

Precision Castparts

Air Quality Public Meeting

March 18, 2020

Brentwood Darlington Community Center



Agenda

- Welcome
- Introductions
- Public Health Assessment + Q&A
- Statewide Air Toxics Summary Report + Q&A
- Cleaner Air Oregon Status + Q&A
- Air Quality Permit Status + Q&A
- Discussion and Next Steps

Ground Rules

- Be respectful of each other and agency representatives
- Speak when recognized
- Allow people who have not had a turn to pose one question before others ask additional questions
- Speak for yourself
- Don't interrupt

Staff Online Tonight with a Formal Role

- Nina DeConcini, DEQ NW Region Administrator
- Todd Hudson, OHA Toxicologist
- Scott Peerman, DEQ Lab
- Kenzie Billings, DEQ Cleaner Air Oregon
- David Graiver, DEQ Air Quality Permit Writer
- Lauren Wirtis, DEQ Communications

Precision Castparts Corp. Public Health Assessment (final release)

Ehap.info@state.or.us



ENVIRONMENTAL PUBLIC HEALTH ASSESSMENT PROGRAM (EHAP)

www.healthoregon.org/ehap

Overview

- What is a public health assessment (PHA)?
- Public comments
- Overview of changes to PHA
- How does this relate to Cleaner Air Oregon?
- Comments/questions

AGENCY ROLES

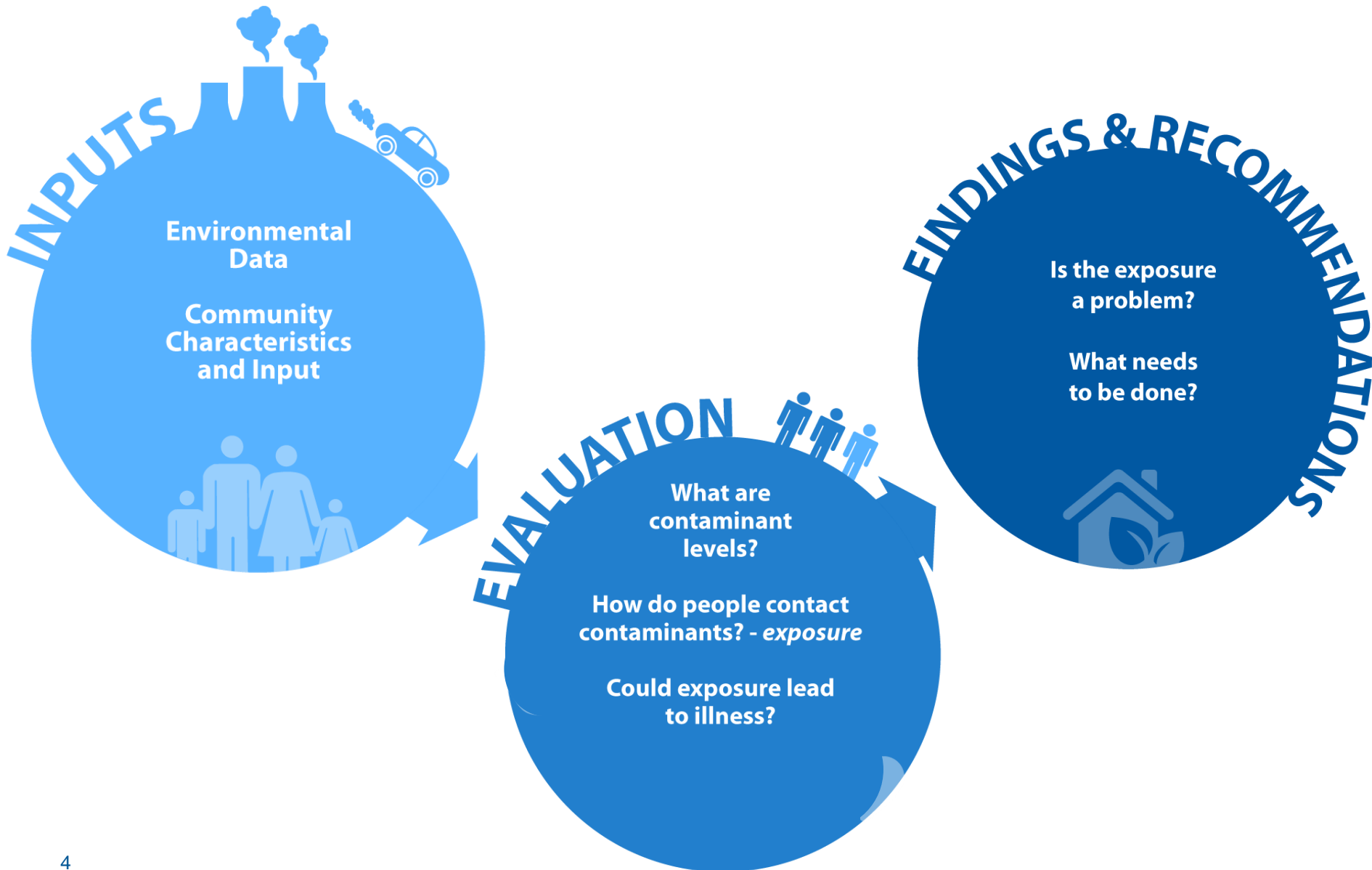


Analyze
Advise
Make recommendations

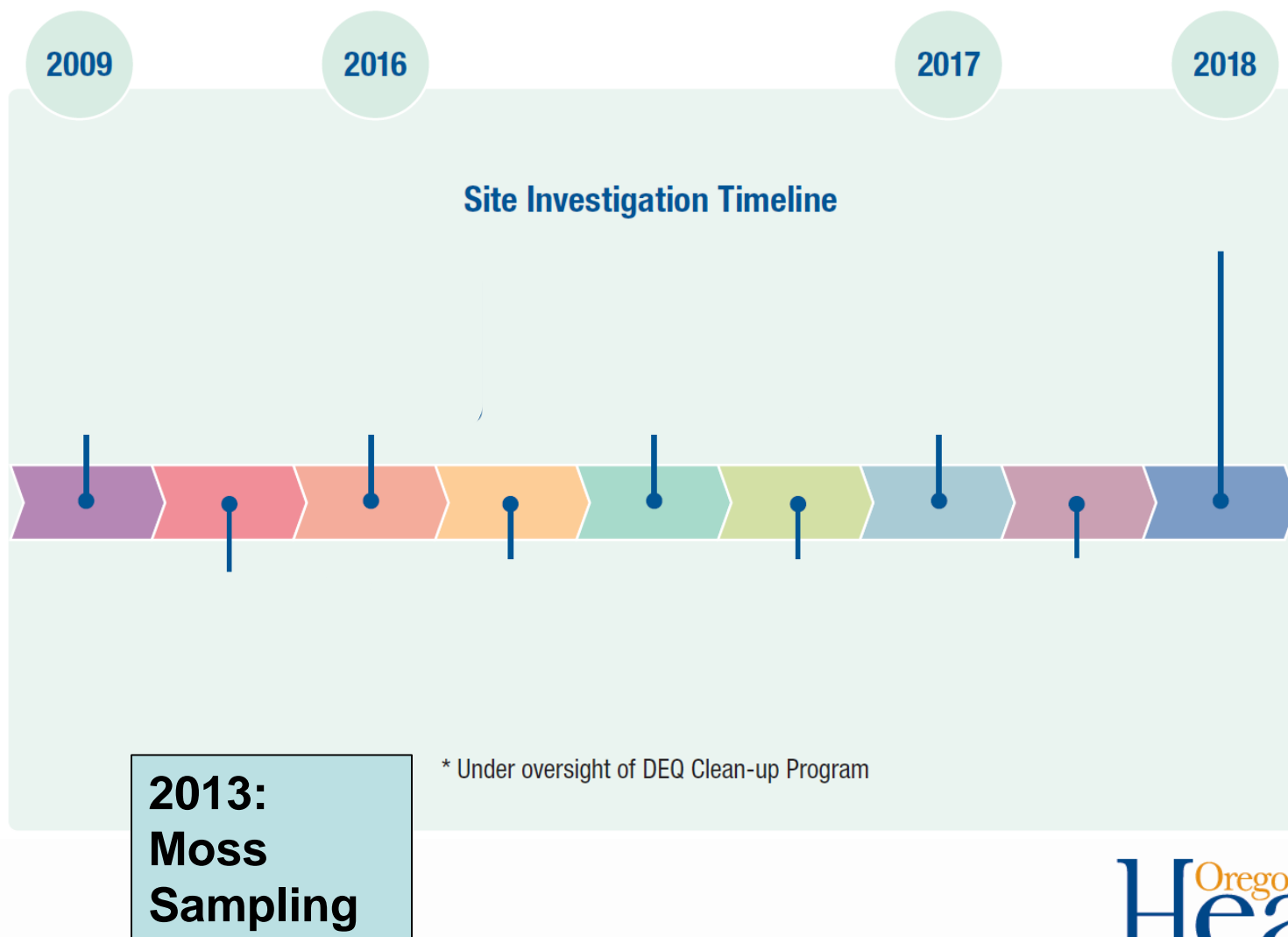


Monitor
Permit
Regulate

What is a Public Health Assessment?



TIMELINE OF EVENTS



Risk Calculations

Exposure

Frequency, duration and amount of exposure to each chemical

Hazard

Toxicity information on each chemical

Health Risk

- Cancer Risk
- Non-cancer Risk

Public comments

- We heard from many people and groups
- All comments were captured in an appendix, and we responded to every question
- Technical consultant reviewed document
- We heard from people requesting more data
 - More data were available

New data

- DEQ monitoring: 45th and Harney
 - Provided a longer period that more likely reflect actual conditions
 - Levels of risk did not change significantly
 - Through December 2017
 - Data consistent with earlier DEQ data

New data (continued)

- PCC Monitoring
 - Collected by a environmental consulting firm
 - Monitor placed in parking area south of Large Parts Campus
 - Collected air samples daily, October 2017-October 2018
 - Data consistent with DEQ data

New data (continued)

- Portland State University STAR Lab
 - A research project measured metals in residential areas near Large Parts Campus
 - April through June 2017
 - We reviewed the findings of their report, and included it in the PHA
 - “Levels of metals were not elevated during the sampling period”
 - “This level of arsenic [is consistent] throughout the Portland area”

Conclusions

- No impact to health
 - Air (using additional data)
 - Soil, surface water, sediment, and biota (crayfish)
- Insufficient information about historical air emissions prior to installation of air control devices

Cleaner Air Oregon (CAO)

- The Public Health Assessment and CAO were independent efforts that have many similarities and were undertaken at different times.
 - Prior to CAO, the Public Health Assessment process was the best tool to protect health
 - Both are site-specific to protect nearby populations
- In October 2019, PCC's Large Parts Campus was required to participate in the CAO process. They will be required to model how their emissions will affect areas around their facility.

Questions?

Todd Hudson, OHA Toxicologist

Email: todd.hudson@state.or.us

Statewide Air Toxics Summary Report



State of Oregon
Department of Environmental Quality

What we did

- 6 locations (including SE 45th & Harney) measuring ambient air
- 60 samples taken (1 every six days for a year)
- Tested for 109 air toxics
- Compared annual average to benchmarks (health-based goals) and typical city levels

General Findings

- Results showed that no air toxics were found at levels that would pose an immediate health risk
- 6 air toxics were above health-based goals at all locations (urban and rural
- Ethylbenzene above health-based goals in Portland Metro Area (likely due to more cars)

SE 45th & Harney Findings

Pollutant	SE 45 th & Harney (xABC)	Average City (xABC)
Arsenic	3.4	3.7
Benzene	3.8	5.2
Carbon tetrachloride	2.5	2.9
Ethylbenzene	1.8	6.2
Naphthalene	1.6	1.9
Acetaldehyde	3.4	3.7
Formaldehyde	9.9	15.6

What's next

- DEQ will use this data to inform strategies for reducing air toxics.
- DEQ will continue collecting data around the state, moving the temporary monitors to new locations

Questions?



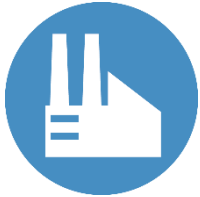
State of Oregon
Department of Environmental Quality

Cleaner Air Oregon



State of Oregon
Department of Environmental Quality

Cleaner Air Oregon – How it Works



Report air toxics

Existing facilities report use of over 600 pollutants to state regulators



Assess risk

Facilities calculate potential air toxics health risks to people who live, work, and go to school nearby



Regulate to reduce risk

Facilities would have to act if the levels of air toxics they emit exceed health risk action levels (RALs)

Program Scope

- Applies to “new” and “existing” facilities with AQ permits.
- Cumulative, facility-wide risk assessment
- Health risks evaluated:
 - Cancer (annual)
 - Noncancer – short-term (24 hour) and long-term (annual)
- 4 “tiers” of risk assessments (simple to complex)
- DEQ went through a prioritization process for existing facilities

CAO Prioritization Process

Emissions Data:

- 2017 reported emissions on >630 air toxics
 - DEQ reviewed to ensure best available data

Prioritization Score:

- Quantitative:
 - DEQ performed risk screening from reported emissions
- Demographic:
 - DEQ included population information within 1 km (0.62 mile) radius
- Qualitative:
 - DEQ considered data quality, controls, distance to nearest homes

CAO Risk Assessment Basics

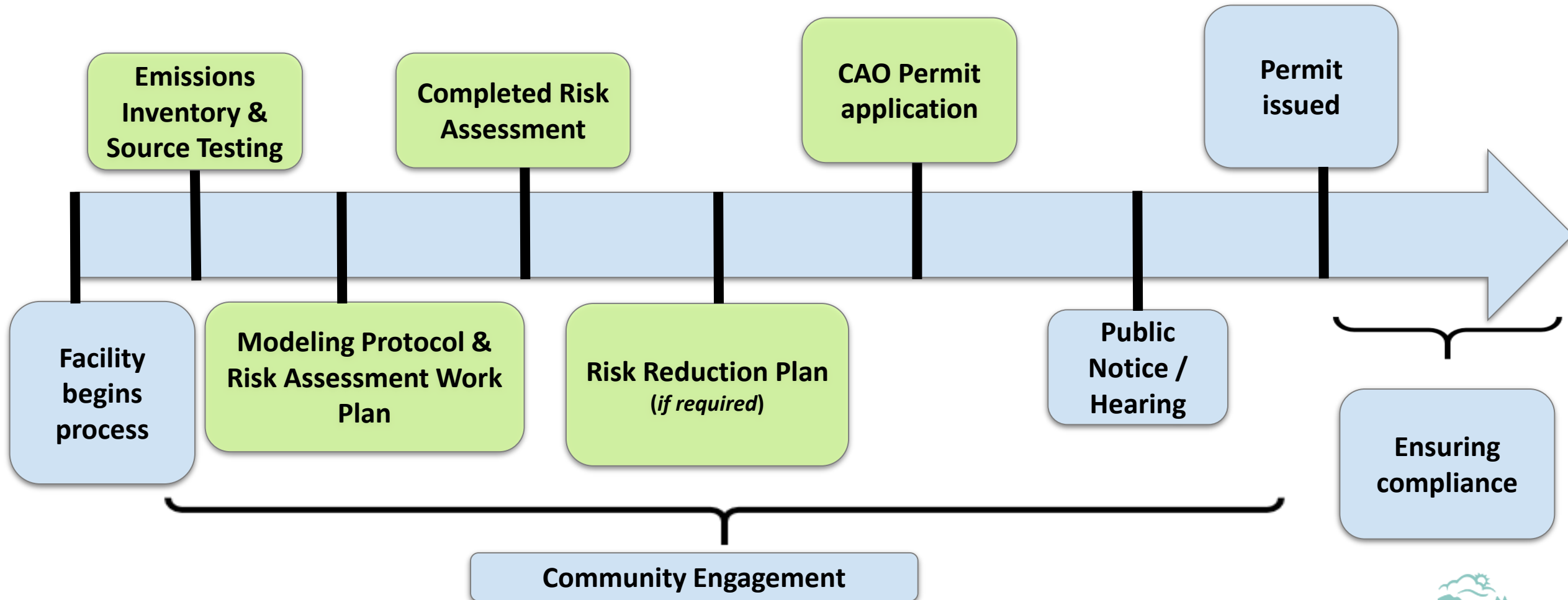
$$\frac{\text{Air Concentration}}{\text{Health Protective Level}} = \text{Risk}$$

How much pollution is there?

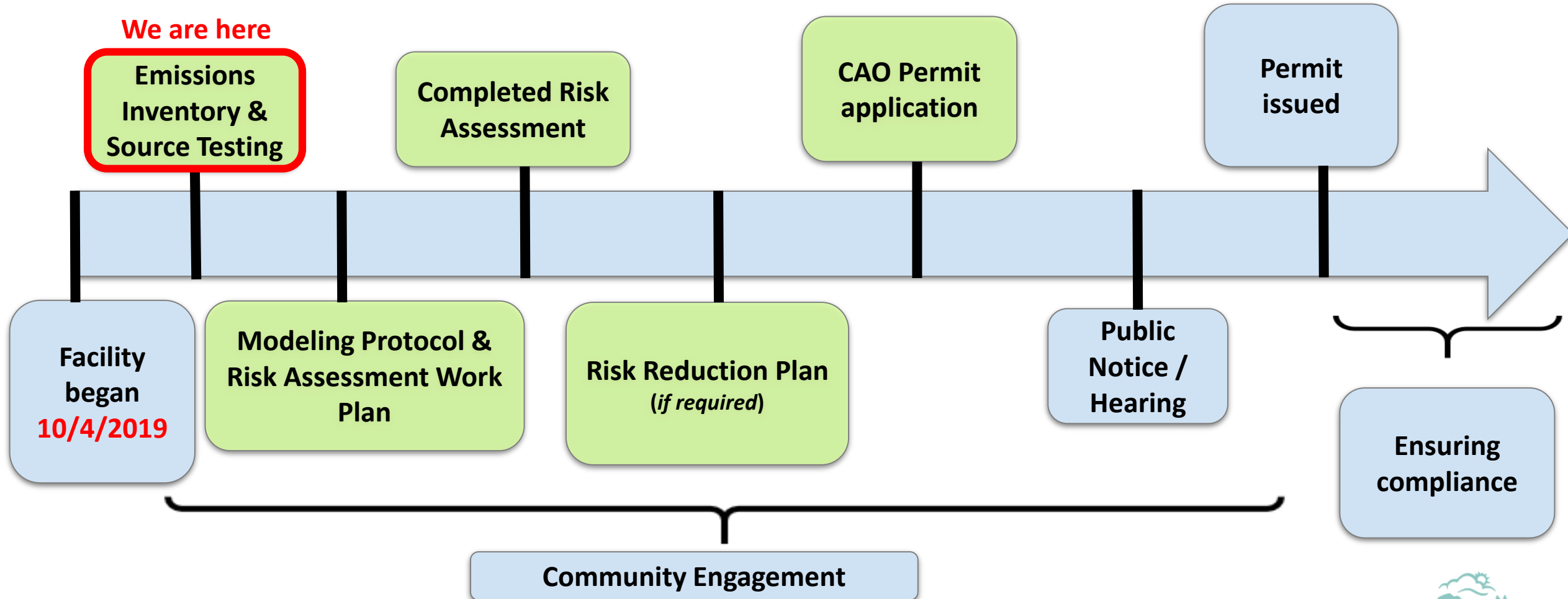
How bad is the pollution?

Are reductions required?

CAO Permitting Process



Precision Castparts CAO Status




Precision Castparts Emissions Inventory

- What was submitted
 - Over 160 tables of emissions calculations
- What DEQ is requesting
 - Detailed facility diagram and process flow diagrams
 - Clarification on changes in production
 - 2018 vs. Potential to Emit
 - Supporting data (Safety Data Sheets, performance data, engineering testing, waste manifests, etc.)
 - Supporting calculations (engineering estimates, etc.)
 - Reference materials

Cleaner Air Oregon



Background and Overview

- [Cleaner Air Oregon fact sheets](#)
- [Cleaner Air Oregon Rules](#)
- [CAO Rules Tables](#) 
- [CAO Regulatory Overhaul](#)
- [Ask a Question](#)



CAO Hazard Index Rulemaking

- [CAO Hazard Index Rulemaking 2019](#)
- [Overview of Proposed Hazard Index Rules](#) 
- [Infographic of Hazard Index Rulemaking](#) 
- [How Do Agencies Determine What Is A Health Risk?](#) 
- [Protecting Against Noncancer Health Risk](#) 



For Community

- [Facilities Conducting CAO Health Risk Assessments](#)
- [How Risk Action Levels Work](#) 
- [Plan for Community Engagement Protocols](#) 
- [Map of DEQ Permitted Facilities](#)
- [Sign up for Updates](#)



For Facilities

- [CAO Permitting Requirements](#)
- [Risk Assessment Resources](#)
- [Facility Call-in Prioritization Report](#) 
- [CAO Call-in Prioritization Details](#)
- [Emissions Inventory](#)

Questions?



State of Oregon
Department of Environmental Quality

Air Quality Permit Status



State of Oregon
Department of Environmental Quality

Air Quality Permit

- **What does an Air Quality Permit Do?**
 - Emission Limits
 - Operational Limits/Requirements
 - Monitoring Requirements
 - Recordkeeping Requirements
 - Reporting Requirements
- **Contract between State and the Source**

Air Quality Permit Requirements

- **Emissions limits**

- **Annual Plant Site Emission Limits for:**

- Particulate Matter
 - Nitrogen Oxides
 - Carbon Monoxide
 - Sulfur Oxides
 - Volatile Organic Compounds
 - Single and Combined Hazardous Air Pollutants

Air Quality Permit Requirements

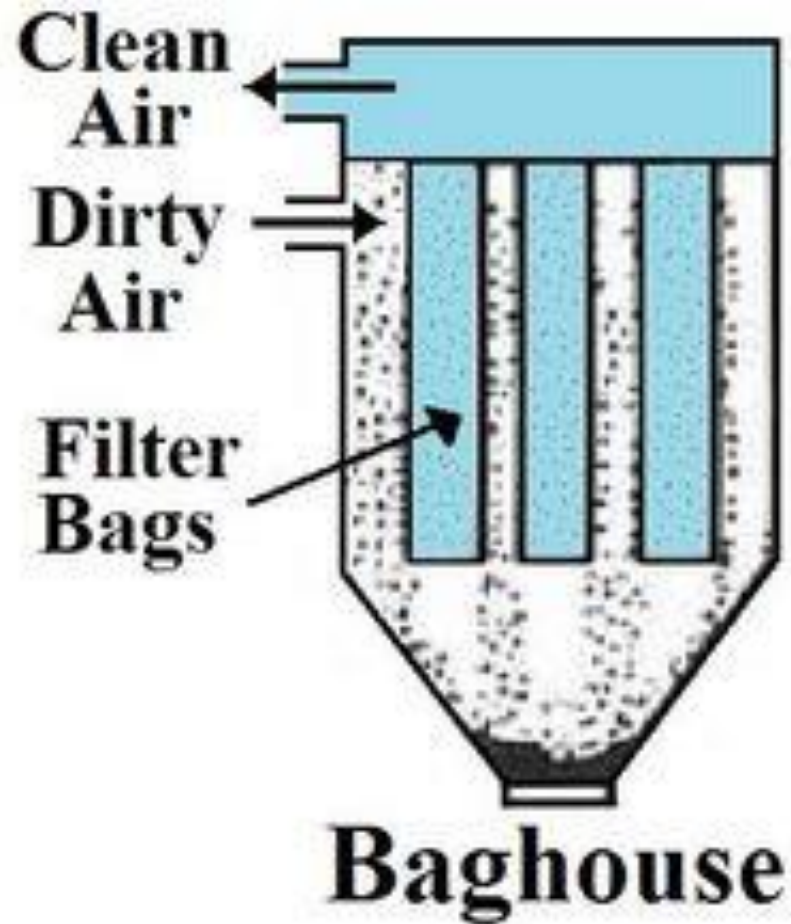
- **Plant Site Emissions limits**

Pollutant	Limit	Units
Particulate Matter	83	tons per year
PM ₁₀	54	tons per year
Sulfur Dioxide	39	tons per year
Nitrogen Oxides	58	tons per year
Carbon Monoxide	99	tons per year
Volatile Organic Compounds	99	tons per year
Single Hazardous Air Pollutant	9	tons per year
Combined Hazardous Air Pollutants	24	tons per year

Air Quality Permit Requirements

- **Operational/Monitoring Requirements**
 - **Baghouse Operation (filter)**
 - 99% removal efficiency
 - Operating differential pressure
 - **Thermal Oxidizer (burn up hazardous air pollutants)**
 - Minimum operating temperature
 - 90% combined capture and control from investment casting

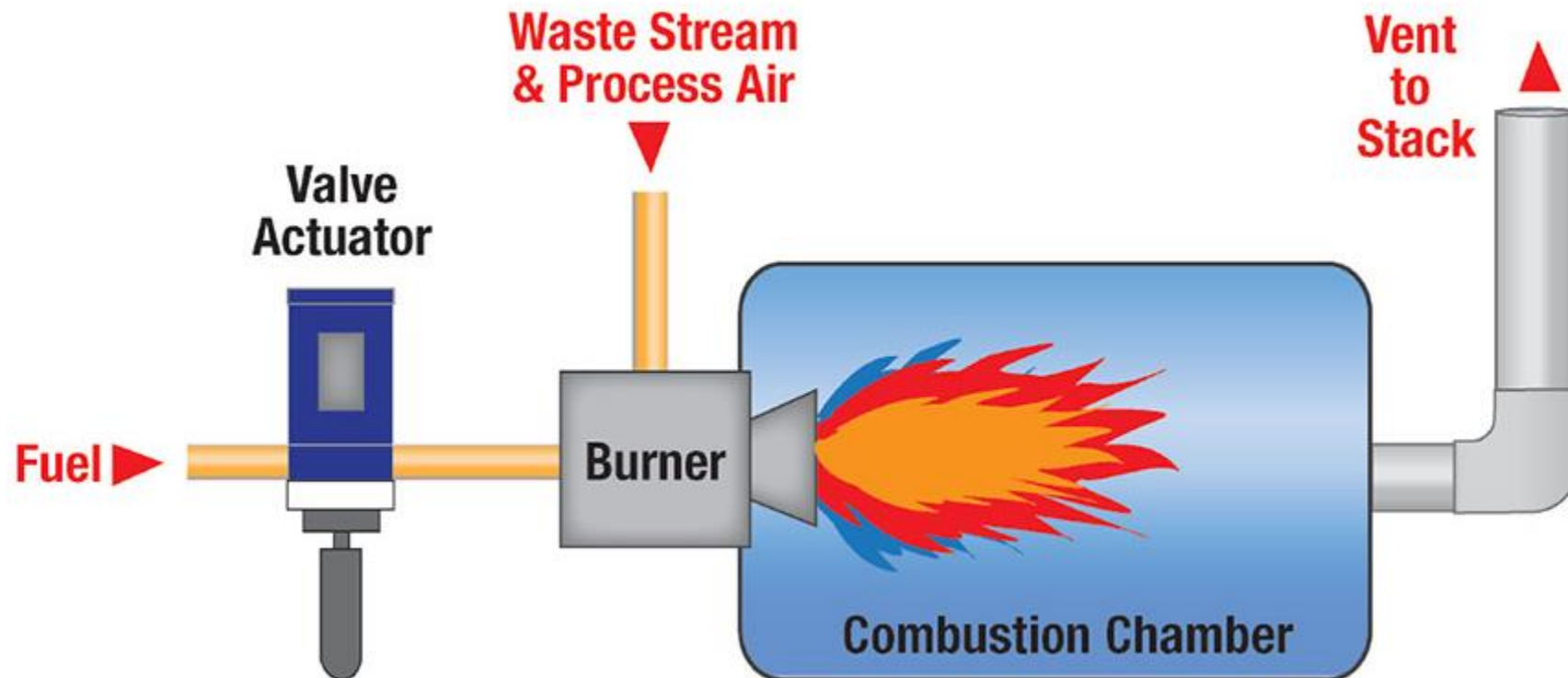
Air Emissions Control - Baghouse



- Controls Particulate Matter (Metals)
- PCC must monitor operating differential pressure
 - Too high: filters may be plugged
 - Too low: bag may be torn

Air Emissions Control – Thermal Oxidizer

- Controls Volatile Organic Compounds (e.g., Isopropyl Alcohol)
- PCC must monitor temperature



Air Quality Permit Requirements

- **Monitoring Requirements**
 - **Source testing:**
 - Determine compliance with % removal efficiency limits
 - Verify emission factors used for PSEL compliance
 - Testing is done by a 3rd party
 - Renewal air quality permit will require source testing

Air Quality Permit Requirements

- **Recordkeeping Requirements**
 - Monitoring performed
 - Control equipment design specs
 - Production records
 - PSEL compliance
- **Reporting Requirements**
 - Annual reporting
 - Excess emission reporting
 - Notice of Intent to Construct

Air Inspections

- **September 9, 2010**
- **March 5, 2015**
- **September 21, 2017**
- **July 18, 2018**
- **September 26, 2018**
- **April 25, 2019**
- **December 17, 2019**
- **No Violations Observed**



Air Quality Permit

- Working on permit renewal
 - ID all units
 - Incorporate new controls
 - Determine appropriate monitoring and testing
- Coordination with Cleaner Air Oregon
 - Testing
 - Public comment period

Questions?



State of Oregon
Department of Environmental Quality

Next Steps

DEQ will continue to reach out and provide updates

Thank you!

OHA Public Health Assessment: Todd Hudson | (971) 673-0024

Statewide Air Toxics Summary: Scott Peerman | (503) 693-5782

Air Quality Permit: David Graiver | (503) 229-5690

Cleaner Air Oregon: Kenzie Billings | (503) 229-5247

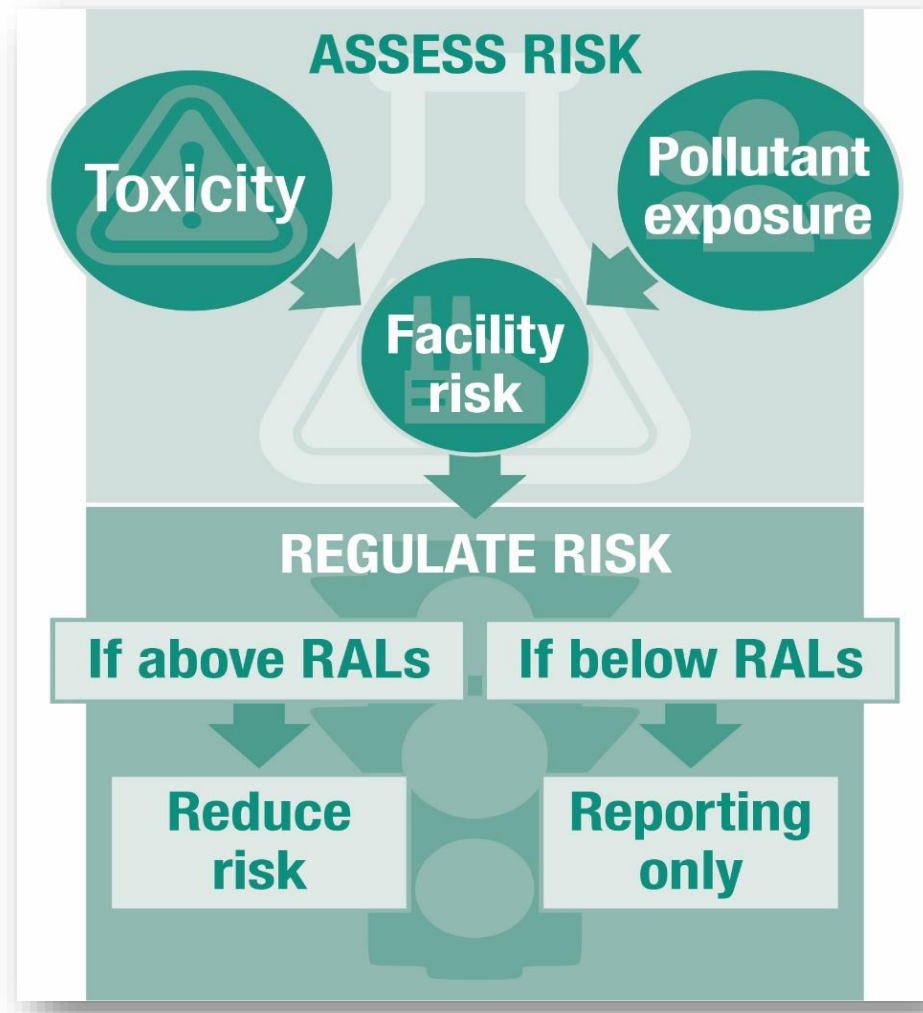


State of Oregon
Department of Environmental Quality

Air Emissions Control - Baghouse

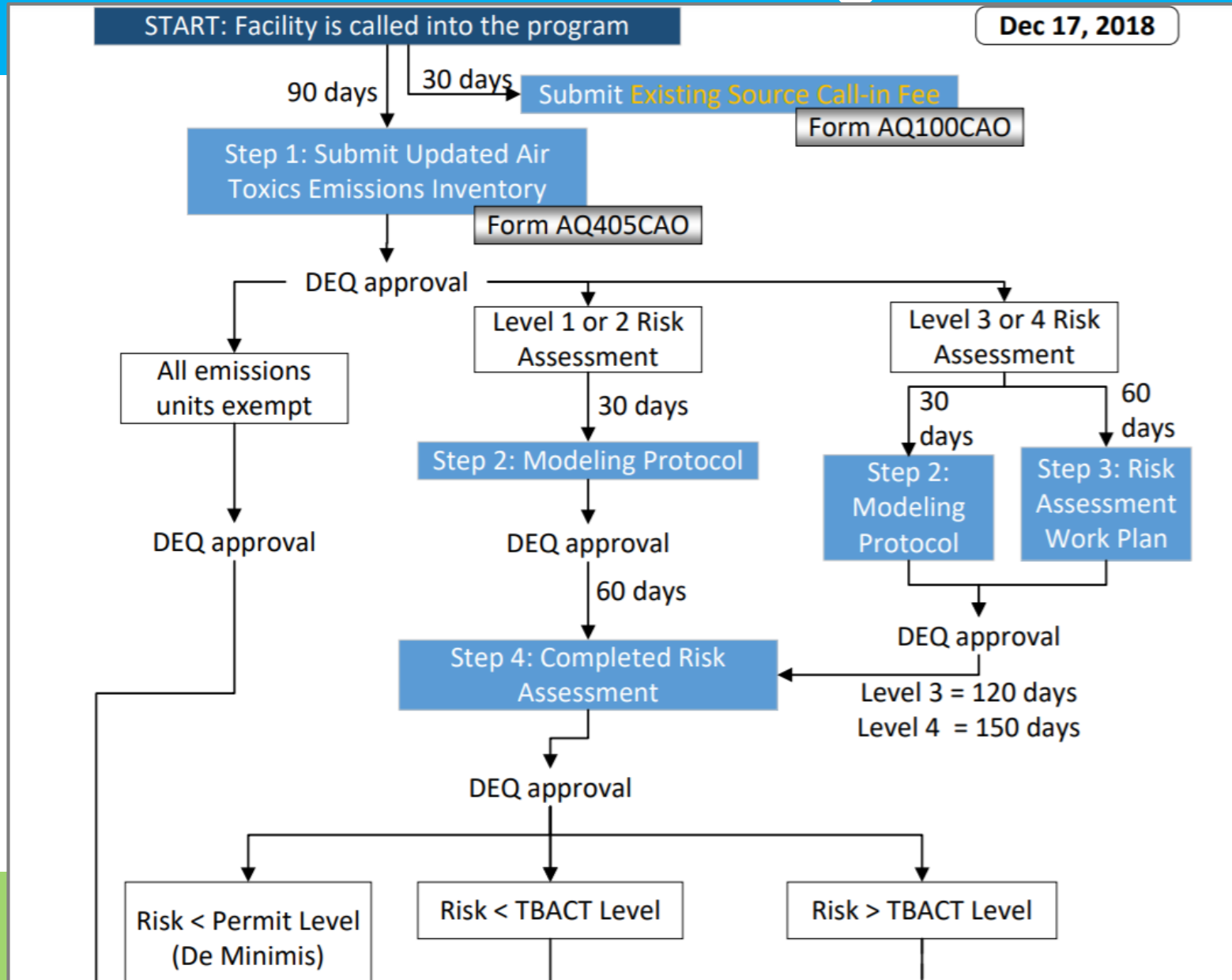
- PCC added HEPA filtration to baghouses
 - High Efficiency Particulate Air
 - Remove 99.97% of airborne particles ≥ 0.3 microns
 - 0.3 microns $\approx 0.000\ 012$ inches
- Recent modifications include ULPA filtration
 - Ultra Low Particulate Air
 - Remove 99.999% of airborne particles ≥ 0.1 microns
 - 0.1 microns $\approx 0.000\ 004$ inches

Risk Action Levels

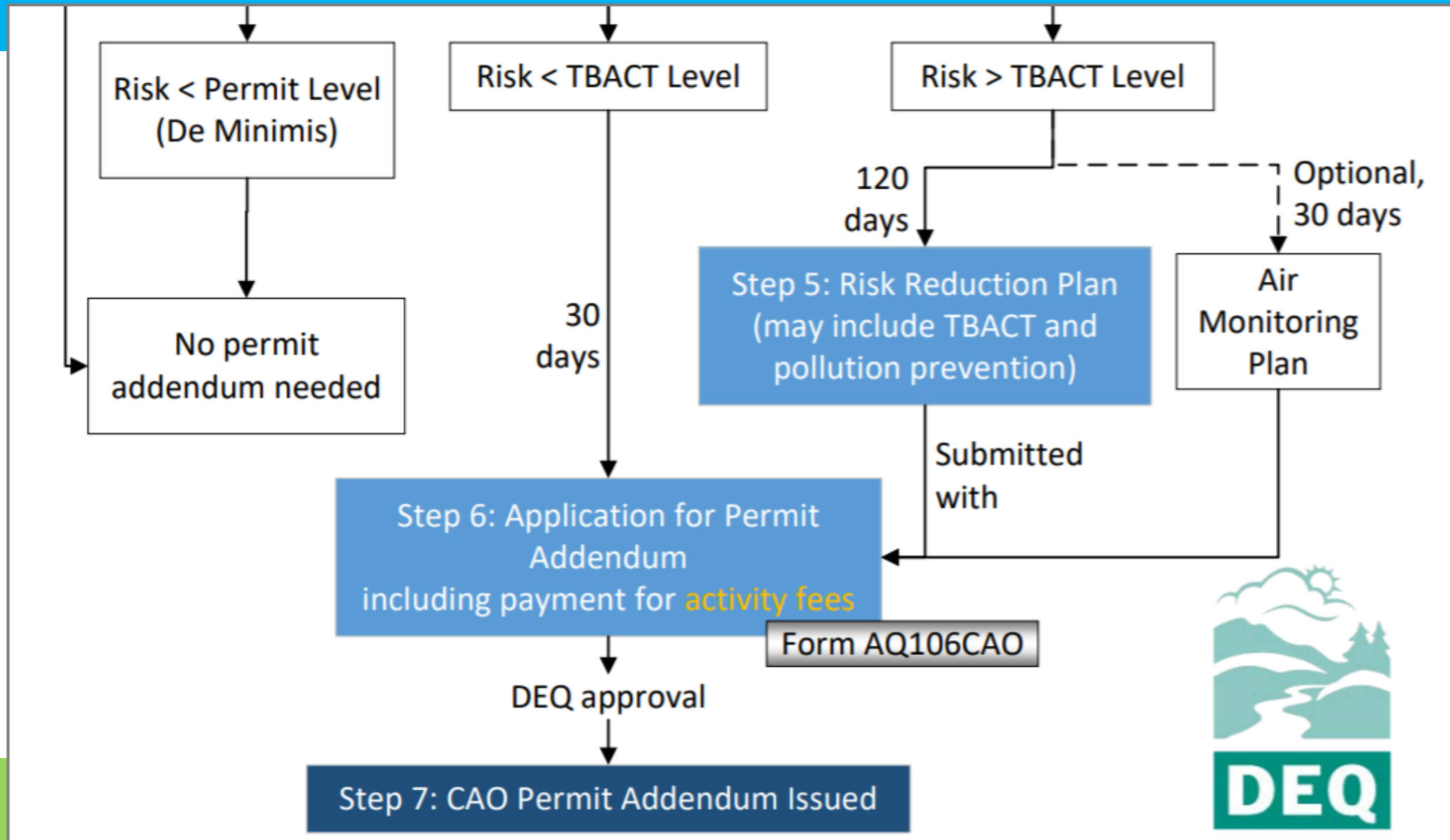


- Establish health protective risk limits
- Reported differently for cancer and noncancer health effects
 - Excess cancer per million
 - Hazard index
- Different levels for new and existing facilities

Timelines for existing facilities

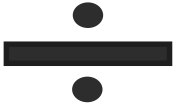


Timelines for existing facilities



CAO Risk Assessment Basics

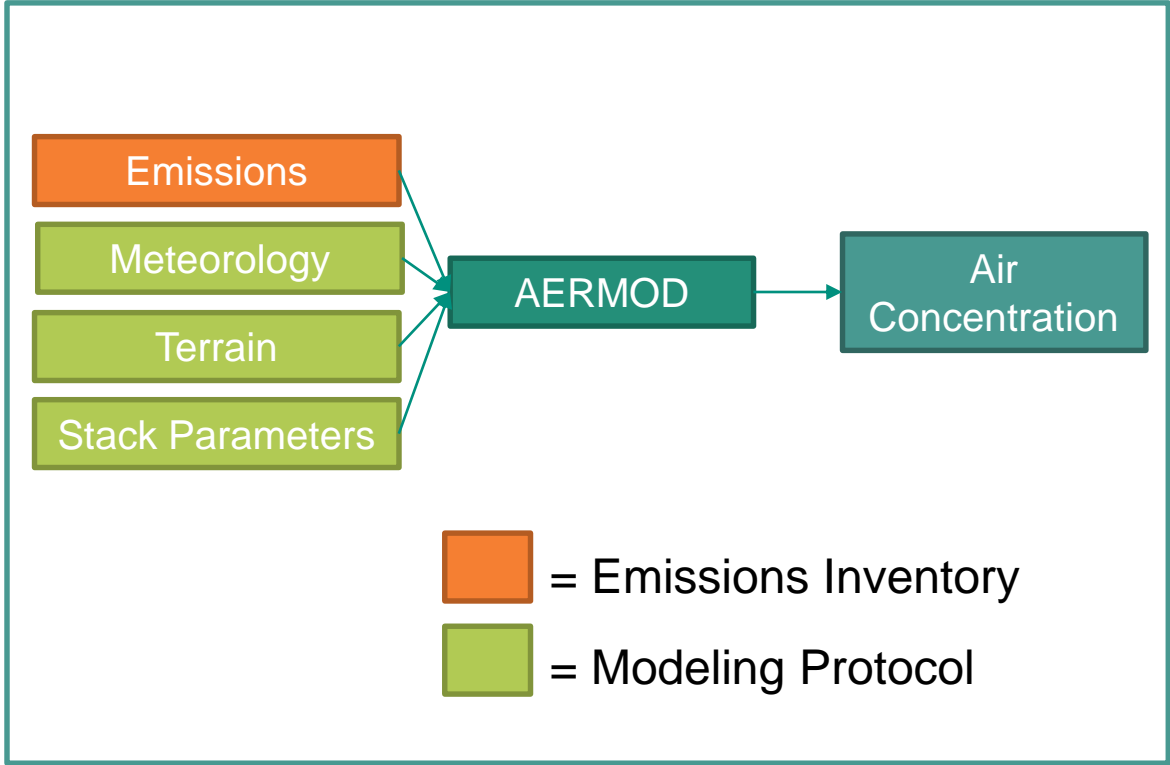
Air Concentration




Risk-Based Concentration



Risk



 **OAR 340-245-8040**
Table 4 - Risk-Based Concentrations

			Residential Chronic		Non-Residential Chronic				Acute
			Cancer RBC ^a	Non-cancer RBC ^a	Child Cancer RBC ^a	Child Non-cancer RBC ^a	Worker Cancer RBC ^a	Worker Non-cancer RBC ^a	Non-cancer RBC ^a
CAS# ^b	Chemical	Notes	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)
75-07-0	Acetaldehyde		0.45	140	12	620	5.5	620	470
60-35-5	Acetamide		0.050		1.3		0.60		
67-64-1	Acetone			31,000		140,000		140,000	62,000
75-05-8	Acetonitrile			60		260		260	
107-02-8	Acrolein			0.35		1.5		1.5	6.9
79-06-1	Acrylamide	g	0.0059	6.0	0.062	26	0.12	26	
79-10-7	Acrylic acid			1.0		4.4		4.4	6,000
107-13-1	Acrylonitrile		0.015	5.0	0.38	22	0.18	22	220
309-00-2	Aldrin		0.00020		0.0053		0.0024		