Working Group Meeting #1

June 1, 2023

10:00 AM

PROPOSED RULE 1445 – CONTROL OF TOXIC EMISSIONS FROM LASER AND PLASMA ARC CUTTING

JOIN ZOOM MEETING

HTTPS: https://scaqmd.zoom.us/j/91059006846

ZOOM WEBINAR ID: 910 5900 6846

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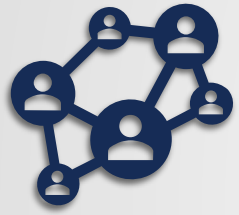
IF THE ZOOM LINK DOES NOT WORK, PLEASE CUT AND PASTE IT INTO YOUR BROWSER

MEETING INFORMATION



South Coast AQMD acknowledges the challenges to businesses and stakeholders due to COVID-19

To ensure safe social distancing, Working Group meetings initially will be held via Zoom or a call-in option is also available

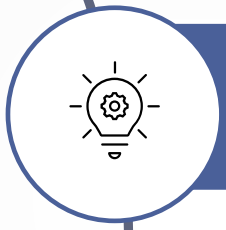
Although it is a different format, staff will ensure stakeholders will have an ability to participate

As we move through the rulemaking process, staff will take the time to listen to all stakeholder comments

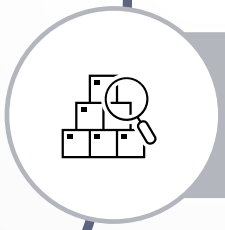
In addition to Working Group meetings, staff is available for individual meetings

AGENDA

Introduction



Rule Development Process



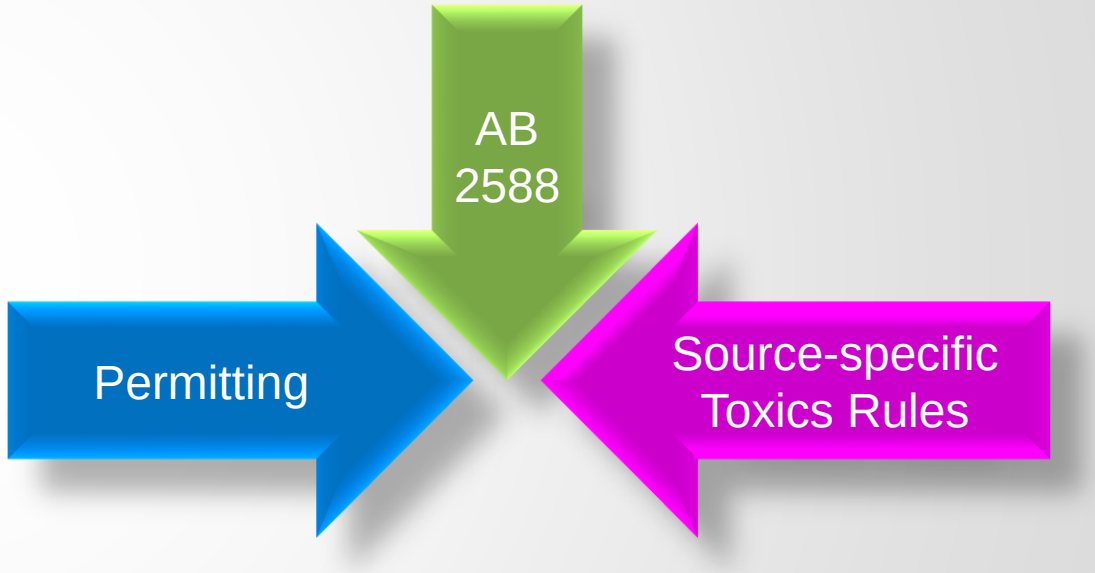
Potential Universe

Next Steps

INTRODUCTION

AIR TOXICS CONTROL

- South Coast AQMD has a comprehensive regulatory program to reduce toxic air contaminants and other non-criteria pollutants (Regulation XIV)
  - Rule 1401 – permitting for new, modified or relocated sources
  - Rule 1402 - Implements the Air Toxics Hot Spots (AB 2588) program for existing facilities
  - Source-specific toxics rules regulating specific equipment or industry categories (e.g., Rule 1469 for chrome plating)
- Proposed Rule 1445 - Control of Toxic Emissions from Laser and Plasma Arc Cutting (PR 1445) will be a source-specific toxic rule



LASER CUTTING

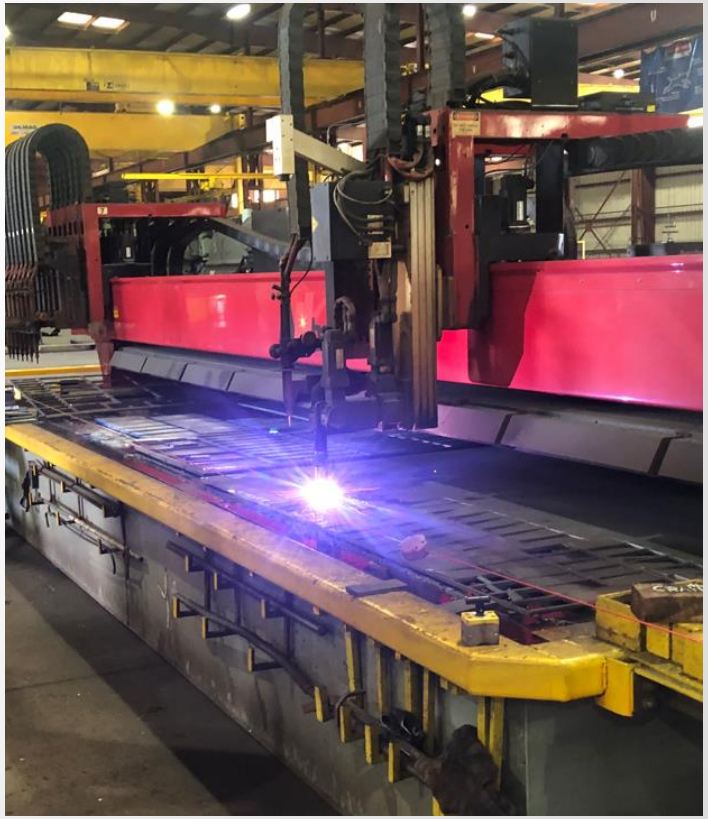
Laser Cutting

- Laser cutting directs a high powered laser beam to cut metals and other materials
- Can cut metals such as stainless steel, carbon steel, mild steel, aluminum, nickel, copper, titanium, alloy steel
- Typically used to cut metal ranging in thickness from 0.2 mm to 40 mm

PLASMA ARC CUTTING

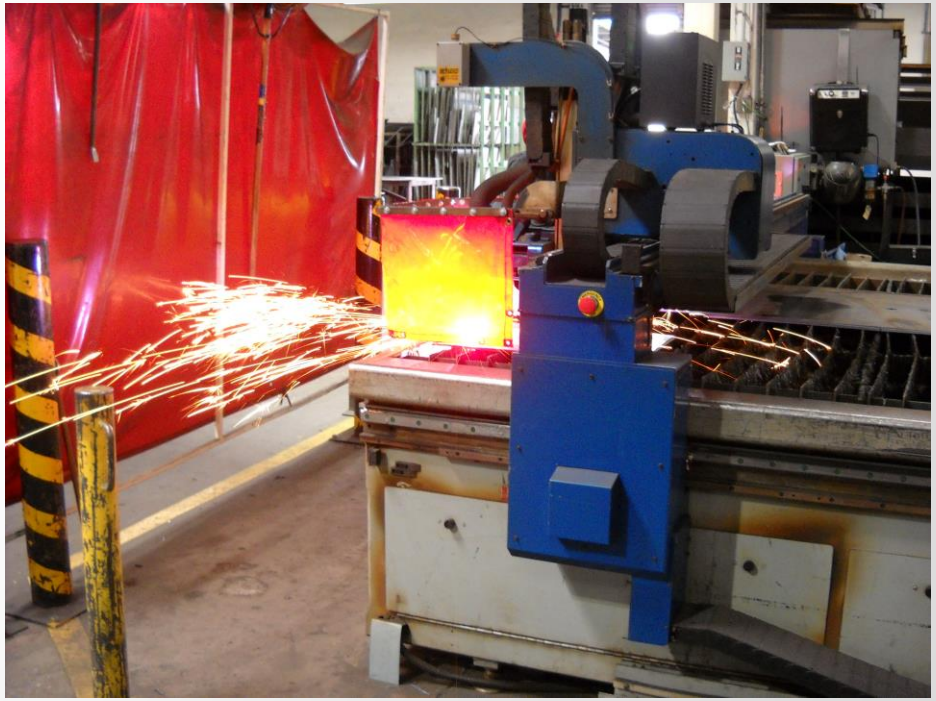
Plasma Arc Cutting

- Plasma arc cutting is a thermal-based fabrication process which utilizes a constricted, transferred plasma arc to cut through a wide range of metals
  - Including stainless steel, mild and carbon steel (structural steel), alloy steel, aluminum, and copper.
- Typically used to cut metal ranging in thickness from 0.5 mm to 180 mm



EMISSION SOURCE

- Laser and plasma arc cutting process creates fumes and smoke from vaporizing the molten material
  - Fumes generated contain carcinogens such as nickel, lead, manganese and other toxic metal particulates
- Heating the metal to the temperatures involved in these cutting processes can form oxidized compounds
  - Elemental chrome in stainless steel could be oxidized into hexavalent chromium



TOXIC AIR CONTAMINANTS

- Hexavalent chromium is a toxic air contaminant that is a potent carcinogen
  - Long-term inhalation of hexavalent chromium can increase the risk of developing lung and nasal cancers
- Other toxic metals, such as nickel, also have adverse health affects

Health Effects of Hexavalent Chromium

A fact sheet by
CalEPA's Office of Environmental Health Hazard Assessment
November 9, 2016

OEHHA

What is hexavalent chromium?

Hexavalent chromium, also known as chromium 6 (Cr6), is the toxic form of the metal chromium. While some less toxic forms of chromium occur naturally in the environment (soil, rocks, dust, plants, and animals), Cr6 is mainly produced by industrial processes.

Cr6 is used in:

- Electroplating
- Stainless steel production and welding
- Pigments and dyes
- Surface coatings
- Leather tanning

How are people exposed to Cr6?

Humans are exposed to Cr6 by:

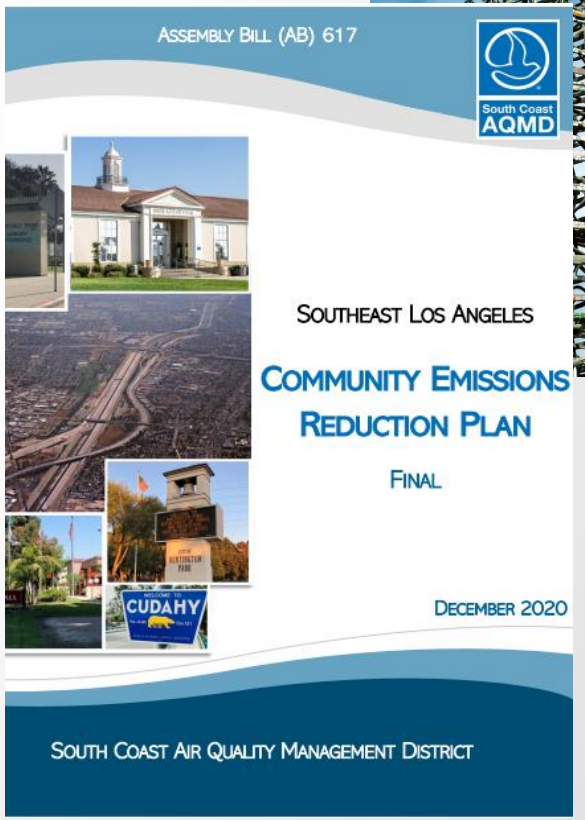
- Inhalation of aerosols or particles
- Ingestion (eating and drinking)
- Skin contact

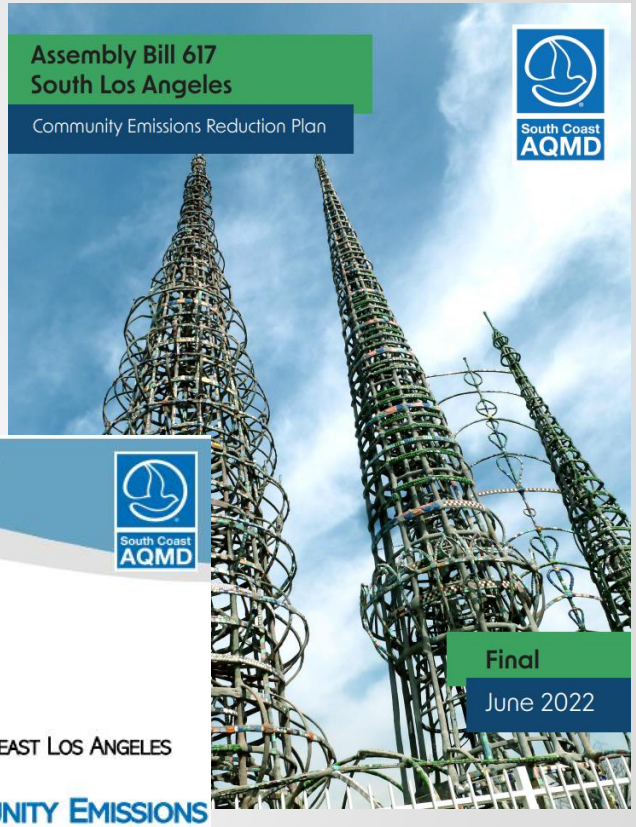
Cr6 may occur as aerosols or particulate matter in air. These can be inhaled directly or ingested after they land on soil or water. Contact with soil containing Cr6 may transfer to the hands and then to the mouth. Young children put their hands in their mouths more frequently than adults. For this reason, young children are more likely to consume contaminated soil. Children are also more active outdoors and they may have more contact with contaminated soil.

One form of Cr6, chromic acid, is created as a mist during electroplating. Workers and bystanders may inhale the mist. Chromic acid can also be absorbed through the skin. In addition, chromic acid deposited on the skin can be ingested through hand-to-mouth activities, such as eating.

COMMUNITY CONCERNS

- Under Assembly Bill 617, South Coast AQMD has been working with stakeholders to develop Community Emission Reduction Plans (CERPs) to identify air pollution sources and control strategies within designated communities
- Southeast Los Angeles and South Los Angeles communities expressed concerns with hexavalent chromium and other metal toxic emissions from metal processing facilities (includes laser and plasma arc cutting activities)
- The CERPs included Actions to address community concerns





AIR QUALITY MANAGEMENT PLAN (AQMP)

- The AQMP includes control strategies to reduce air pollution and protect public health
- Chapter 9 (2016 AQMP) includes Air Toxics Control Strategy
  - Control measure TXM-05: Toxic Metal Particulate Emissions from Laser and Plasma Arc Cutting
  - Objective: Control toxic metal particulates from laser and plasma arc cutting operations

RULE DEVELOPMENT PROCESS

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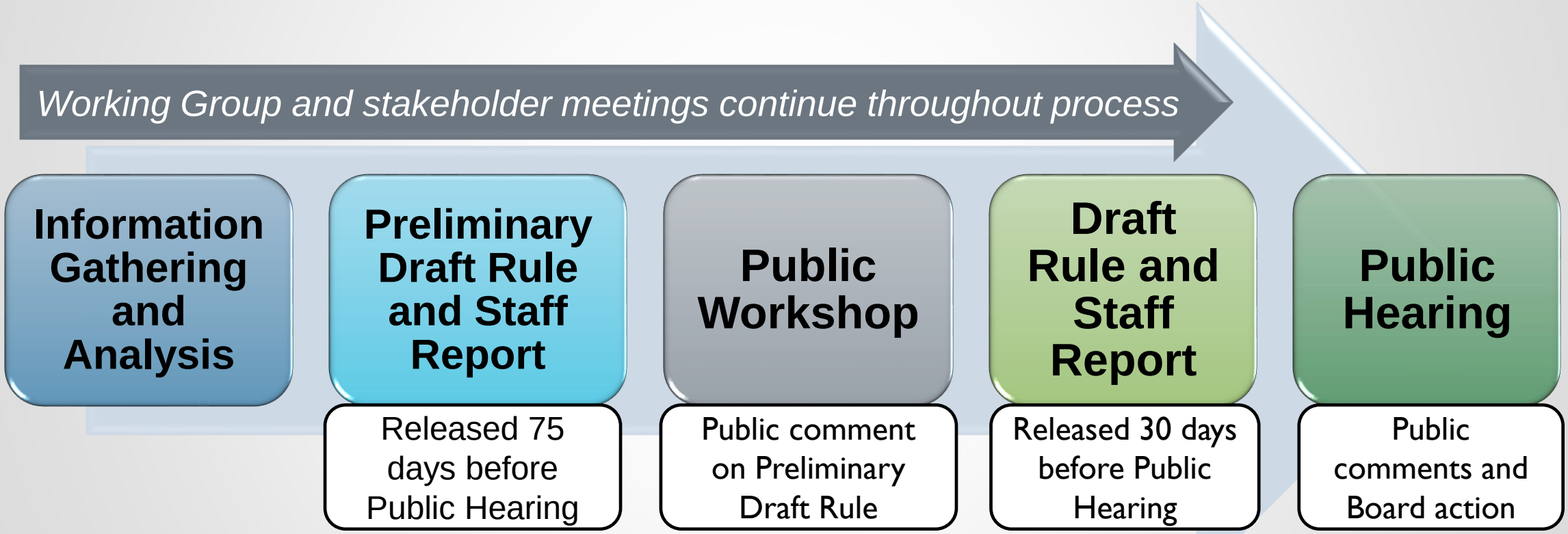
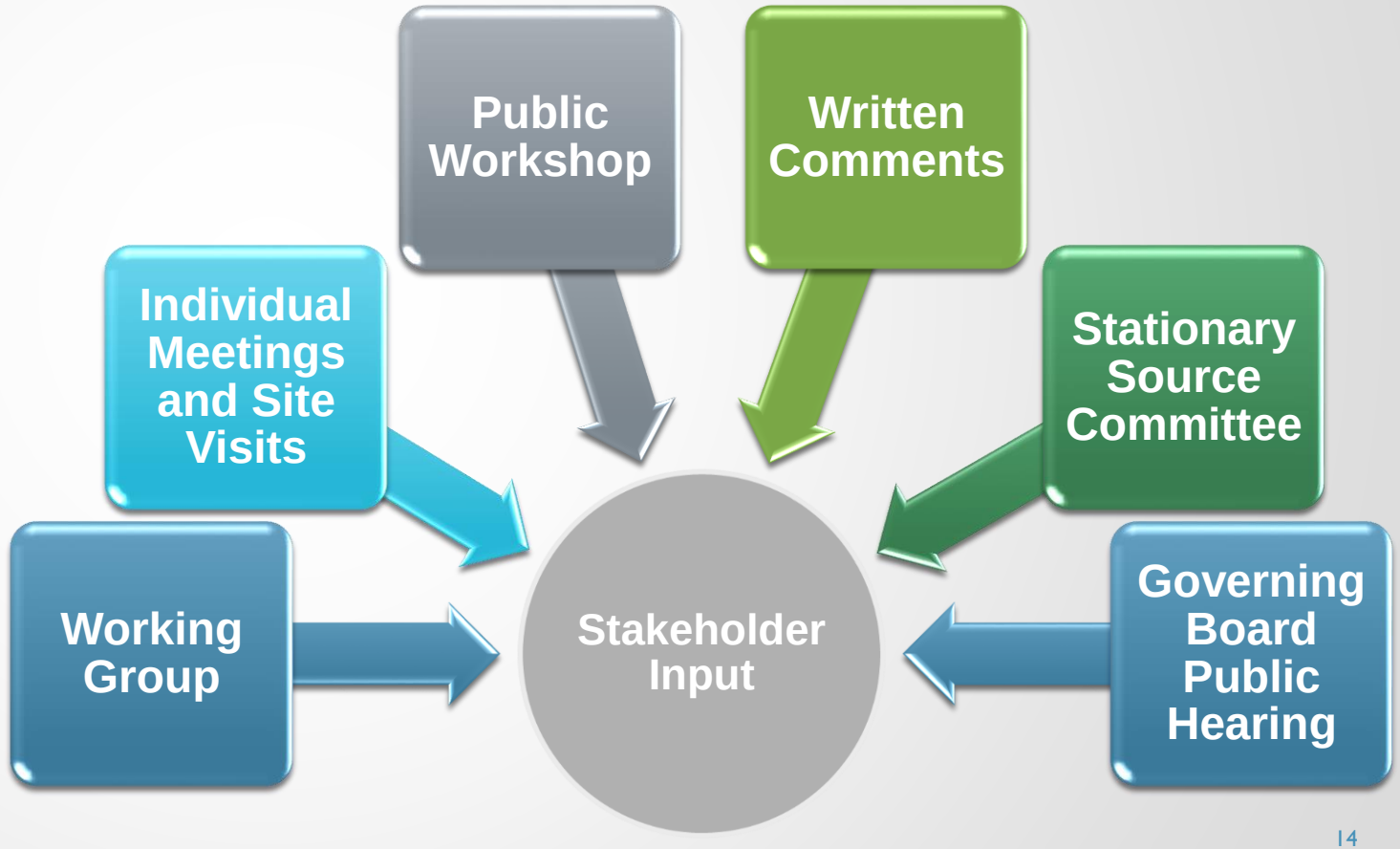


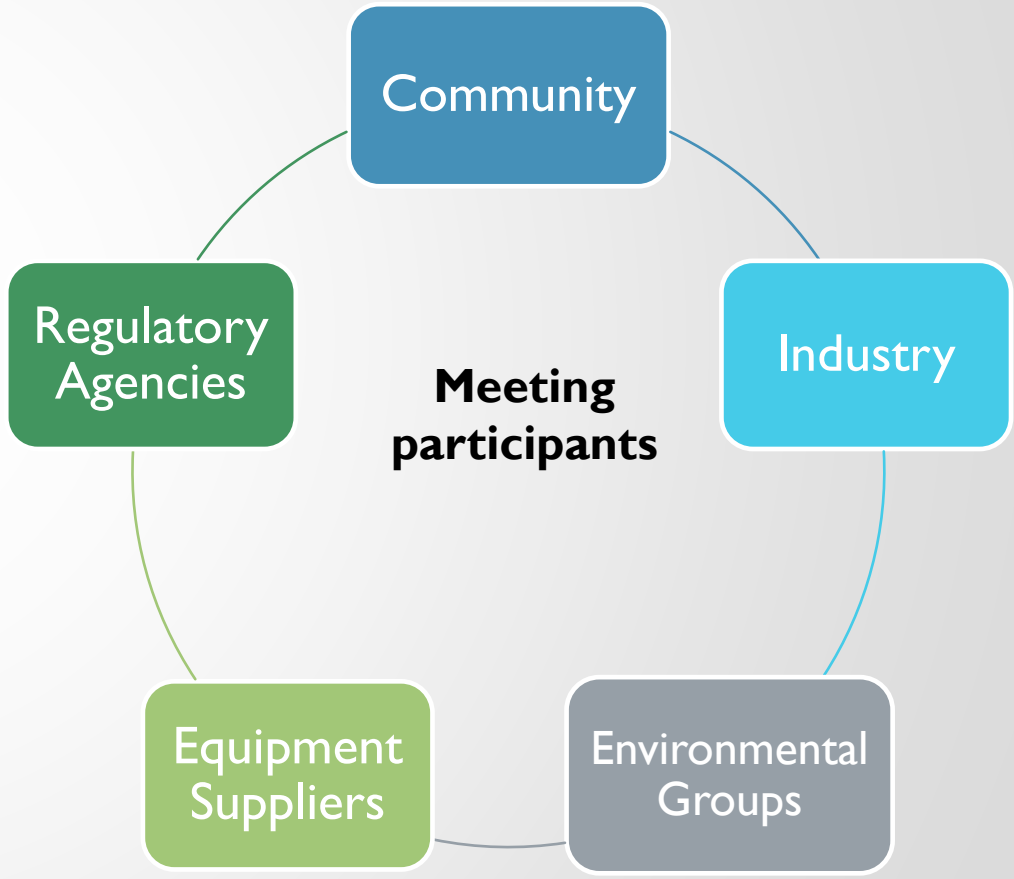
STAKEHOLDER INPUT

- Stakeholders can provide input throughout the rulemaking process
- Early input is strongly encouraged
  - Provides staff the opportunity to try to resolve issues
- Variety of ways for stakeholders to provide input



WORKING GROUP MEETINGS

- Working Group Meetings are a key component of rule development process
  - Email notices are sent out before each Working Group Meeting
- Objectives of Working Group Meetings:
  - Build consensus and work through issues
  - Exchange information and understanding of key issues
  - Collaboration and create a dialogue with stakeholders

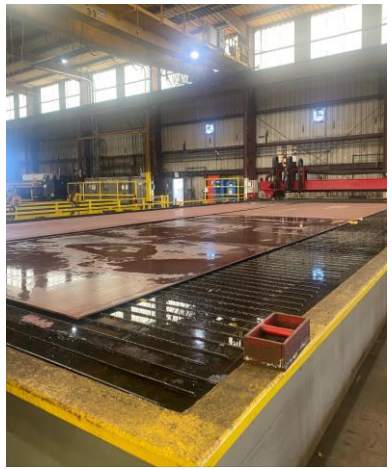


POTENTIAL UNIVERSE

DATA REVIEW

Identify applicable equipment by reviewing

1. Permitting applications for equipment with active permits and associated control devices
2. Inspection reports to compile information not included in permitting database



Potentially Affected Facilities

Equipment Description	Permits*	Facilities
Laser Cutter	142	80
Plasma Arc Cutter	180	104
Laser Cutter & Plasma Arc Cutter		9

** Including active permits for equipment cutting non-metal materials*

Main Industry Categories

Equipment Description	NAICS Code	Sector	Final Level
Laser Cutter	332322	Manufacturing	Sheet Metal Manufacturing
	336412	Manufacturing	Aircraft Engine and Engine Parts Manufacturing
	423510	Wholesale Trade	Metal Service Centers and Other Metal Merchant Wholesalers
Plasma Arc Cutter	221320	Utilities	Sewage Treatment facilities
	423930	Wholesale Trade	Recyclable Materials Merchant Wholesalers
	423510	Wholesale Trade	Metal Service Centers and Other Metal Merchant Wholesalers

SITE VISITS

Overall objective is to identify:

- Types of metal alloys processed
- Existing pollution controls
- Best management practices
- Housekeeping
- Maintenance schedule and cost

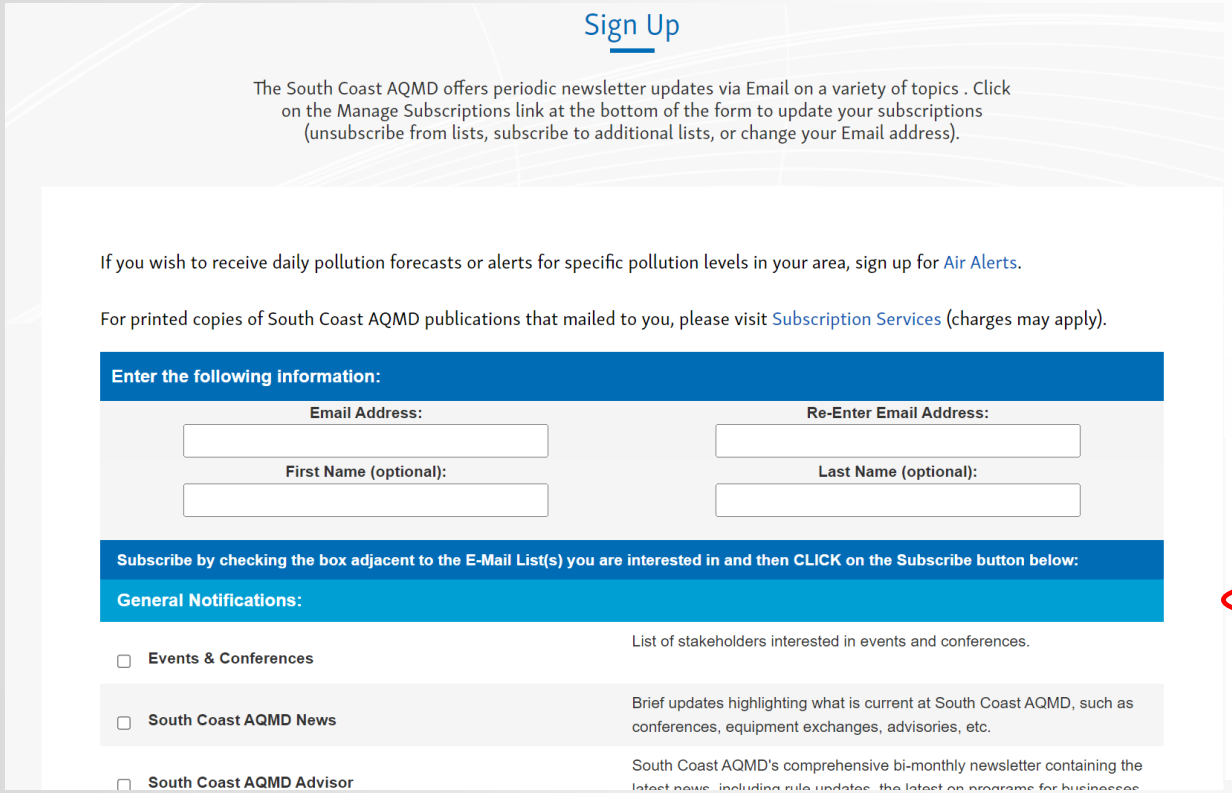
NEXT STEPS

Continue to obtain additional facility information

Evaluate best management practices, housekeeping activities and equipment controls

Next Working Group meeting

STAYING UPDATED



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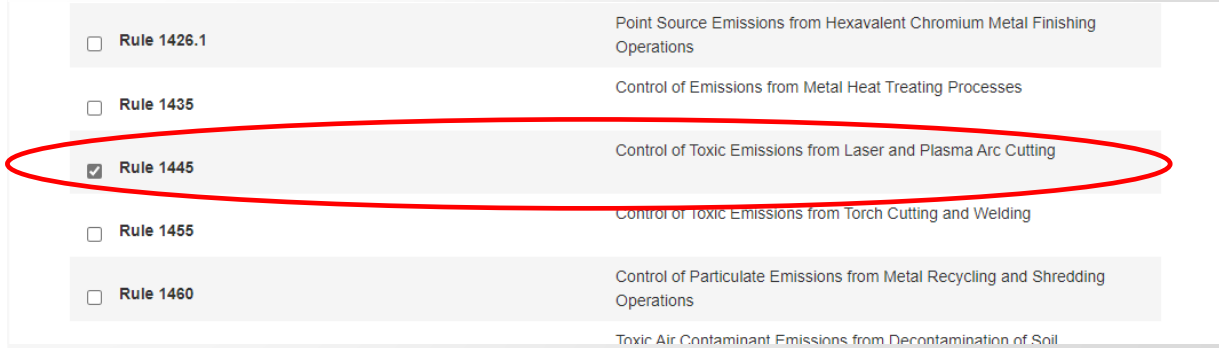
☐ South Coast AQMD Advisor	South Coast AQMD's comprehensive bi-monthly newsletter containing the latest news, including rule updates, the latest on programs for businesses

Subscribe by scrolling down the page and checking off the box for Proposed Rule 1445 to receive future meeting notices and links to documents



☐ Rule 1426.1	Point Source Emissions from Hexavalent Chromium Metal Finishing Operations
☐ Rule 1435	Control of Emissions from Metal Heat Treating Processes
☑ Rule 1445	Control of Toxic Emissions from Laser and Plasma Arc Cutting
☐ Rule 1455	Control of Toxic Emissions from Torch Cutting and Welding
☐ Rule 1460	Control of Particulate Emissions from Metal Recycling and Shredding Operations
	Toxic Air Contaminant Emissions from Decontamination of Soil

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