

# Air Permitting and Compliance

- \* *How to conduct a facility-wide PTE Emissions Inventory*
- \* *Emission Calculation Strategies*

# Who & How to conduct an emissions inventory

**Who:** Under state and federal regs, it is the business owner's responsibility to obtain an air pollution permit for **all** air contaminant sources.

How do I know if I have an air contaminant source?

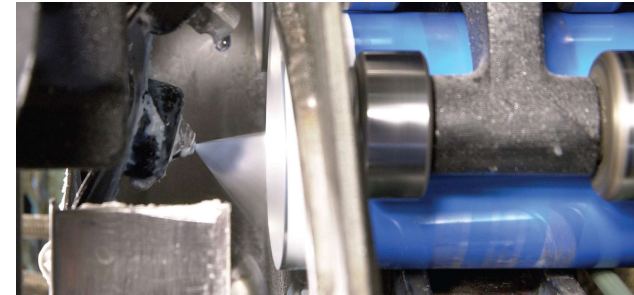
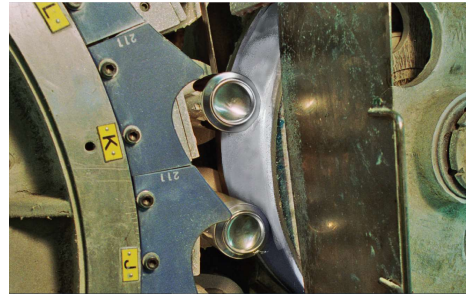
Recommends 4 rules of thumb:

1. Equipment that has a stack, dust collector, or vent.



# Who & How to conduct an emissions inventory

2. A process that uses paints, solvents, adhesives, or inks.





# Who & How to conduct an emissions inventory

3. A process that burns a fuel (e.g., oil, natural gas, or coal)



# Who & How to conduct an emissions inventory

4. A process that produces visible dust, odors, or smoke.





# Who & How to conduct an emissions inventory

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After you review the 4 rules of thumb, consider:

- Include any process not located in your main building
  - *Emergency generator; storage silo*
- Non-production units
  - *Welding; grinding; clean-up solvent*

These all must be included in the PTE



# *How to conduct an emissions inventory*

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Now you have you have an air contaminant source inventory –  
*What Next?*

1. *Gather data from each emission source and determine if they contain any of the 6 “Criteria Pollutants” on the National Ambient Air Quality Standards (NAAQS)*
  - *SDS; VOC sheets; gas usage; current air permits issued to the facility; performance test results (stack tests, raw materials, etc.); capture and control efficiency of pollution control equipment (RTO, baghouse, etc.); vendor literature describing the process*





# How to conduct an emissions inventory

## 2. Identify legally enforceable limitations

## 3. Identify the emission calculation methods you will use.



### EXAMPLE: PTE Calculations Using MASS BALANCE

**Small Business, Inc.** has maintenance booth with a single spray gun. The gun capacity is 5 gallons per hour. The coating contains 65 percent VOC by weight and its density is 11.2 lbs/gal.

- $VOC\ content = (11.2\ lbs\ coating/gal) \times (0.65\ lbs\ VOC/lb\ coating) = 7.28\ lbs\ VOC/gal\ coating$
- $Maximum\ operating\ hours/yr = 8,760$

#### Annual Potential Emission of VOCs

$(5\ gal\ coating/hr) \times (7.28\ lbs\ VOC/gal\ of\ coating) = 36.4\ lbs\ of\ VOC/hr$   
 $(36.4\ lbs\ VOC/hr) \times (8,760\ hrs/yr) = 318,864\ lbs\ of\ VOC/yr$   
 $(318,864\ lbs\ VOC/yr) \times (1\ ton/2,000\ lbs) = \mathbf{159.4\ tons\ of\ VOC/yr}$



### EXAMPLE: PTE Calculations Using EMISSION FACTORS

**Small Business, Inc.** has a natural gas-fired boiler rated at 10 million Btu per hour. The NO<sub>x</sub> Emission Factor from Table 1.4-1 in Chapter 1.4 of AP-42 (see figure 2-3 above) is 100 pounds of NO<sub>x</sub> emitted per million scf of natural gas burned. In addition to NO<sub>x</sub> emissions the company would also use emission factors to calculate CO, SO<sub>2</sub>, PM, and VOC emissions.

- $1\ scf\ of\ natural\ gas = 1,020\ Btu$
- $Maximum\ operating\ hours/yr = 8,760$

#### Annual Potential Emission of NO<sub>x</sub>:

$(10,000,000\ Btu/hr) \times (1\ scf\ of\ fuel/1,020\ Btu) = 9,803.9\ scf\ of\ natural\ gas/hr$   
 $(9,803.9\ scf\ natural\ gas/hr) \times (8,760\ hrs/yr) = 85,882,352.9\ scf\ of\ natural\ gas/yr$   
 $(85,882,352.9\ scf/yr) \times (100\ lbs\ of\ NO_x/1,000,000\ scf\ of\ fuel) = 8,588.2\ lbs\ of\ NO_x/yr$   
 $(8,588.2\ lbs\ of\ NO_x/yr) \times (1\ ton/2,000\ lbs) = \mathbf{4.3\ tons\ of\ NO_x/yr}$



### EXAMPLE: PTE Calculations Using PERFORMANCE TEST DATA

Data from a stack test at **Small Business, Inc.** indicates that the actual air flow rate of the exhaust fan on the unpermitted metal parts grinder is 29,000 scf per minute. The emission source is subject to Rule 331, which limits PM emissions to 0.10 pounds of PM per 1,000 pounds of exhaust gas.

- $1\ scf\ air = 0.075\ pounds.$
- $Maximum\ operating\ hours/yr = 8,760$

#### Annual Potential Emissions of PM

$(29,000\ scf\ of\ air/min) \times (60\ min/hr) \times (0.075\ lbs\ of\ air/1\ scf\ of\ air) = 130,500\ lbs\ of\ air/hr$   
 $(130,500\ lbs\ of\ air/hr) \times (0.10\ lbs\ of\ PM/1,000\ lbs\ of\ air) = 13.05\ lbs\ of\ PM/hr$   
 $(13.05\ lbs\ PM/hr) \times (8,760\ hrs/yr) \times (1\ ton/2,000\ lbs) = \mathbf{57.0\ tons\ PM/yr}$





## *How to conduct an emissions inventory*

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4. Determine if any of the air contaminant sources are De minimis, permanent exemptions or permit-by-rule provision.

What is De minimis?

Emission sources that meet two conditions:

1. Emit less than 10#/day of any air contaminant
2. < 1 ton/ year (2,000 pounds) of any hazardous air pollutant or combination of hazardous air pollutants



## *How to conduct an emissions inventory*

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What may fall under Permanent Exemptions?

These are sources that have minimal emissions or meet certain size criteria.

What is Permit-by-rule provision?

This applies to certain types of low-emitting air pollutions

## The PTE Equation

PTE is the amount of air contaminants that the facility **could release** into the air while operating at **maximum design capacity**, with the highest polluting materials operating at **100% of the time**.

$$\text{PTE} = (\text{Max hourly emissions rate of pollutant}) \times (8760 \text{ hours})$$



# *How to conduct an emissions inventory*

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Determine best way to collect and display your emissions calculations

- Before you begin calculating the emissions – design what you want on a simple piece of paper.
  - You want something that is brief, easy to follow by all technical levels and adaptable to business changes and needs.
    - Know your audience: accounting, business managers, EPA associates, air program manager.
    - Design something that can be completed easily in your absence
    - Design something that can be updated easily
    - Know your business inputs and needs



# Make it simple, Make it smart



## CAN LINES (K004-K008)

### Control Efficiencies

Coating/Oven Capture Efficiency	80% by weight
Ink Capture Efficiency	80% by weight
Destruction Efficiency	99% by weight

Uncaptured VOC are assumed to be captured by general building ventilation and emitted through  
 Uncaptured VOC are assumed to be captured by general building ventilation and emitted through

### Can Surface Areas

Surface Area For Standard 12 Oz. Cans	44.02 in <sup>2</sup>
Surface Area For 16 Oz. Cans	55.25 in <sup>2</sup>
Surface Area For 19.2 Oz. Cans	65.15 in <sup>2</sup>
Surface Area For 12.1 Oz. Sleek Cans	47.22 in <sup>2</sup>

### Monthly Production (While RTO is Operating)

Production Type	Monthly Production While RTO is Operating (cans/month)							
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Lines 1 & 2 Production (12 Oz. Standard) K004(L1)K005(L2)	98,965,101	96,819,766	92,157,212	59,527,309	56,378,548	0	0	0
Lines 1 & 2 Production (16 Oz.) K004(L1)K005(L2)	0	0	0	0	0	0	0	0
Line 3 Production (16 Oz.) K006(L3)	0	0	0	0	0	0	0	0
Line 3 Production (19.2 Oz.) K006(L3)	0	0	8,435,076	22,382,282	28,817,120	0	0	0
Lines 4 & 5 Production (12.1 Oz. Sleek) K007(L4)K008(L5)	70,621,954	103,094,464	126,095,200	130,102,720	99,540,320	0	0	0

### Monthly Production (During RTO Downtime)

Production Type	Monthly Production During RTO Downtime (cans/month)							
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Lines 1 & 2 Production (12 Oz. Standard) K004(L1)K005(L2)	0	0	134,575	0	0	0	0	0
Lines 1 & 2 Production (16 Oz.) K004(L1)K005(L2)	0	0	0	0	0	0	0	0
Line 3 Production (16 Oz.) K006(L3)	0	0	0	0	0	0	0	0
Line 3 Production (19.2 Oz.) K006(L3)	0	0	32,667	0	0	0	0	0
Lines 4 & 5 Production (12.1 Oz. Sleek) K007(L4)K008(L5)	938,590	0	107,820	0	0	0	0	0

### Inside Spray (Volume)

Description	Monthly Material Use (gal/month)							
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
AKZONOBEL 640C2135 / IS	25,110	28,800	28,767	32,863	0	0	0	0

Inputs ---> FER Input Material Properties Summaries ---> FER Summary Rolling 12-Month ...

Description	Type of Coating	Material Properties									
		VOC Content (lb/gal)	VOC Content (kg/1000g)	Coating Density (lb/gal)	Solids Content (wt %)	Solids Content (Vol %)	Solvent Content (wt %)	Water Content (wt %)	Diethylene Glycol Monoethyl Ether (DGEH)	Diethylene Glycol Butyl Ether (DGBE)	Diethylene Glycol Monoethyl Ether (DGEH)
AKZONOBEL 640C2135 / IS	Inside Spray	3.48	8.45	20.7%	17.2%	13.8%	65.7%	-	-	-	-
PPG DUXO DRYWASH / IS	Inside Spray	3.5	8.4	21.0%	17.2%	14.0%	64.4%	-	-	-	-
SHERWIN WILLIAMS VITROKEMA GR2.1 / IS	Inside Spray	3.2	7.8	21.1%	18.1%	12.4%	66.7%	-	-	-	-
SHERWIN WILLIAMS VITROKEMA PRANK / GR2.2 / IS	Inside Spray	3.3	8.1	21.1%	18.0%	13.0%	65.9%	0.2%	-	-	-

### TITLE V OPERATING PERMIT RECORDKEEPING REQUIREMENTS

Year	Month	Monthly VOC Emissions (ton/month)										Rolling 12-Month Emissions (Avg. ton/month)			
		K001	K002	K003	K004	K005	K006	K007	K008	PH01	End Modules	Clean-up Solvent			
2022	Jan	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-
	Feb	0.55	-	-	-	-	-	-	-	-	-	-	-	-	-
	Mar	0.43	0.35	-	-	-	-	-	-	-	-	-	-	-	-
	Apr	0.46	0.79	-	-	-	-	-	-	-	-	-	-	-	-
	May	0.93	1.02	-	-	0.10	0.10	-	-	-	-	-	-	-	-
	Jun	0.98	1.52	-	-	0.84	0.84	-	-	-	-	-	-	-	-
	Jul	0.68	1.95	-	-	0.84	0.84	-	-	-	-	-	-	-	-
	Aug	0.71	2.05	-	-	5.09	5.09	-	-	-	-	-	-	-	-
	Sep	1.03	1.65	-	-	0.16	0.16	-	-	5.6E-03	5.6E-03	-	-	-	-
	Oct	1.40	2.24	-	-	4.16	4.16	-	-	0.82	0.82	-	-	-	-
	Nov	1.11	1.73	-	-	3.97	3.97	-	-	1.07	1.07	-	-	-	-
	Dec	1.05	2.01	-	-	1.42	1.42	-	-	0.85	0.85	-	-	-	-
2023	Jan	1.15	2.10	-	-	1.71	1.71	-	-	1.82	0.97	0.18	2.26	3.50	0.64
	Feb	0.99	1.99	-	-	1.62	1.62	-	-	1.82	1.82	1.33	2.46	4.08	0.75
	Mar	1.13	2.12	-	-	1.74	1.74	-	-	1.49	1.49	1.83	2.66	4.81	0.90
	Apr	1.03	2.01	-	-	1.19	1.01	1.23	2.97	2.97	0.94	-	2.81	5.54	0.95
	May	1.71	2.83	-	-	-	-	-	-	-	-	-	3.06	5.52	0.93
Jun	-	-	-	-	4.61	0.01	4.60	0.01	4.60	0.01	-	2.85	4.00	0.92	

Yellow = greater than 80% of permit limit  
 Red = Permit limit exceeded

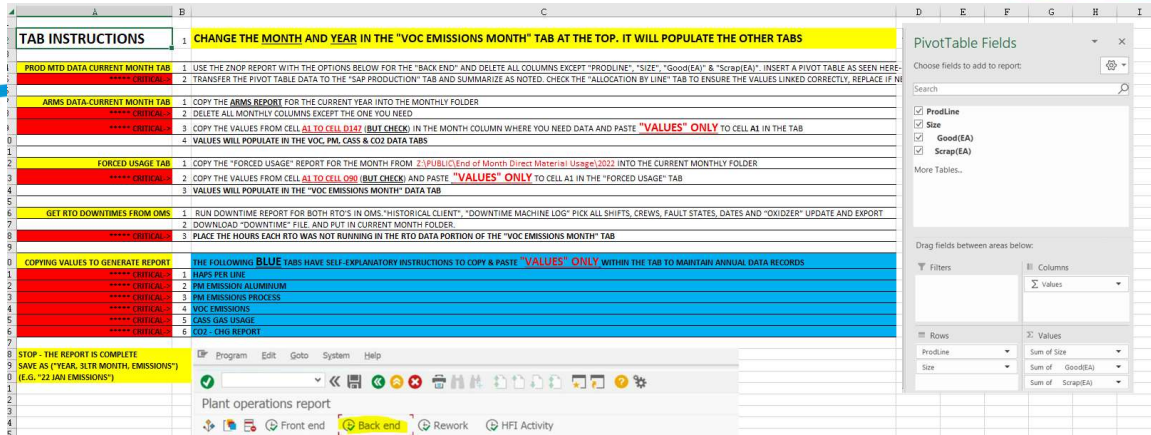
# Make it simple, Make it smart

Video Jet Ink	VideoJet	6.50	6.68	Methanol	122-96-4	25.00%	N	2	1
Make-up Fluid	16-23450			2-Butanone (MEK)	78-93-3	70.00%	N	1	1
Formaldehyde:	145.070486 MMcans w/IG & OV + 6.0 lbs formaldehyde/MMcans = 870.422916 lbs formaldehyde produced								870
	79.329159 MMcans w/BC x 0.6 lbs formaldehyde/MMcan = 47.5974954 lbs formaldehyde produced								48
									<b>Total lbs</b> 29,277
									<b>Total ton</b> 14.58
Hours Operated	840								
Cans Production									
Line 1:	42,273,909	839	1,600	OK					
Line 2:	28,671,975	569	1,600	OK					
Line 3:	43,609,418	865	1,600	OK					
Line 4:	30,515,184	605	1,400	OK					
Total:	145,070,486								
Basecoated Cans:	79,329,159								
Overspray PE (lb/hr)		0.12	1.72	OK					
1) Unit Description:	Plant Gas	<b>Emission Calculations for Natural Gas Consumption</b>							
2) Burner Size:	10 MMbtu/hr	Emission factors based on AP-42 Table 1.4-1 (rev. 3/98)							
3) Gas Usage:	19.76 MMscf								
4) Control:	None								
CO:	19.760 MMscf	X	84.0 lb/MMscf	/	840.0 hours	=	1.98	13.02	OK
NOx:	19.760 MMscf	X	100.0 lb/MMscf	/	840.0 hours	=	2.35	15.5	OK
PM:	19.760 MMscf	X	7.60 lb/MMscf	/	840.0 hours	=	0.18	1.18	OK
VOC:	19.760 MMscf	X	5.50 lb/MMscf	/	840.0 hours	=	0.13	0.85	OK

Compare the rolling 12-month monthly average VOC emissions to the permit limits.  
 Calculated value is more than half of the allowable limit  
 Calculated value exceeds the allowable limit

Material Generic Description	Sofidel Material Identification	Supplier Name	Supplier Material Identification	Material VOC Content (wt. %)	VOC Emissions Per Month (short tons)														
					2019														
					May	June	July	August	September	October	November	December	January	February	March	April			
Rolling 12-month Monthly Average VOC Emissions PER PULP & PAPER MACHINE (short tons): = 12-month sum of VOC emissions / 12 months per year					2.23	2.29	2.31	2.35	2.40	2.44	2.33	2.16	2.05	1.88	1.75	1.36	0.99	0.89	0.82
Total VOC Monthly VOC Emissions PER PULP & PAPER MACHINE (short tons): = Sum of VOC emissions per month					4.40	1.18	0.89	0.41	0.67	1.36	0.01	1.06	1.70	2.65	1.60	0.41	0.00	0.00	0.00
Pulp Additive	803078	Solenis	Presstige FB8527	85.00%	2.99	0.79	0.44	0.20	0.51	1.20	-	0.80	1.20	2.39	1.20	-	-	-	
Pulp Additive	803076	Solenis	PerForm PA8254F	25.00%	0.06	0.06	0.20	-	-	-	-	0.06	0.11	0.10	-	0.22	-	-	
Pulp Additive	803203	Solenis	Prosoft TQ260	15.40%	0.35	0.25	0.14	0.12	0.04	0.14	-	0.09	0.30	0.07	-	0.19	-	-	
Pulp Additive	803197 & 803097	Solenis	Rezsol 8207NA	0.27%	0.13	0.08	0.11	0.08	0.11	0.01	-	0.02	0.08	0.02	-	-	-	-	
Pulp Additive	803157	Solenis	Rezsol CS3250	0.08%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pulp Additive	803160	Solenis	Solenis DPC710	0.30%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pulp Additive	803217	Solenis	Hercobond 1194	0.01%	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	-	-	-	
Pulp Additive	803256	Solenis	Perform PC8179	25.77%	0.87	-	-	-	-	-	-	0.09	-	0.06	0.40	-	-	-	
CoGen Additive	-	Solenis	AmerROYal 710	0.30%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	
CoGen Additive	-	Solenis	Advantage Plus 1465	0.60%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	-	
CoGen Additive	-	Solenis	Amercor 1848	48.08%	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-	-	

# Caution of what not to do:



The screenshot shows an Excel spreadsheet with a 'TAB INSTRUCTIONS' tab. The instructions are as follows:

- PROD MTD DATA CURRENT MONTH TAB**
  - USE THE ZNOP REPORT WITH THE OPTIONS BELOW FOR THE "BACK END" AND DELETE ALL COLUMNS EXCEPT "PRODLINE", "SIZE", "Good(EA)" & "Scrap(EA)". INSERT A PIVOT TABLE AS SEEN HERE.
  - TRANSFER THE PIVOT TABLE DATA TO THE "SAP PRODUCTION" TAB AND SUMMARIZE AS NOTED. CHECK THE "ALLOCATION BY LINE" TAB TO ENSURE THE VALUES LINKED CORRECTLY. REPLACE IF NEEDED.
- ARMS DATA CURRENT MONTH TAB**
  - COPY THE ARMS REPORT FOR THE CURRENT YEAR INTO THE MONTHLY FOLDER
  - DELETE ALL MONTHLY COLUMNS EXCEPT THE ONE YOU NEED
  - COPY THE VALUES FROM CELL A1 TO CELL D147 (BUT CHECK) IN THE MONTH COLUMN WHERE YOU NEED DATA AND PASTE "VALUES" ONLY TO CELL A1 IN THE TAB
  - VALUES WILL POPULATE IN THE VOC, PM, CASS & CO2 DATA TABS
- FORCED USAGE TAB**
  - COPY THE "FORCED USAGE" REPORT FOR THE MONTH FROM Z:\PUBLIC\End of Month Direct Material Usage\2022 INTO THE CURRENT MONTHLY FOLDER
  - COPY THE VALUES FROM CELL A1 TO CELL D90 (BUT CHECK) AND PASTE "VALUES" ONLY TO CELL A1 IN THE "FORCED USAGE" TAB
  - VALUES WILL POPULATE IN THE "VOC EMISSIONS MONTH" DATA TAB
- GET RTD DOWNTIMES FROM OMS**
  - RUN DOWNTIME REPORT FOR BOTH RTD'S IN OMS "HISTORICAL CLIENT", "DOWNTIME MACHINE LOG" PICK ALL SHIFTS, CREWS, FAULT STATES, DATES AND "OXIDIZER" UPDATE AND EXPORT
  - DOWNLOAD "DOWNTIME" FILE AND PUT IN CURRENT MONTH FOLDER.
  - PLACE THE HOURS EACH RTD WAS NOT RUNNING IN THE RTD DATA PORTION OF THE "VOC EMISSIONS MONTH" TAB
- COPYING VALUES TO GENERATE REPORT**

THE FOLLOWING BLUE TABS HAVE SELF-EXPLANATORY INSTRUCTIONS TO COPY & PASTE "VALUES" ONLY WITHIN THE TAB TO MAINTAIN ANNUAL DATA RECORDS

  - MAPS PER LINE
  - EM EMISSION ALUMINIUM
  - PM EMISSIONS PROCESS
  - VOC EMISSIONS
  - CASS GAS USAGE
  - CO2 - CMS REPORT

The PivotTable Fields task pane on the right shows the following configuration:

- Choose fields to add to report:
  - ProdLine
  - Size
  - Good(EA)
  - Scrap(EA)
- Drag fields between areas below:
  - Filters: (empty)
  - Columns: values
  - Rows: ProdLine, Size
  - Values: Sum of Size, Sum of Good(EA), Sum of Scrap(EA)

MONTHLY EMISSION CALCULATIONS - COATING USAGE & VOC EMISSIONS

MONTH: **March** <- CHANGE THESE VALUES  
 YEAR: **2022**

	(a) COATING USAGE (gal)	(a1) COATING USAGE (lb)	(b) COATING DENSITY (lb/gal)	(c) VOLUME % SOLIDS (gal/gal)	(d) VOC CONTENT (lb VOC/gal solids)	(e) OVERALL EFFICIENCY	(f) EMISSION FACTOR (lb VOC/gal (c/100 x d)	(g) COATING USAGE (a x b)	(h) VOC EMISSIONS (lb VOC) (a x f/(1-e))	(i) VOC EMISSIONS (tons VOC) (g/2000)
<b>INSIDE SPRAY</b>										
20Q53AP (lines 1, 2 & 5)	16,614		8.43	18.20	5.80	0.00%	1.056	140,059	17,538	8.77
20Q53AP (line 6)	7,027		8.43	18.20	5.80	13.23%	1.056	59,240	3,873	1.94
20Q53AP (lines 3 & 4)	9,454		8.43	18.20	5.80	13.23%	1.056	79,690	5,211	2.61
20Q53AP (lines 7, 8, 9 & 10)	2,187		8.43	18.20	5.80	8.92%	1.056	18,437	255	0.14
<b>TOTAL</b>	<b>35,283</b>							<b>278,898</b>	<b>26,622</b>	<b>13.45</b>
<b>CK SUM FROM ARMS</b>	<b>35,283</b>							<b>139.50</b>		
PPG 2012823 - BPANI (lines 1, 2 & 5)	7,854	8.40	17.70	6.90	0.00%	1.221	65,977	0.593	4.786	
PPG 2012823 - BPANI (Line 6)	3,322	8.40	17.70	6.90	13.23%	1.221	27,906	2,118	1.059	
PPG 2012823 - BPANI (Lines 3 & 4)	4,469	8.40	17.70	6.90	13.23%	1.221	37,544	2,850	1.428	
PPG 2012823 - BPANI (Lines 7, 8, 9 & 10)	1,034	8.40	17.70	6.90	8.92%	1.221	8,685	89	0.075	
<b>TOTAL</b>	<b>16,680</b>						<b>140,132</b>	<b>14,711</b>	<b>7.36</b>	
<b>CK SUM FROM ARMS</b>	<b>16,680</b>						<b>70.06</b>			
<b>OVER VARNISH</b>										
PPG CC3625XLV (lines 1, 2 & 5)	7,530	8.75	33.50	2.90	0.00%	0.972	65,887	7,315	3.66	
PPG CC3625XLV (line 6)	3,185	8.75	33.50	2.90	0.00%	0.972	27,868	3,094	1.55	
PPG CC3625XLV (lines 3 & 4)	4,285	8.75	33.50	2.90	0.00%	0.972	37,492	4,163	2.08	
PPG CC3625XLV (lines 7, 8, 9 & 10)	991	8.75	33.50	2.90	11.89%	0.972	8,673	143	0.07	

## Speaker Bio



Tracie Sorvillo is the Director of Environmental Compliance & Excellence at Ardagh Metal Packaging NA, headquartered in Chicago, IL. She supports all nine United States Aluminum can manufacturing plants in Clean Air Act, Clean Water Act, SARA, Waste permitting, and compliance. AMP has three Aluminum can manufacturing plants located in the Northwest Ohio area. She has degrees in Chemical Engineering, Information Technology and obtained her MBA from The Ohio State University. Tracie has permitted and managed both Title V and non-Title V air permits during her 17 years of environmental health and safety work. She has been part of starting up a new state-of-the-art aluminum can manufacture facility and creating environmental compliance tracking data analytics for all NA facilities.

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## Sources

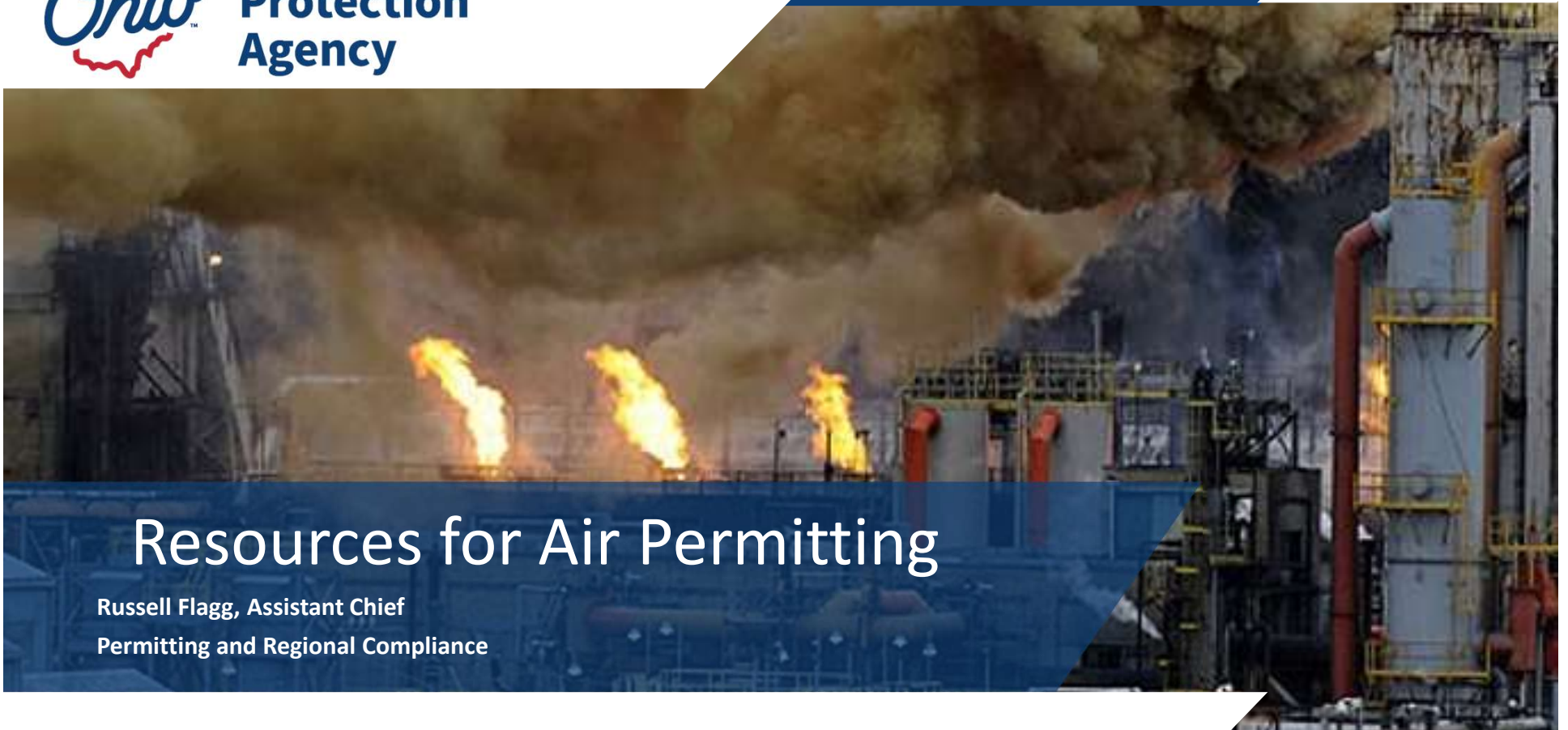
- <https://www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history#text>
- <https://epa.ohio.gov/static/Portals/41/sb/publications/SBAirPermit.pdf>



**Environmental  
Protection  
Agency**

# Resources for Air Permitting

Russell Flagg, Assistant Chief  
Permitting and Regional Compliance



# Topics



- Resources – Web/People
- Permitting
- Engineering Guides
  - Old
  - New (requirements)
  - How to find and use
- Other website resources

# Where to find resources?



- Stay Compliant
- Make a Difference
- Monitor Pollution
- Get Funding
- Find Regulations
- Help
- Search

Ohio EPA / Divisions & Offices / Air Pollution Control

## Air Pollution Control

Ensures compliance with the federal Clean Air Act and the Emergency Planning and Community Right-to-Know Act as part of its mission to attain and maintain air quality at a level that protects the environment and public health. The division reviews, issues and enforces permits for installation and operation of sources of air pollution and operates an extensive outdoor air monitoring network. The division also oversees an automobile emission testing program to minimize emissions from mobile sources.

### Welcome

Announcements

About DAPC

Programs

Asbestos Abatement & Demolition

Guides & Manuals

E-Check

Open Burning

Permitting Resources

Reports & Data

Regulations

State Emergency Response Commission

State Implementation Plans

Training



### Calendar Year 2023 Annual Emissions Reporting

Learn more about the Division of Air Pollution Control's emission reporting programs

[Learn More](#)

### Featured Content

- [Air Services](#)
- [E-Check](#)
- [Air Quality Map](#)
- [Air Monitoring](#)
- [Weekly Review and Public Notices](#)
- [Contact Us](#)



[epa.ohio.gov/divisions-and-offices/air-pollution-control](https://epa.ohio.gov/divisions-and-offices/air-pollution-control)



# Permitting Resources



## Air Pollution Control

[Welcome](#)

[Announcements](#)

[About DAPC](#)

[Programs](#)

[Asbestos Abatement & Demolition](#)

[Guides & Manuals](#)

[E-Check](#)

[Open Burning](#)

[Permitting Resources](#)

[Reports & Data](#)

[Regulations](#)

[State Emergency Response Commission](#)

[State Implementation Plans](#)

[Training](#)

- [Applications](#)
- [General Permits](#)
- [Contacts](#)
- [Testing](#)

# Permitting Resources



- Stay Compliant
- Make a Difference
- Monitor Pollution
- Get Funding
- Find Regulations
- Help
- Search

Ohio EPA / Divisions & Offices / Air Pollution Control / Permitting Resources / DAPC Permitting

## Air Pollution Control

### DAPC Permitting

DAPC permitting conducts permit recommendation technical reviews submitted by Ohio EPA District Offices and Local Air Agencies. The group also develops permitting guidance and answers technical permitting questions.

Welcome

Announcements

About DAPC

Programs

Asbestos Abatement & Demolition

Guides & Manuals

E-Check

Open Burning

Permitting Resources

Reports & Data

Regulations

State Emergency Response Commission

State Implementation Plans

Training

Filter the content below by keyword or topic.

Type a Keyword here

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ALL TOPICS x

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#### Acid Rain Permits

#### Applying for an Air Pollution Control Permit

Information on determining if you need a permit, applicable permit application forms, best available technology (BAT).

#### Contacts

Ohio EPA District Offices and Local Air Pollution Control Agencies

#### Draft General Permits Available for Comment



[epa.ohio.gov/divisions-and-offices/air-pollution-control/permitting](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/permitting)

# Air Pollution Permits

# Apply for a permit



## Applying for an Air Pollution Control Permit

### Air Pollution Control

Expand All Sections

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- Welcome
- Announcements
- About DAPC
- Programs
- Asbestos Abatement & Demolition
- Guides & Manuals
- E-Check
- Open Burning
- Permitting Resources
- Reports & Data
- Regulations
- State Emergency Response Commission
- State Implementation Plans
- Training

### Permit Applications

Permit applications and supporting documentation can be found on our permit application page: [Permit Application Forms | Ohio Environmental Protection Agency](#). If a PTI/PTIO application is needed, please submit the information to the appropriate [district office or local air agency](#).

#### 1. Application for PTI/PTIO Section I, EPA Form 3150a

Only one of these forms is needed regardless of the number of emissions units being installed/modified. If your facility has no previous air permits, it will not have a facility ID Number. An ID Number will be assigned upon receipt. If this is the case, leave the 'Facility Information' question regarding the facility ID Number blank.

#### 2. Application for PTI/PTIO Section II, EPA Form 3150a

Make copies of Section II for each emissions unit. Complete and submit the forms to the appropriate [district office or local air agency](#). Additional information is needed in order to determine compliance with new regulations and/or policies.

#### 3. Emissions Activity Category (EAC) Form(s)

A list of all of the available [EAC Forms](#) is included in the PTI/PTIO application instructions. Copies of the appropriate forms for your facility can be obtained from your [district office or local air agency](#). Make enough copies for each emissions unit. In order to facilitate review you may wish to staple Section II of Form 3150a and the EAC FORM for the same emissions unit, together.

Additional PTI/PTIO Application Guidance

You May Not Need To Submit An Application If:

Additional Information That May be Helpful to You:



[epa.ohio.gov/divisions-and-offices/air-pollution-control/permitting/applying-for-an-air-pollution-control-permit](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/permitting/applying-for-an-air-pollution-control-permit)

# Emissions Activity Category EAC form



[Stay Compliant](#)
[Make a Difference](#)
[Monitor Pollution](#)
[Get Funding](#)

Ohio EPA / Divisions & Offices / Air Pollution Control / Permitting Resources / Permit Application Forms

## Permit Application Forms

### Air Pollution Control

Welcome

Announcements

About DAPC

Programs

Asbestos Abatement & Demolition

Guides & Manuals

E-Check

Open Burning

Permitting Resources

Reports & Data

Regulations

State Emergency Response Commission

State Implementation Plans

Training

Form	Permit Type (Revision Date)	Application (Word)		Instructions (Word)	Application (PDF)		Instructions (PDF)
3150a	Permit-to-Install/Permit-to-Install and Operate Application <a href="#">Updated 1/23/2023</a>	<a href="#">Sec-1 [DOC]</a>	<a href="#">Sec-2 [DOC]</a>	<a href="#">[DOC]</a>	<a href="#">Sec-1 [PDF]</a>	<a href="#">Sec-2 [PDF]</a>	<a href="#">[PDF]</a>

Form	Form Name (Revision Date)	Emissions Activity Category (EAC) Form (Word)	EAC Instructions (Word)	EAC Form & Instructions Combined (PDF)
3100	Process Operation	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3101	Fuel Burning Operation (November 2018)	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3102	Incinerator Operations	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3103	Surface Coating Operations (November 2018)	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3104	Storage Tank	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3105/3106	Gasoline, Diesel, and/or Kerosene	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3107	Loading Rack for Liquid Materials	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3108	Printing Operations	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3109	Solvent Metal Cleaning	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3111	Roadways and Parking Areas	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>
3112	Storage Piles	<a href="#">[DOC]</a>	<a href="#">[DOC]</a>	<a href="#">[PDF]</a>



[epa.ohio.gov/divisions-and-offices/air-pollution-control/permitting/permit-application-forms](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/permitting/permit-application-forms)

# Questions – Forms - Where?



## Contacts

### Air Pollution Control

The Division of Air Pollution Control's jurisdictional boundaries for District Offices and local air agencies are not the same as Ohio EPA's standard district boundaries.

Note: The Northeast District Office handles all permitting for Lake, Geauga, Trumbull and Mahoning counties.

[Division of Air Pollution Control jurisdiction maps in PDF format](#)

Welcome

Announcements

About DAPC

Programs

Asbestos Abatement & Demolition

Guides & Manuals

E-Check

Open Burning

Permitting Resources

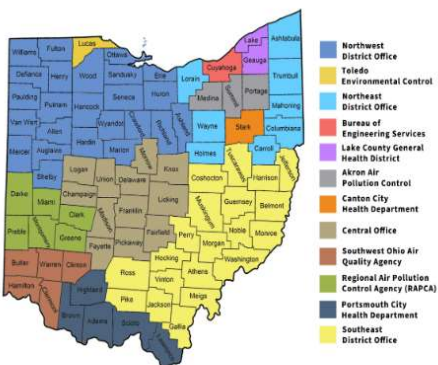
Reports & Data

Regulations

State Emergency Response Commission

State Implementation Plans

Training



Note: For asbestos demolition/renovation contacts, please see the [asbestos program page](#).

Main Office

Central Office (CO)

614.644.2270

614.644.3681 (fax)

Ohio EPA Division of Air Pollution Control

P.O. Box 1049 Columbus, OH 43216-1049



[epa.ohio.gov/divisions-and-offices/air-pollution-control/permitting/ohio-epa-district-offices-and-local-air-pollution-control-agencies](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/permitting/ohio-epa-district-offices-and-local-air-pollution-control-agencies)



# Engineering Guides Q&A



**Air Pollution Control** Guides & Manuals

Welcome

Announcements

About DAPC

Programs

Asbestos Abatement & Demolition

**Guides & Manuals**

E-Check

Open Burning

Permitting Resources

Reports & Data

Regulations

State Emergency Response Commission

State Implementation Plans

Training

Filter the content below by keyword or topic.

Type a keyword here

Filter by Topic

ALL TOPICS x

**FILTER** **RESET FILTERS**

 <b>Annual Emissions Reporting Programs</b>	 <b>Emission Reduction Credit (ERC) Banking Program</b> A voluntary statewide program that creates a consistent method for generating and transferring ERCs for future use	 <b>Engineering Guides Notebook</b> Engineering Guides and other permitting guidance	 <b>Guidance Concerning Best Available Technology (BA...</b>
 <b>Maximum Achievable Control Technology (MAC...</b>	 <b>National Ambient Air Quality Standards (NAAQ...</b>	 <b>Non-Title V Emission Fee Program</b> The facility owner or air permit holder is required to pay a fee based on the amount of air pollution emitted by the facility	 <b>Ohio EPA's Operation and Maintenance Guidelines f...</b>



[epa.ohio.gov/divisions-and-offices/air-pollution-control/guides-and-manuals/engineering-guides-notebook](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/guides-and-manuals/engineering-guides-notebook)

# Engineering Guides



## Engineering Guides Notebook

Air Pollution Control

Expand All Sections

Welcome

Announcements

About DAPC

Programs

Asbestos Abatement & Demolition

Guides & Manuals

E-Check

Open Burning

Permitting Resources

Reports & Data

Regulations

State Emergency Response Commission

State Implementation Plans

Training

### Table of Engineering Guides

Filename & Extension	Guide Name & Subject Matter	Last Review Date	Applicable Rule(s) 3745-
<a href="#">Guide 100</a>	Guide 100 - Initial Facility Access and Responsible Official - Owner/Operator Guidance	5/22/2024	
<a href="#">Guide 99</a>	Guide 99 - Designating a Responsible Official for a Facility	5/22/2024	
<a href="#">Guide 98</a>	Guide 98 - Director's Discretionary Exemptions	5/13/2024	
<a href="#">Guide 95</a>	Guide 95 - General Permit Fees	11/8/2022	
<a href="#">Guide 94</a>	Guide 94 - Recommended Emissions Tests for Asphalt Plants	9/2/2021	<a href="#">31-05</a> and <a href="#">40 CFR Subpart I (NSPS)</a>
<a href="#">Guide 92</a>	Guide 92 - Process for Evaluation of Operation of Source Without Controls Guidance	11/1/2019	<a href="#">15-06</a>
<a href="#">Guide 91</a>	Guide 91- Guidance for Replacing Components of Complex Operations	7/16/2020	<a href="#">17-11</a> , <a href="#">31-01</a> , <a href="#">31-02</a>
<a href="#">Guide 89</a>	Guide 89 - Determining When a Best Available Technology Cost-Effectiveness Study is Needed	Review Pending	<a href="#">31-05</a>
<a href="#">Guide 88</a>	Guide 88 - MACT and GACT Guidance	7/12/2023	<a href="#">40 CFR Part 63 (MACT)</a>
<a href="#">Guide 87</a>	Guide 87 - Guidance concerning rule citations for the <10 tons/year BAT exemption	Review Pending	<a href="#">31-05</a>
<a href="#">Guide 86</a>	Guide 86 - Guidance concerning appropriate 31-05 rule citations	Review Pending	<a href="#">31-05</a>

Descending #s  
New column  
Applicable rules

# Why the changes?



HB33 – Effective Oct. 3, 2023 (ORC 121.93)

## [Section 121.93 - Ohio Revised Code | Ohio Laws](#)

- All policies must:
  - Be reviewed every 5-years
    - Engineering Guides are in this bucket
  - State “this policy is not law”
- Not all have been reviewed, yet
  - Permitting and Enforcement Workgroup
  - Industry stakeholders
  - Develop revised documents, as needed



# Engineering Guides



- Eng. Guides are established best practice
  - Example – EG#70 – Modeling guidance
    - Q&A – Common questions from industry and internal
    - pdf is searchable
- Eng. Guides have industry as well as Agency “buy-in”
- Eng. Guide substantive revisions are sent out for comment

NOTE: Administrative changes (typos or simple corrections)

  - Not a revision = not sent out for public comment

# Other resources



## Other Permitting Guidance

- [Ohio EPA's Operation and Maintenance Guidelines for Air Pollution Control Equipment](#)
- [Best Available Technology Guidance](#)
- [Air and Noise Pollution Tax Exemption Program Guidance](#)

Proposed Engineering Guides



Obsolete/Rescinded/Revoked Engineering Guides



Keyword Index



Cross Reference Index



# Get involved!



## Proposed Engineering Guides ^

EG Number	Description	Comment period ends on...	Contact Info
There are currently no proposed Engineering Guides.			



# What about old EGs?



Obsolete/Rescinded/Revoked Engineering Guides <span>^</span>		
EG Number	Description	Rule Reference(s)
Guide 6	Guide 6 - PTI for coal to oil conversion - <b>Obsolete</b>	31-01
Guide 38	Reserved	
Guide 42	Guide 42 - Definition of BAT for new sources - <b>Obsolete</b>	31-05
Guide 43	Guide 43 - Special terms and conditions for PTOs and variances — <b>Obsolete 12/20/22</b>  Use Terms and Conditions Library Instead.	31-05, 31-09

# EGs are searchable



## Keyword Index

Keyword(s)	Applicable Engineering Guide Number (.pdf or .html)
A	
Ambient air monitoring (particulate matter)	<a href="#">43</a>
Aggregate plants	<a href="#">10</a>
Alfalfa dehydrating plants	<a href="#">47</a>
Asphalt plants	<a href="#">83</a>

# EGs are searchable



## Cross Reference Index

Ohio Administrative Code (OAC) Rule	Applicable Engineering Guide Number (.pdf or .html)
General Provisions	
<a href="#">3745-15-01</a>	<a href="#">26</a>
<a href="#">3745-15-04</a>	<a href="#">16, 17 &amp; 52</a>
<a href="#">3745-15-05</a>	<a href="#">62, 71, 80</a>
<a href="#">3745-15-06</a>	<a href="#">33 &amp; 92</a>
<a href="#">3745-15-07</a>	<a href="#">30 &amp; 54</a>
Particulate Matter Standards	
<a href="#">3745-17-01</a>	<a href="#">7, 81</a>
<a href="#">3745-17-03</a>	<a href="#">20, 27, 40, 41, 51 &amp; 56</a>
<a href="#">3745-17-04</a>	<a href="#">25</a>
<a href="#">3745-17-05</a>	<a href="#">30</a>
<a href="#">3745-17-07</a>	<a href="#">13, 14, 15, 17, 20, 32, 56 &amp; 57</a>

# Other website resources



## Air Pollution Control

Welcome

Announcements

About DAPC

Programs

Asbestos Abatement & Demolition

Guides & Manuals

E-Check

Open Burning

Permitting Resources

Reports & Data

Regulations

State Emergency Response Commission

State Implementation Plans

Training

## What's New and Updates

Adobe Acrobat Reader is required to view the [PDF] publications. If you do not have Adobe Acrobat Reader, [click here](#) to download it for free.

Expand All Sections

July 8, 2024 - Availability of Draft for Comment – Ohio's State Implementation Plan for the 2008 Lead National Ambient Air Quality Standard in the Canton Nonattainment Area

June 25, 2024 - Availability of Draft for Comment – Director's Final Findings and Orders for Sulfur Dioxide Emissions Limits at the Carmeuse Lime Maple Grove Facility in Seneca County, Ohio

June 21, 2024 - Availability of Draft Amended Rules for Comment - Rule Related to Emergency Episodes and Air Quality Standards

June 20, 2024 - Adoption of OAC Chapters 3745-20 and 3745-22, Ohio's Asbestos Emissions and Licensing Rules

June 17, 2024 - Stakeholder Input Requested - Rules Related to Emission Reduction Credit Banking Program



[epa.ohio.gov/divisions-and-offices/air-pollution-control/announcements](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/announcements)

# Other website resources



## Air Pollution Control

### Programs

Expand All Sections

Welcome

Announcements

About DAPC

Programs

Asbestos Abatement & Demolition

Guides & Manuals

E-Check

Open Burning

Permitting Resources

Reports & Data

Regulations

State Emergency Response Commission

State Implementation Plans

Training

Air Monitoring

Asbestos

Compliance

Community Right-to-Know

E-Check

Emissions Reporting

Permitting

Rules and Regulations

State Implementation Plan

Other Programs

Filter the content below by keyword or topic.



[epa.ohio.gov/divisions-and-offices/air-pollution-control/dapc-programs](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/dapc-programs)

# Regs – proposed and effective



## Regulations

Welcome

Early Stakeholder Outreach

Interested Party Review

Proposed Rules

Effective Rules

Additional Information

## DAPC Regulations

The Division of Air Pollution Control (DAPC) develops and enforces rules in the Ohio Administrative Code (OAC). These rules assist the state of Ohio to:

- Attain and maintain the National Ambient Air Quality Standards (NAAQS) contained in the Clean Air Act
- Fulfill the requirements set forth by the Ohio General Assembly in Ohio Revised Code (ORC) Section 3704
- Protect and maintain healthy air quality for the citizens of the state of Ohio

Ohio EPA air pollution control regulations are located in the OAC in chapters 3745-14 to 3745-26, 3745-31, 3745-71 to 3745-73, 3745-77 to 3745-80, 3745-100, 3745-103, 3745-104, 3745-107, and 3745-110 to 3745-114. Additional chapters are added as needed to address new laws and requirements related to air pollution control.

Proposing new rules and amendments to existing rules is a regular activity conducted by Ohio EPA in response to laws passed by the General Assembly and federal rule requirements. The Agency is also required by state law to review its rules at least once every five years to ensure their continued need and relevance.

During the Ohio rule-making process, rules pass through the following four phases: early stakeholder outreach; draft review; proposal to the Joint Committee on Agency Rule Review (JCARR); and final adoption. To view the rules currently in each of these phases, please view the tabs below.

Some of Ohio EPA's air pollution control regulations are a part of Ohio's State Implementation Plan (SIP). Rules that are a part of Ohio's SIP are submitted to U.S. EPA after final promulgation of the rule(s) and then U.S. EPA must in turn take action to approve the rule(s) into Ohio's SIP. The process of U.S. EPA approval can take up to 18-months after Ohio EPA submits a request, as allowed under CAA Section 110(k). Therefore, often there is a time lag between the effective date of Ohio's rules and the effective date of approval of those rules as a part of Ohio's SIP. When a rule(s) that was approved as a part of Ohio's SIP is amended, Ohio EPA will often submit the amended rule(s) as a revision to the approved Ohio SIP, which U.S. EPA must again take action to approve as a replacement. To find a list of the currently approved SIP rules, and the effective dates of those rules, see [40 CFR 52.1070](#). As explained above, some of these SIP approved rules will not be the most currently effective rule found on the tab below. You may request specific SIP approved rules not found in the tab below by contacting Ohio EPA DAPC's Rule Coordinator at [amanda.payton@epa.ohio.gov](mailto:amanda.payton@epa.ohio.gov) or [614.644.3134](tel:614.644.3134).

If you would like to receive e-mail notifications regarding opportunities to provide comment regarding important changes to Ohio's air pollution control rules, please go to [Ohio EPA's Customer Support Center](#), log-in or sign-up to create a new account, and choose "Information on rulemaking activity and regulatory notifications from the Division of Air Pollution Control" from your subscriptions.



[epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/regulations)



# State Implementation Plan



State Implementation Plans

Training

## Table of Contents

Expand All Sections

Ozone	▼
PM 2.5	▼
Nitrogen Oxides	▼
Sulfur Dioxide	▼
Lead	▼
Regional Haze	▼
Infrastructure	▼
Emissions Inventory	▼
Transportation Conformity	▼
Miscellaneous SIP Submittals	▼
Air Quality Modeling	▼



[epa.ohio.gov/divisions-and-offices/air-pollution-control/state-implementation-plans](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/state-implementation-plans)

# Training



## Training

### Air Pollution Control

Welcome

Announcements

About DAPC

Programs

Asbestos Abatement & Demolition

Guides & Manuals

E-Check

Open Burning

Permitting Resources

Reports & Data

Regulations

State Emergency Response Commission

State Implementation Plans

Training

#### Division of Air Pollution Control Informational Videos

- [February 10, 2022, Open Burning, Odors, Dust, and Asbestos in Demolition In Your Community - YouTube](#)
- [Air Pollution Risk Management Program for Drinking Water and Wastewater Treatment Plan - YouTube](#)
- [Columbus Ohio Meets Ozone Air Quality Standard - YouTube](#)
- [Ohio EPA's Air Pollution Permit Requirements - March 9, 2022 - YouTube](#)
- [Air Pollution Regulations for Asbestos Landfills - YouTube](#)
- [Ohio EPA's Anti-Tampering Laws- Webinar - YouTube](#)

#### 2020 Virtual Compliance Assistance Conference and 2021 External Training Recordings

- [Introduction to Air Permitting Part 1](#)
- [Introduction to Air Permitting Part 2](#)
- [Preparing for a Virtual Ohio EPA Inspection](#)
- [Air Permitting for Major Sources Part 1](#)
- [Air Permitting for Major Sources Part 2](#)
- [Division Chiefs Programs Priorities and Compliance Tactics](#)
- [Ohio EPA's Rules — What You Need to Know to Stay Out of Trouble \(March 2021\)](#)



[epa.ohio.gov/divisions-and-offices/air-pollution-control/training](https://epa.ohio.gov/divisions-and-offices/air-pollution-control/training)

## Speaker Bio



Russell Flagg is the Assistant Chief for permitting and regional compliance (PARC) at Ohio EPA in Columbus, Ohio since December 2023. He supports four regional offices with ~80 staff, Central Office permitting review staff and seven Local Air Agencies.

He has a degree in Environmental Health Science from Ohio University. Russell has over 37 years of experience in environmental health ranging from the U.S. NAVY, a consulting business owner catering to federal agencies throughout the U.S., Ohio EPA as an environmental health specialist and Assistant Chief of the Southeast District Office until his current position.

# Thank You

## Russell Flagg

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Pollution Control  
Permitting and Regional  
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