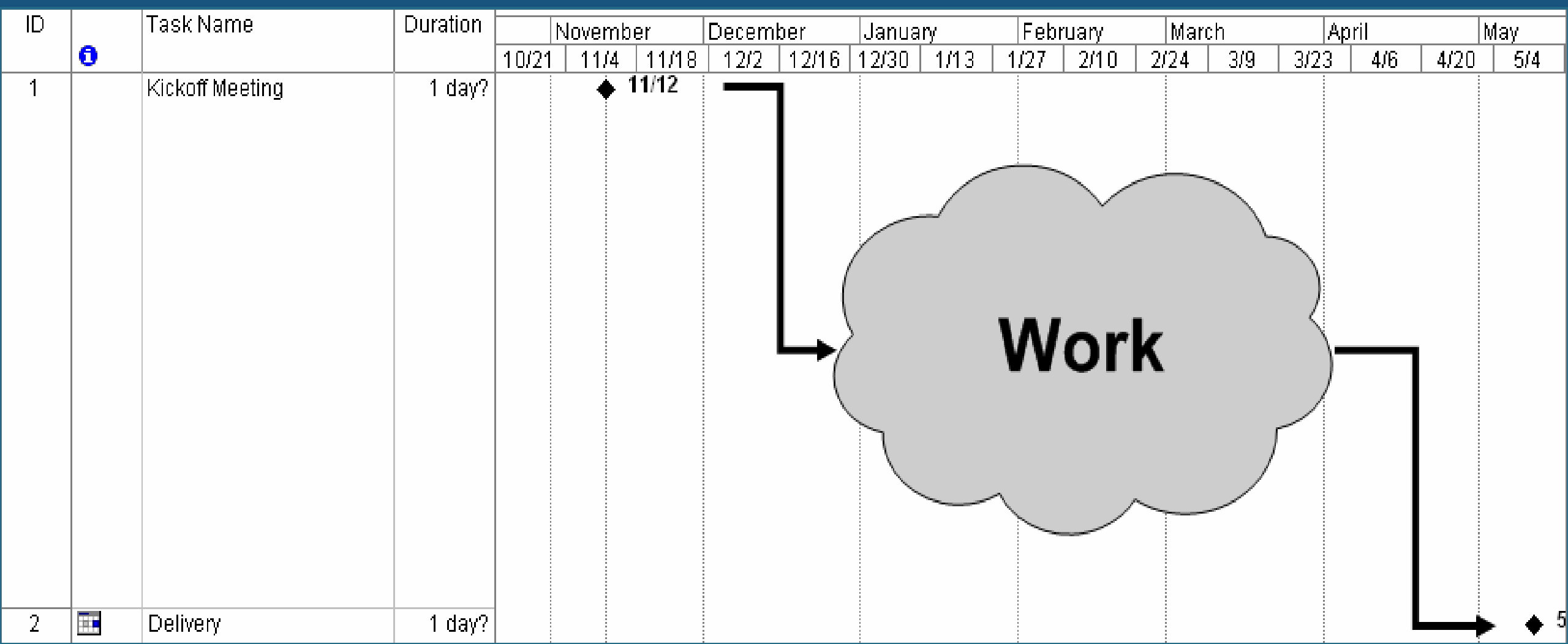
# 2017 NEI Plan: High-level

- Schedule and timelines for 2017 NEI development
- Leverages AERR for most deadlines and expectations
- Released at least 12/18 months before EIS submittal window opens/closes\*
- Goal: Ensure that all proposed changes to business processes, NEI/EIS codes, QA checks are provided prior to 2017 NEI development –allows SLTs enough time to implement associated changes into their data systems





# 2017 NEI Schedule: General



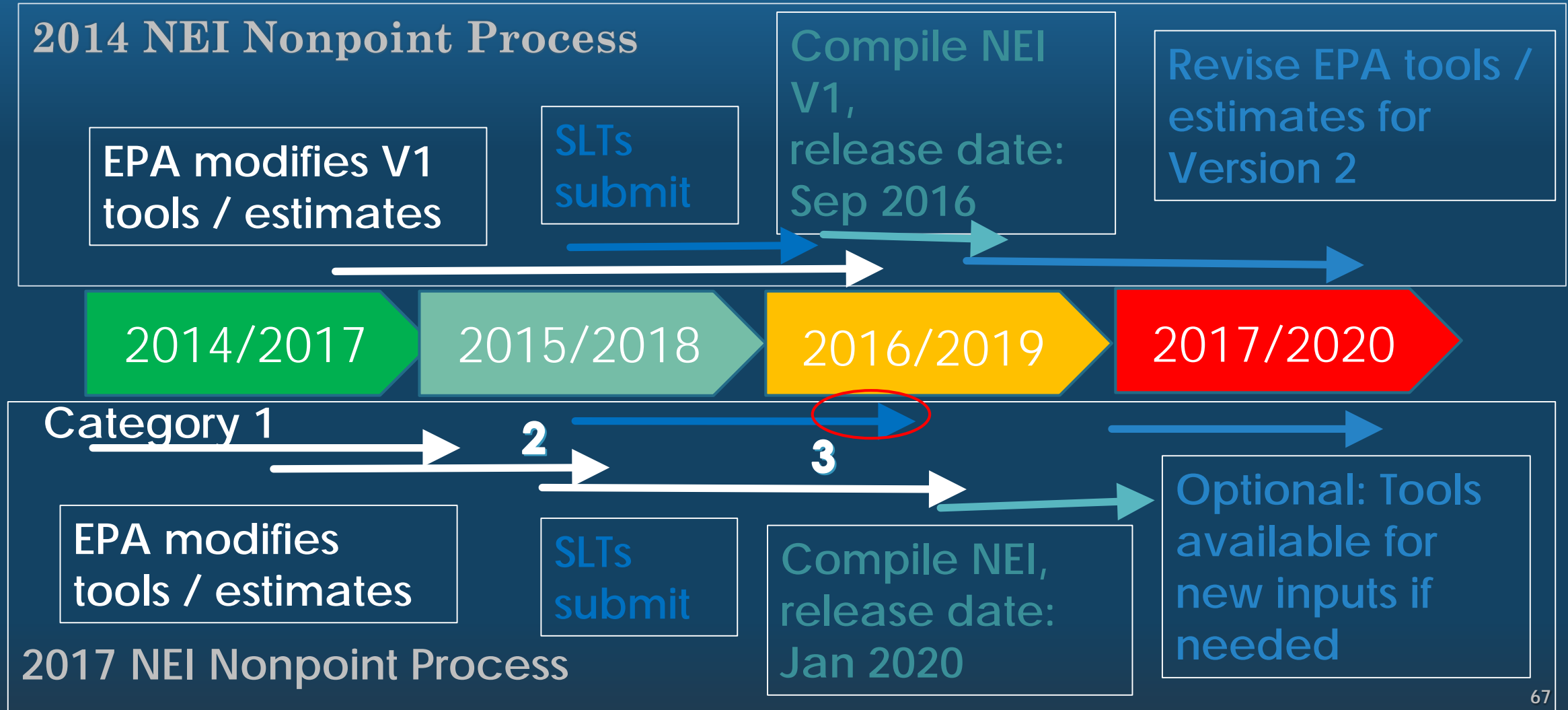


# 2017 NEI Schedule: OK, details

- Similar to 2014 NEI schedule overall: exception Nonpoint
- Key dates
  - **June 15, 2018**: EIS submittal window opens
  - **January 9 - 15, 2019** (Extended AERR deadline): EIS submittal window closes for all except Nonpoint data category. Facility window closes Jan 9<sup>th</sup>
  - March 31, 2019: Nonpoint survey and emissions due
  - May 15 – June 15, 2019: Draft NEI release in EIS, excluding some nonpoint data
  - May 15 – **July 31, 2019**: EPA solicits corrections to draft NEI
  - September 15, 2019: NEI release in EIS for all except nonpoint data
  - December 31, 2019: NEI release in EIS for nonpoint data
  - January 31, 2020: 2017 NEI Version 1 public release
- See Appendix 1 for Suggested SLT Timeline and QA Checks



# 2017 NEI Nonpoint: Current 2014 vs Proposed 2017 Timeline



# EIS Reporting Code Changes (Appendix 2)



- Control Measure Codes: imminent
- Unit Type Codes: Provided and new codes coming soon for Printing, Refineries and Waste Disposal
- SCCs
  - Nonpoint: new, proposed retirements
  - Point: none yet, see Appendix 3 for potential changes via Risk and Technology Review (RTR) rules
  - Nonroad: new SCCs for MOVES expected but timing unknown
  - Events: new SCC possible for pile burns
  - Onroad: no expected changes
- Pollutants: no retirements expected, but new pollutants possible, some reclassifications, continued PM speciation + diesel PM
- NAICS: retirements and additions and EIS announcement of 4-digit minimum



# Expected Pollutants

- Provided by EPA, at SLT request, for point and nonpoint
  - By SCC
  - Impacts how pollutants added to, or removed from, NEI selection
- Onroad and nonroad mobile generated by MOVES
- Events from EPA methods
- First provided for 2014 NEI, refer to TSD





# Expected Pollutants: Point Criteria

- SCC contributes at least 0.1% of total national emissions for that pollutant and includes an existing emissions factor (e.g. AP-42),  
OR
- SCC contributes at least 0.01% of total national emissions for pollutant (min. of 3 processes nationally), and SCC does not include a generic description “Other” or “Miscellaneous....NEC”
- For fuel combustion SCCs, same pollutants for all SCCs for same fuel

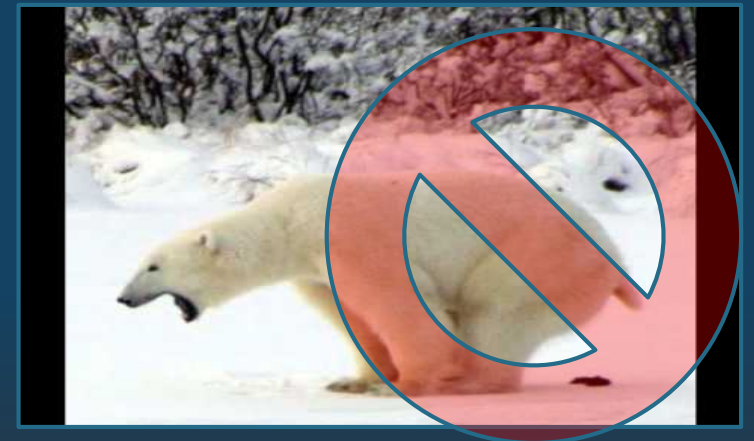


# Expected Pollutants: Point cont.

- Generally, SLT pollutants not in expected pollutants list (unexpected pollutants) will be in NEI
- However, EPA may tag out (remove) nonsensical pollutants (e.g., VOC or NOX from rock crushing SCCs)
- TRI data is first source of HAPs for missing expected pollutants, followed by HAP augmentation
- We plan to post this list for use in the 2017 NEI by the end of October 2017

# Expected Pollutants List: Nonpoint

- List plays a more active role in NEI selection, compared to the Point list, to satisfy these goals:
  - A consistent representation of pollutants
  - Less state-to-state variability in pollutant coverage and magnitudes
- Will include 2014v2 statistical-based thresholds by SCC and county: meaningful expected maximum values
- Only provided for source types EPA estimates





# Nonpoint Expected Pollutants Business Rules

Item	If an agency submits...	EPA will...	Unless...
1	Emissions > EPA-expected checks	Use EPA in lieu	Agency provides “supporting info” –TBD
2	Pollutants not in list	Remove pollutants	Agency provides “supporting info” -TBD
3	VOC but no HAPs	Run HAP Aug, not use EPA tool data	VOC > EPA-expected
4	Total VOC-HAPs > VOC	Replace all agency VOC-HAPs with HAP aug	
5	VOC + different VOC-HAPs	Use HAP aug to gap-fill	Total VOC-HAPs > VOC
6	Incomplete expected CAPs	Supplement w/ EPA tool data	Agency directs EPA not to
7	VOC but missing VOC-HAPs for non-EPA-estimated SCC	Use HAP aug	Agency also submits HAPs



# EIS QA Checks: Changes since 2014 NEI

- Additional critical QA checks:
  - “heat values” for events
  - The only pollutant that you can report in “curies” is radionuclides
- Clarification on acceptable ranges for stack parameters -deleted several duplicate QA checks for stacks
- New event critical errors for checks on presence and validity of staging codes, and valid emission calculation method code
- Ag fires (nonpoint) numerous activity values required if submitting data





# EPA Completeness Feedback

- Back by popular demand for 2017 NEI!
- Available via EIS Gateway to SLT agency staff + EPA Regional Offices –can run yourself
- Viewable only to your own agency
- Letters to local air directors after 2017 NEI release –based on final completeness reports by data category



# EPA Completeness Check Criteria

- Point: All facilities with operating status OP (operating) reported, with % completeness based on SCC/expected CAPs, voluntary HAPs noted but no impact to %
- Nonpoint: Completion of simplified NP Survey, w/ similar % completeness criteria and caveats as PT
- Onroad/Nonroad: Based on agency submitting inputs or accepting EPA data
- Events: Similar to mobile, but if submit emissions, completeness based on ALL pollutants EPA estimates: CAPs, HAPs and GHGs.



# Example Feedback Report

Data Category	Status	Percent Complete <sup>1</sup>	Voluntary HAP level <sup>2</sup>	What to do
Point sources	75% of facilities reported	60%	Modest	Report remaining facilities or indicate facility shutdowns. Reporting all expected criteria pollutants for reported SCCs or correct SCCs.
Nonpoint sources	Survey submitted, Data partly complete	80%	High	Report remaining expected criteria pollutants for SCCs reported.
Onroad mobile sources	Inputs not provided	0%	No data	Submit model inputs or accept EPA inputs/emissions.
Nonroad equipment sources	Inputs not provided	0%	No data	Submit model inputs or accept EPA inputs/emissions.
Events	Inputs provided EPA data accepted	200%	High	



# 2017 NEI Plan: Point



- Submit edits/adds to facility inventory and then point emissions inventory
  - NOT necessary to resubmit entire facility inventory each cycle
  - If release point coordinates, types, or site coordinates aren't changing, or do not have unit type in your system, leave EIS as-is
- Inclusion of GHG (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>) from GHG Reporting Program (GHGRP)
  - SLT data for same GHG pollutants not in GHGRP, but GHGRP takes precedence
  - Mostly facility-level, perhaps unit-level CO<sub>2</sub> where EPA Clean Air Markets Division estimates
  - Using actual mass via CO<sub>2</sub>-equivalent conversions where necessary
- New fugitive source characterization –based on NATA TSD
- Refer to 2017 Draft NEI Plan for best practices



# 2017 NEI Plan: Nonpoint

- New staggered 3-category schedule (earliest first) for EPA tools
  - 1) No PT subtraction, minimal changes to existing methodology
  - 2) No PT subtraction, more resources to methodology
  - 3) PT reconciliation required, leverage 2017 PT data in final version
- Full list of all tools/EPA estimates in plan
- Early engagement on Cat 1 and 2 tools
- See Mason et al. presentation in “Point and Nonpoint” Session 3 for more





# 2017 NEI Plan: Nonpoint Success

- Early and engaged review of NEMOs –NOMAD meetings
- Focus limited resources on tools/sectors requiring PT reconciliation
- Accurate and on-time NP survey
- Submit accurate and correctly-formatted inputs for EPA tools where desired
- Understand how Option Group/Option Set will be used in NEI Selection –see Appendix 4



# Option Group/Option Set -Background

- Using SCC Group rules for Nonpoint Data Category Selection
- Purpose: prevent potential overlap/overestimate of NEI emissions intra-dataset and between EPA and SLT submittals
- Option Group (OG): General category name for grouping of SCCs
- Option Set (OS): With OG, defines how SCC relates to others in same OG, values are <XnY> where,
  - X = “Level-1” category, mandatory when OG is populated. Expected values of “A”, “B”, “C”, etc., with “A” being highest in hierarchy
  - n = “Level-2” identifier, an optional subgroup of Level-1 category (X). Expected values of “1”, “2”, “3”, etc.
  - Y = “Level-2 ranking”, optional hierarchical values if Level-2 identifier assigned. Expected values of “A”, “B”, “C”, etc., with “A” being highest in hierarchy



# Option Group/Option Set –Gritty Details

- Any Level-1 Category “A” grouping will outrank any Level-1 Category “B” grouping, regardless of the length
- Within a given Level-1 Category, those with only 1 character will outrank any grouping that has more than 1 character
- All Level-2 identifiers within the same Level-1 Category will be have equal ranking
- Within a Level-2 Identifier set, the Level-2 Ranking will be based alphabetically, with “A” being the highest value and “Z” being the lowest value
- Only the highest ranking values within the set is chosen for the selection. Multiple SCCs may have the same ranking values, and all values with the same ranking will be selected



# Option Group/Option Set –Example 1

Option Group	Option Set	SCC	Description
Ind_Dist_ICI	A	2102004000	Total: Boilers and IC Engines
Ind_Dist_ICI	B	2102004001	All Boiler Types
Ind_Dist_ICI	B	2102004002	All IC Engine Types

- If agency reports all 3 SCCs, only emissions from Option Set “A” will be selected (in NEI)
- If agency reports both “B” SCCs, but no “A” SCC, then both “B” SCCs selected
- Can and do flip assignments to make “specific” SCCs “A” and more general SCCs “B”
- See 2017 Draft NEI Plan Appendix 4 for full “draft” OG/OS assignments



# Option Group/Option Set –Example 2

Data Set Name	Data Set Priority
SLT Data Set	1
EPA Data Set	2

- Typical NEI Selection: SLT data has hierarchy over EPA data
- Sample data supplied by SLT and EPA for various SCCs within same Option Group
- Done by-pollutant: Highest-ranking data set in hierarchy takes precedence over highest Level-1 Option Set assignment –subject to NEI/NOMAD review

SCC	Option Group	Option Set	SLT Data Set Reported?	EPA Data Set Reported?	Selected?
2610000100	Open Burning Leaf	A		Y	No
2610000110	Open Burning Leaf	B	Y		Yes
2610000120	Open Burning Leaf	B		Y	No
2610000130	Open Burning Leaf	B	Y		Yes



# Option Group/Option Set –Example 3



SCC	Option Group	Option Set	SLT Data Set Reported?	Selected?
2294000000	Paved Roads	A		
2294000002	Paved Roads	B		
2294005000	Paved Roads	B1A	Y	Yes
2294005001	Paved Roads	B1B	Y	No
2294010002	Paved Roads	B2B		
2294015000	Paved Roads	B3A		
2294015001	Paved Roads	B3B	Y	Yes

- Simplified data hierarchy but more complicated Option Set assignments

# 2017 NEI Plan: Revised Nonpoint Survey



- Original survey developed for 2014v1 NEI had numerous questions and ASCII answers
- With use of Option Set/Option Group, new survey basically limited to:
  - *Do you want to use EPA estimates for this SCC?*
  - If no, because of any of the following:
    - You have this source and are submitting data,
    - You do not have this source, or,
    - You have this source but it is completely covered in the Point inventory
- New NP survey will default to “Yes” except for Industrial and Commercial/Institutional Fuel Combustion, which will default to “no”



# 2017 NEI Plan: Nonpoint Survey Caveats



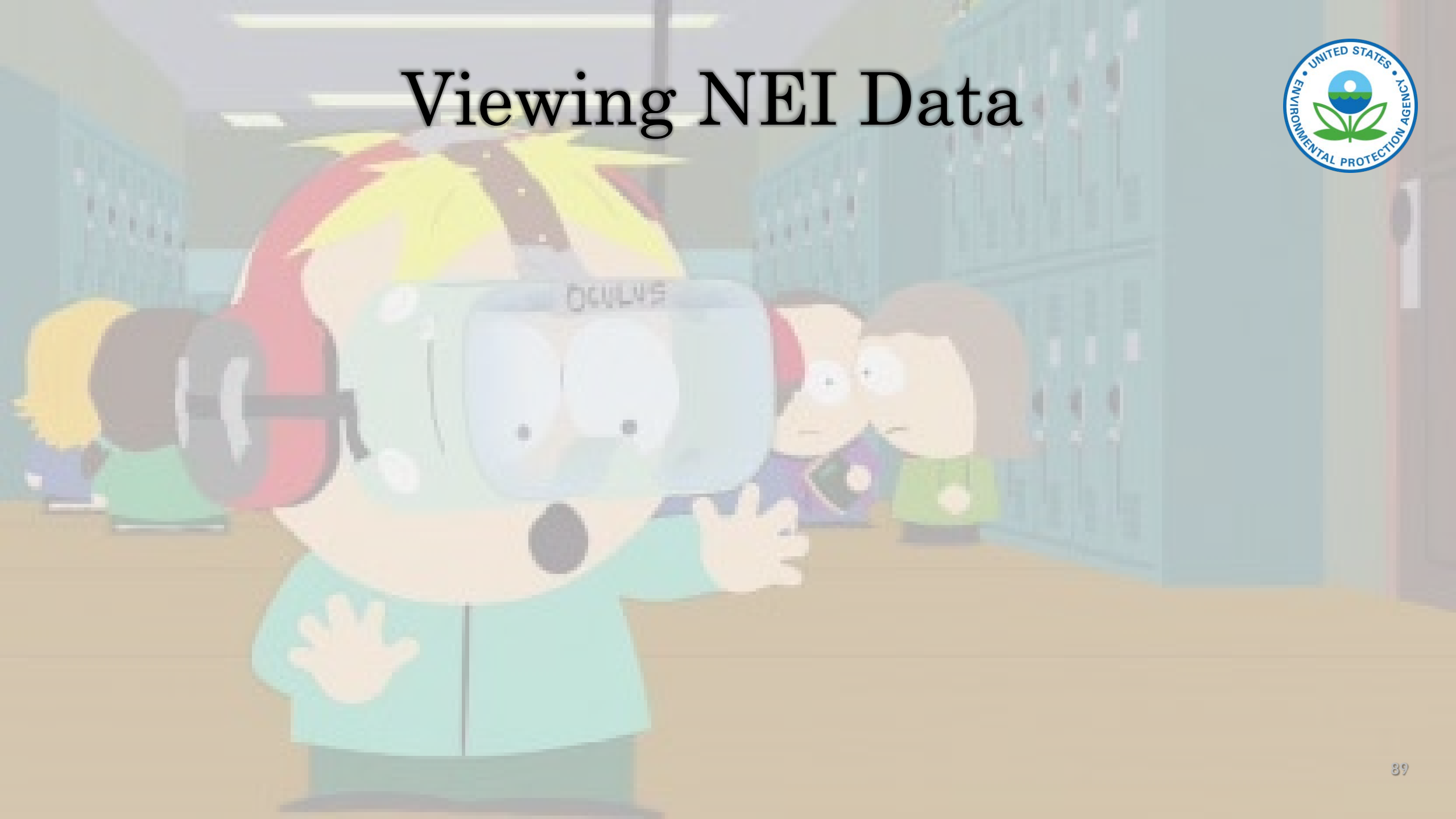
- Default if SLTs do not submit NP Survey: EPA estimates used if SLTs do not submit emissions in Option Group. No more (ideally) manual EPA tags!
- If you indicate “no” then do not properly fill out remaining option, EPA estimates likely to be used –essentially, will reset to “yes”
- ICI defaults to “no” because:
  - We expect/need PT SLT subtraction, **and**,
  - We expect nonpoint emissions for virtually every county



# Comments on 2017 NEI Plan

- EIS Feedback report: Provide max/threshold EPA value in outlier check
- Nuances in Option Set/Option Group –e.g., Pb mines vs EPA total
- Clarification on emissions vs inputs submission for NP schedule
- PM components requirements in NEI: PM-CON vs PM25-PRI/PM10-PRI
- Show how to EIS-access sub-annual emissions where available
- Lots of typos
- Others?

# Viewing NEI Data







# Viewing NEI Data

- Public and Internal/SLTs -for inventory developers
- SLTs: Use EIS for intermediate products/resources –before draft selection available (e.g., EPA datasets, TRI IDs, tagged emissions values, HAP aug ratios/data, Option Set/Option Group assignments, etc...)
- Public: NEI Homepage

<https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei>

- Data and Documentation sites for each triennial NEI: 2008, 2011, 2014, 2017
- Data includes:
  - EIS sector (60) query tool: individual CAPs and HAPs at national, state or county-level
  - Tier 1 (14) tool: CAPs only at national, state or county-level
  - SCC summaries for each data category (e.g., Point, Onroad, Nonroad, Nonpoint)
  - Tribal Lands summaries by sector and Tier 1
  - Other summaries: fires by county/SCC, facility/pollutant-level, others

# DOCUMENTATION



- NEI Documentation
  - Technical Support Documentation (TSD) + supporting data
  - NEI Report
  - NEI Plan + Appendices
  - Various resources for SLTs:
    - Submittal instructions and resources for inventory developers
    - Expected pollutants list
    - Draft and interim products and analyses
  - EPA likely shifting away from using Documentation site as repository in 2017 NEI –relying more on NEI SharePoint (e.g., NOMAD subsite)

**AIN'T NOBODY GOT TIME FOR  
THAT!**



# Viewing NEI Data: Inventory Developers

- The EIS (discussed earlier)
  - Reports
  - Viewing Data
- NEI SharePoint site (also discussed earlier)
  - Most-desirable place to share intermediate NEI analyses, meeting notes, etc.
  - Draft and current version of Nonpoint tools
  - NOMAD subsite
  - Links to NATA products
  - Links to EIS and NEI website



# EIS on Envirofacts

- Available on the current 2014 NEI website
  - <https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data>
  - Similar to what exists now. Queries pulled from Envirofacts.
- Available (September) on Envirofacts
  - <https://www3.epa.gov/enviro/>
  - Multisystem search function available at <https://www3.epa.gov/enviro/facts/multisystem.html>

# Contact Information:

## Phone (919) 541-xxxx



- Point
  - Ron Ryan, [ryan.ron@epa.gov](mailto:ryan.ron@epa.gov), x4330
  - Laurel Driver, [driver.laurel@epa.gov](mailto:driver.laurel@epa.gov), x2859
    - Airports
- Mobile Sources
  - Laurel Driver, [driver.laurel@epa.gov](mailto:driver.laurel@epa.gov), x2859
    - On-road, Non-road
    - In Nonpoint: CMV, Rail
- Fires/Events + Ag Fires (in Nonpoint)
  - Tesh Rao, [rao.venkatesh@epa.gov](mailto:rao.venkatesh@epa.gov), x1173
- NATA and HAP Augmentation
  - Madeleine Strum, [strum.madeleine@epa.gov](mailto:strum.madeleine@epa.gov), x2383
- EIS Support
  - Sally Dombrowski, [dombrowski.sally@epa.gov](mailto:dombrowski.sally@epa.gov), x3269
- Nonpoint
  - Jennifer Snyder, [snyder.jennifer@epa.gov](mailto:snyder.jennifer@epa.gov), x3003
    - Oil and Gas, Solvents, Gas Distribution, Commercial Cooking, Open Burning, others
  - Rich Mason, [mason.rich@epa.gov](mailto:mason.rich@epa.gov), x3405
    - Residential Wood & Other Residential and ICI Fuel Combustion, Mercury, others
  - Rhonda Thompson, [thompson.rhonda@epa.gov](mailto:thompson.rhonda@epa.gov), x5538
    - Ag Fertilizer/Pesticides/Tilling
    - All dust categories
  - Lee Tooly, [tooly.lee@epa.gov](mailto:tooly.lee@epa.gov), x5292
    - Asphalt Paving
  - Tesh Rao, [rao.venkatesh@epa.gov](mailto:rao.venkatesh@epa.gov), x1173
    - Ag Livestock Waste



# Open Q&A





# Appendix: SharePoint Training



# Collaboration with EPA - SharePoint

- What is SharePoint?
  - Collaboration and Document Management Tool
    - Central location for team documents and information by means of web portals
    - Centralized repository for shared documents
  - Cloud-based service
  - Available through desktop or mobile devices
  - Allows for simultaneous editing of a single document, saving previous versions and tracking updates.



# Getting started

- You must first setup a “Microsoft account”
- Receive an invitation email
  - Sent from owner of SharePoint site
  - **Click link** contained in the email
  - Do not attempt to login to SharePoint
- If you have SharePoint where you work:
  - Sign out of your SharePoint account from your browser
  - In your browser cut and paste
    - [https://usepa.sharepoint.com/sites/oar\\_Work/NEI](https://usepa.sharepoint.com/sites/oar_Work/NEI)
    - Click on link “**Sign in with a Microsoft account**” at the bottom
    - Enter your Microsoft login and password
- Book mark the SharePoint website!

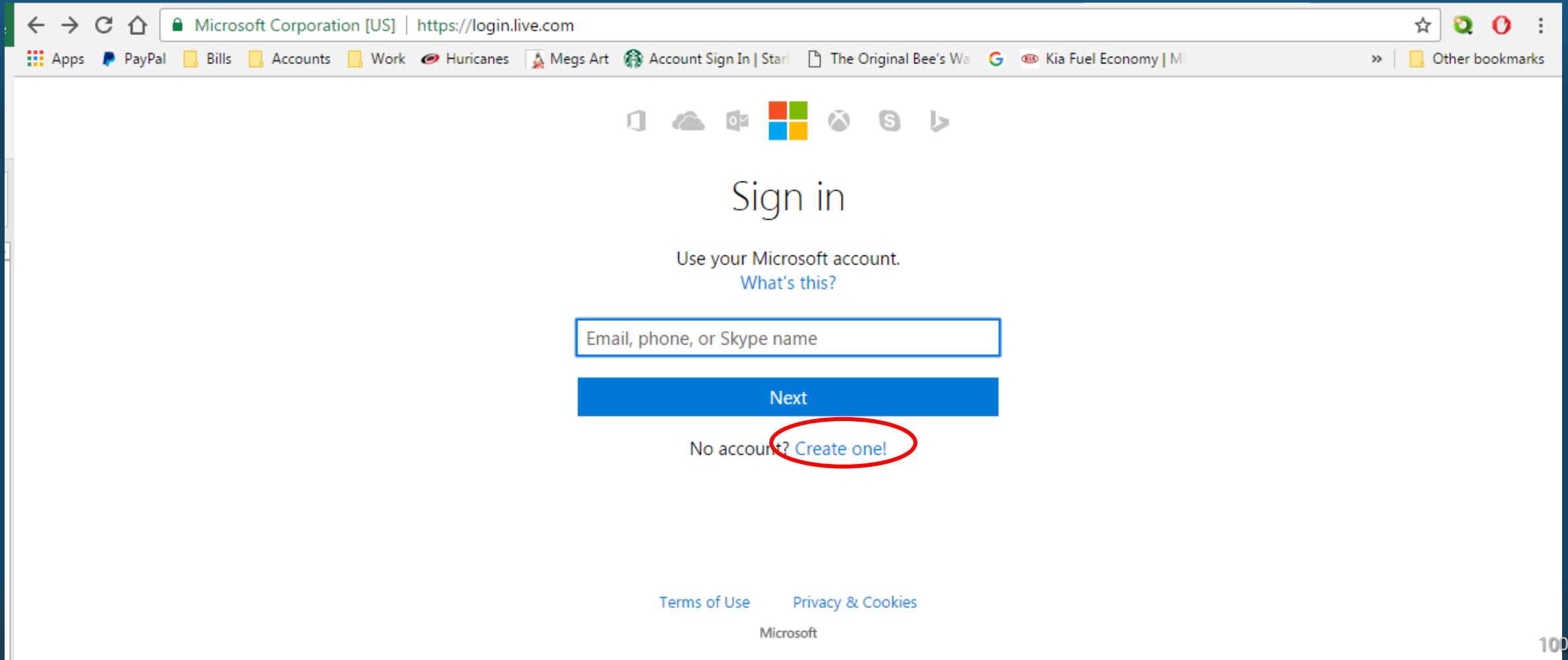


# What is a Microsoft Account?

- A Microsoft Account is any login/password that you use to sign into Skype, Outlook, or OneDrive.
- If you do not have a Microsoft account:
  - In your browser go to <https://login.live.com/> and select **Create one!**



Don't have a Microsoft account?  
<https://login.live.com/>


A screenshot of a web browser displaying the Microsoft login page at https://login.live.com/. The browser's address bar shows the URL and the page title "Microsoft Corporation [US]". The browser's bookmark bar contains several links including "Apps", "PayPal", "Bills", "Accounts", "Work", "Hurricanes", "Megs Art", "Account Sign In | Start", "The Original Bee's Wa", "Kia Fuel Economy | M", and "Other bookmarks". The main content area of the page has a white background. At the top, there is a row of icons for various Microsoft services. Below this, the text "Sign in" is displayed in a large font. Underneath, it says "Use your Microsoft account." followed by a link "What's this?". A text input field with the placeholder "Email, phone, or Skype name" is present. Below the input field is a blue button labeled "Next". At the bottom of the main content area, the text "No account?" is followed by a link "Create one!" which is circled in red. At the very bottom of the page, there are links for "Terms of Use" and "Privacy & Cookies", and the Microsoft logo.



← → ↻ 🏠 Secure | https://signup.live.com/signup?contextid=F21900C50932961B&bk=1490194113&ru=https%3a%2f%2flogin.live.com%2flogin.srf%3fcontextid%3dF21900 ☆ 🔄 🔍 ⋮

Apps PayPal Bills Accounts Work 🌪️ Hurricanes 🗑️ Megs Art ☕ Account Sign In | Start 📄 The Original Bee's W... 🌐 📺 Kia Fuel Economy | M... » 📁 Other bookmarks

---

Microsoft

## Create an account

You can use any email address as the user name for your new Microsoft account, including addresses from Outlook.com, Yahoo! or Gmail. If you already sign in to a Windows PC, tablet, or phone, Xbox Live, Outlook.com, or OneDrive, use that account to [sign in](#).

First name

Last name

User name

[Get a new email address](#)

Password

8-character minimum; case sensitive

Reenter password

Country/region

Birthdate

Month

Day

Year

Gender

Help us protect your info

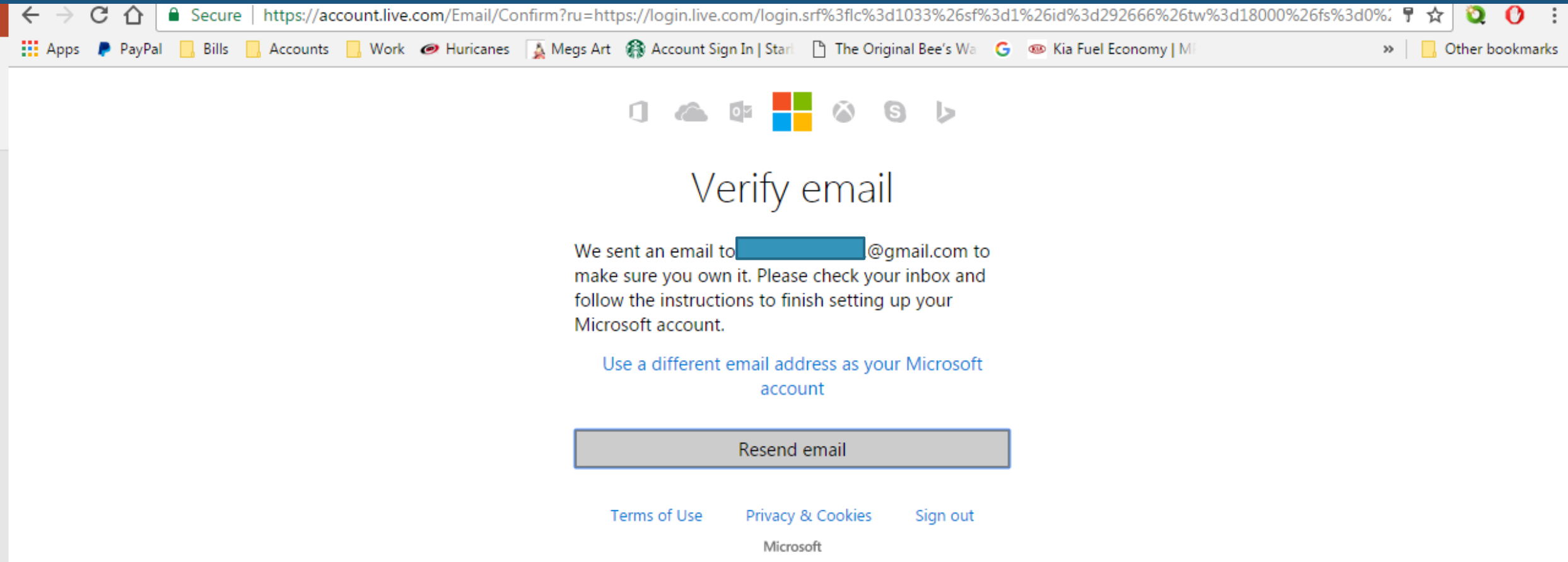
Your phone number helps us keep your account secure.

Country code

Your name will appear to your friends, co-workers, family, and others in the Microsoft services you use.

Complete the form and select “Create Account” at the bottom of the page.

# You will receive an email with instructions to verify your email

A screenshot of a web browser showing the Microsoft account verification page. The browser's address bar displays a URL from account.live.com. The page has a white background with a blue header area. At the top, there are several application icons (OneDrive, Outlook, Microsoft Store, etc.). The main heading is "Verify email" in a large, dark font. Below it, a paragraph states: "We sent an email to [redacted]@gmail.com to make sure you own it. Please check your inbox and follow the instructions to finish setting up your Microsoft account." A blue link "Use a different email address as your Microsoft account" is positioned below the paragraph. A large, light gray button labeled "Resend email" is centered on the page. At the bottom, there are links for "Terms of Use", "Privacy & Cookies", and "Sign out", followed by the "Microsoft" logo.

Secure | <https://account.live.com/Email/Confirm?ru=https://login.live.com/login.srf%3flc%3d1033%26sf%3d1%26id%3d292666%26tw%3d18000%26fs%3d0%26>

Apps PayPal Bills Accounts Work Hurricanes Megs Art Account Sign In | Start The Original Bee's Wa G Kia Fuel Economy | M Other bookmarks

Verify email

We sent an email to [redacted]@gmail.com to make sure you own it. Please check your inbox and follow the instructions to finish setting up your Microsoft account.

[Use a different email address as your Microsoft account](#)

Resend email

[Terms of Use](#) [Privacy & Cookies](#) [Sign out](#)

Microsoft

# Select Link to Verify



A screenshot of a web browser displaying a Gmail inbox. The browser's address bar shows a secure connection to a Gmail URL. The Gmail interface includes a search bar, navigation icons, and a sidebar with folders like 'Inbox', 'Starred', 'Sent Mail', 'Drafts', and 'More'. The main content area shows an email from the 'Microsoft account team' with the subject 'Verify your email address'. The email body contains instructions to verify the email address and a blue button labeled 'Verify [redacted]@gmail.com', which is circled in red. Below the button, it says 'Or you may be asked to enter this security code: 3222' and 'If you didn't make this request, click here to cancel.' The email is signed 'Thanks, The Microsoft account team'.

# Select OK and return to original invitation email

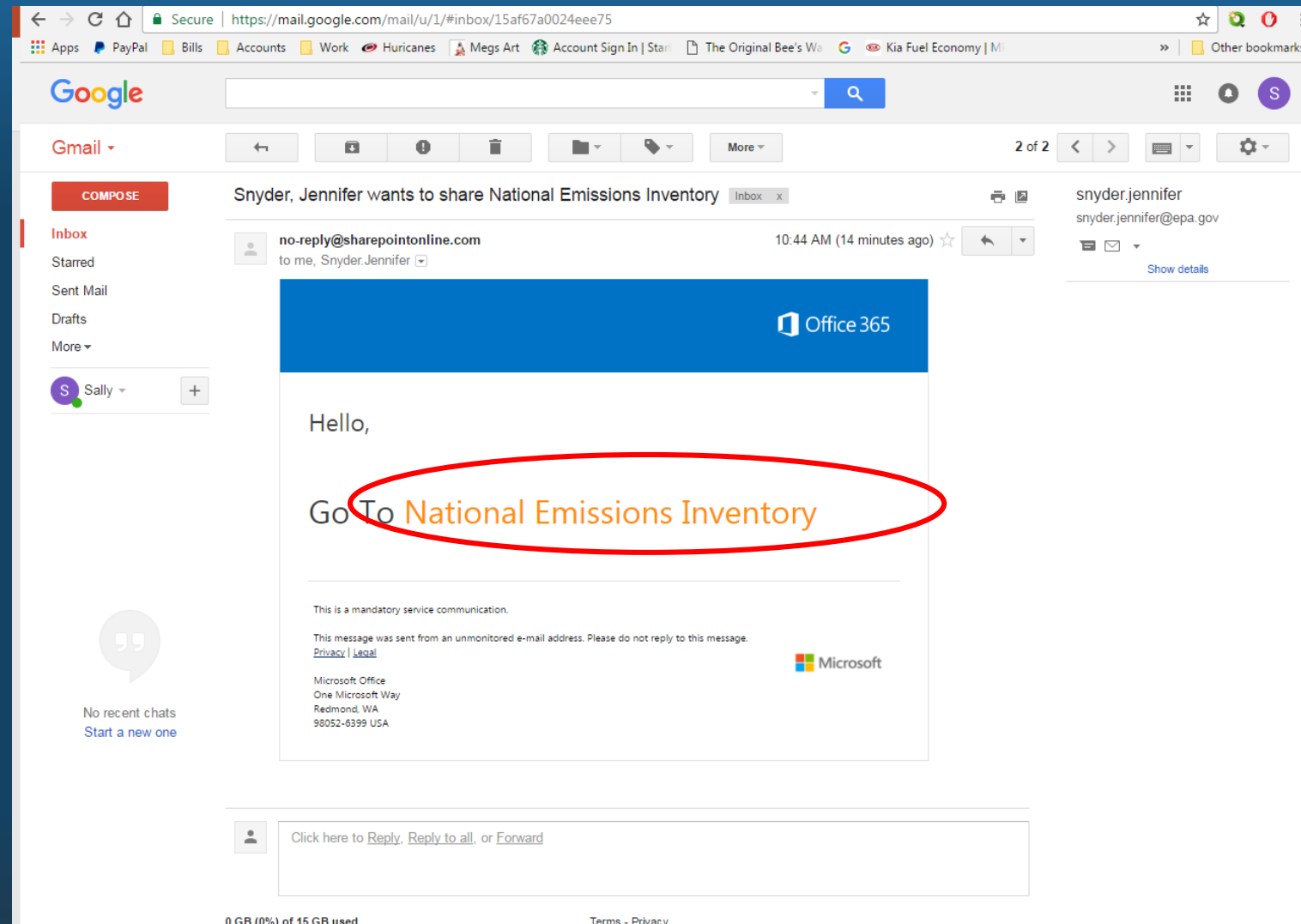


A screenshot of a web browser showing a Microsoft account verification page. The browser's address bar displays a URL from account.live.com. The page features the Microsoft logo and navigation links like Store, Products, and Support. A blue navigation bar contains links for Account, Your info, Privacy, Security, Payment &amp; billing, Services &amp; subscriptions, Devices, and Family. The main content area says "Ready to go!" and "Thanks for verifying [redacted]@gmail.com. You can now get back to what you were doing." Below this is a blue button labeled "OK". The footer includes a language selector for English (United States) and links for Privacy &amp; cookies, Terms of use, Contact us, and a copyright notice for Microsoft 2017.



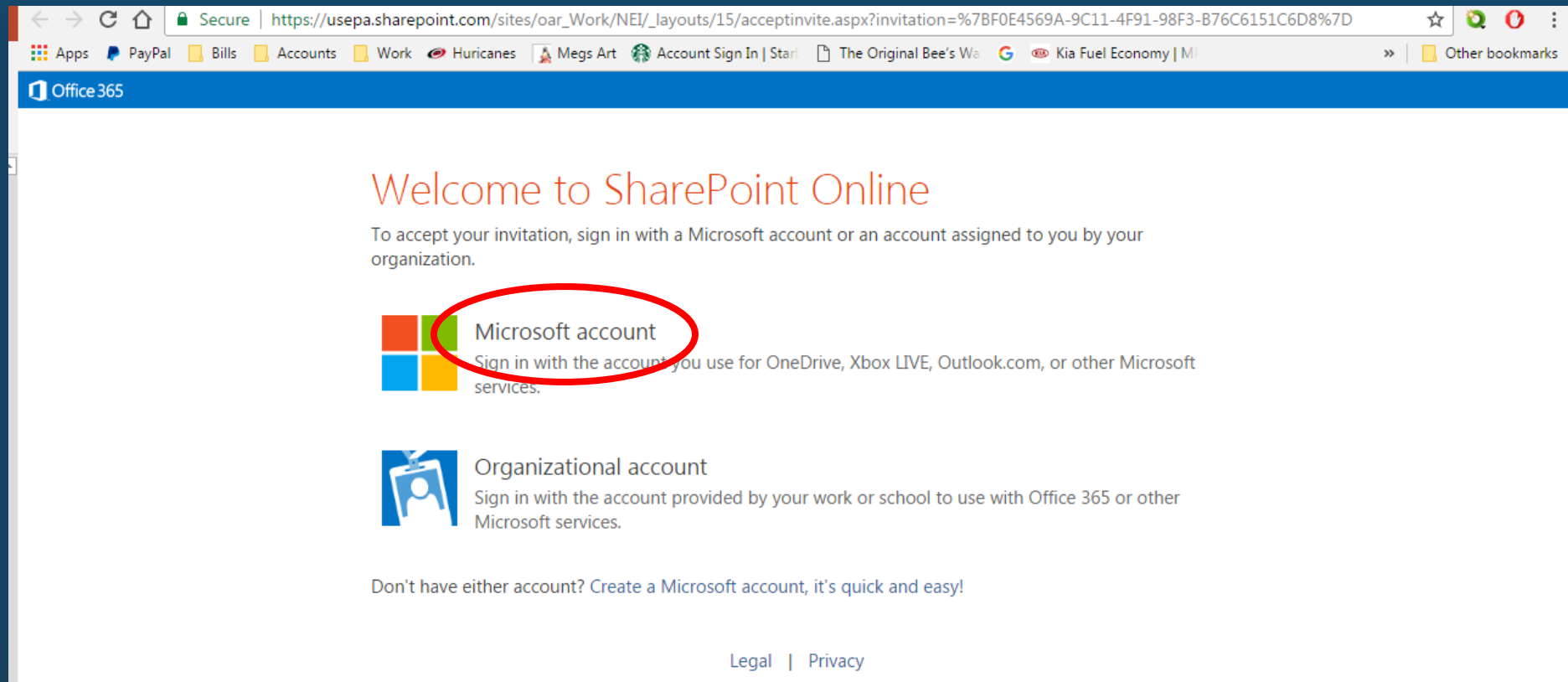


# Invitation Email: select link provided






# Select Microsoft Account




The screenshot shows a web browser window with the URL [https://usepa.sharepoint.com/sites/oar\\_Work/NEI/\\_layouts/15/acceptinvite.aspx?invitation=%7BF0E4569A-9C11-4F91-98F3-B76C6151C6D8%7D](https://usepa.sharepoint.com/sites/oar_Work/NEI/_layouts/15/acceptinvite.aspx?invitation=%7BF0E4569A-9C11-4F91-98F3-B76C6151C6D8%7D). The browser's address bar shows "Secure" and the URL. The browser's toolbar includes "Apps", "PayPal", "Bills", "Accounts", "Work", "Hurricanes", "Megs Art", "Account Sign In | Start", "The Original Bee's Wa", "Kia Fuel Economy | M", and "Other bookmarks". The page title is "Office 365". The main content area displays the "Welcome to SharePoint Online" message. Below the message, there are two sign-in options: "Microsoft account" and "Organizational account". The "Microsoft account" option is circled in red. The "Organizational account" option is also visible. At the bottom of the page, there is a link to "Legal | Privacy".

Welcome to SharePoint Online

To accept your invitation, sign in with a Microsoft account or an account assigned to you by your organization.

 **Microsoft account**  
Sign in with the account you use for OneDrive, Xbox LIVE, Outlook.com, or other Microsoft services.

 **Organizational account**  
Sign in with the account provided by your work or school to use with Office 365 or other Microsoft services.

Don't have either account? [Create a Microsoft account](#), it's quick and easy!

[Legal](#) | [Privacy](#)

# Create a Bookmark!



A screenshot of a web browser displaying a SharePoint site for the National Emissions Inventory (NEI). The browser's address bar shows the URL "https://usepa.sharepoint.com/sites/oar\_Work/NEI/SitePages/Home.aspx", which is circled in red. The page header includes "Office 365" and the user name "Sally Dombrowski". The main content area is titled "National Emissions Inventory - Home" and features a "2014 NEI Schedule" section. This section includes a timeline from August 2016 to August 2017, with key events such as "2014 v1 Event Comments" (8/1/2016 - 12/5/2016), "Facility inventory window closes" (1/6/2017), "2014 Nonpoint Tool updates" (10/1/2016 - 1/31/2017), and "2014 Nonpoint EIS Production Window Op..." (1/27/2017 - 5/1/2017). A "Today" marker is positioned on the timeline. Below the timeline, there is an "Announcements" section with a list of recent updates, including "Nonpoint submission window open until February 19, 2016" and "Updated 2014 NEI schedule posted". The left sidebar contains navigation links for "Home", "EIS Gateway", "CHIEF Inventory", "NOMAD Workgroup", "About", "EPA Internal", "Shared with SLTs", "Members", "Calendar", "2014 NEI Tasks", "Announcements", "Discussions", "Site Contents", and "Recent".

# NEI SharePoint Homepage



Home - National Emission x 2014\_schedule.pdf x

Secure | https://usepa.sharepoint.com/sites/oar\_Work/NEI/SitePages/Home.aspx

Apps Remote Access Sign PSS LAN help NEI Page SP Sites OneDrive 2014v2 changes.docx NP busn. rules 2017 Weather NEI team EIS Rich stuff CDX Droupal EMT Other bookmarks

Office 365 SharePoint My Workplace

SHARE FOLLOW

Mason, Rich

BROWSE PAGE

National Emissions Inventory NEI Home NOMAD Workgroup RTP Sharepoint EDIT LINKS

Search this site

National Emissions Inventory - Home

Home 2014 NEI Schedule

EIS Gateway

CHIEF Inventory

2014 NATA

2014 NATA - FACILITY

NOMAD Workgroup

About

EPA Internal

Shared with SLTs

Members

Calendar

2014 NEI Tasks

Announcements

Discussions

Site Contents

Recent

Nonpoint Issues List

2014 v1

EDIT LINKS

2014 v1 Event Comments 8/1/2016 - 12/5/2016

Facility inventory window closes 1/6/2017

2014 Nonpoint Tool updates 10/1/2016 - 1/31/2017

2014 Nonpoint EIS Production Window Open 1/27/2017 - 8/11/2017

2014 v1 Comments and NATA Change Sheets 10/1/2016 - 8/11/2017

2014 NEI v2 EIS Release 12/1/2017

2014 v1 Comments and NATA due in 11 days

Announcements

New announcement or edit this list

Title	Modified
Nonpoint submittal window for 2014v2 closes August 11, 2017	A few seconds ago
Nonpoint submission window open until February 19, 2016	December 22, 2015
Updated 2014 NEI schedule posted	July 15, 2015
2014 NEI Draft plan available to public	July 18, 2014

Newsfeed

Start a conversation

Shared with SLTs

New Upload Sync Share More

Name Modified Modified By

NEI Outreach June 6, 2016 Mason, Rich

NOMAD 2014 November 18, 2016 Jennifer



← → ↻ 🏠 Secure | https://usepa.sharepoint.com/sites/oar\_Work/NEI/SitePages/Home.aspx


Apps PayPal Bills Accounts Work Hurricanes Megs Art Account Sign In | Start The Original Bee's Wa Google KIA Fuel Economy | M US EPA Clearinghouse for Inv EIS » Other bookmarks

Office 365 ⚙️ ? Sally Dombrowski ▾


BROWSE PAGE 🔄 SHARE 🖨️

**Newsfeed**


Start a conversation




**Houyoux, Marc**  
Updated timeline on this site today with new EPA and SLT tasks from the main 2014 NEI schedule available on our website.  
Friday, September 25, 2015 Like Reply ...



**Houyoux, Marc**  
2014 NEI Nonpoint Survey Webinar - Wednesday of this week!  
Monday, July 27, 2015 Like Reply ...



**Houyoux, Marc**  
New 2014 tentative schedule posted that reflects resource delays on our nonpoint tools. Please take a close look at our plans. Any questions on nonpoint schedule can be directed to Jennifer Snyder (@Snyder, Jennifer)  
Wednesday, July 15, 2015 Like Reply ...



**Houyoux, Marc**  
Added a 'Shared with SLTs' library to allow us to share materials with state, local, and tribal inventory developers and other external stakeholders. The documents created in this library use version control, in which "minor" versions are viewable only to the site members (who

**Shared with SLTs**

📁 New 📁 Upload 🔄 Share

✓	📁 Name	Modified	Modifi
	📁 EIC 2015	... November 20, 2014	☐ Ho
	📁 Fires Workgroup	... November 21, 2014	☐ Ho
	📁 NEI Outreach	... June 6, 2016	☐ Ma
	📁 NOMAD 2014	... November 18, 2016	☐ Sny
	📁 Oil and Gas Summit - November 4-5, 2014	... October 29, 2014	☐ Sny
	📁 OLD	... December 19, 2016	☐ Ra
	📁 Old Emissions Inventory Conference Papers	... June 28, 2016	☐ Ma
	📁 Point Data Category	... November 23, 2015	☐ Ma
	📁 2014 Tool Feb 2016 (oil and gas production revision)	... December 19, 2016	☐ Ra
	📁 2014_Ag_Livestock_v1.0_20may2016	... December 19, 2016	☐ Ra
	📁 2014_Agricultural_Pesticides_v2.0_18feb2016	... December 19, 2016	☐ Ra
	📁 2014_Agricultural_Tilling_v3.0_18feb2016	... December 19, 2016	☐ Ra
	📁 2014_Av_Gas_Stage_1_15nov2015	... December 19, 2016	☐ Ra
	📁 2014_Av_Gas_Stage_2_15nov2015	... December 19, 2016	☐ Ra

109

4:15 PM  
3/24/2017



# A Walk Through the NOMAD Sub-Site



https://usepa.sharepoint.com/sites/oar\_Work/NEI/SitePages/Home.aspx

File Edit View Favorites Tools Help

CAER... E-En... PDT Tasks 2017... EIS ... US EPA ... One ... Web ... EPA ... EIS ... LM CAER... Faci... Pass...

Office 365 | SharePoint | My Workplace

4 ? Dombrowski, Sally

BROWSE PAGE

SHARE FOLLOW

National Emissions Inventory NEI

NEI Home NOMAD Workgroup RTP Sharepoint EDIT LINKS

Search this site

Home

EIS Gateway

CHIEF Inventory

2014 NATA

**NOMAD Workgroup**

About

EPA Internal

Shared with SLTs

Members

Calendar

2014 NEI Tasks

Announcements

Discussions

Site Contents

Recent

2014 NEI Schedule

2014 v1 Comments and NATA due in 13 days

2014 v1 Event Comments 8/1/2016 - 12/5/2016

Facility inventory window closes 1/6/2017

August 2016 October 2016 December 2016 February 2017 April 2017

2014 Nonpoint Tool updates 10/1/2016 - 1/31/2017

2014 Nonpoint EIS Production Window C 1/27/2017 - 5/1/2017

2014 v1 Comments and NATA Change Sheets 10/1/2016 - 5/1/2017

Announcements

+ new announcement or edit this list

✓	Title	Modified
	Nonpoint submission window open until February 19, 2016	*** December 22, 2015



Secure | https://usepa.sharepoint.com/sites/oar\_Work/NEI/NOMAD/SitePages/Home.aspx

Apps Remote Access Sign PSS LAN help NEI Page SP Sites OneDrive 2014v2 changes.docx NP busn. rules 2017 Weather NEI team EIS Other bookmarks

Office 365 | SharePoint | My Workplace | Mason, Rich





BROWSE PAGE SHARE FOLLOW EDIT


MyWorkplace US EPA **NOMAD Workgroup**

NEI Sharepoint home Recent Pages Recycle Bin EDIT LINKS

Search this site

### Home





### Calendar

July 2017

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
25	26	27	28	29	30	1
Nonpoint Window Open for SLT Submissions for 2014v2						SLTs comment on 2017 Draft Plan
						+ Add
2	3	4	5	6	7	8
Nonpoint Window Open for SLT Submissions for 2014v2						SLTs comment on 2017 Draft Plan



# Set up Alerts on your favorite Nonpoint Tools!

Office 365 | SharePoint | My Workplace

LIBRARY

Set alert on this library

MyWorkplace US EPA

## NOMAD Workgroup

NEI Sharepoint home Recent Pages Recycle Bin EDIT LINKS

Search this site

### Nomad Tools

To see ONLY the latest tools, filter on "Archive Tool" to "no". (OLD TOOLS ARE DESIGNATED as YES in the Archive Tool column.)

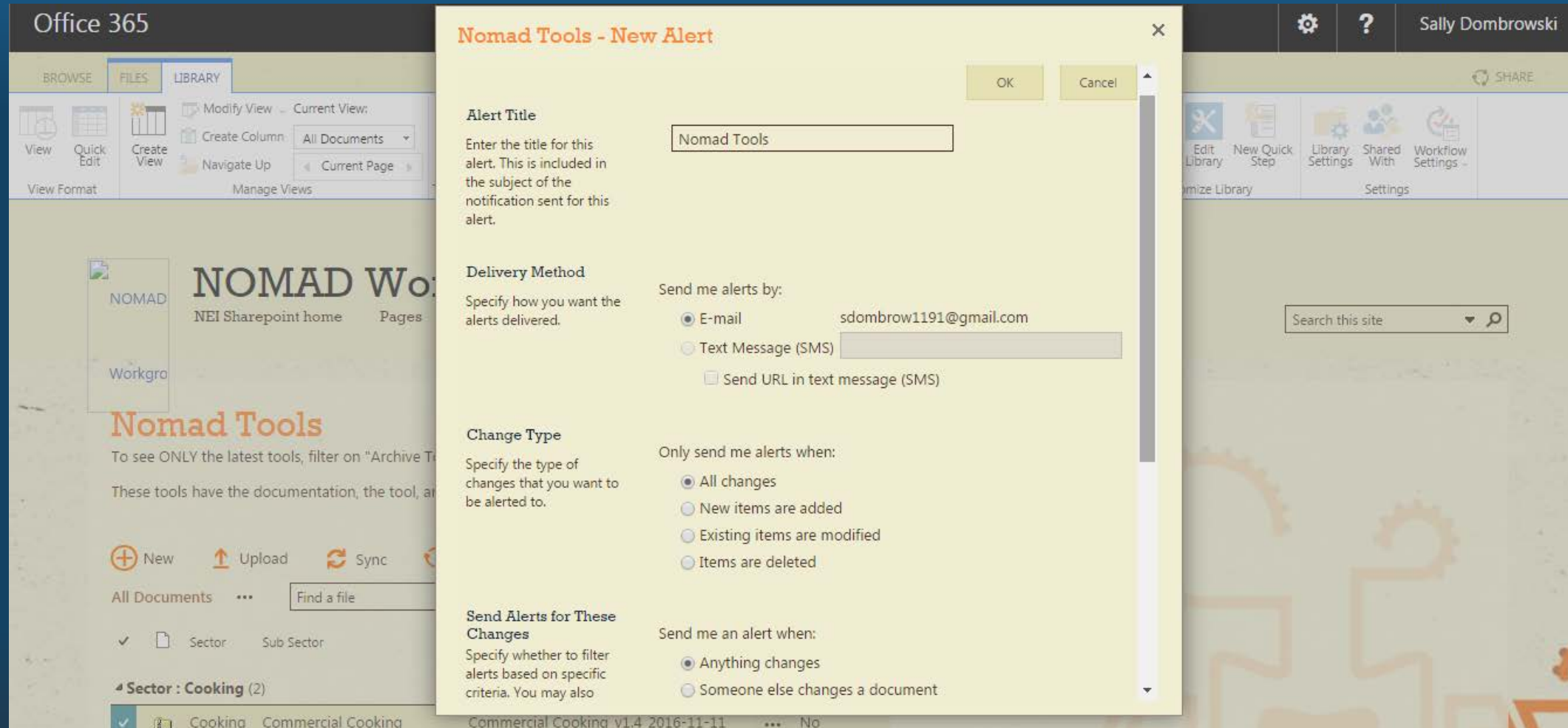
These tools have the documentation, the tool, and the staging tables, all zipped together into one file.

New Upload Sync Share More

All Documents Find a file

✓	File icon	Sector	Sub Sector	Name	Archive Tool
Sector: Agriculture (4)					
Sector: Cooking (3)					
✓	File icon	Cooking	Commercial Cooking	Commercial Cooking_v1.4_2016-11-11	Yes
	File icon	Cooking	Commercial Cooking	Commercial Cooking_v1.5_2017-05-26	No
	File icon	Cooking	Residential Charcoal Grilling	Residential Charcoal Grilling Tool v1.1	No
Sector: dust (10)					
Sector: Gasoline Distribution (3)					
Sector: Industrial, Commercial, and Institutional Fuel Combustion (2)					

# SharePoint Alert Options



**Office 365**

**BROWSE** **FILES** **LIBRARY**

View Quick Edit Create View Modify View Current View: All Documents Navigate Up Current Page Manage Views

**NOMAD Wo**  
NEI Sharepoint home Pages

**Nomad Tools**  
To see ONLY the latest tools, filter on "Archive T  
These tools have the documentation, the tool, a

**+ New** **↑ Upload** **↻ Sync**

All Documents ... Find a file

✓ **Sector** Sub Sector

**4 Sector : Cooking (2)**

✓ **Cooking** Commercial Cooking Commercial Cooking\_v1.4\_2016-11-11 ... No

**Nomad Tools - New Alert**

**Alert Title**  
Enter the title for this alert. This is included in the subject of the notification sent for this alert.

**Delivery Method**  
Specify how you want the alerts delivered.

Send me alerts by:

☒ E-mail

☐ Text Message (SMS)

☐ Send URL in text message (SMS)

**Change Type**  
Specify the type of changes that you want to be alerted to.

Only send me alerts when:

☒ All changes

☐ New items are added

☐ Existing items are modified

☐ Items are deleted

**Send Alerts for These Changes**  
Specify whether to filter alerts based on specific criteria. You may also

Send me an alert when:

☒ Anything changes

☐ Someone else changes a document

**OK** **Cancel**

**SHARE**

Edit Library New Quick Step Library Settings Shared With Workflow Settings

Search this site



# Multiple Ways to Download NOMAD Tools

BROWSE FILES LIBRARY SHARE

These tools have the documentation, the tool, and the staging tables, all zipped together into one file.

New Upload Sync Share More

All Documents Find a file

Download

Share

Get a link

Rename

Delete

Copy

Version History

Properties

Advanced

✓	File icon	Sector	Sub Sector	Name	Archive Tool
4 Sector : Cooking (2)					
✓	File icon	Cooking	Commercial Cooking	Commercial C	1 ... No
	File icon	Cooking	Residential Charcoal Grilling	Residential Ch	1 ... No
Sector : Dust (7)					
Sector : Gasoline Distribution (2)					
Sector : Industrial, Commercial, and Institutional Fuel Combustion (2)					
Sector : Mercury (1)					
Sector : Residential Fuel Combustion (2)					
Sector : Solvents (2)					
Sector : Waste Disposal (3)					



# Shared Link to “Shared with SLTs”

Office 365

BROWSE PAGE

SHARE EDIT

NOMAD Workgroup

NEI Sharepoint home Pages Recent Recycle Bin

Search this site

Home

NOMAD Estimation Tools

Sector Folders Subcommittees

Useful Links

Meeting Minutes

2017 NEMOs



# How to Follow SharePoint Pages

Office 365

SharePoint

My Workplace

2

?

Dombrowski, Sally

Search

NEI Home

NOMAD Workgroup

RTP Sharepoint

☆ Not following

Share

Home

EIS Gateway

CHIEF Inventory

2014 NATA

NOMAD Workgroup

About

EPA Internal

Shared with SLTs

Members

Calendar

National Emissions Inventory

NEI

Share

Get a link

Delete

...

1 selected

Filter

Info

Shared with SLTs > NOMAD 2014

Name	Modified	Modified By	...
<div><div>✓</div><div>2014 version 1 Final zipped files= tools, documentation and staging t...</div></div>	November 18, 2016	Snyder, Jennifer	...
<div><div>Ag Field Burning</div></div>	March 19, 2015	Snyder, Jennifer	...
<div><div>Ag Livestock</div></div>	March 19, 2015	Snyder, Jennifer	...
<div><div>Ag Pesticides</div></div>	October 21, 2015	Chun Yi	...

Feedback

# Do-it-all Button



Office 365 | SharePoint | My Workplace | Mason, Rich

Search

NEI Home | NOMAD Workgroup | RTP Sharepoint

## National Emissions Inventory

Share | Copy link | Download | Delete | Pin to top | Move to | Copy to | 1 selected

Shared with SLTs > NOMAD 2014

Name	Modified	Modified By	EIS Data Category	Sectors
2014 version 1 Final zipped files= tools, documentation and staging files	November 18, 2016	Snyder, Jennifer		
Ag Field Burning		Snyder, Jennifer		
Ag Livestock		Snyder, Jennifer		
Ag Pesticides		Lin Yi Wu		
Asphalt		Snyder, Jennifer		
Commercial Cooking & Backyard BBQs		Snyder, Jennifer		
Composting		David Cooley		
Dust		Snyder, Jennifer		
Gasoline Distribution (Stage 1, 2 and PFCs)		Snyder, Jennifer		
ICI Combustion		Snyder, Jennifer		
Meeting Minutes		Snyder, Jennifer		
Mercury	March 19, 2015	Snyder, Jennifer		
Nonpoint 2014v1 Draft Summaries and Analysis	June 3, 2016	Mason, Rich		
Oil and Gas	December 22, 2015	Snyder, Jennifer		

Feedback



# Useful Links

Office 365 | SharePoint | My Workplace

BROWSE PAGE SHARE FOLLOW EDIT

MyWorkplace US EPA

NOMAD Workgroup

NEI Sharepoint home Pages Recent Recycle Bin

Search this site

Home

NOMAD Estimation Tools

Sector Folders Subcommittees

Useful Links

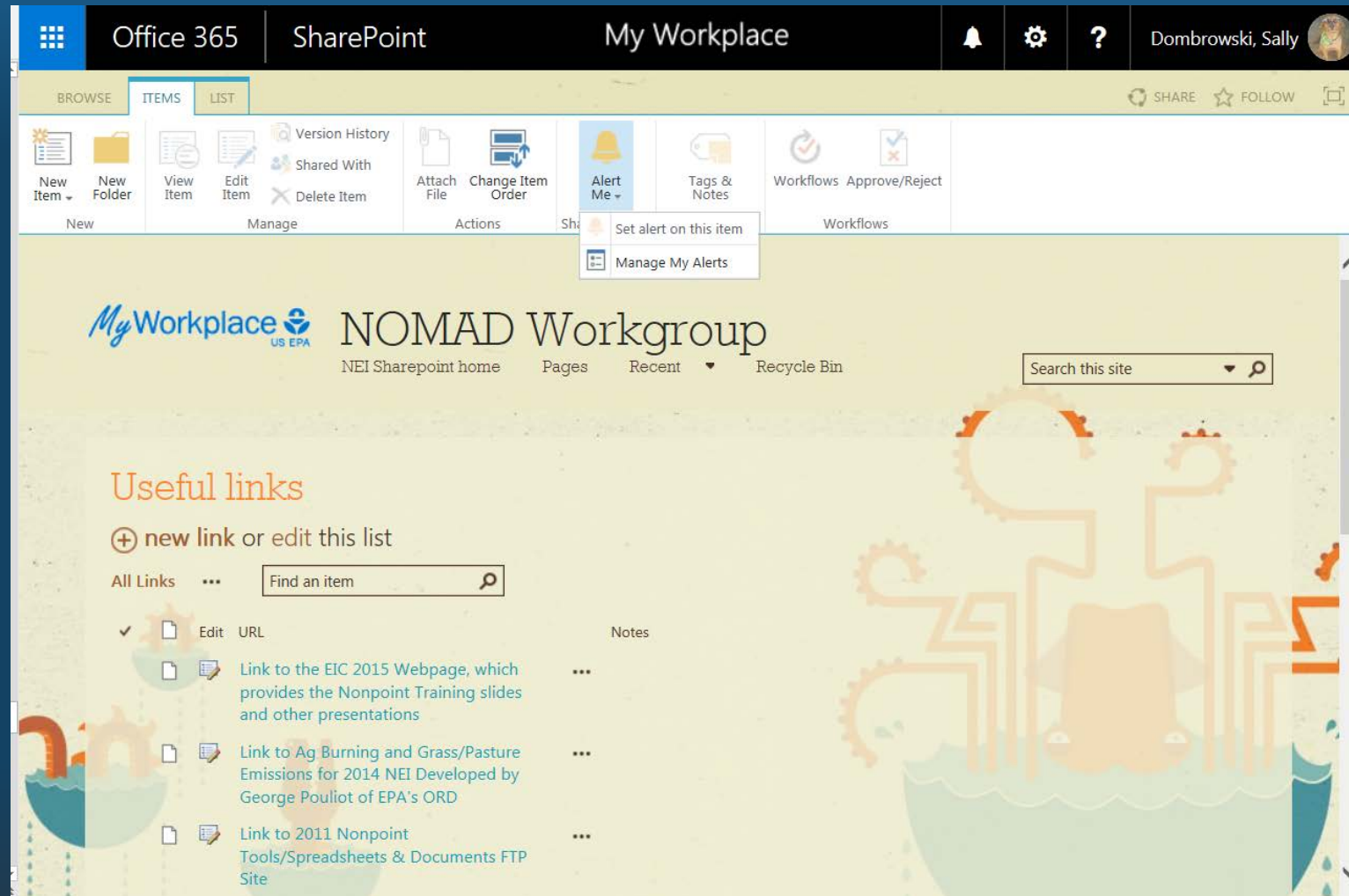
Meeting Minutes

2017 NEMOs

Calendar

+ new event or edit this list

# Useful Links: Analyses and Supporting Info



Office 365 | SharePoint | My Workplace

BROWSE ITEMS LIST

SHARE FOLLOW

New Item New Folder View Item Edit Item Delete Item Attach File Change Item Order Alert Me Tags & Notes Workflows Approve/Reject

My Workplace US EPA

NOMAD Workgroup

NEI Sharepoint home Pages Recent Recycle Bin

Search this site

### Useful links

+ new link or edit this list

All Links Find an item

✓	Edit	URL	Notes
✓		Link to the EIC 2015 Webpage, which provides the Nonpoint Training slides and other presentations	...
		Link to Ag Burning and Grass/Pasture Emissions for 2014 NEI Developed by George Pouliot of EPA's ORD	...
		Link to 2011 Nonpoint Tools/Spreadsheets & Documents FTP Site	...





# Meeting Minutes




Office 365 | SharePoint | My Workplace | Dombrowski, Sally

BROWSE PAGE SHARE FOLLOW EDIT


**MyWorkplace** US EPA **NOMAD Workgroup**

NEI Sharepoint home Pages Recent Recycle Bin Search this site

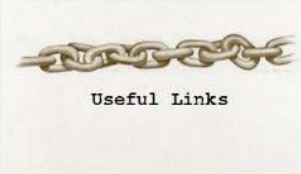
Home




NOMAD Estimation Tools




Sector Folders Subcommittees



Useful Links



Meeting Minutes



2017 NEMOs

Calendar

+ new event or edit this list



# Meeting Minutes: Do-it all button

Office 365 | SharePoint | My Workplace | Mason, Rich

Search

NEI Home | NOMAD Workgroup | RTP Sharepoint

National Emissions Inventory

Open | Share | Copy link | Download | Delete | Pin to top | Move to | 1 selected

Shared with SLTs > NOMAD 2014 > Meeting Minutes

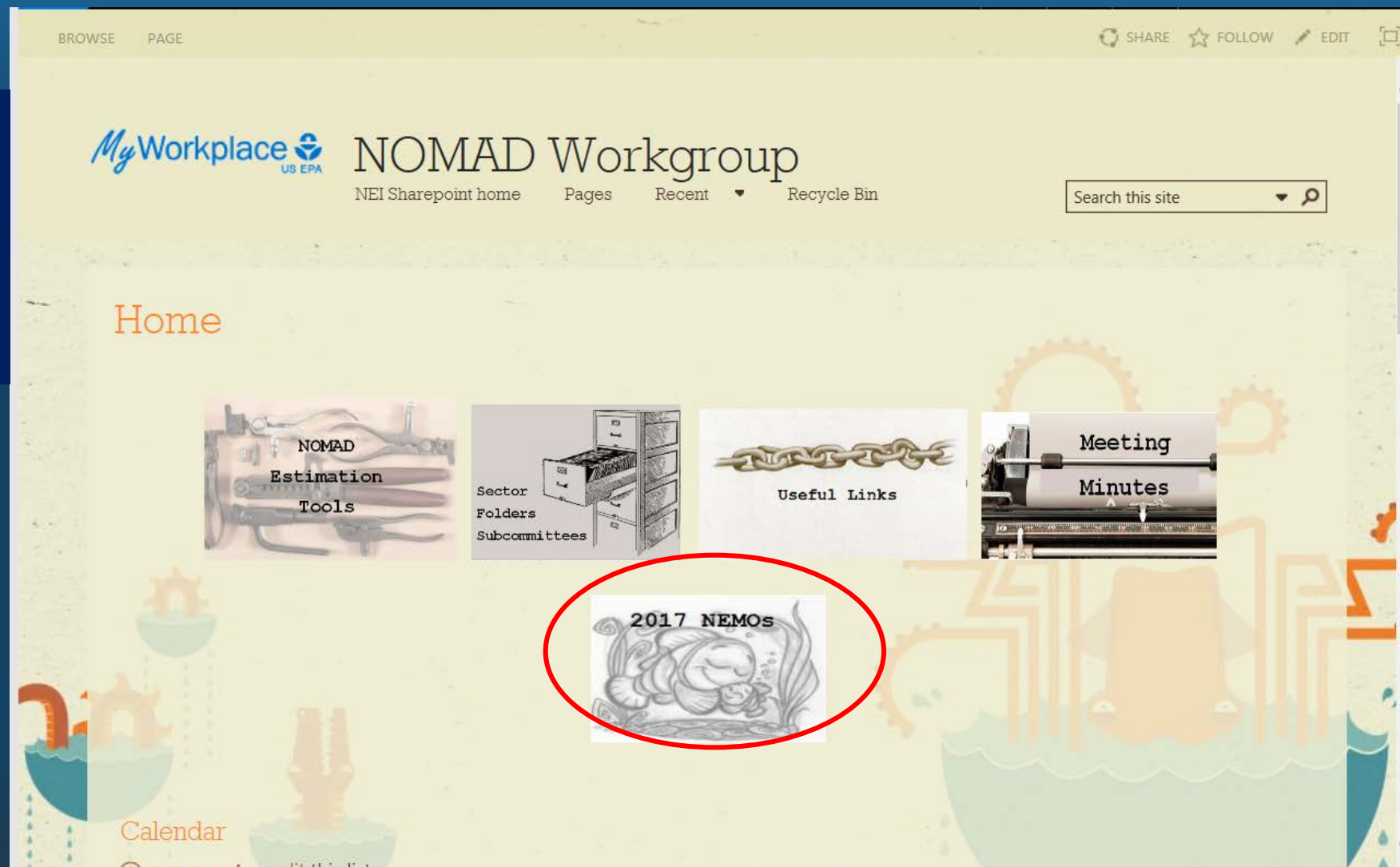
Name	Modified	Modified By	EIS Data Category	Sectors
Minutes June 21 2017 NOMAD meeting.docx	June 27	Snyder, Jennifer		
Minutes May 17 2017 NOMAD meeting.docx		Snyder, Jennifer		
Minutes April 19 2017 NOMAD meeting.docx		Snyder, Jennifer		
ICI NOMAD call_notes_12may17.docx		Mason, Rich		
Minutes February 15 2017 NOMAD meeting.docx		Snyder, Jennifer		
Minutes January 18 2017 NOMAD meeting.docx		Snyder, Jennifer		
Minutes December 21 2016 NOMAD meeting.docx		Snyder, Jennifer		
Minutes November 16 2016 NOMAD meeting.docx		Snyder, Jennifer		
Minutes October 26 2016 NOMAD Committee Meeting.docx		Snyder, Jennifer		
Minutes August 31 2016 NOMAD Committee Meeting.docx		Snyder, Jennifer		
Minutes March 16 2016 NOMAD Committee Meeting.docx		Snyder, Jennifer		
Minutes February 17 2016 NOMAD meeting.docx		Snyder, Jennifer		
Minutes January 20 2016 NOMAD meeting.docx		Snyder, Jennifer		
Minutes December 16 2015 NOMAD meeting.docx	December 22, 2015	Snyder, Jennifer		

Feedback

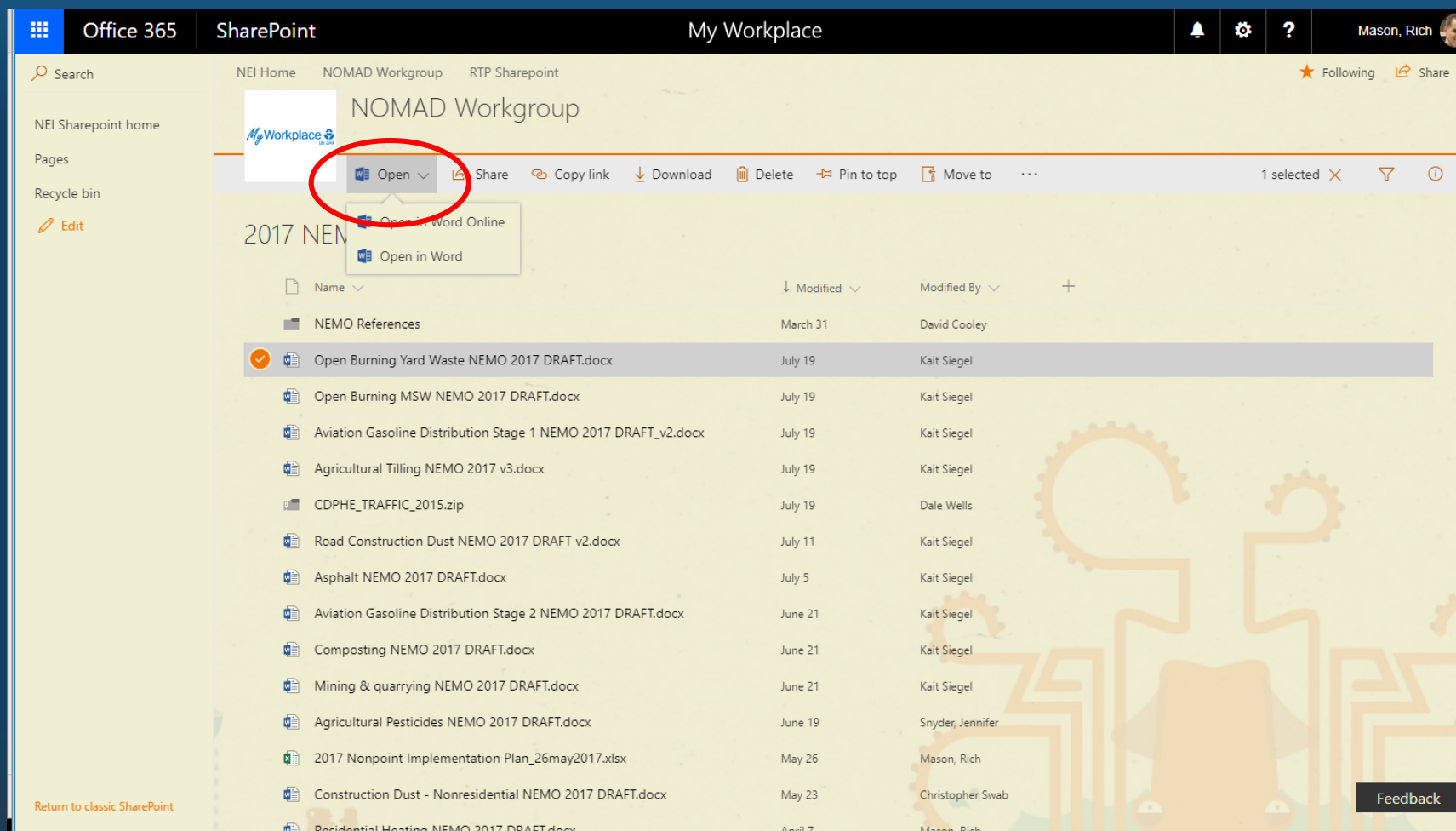
# 2017 NEMOS!



Nonpoint  
Emissions  
Methodology &  
Operating  
Instructions  
(the "I" is implied)



# 2 Options for Viewing, 1 good option for editing



Office 365 | SharePoint | My Workplace

Search | NEI Home | NOMAD Workgroup | RTP Sharepoint

NEI Sharepoint home | Pages | Recycle bin | Edit

NOMAD Workgroup

Open | Share | Copy link | Download | Delete | Pin to top | Move to | 1 selected

2017 NEMO

Name	Modified	Modified By
NEMO References	March 31	David Cooley
Open Burning Yard Waste NEMO 2017 DRAFT.docx	July 19	Kait Siegel
Open Burning MSW NEMO 2017 DRAFT.docx	July 19	Kait Siegel
Aviation Gasoline Distribution Stage 1 NEMO 2017 DRAFT_v2.docx	July 19	Kait Siegel
Agricultural Tilling NEMO 2017 v3.docx	July 19	Kait Siegel
CDPHE_TRAFFIC_2015.zip	July 19	Dale Wells
Road Construction Dust NEMO 2017 DRAFT v2.docx	July 11	Kait Siegel
Asphalt NEMO 2017 DRAFT.docx	July 5	Kait Siegel
Aviation Gasoline Distribution Stage 2 NEMO 2017 DRAFT.docx	June 21	Kait Siegel
Composting NEMO 2017 DRAFT.docx	June 21	Kait Siegel
Mining & quarrying NEMO 2017 DRAFT.docx	June 21	Kait Siegel
Agricultural Pesticides NEMO 2017 DRAFT.docx	June 19	Snyder, Jennifer
2017 Nonpoint Implementation Plan_26may2017.xlsx	May 26	Mason, Rich
Construction Dust - Nonresidential NEMO 2017 DRAFT.docx	May 23	Christopher Swab
Residential Heating NEMO 2017 DRAFT.docx	April 7	Mason, Rich

Return to classic SharePoint

Feedback



# Button options with on top, or in drop down

Office 365 | SharePoint | My Workplace | Mason, Rich

Search | NEI Home | NOMAD Workgroup | RTP Sharepoint

NEI Sharepoint home | Pages | Recycle bin | Edit

NOMAD Workgroup

Open | Share | Copy link | Download | Delete | Pin to top | Move to | Copy to | Rename | ...

2017 NEMO Library

Name	Modified	Modified By
NEMO References	March 31	David Cooley
Open Burning Yard Waste NEMO 2017 DRAFT.docx	July 19	Kait Siegel
Open Burning MSW NEMO 2017 DRAFT.docx	July 19	Kait Siegel
Aviation Gasoline Distribution Stage 1 NEMO 2017 DRAFT_v2.docx	July 19	Kait Siegel
Agricultural Tilling NEMO 2017 v3.docx	July 19	Kait Siegel
CDPHE_TRAFFIC_2015.zip	July 19	Dale Wells
Road Construction Dust NEMO 2017 DRAFT v2.docx	July 11	Kait Siegel
Asphalt NEMO 2017 DRAFT.docx	July 5	Kait Siegel
Aviation Gasoline Distribution Stage 2 NEMO 2017 DRAFT.docx	June 21	Kait Siegel
Composting NEMO 2017 DRAFT.docx	June 21	Kait Siegel
Mining & quarrying NEMO 2017 DRAFT.docx	June 21	Kait Siegel
Agricultural Pesticides NEMO 2017 DRAFT.docx	June 19	Snyder, Jennifer
2017 Nonpoint Implementation Plan_26may2017.xlsx	May 26	Mason, Rich
Construction Dust - Nonresidential NEMO 2017 DRAFT.docx	May 23	Christopher Swab
Residential Heating NEMO 2017 DRAFT.docx	April 7	Mason, Rich

Version history | Alert me | Manage my alerts | Check out

Return to classic SharePoint | Feedback



# 2 options for Editing: 1 good option



Word Online interface showing the document "AVIATION GASOLINE DISTRIBUTION-STAGE 1". The "Edit Document" button is circled in red, and a dropdown menu is open, showing two options: "Edit in Word" (highlighted) and "Edit in Browser".

**Yeah, that option** → Edit in Word  
**Not that option** → Edit in Browser

**AVIATION GASOLINE DISTRIBUTION-STAGE 1**

**A. Source Category Description**

Aviation gasoline (also called "AvGas") is the only aviation fuel that contains lead as a knock-out component for small reciprocating, piston-engine crafts in civil aviation.<sup>1</sup> Commercial and military aviation rarely use this fuel. AvGas is shipped to airports and is filled into bulk terminals, and then into tanker trucks. These processes fall under the definition of stage 1, displacement vapors during the transfer of gasoline from tank trucks to storage tanks, and vice versa. In 2014, aviation gasoline distribution-stage 1 resulted in approximately 30,585 tons of VOC emissions.

For this source category, the following SCC is assigned:

SCC	SCC Level 1	SCC Level 2	SCC Level 3	SCC Level 4
2501080050	Storage and Transport	Petroleum and Petroleum Product Storage	Airports : Aviation Gasoline	Stage 1: Total

**B. Overview of Calculations**

The calculations for estimating emissions from stage 1 aviation gasoline distribution involve first estimating the amount of aviation gasoline consumed in each county, based on state-level aviation gasoline consumption data from the Energy Information Administration (EIA). State-level aviation gasoline consumption is distributed to the counties based on the proportion of Landing-Take Offs (LTOs). The total amount of gasoline consumed is used to estimate non-fugitive and fugitive VOC emissions, as well as hazardous air pollutant (HAP) emissions. Sources of data and calculations for the amount of aviation gasoline consumed are discussed in section C. The process of allocating aviation gasoline activity data to the county level is discussed in section D. Emissions factors are discussed in section E. The estimation of emissions from stage 1 of aviation gasoline distribution is discussed in section G.

**C. Activity Data**

# Save to Same SharePoint File with Track Changes



Aviation Gasoline Distribution Stage 1 NEMO 2017 DRAFT\_v2.docx [Compatibility Mode] - Word

File Home Insert Design Layout References Mailings Review View ACROBAT

Spelling & Grammar Thesaurus Word Count Check Accessibility Translate Language New Comment Delete Previous Next Show Comments Track Changes All Markup Show Markup Reviewing Pane Accept Reject Previous Next Compare Block Restrict Linked Authors Editing Notes

**AVIATION GASOLINE DISTRIBUTION-STAGE 1**

**A. Source Category Description**

Aviation gasoline (also called "AvGas") is the only aviation fuel that contains lead as a knock-out component for small reciprocating, piston-engine crafts in civil aviation.<sup>1</sup> Commercial and military aviation rarely use this fuel. AvGas is shipped to airports and is filled into bulk terminals, and then into tanker trucks. These processes fall under the definition of stage 1, displacement vapors during the transfer of gasoline from tank trucks to storage tanks, and vice versa. In 2014, aviation gasoline distribution-stage 1 resulted in approximately 30,585 tons of VOC emissions.

For this source category, the following SCC is assigned:

SCC	SCC Level 1	SCC Level 2	SCC Level 3	SCC Level 4
2501080050	Storage and Transport	Petroleum and Petroleum Product Storage	Airports, Aviation Gasoline	Stage 1: Total

**B. Overview of Calculations**

The calculations for estimating emissions from stage 1 aviation gasoline distribution involve first estimating the amount of aviation gasoline consumed in each county, based on state-level aviation gasoline consumption data from the Energy Information Administration (EIA). State-level aviation gasoline consumption is distributed to the counties based on the proportion of Landing-Take Offs (LTOs). The total amount of gasoline consumed is used to estimate non-fugitive and fugitive VOC emissions, as well as hazardous air pollutant (HAP) emissions. Sources of data and calculations for the amount of aviation gasoline consumed are discussed in section C. The process of allocating aviation gasoline activity data to the county level is discussed in section D. Emissions factors are discussed in section E. The estimation of emissions from stage 1 of aviation gasoline distribution is discussed in section G.

**C. Activity Data**

The activity data for this source category is the amount of aviation gasoline consumed, which is estimated using data from the EIA's State Energy Data System (SEDS).<sup>2</sup> The SEDS MSN Code AVTCP is used to identify the total consumption of aviation gasoline in units of thousand barrels. Data are then converted to units of gallons.

$$AG_s = AGB_s \times 42 \text{ gallons/barrel} \quad (1)$$

Where:

$AG_s$  = Annual consumption of AvGas for state  $s$ , in gallons  
 $AGB_s$  = Annual consumption of AvGas for state  $s$ , in barrels

**David Cooley**  
Note to NOMAD reviewers:  
1. We are still trying to locate references 6 and 7.  
2. The EF for lead is based on an older emission factor for tetraethyl lead (TEL), which cites reference 1. However, we are unable to find that EF in that reference. We are able to find state-level TEL EFs. We recommend discussing whether to use the state-level EFs in place of the current lead EF.

**Driver, Laurel**  
For all 50 states, plus PR and VT?

Page 1 of 6 1969 words

# List All Comments Button



Word Online interface showing a document titled "AVIATION GASOLINE DISTRIBUTION-STAGE 1". The document content includes sections A, B, and C, and a table of SCC levels.

**AVIATION GASOLINE DISTRIBUTION-STAGE 1**

**A. Source Category Description**

Aviation gasoline (also called "AvGas") is the only aviation fuel that contains lead as a knock-out component for small reciprocating, piston-engine crafts in civil aviation.<sup>1</sup> Commercial and military aviation rarely use this fuel. AvGas is shipped to airports and is filled into bulk terminals, and then into tanker trucks. These processes fall under the definition of stage 1, displacement vapors during the transfer of gasoline from tank trucks to storage tanks, and vice versa. In 2014, aviation gasoline distribution-stage 1 resulted in approximately 30,585 tons of VOC emissions.

For this source category, the following SCC is assigned:

SCC	SCC Level 1	SCC Level 2	SCC Level 3	SCC Level 4
2501080050	Storage and Transport	Petroleum and Petroleum Product Storage	Airports : Aviation Gasoline	Stage 1: Total

**B. Overview of Calculations**

The calculations for estimating emissions from stage 1 aviation gasoline distribution involve first estimating the amount of aviation gasoline consumed in each county, based on state-level aviation gasoline consumption data from the Energy Information Administration (EIA). State-level aviation gasoline consumption is distributed to the counties based on the proportion of Landing-Take Offs (LTOs). The total amount of gasoline consumed is used to estimate non-fugitive and fugitive VOC emissions, as well as hazardous air pollutant (HAP) emissions. Sources of data and calculations for the amount of aviation gasoline consumed are discussed in section C. The process of allocating aviation gasoline activity data to the county level is discussed in section D. Emissions factors are discussed in section E. The estimation of emissions from stage 1 of aviation gasoline distribution is discussed in section G.

**C. Activity Data**

The activity data for this source category is the amount of aviation gasoline consumed, which is estimated using data from the EIA's State Energy Data System (SEDS).<sup>2</sup> The SEDS MSN Code AVTCP is used to identify the total consumption of aviation gasoline in units of thousand barrels. Data are then converted to units of gallons.

$$AG_s = AGB_s \times 42 \frac{\text{gallons}}{\text{barrel}} \quad (1)$$

Where:

Word Online interface showing a document titled "AVIATION GASOLINE DISTRIBUTION-STAGE 1". The document content includes sections A, B, and C, and a table of SCC levels.

**Comments**

Page 1

**David Cooley**  
Note to NOMAD reviewers:  
1. We are still trying to locate references 6 and 7.  
2. The EF for lead is based on an older emission factor for tetraethyl lead (TEL), which cites reference 1. However, we are unable to find that EF in that reference. We are able to find state-level TEL EFs. We recommend discussing whether to use the state-level EFs in place of the current lead EF.

**Driver, Laurel**  
For all 50 states, plus PR and VI?

**Driver, Laurel**  
Perhaps a timing issue but 2014 LTO estimates from the aircraft exhaust emissions estimates of 2014NEI are available here  
<https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-documentation>

Page 3

**Kait Siegel**  
Do not have a copy of this reference

Page 1 OF 6

HELP IMPROVE OFFICE 84%

125%