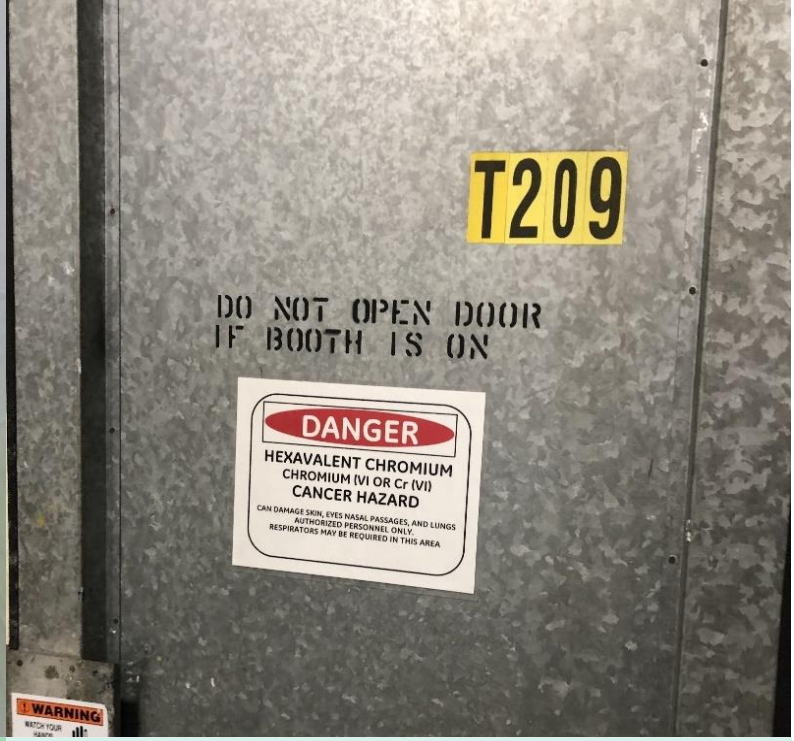


Proposed Amended Rule 1469.1 - Spraying Operations Using Coatings Containing Chromium

Working Group Meeting #3

July 22, 2020, at 10:00 AM

Zoom meeting link:

https://scaqmd.zoom.us/j/99791479385

Meeting ID: 997 9147 9385

Password: 357925

Join via teleconference:

1 669 900 6833

Meeting Agenda

- Previous Working Group Summary and Presentation Overview
- Point Source Compliance Options
  - Overview
  - Proposed concepts for point source requirements
- Control Device Testing and Monitoring Approach
- Next Steps

Working Group Meeting #2
June 10, 2020

- Initial recommendations for housekeeping rule concepts discussed

Housekeeping Measure Category	Recommendation Summary
Approved Cleaning Methods	Use approved cleaning methods such as wet cleaning using mops and cloths, and HEPA vacuuming
Routine Cleaning	Routinely clean areas where coatings containing chromium are handled at specified frequencies
Cleaning Spills	Clean up coating spills within 1 hour
Waste Collection and Storage	Collect and store waste materials with coatings containing chromium in closed, leak-tight containers

Presentation Overview

- Presentation today will focus on point source requirements in paragraph (d)(3) and the approach for control device testing and monitoring
- Each discussion will provide:
  - Background on existing rule provisions
  - Reasons why revisions are needed
  - Initial recommendations for rule concepts

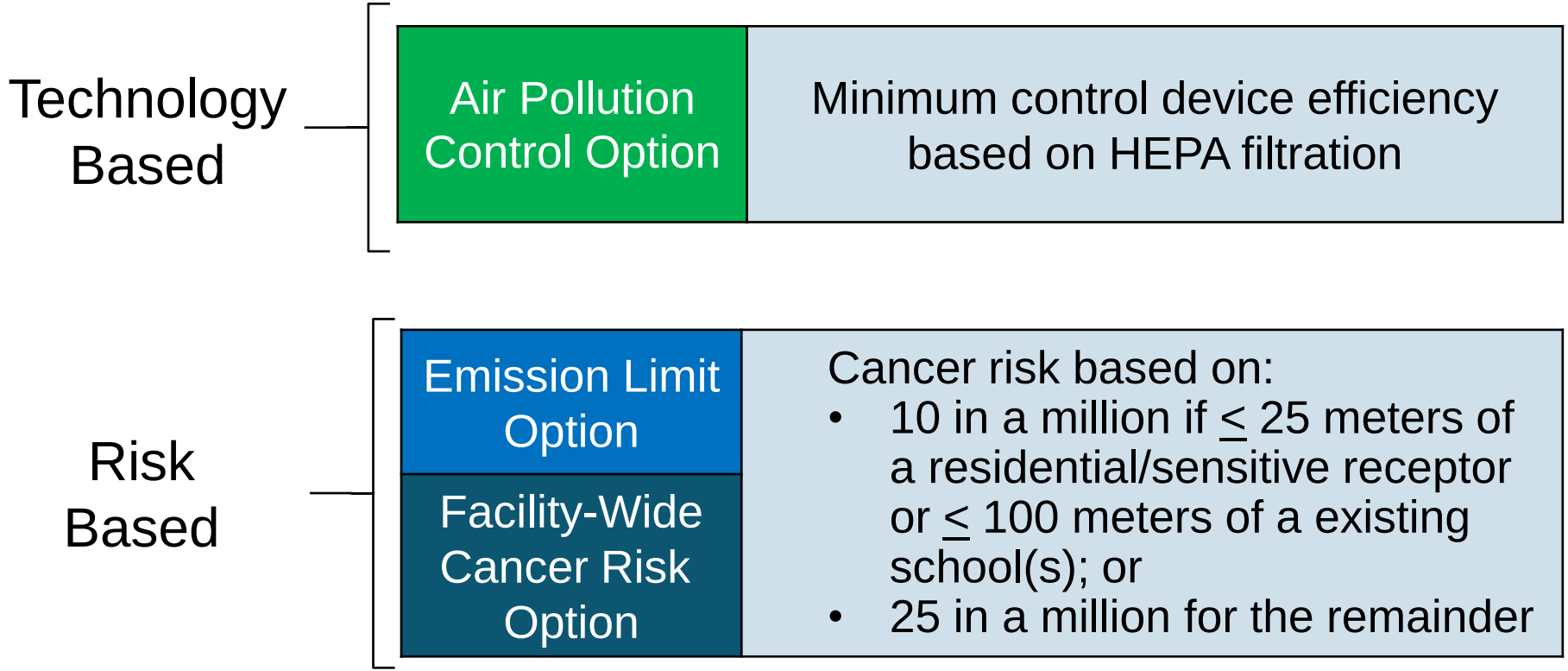
Overview of Point Source Compliance Options

Current Rule 1469.1 Provisions for Point Source Controls

- Rule 1469.1 currently includes three compliance options for point sources under paragraph (d)(3) that operators can select to satisfy point source requirements

Air Pollution Control Option	Annual Emission Limit Option	Facility-Wide Cancer Risk Option
• Spraying operations must ventilate to HEPA filters, or controls with equivalent efficiency	• Annual hexavalent chromium emissions must not exceed specified limits • Only available to facilities without other hexavalent chromium sources	• Facility-wide emissions of all TACs must not lead to exceedance of specified cancer risk limits to sensitive receptors

Rule 1469.1 Compliance Options [(d)(3)]



Air Pollution Control Option

Current Compliance Option Under (d)(3)(B)

- Facilities are required to ventilate each source to pollution control equipment with a rated particulate filtration efficiency of 99.97% or higher, for particulate matter 0.3 microns and larger
  - Control efficiency based on manufacturer testing

Filter efficiency definition not consistent with recent rules

Annual Emission Limit Option

Current Compliance Option Under (d)(3)(A)

- Available to facilities with no other hexavalent chromium emission sources other than those subject to Rule 1469.1
- Emission limit for spraying operations:
  - 0.018 lb/year if > 25 meters from residential or sensitive receptor [(d)(3)(A)(i)]
    - Represent 25 in a million cancer risk limit at time of rule adoption
  - 0.007 lb/year if ≤ 25 meters from residential or sensitive receptor, or ≤ 100 meters from an existing school [(d)(3)(A)(ii)]
    - Represents 10 in a million cancer risk limit at time of rule adoption
  - Emission limits based on pre-2015 OEHHA health risk guidelines (more details in later slide)

- Emission limits were calculated from guidance documents available in 2005
- Emission limits no longer represent the estimated health risks since the guidance documents have since been updated

Annual Emission Limit Option

Current Compliance Option *(continued)*

- Based on Tier 2 Screening Assessment using:
  - Risk Assessment Procedures for Rule 1401 and 212, Version 6.0, Application Package "J" (August 2000)
  - OEHHA Guidance Manual (August 2003)
- Back-calculated to represent maximum allowable emissions below applicable risk limits
- One facility under evaluation for use of the Annual Emission Limit Option
- No facilities are currently using the Annual Emission Limit Option

(i) 0.018 lbs per year, calculated from July 1 through June 30 of each year, or applicable emission limit adjusted for receptor distance and operating schedule in Table 2-2, if a facility is located more than 25 meters (82 ft) from a residential or sensitive receptor; or

(ii) 0.007 lbs per year, calculated from July 1 through June 30 of each year, if a facility is located 25 meters (82 ft) or less from a residential or sensitive receptor, or located 100 meters (328 ft) or less from an existing school; or

Facility-Wide Cancer Risk Option

Current Compliance Option Under (d)(3)(C)

- Cancer risk limit for all air toxics at facility
  - 10 in a million if ≤ 25 meters from residential or sensitive receptor, or ≤100 meters from an existing school
  - 25 in a million if > 25 meters from residential or sensitive receptor

Different risk thresholds based on receptor distance

No requirement to conduct new HRA if emissions increase, Risk Assessment Procedures change, or cancer potency factors

Facility-Wide Cancer Risk Option

Current Compliance Option *(continued)*

- Cancer risk below applicable limits demonstrated through one of the following:
  - Approved Health Risk Assessment
    - Reflects representative operating conditions
  - Implement approved Risk Reduction Plan
  - Submittal of evidence of enforceable permit conditions that reduce cancer risk

Estimated cancer risk levels based on Risk Assessment Procedures available at time of analysis

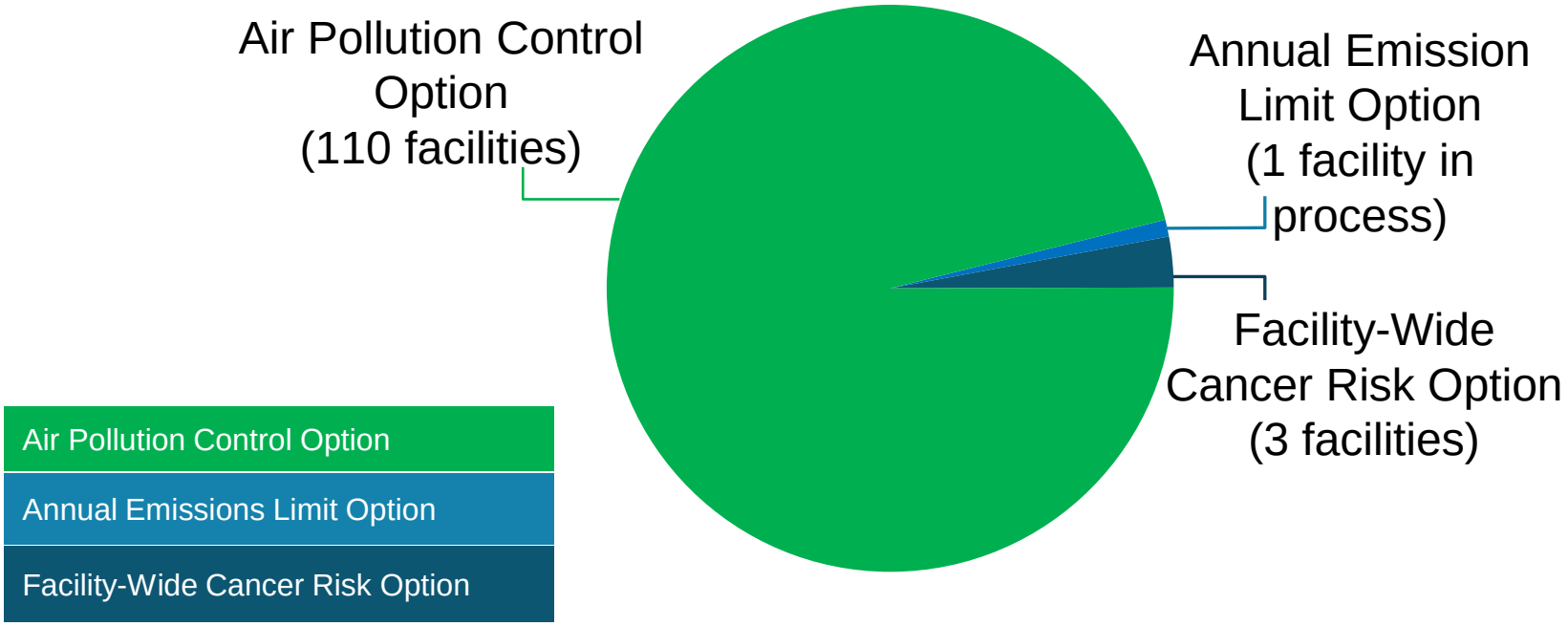
All three facilities have submitted Health Risk Assessments to demonstrate compliance

Facility-Wide Cancer Risk Option

Results of Revised Health Assessment Procedures

Facility	Spray Booths Permitted for 1469.1	HRA Approval Year	Previously Calculated Cancer Risk (one in a million)	2015 OEHHA Impact
A	1 booth with HEPA 2 non-HEPA booths	2015	6.4	TBD
B	2 non-HEPA booths	2000	6.2	TBD
C	1 booth with HEPA 4 non-HEPA booths	1998	5.5	TBD

1469.1 Point Source Compliance Summary by Facility



Total: 114 facilities

Proposed Approach for PAR 1469.1

Initial Concept for Point Source Requirements Under PAR 1469.1

- Staff is recommending that PAR 1469.1 point source requirements:
  - Allow only the Air Pollution Control Option
  - Remove the Annual Emission Limit and Facility-Wide Cancer Risk Options
- A technology-based approach provides greater certainty that all hexavalent chromium spraying operations are meeting the same standard
- Changes to certain key variables can substantially change the estimated emissions and cancer risk such as:

Guidance for Estimating Health Risk	Operating Conditions at the Facility	Types and Location of Receptors

Changes to Guidance for Estimating Health Risk

Guidance for Estimating Health Risk

- Changes in the risk assessment procedures or the addition or changes to health effects of toxic air contaminants used to estimate health risk will affect the level of pollution control needed to meet a specific risk threshold
- South Coast AQMD and all air agencies throughout California use risk assessment procedures established by the Office of Environmental Human Health Assessment (OEHHA) to estimate health risks as well as health effects of toxic air contaminants
- In 2015, OEHHA revised the Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (2015 OEHHA Guidance)
- The 2015 OEHHA Guidance incorporated new studies on childhood sensitivities and new exposure data on breathing rates and time at home
  - Estimated health risk is higher for residential and sensitive receptors even with no change in emissions, while worker risks remain similar
- Health risks estimated prior to the 2015 OEHHA Guidance are underestimated

Changes in Operating Conditions at a Facility

Operating Conditions at the Facility

- Changes in operating conditions at a facility can affect the estimated health risk
- Health risk assessment allowed under the Facility-Wide Health Risk Assessment Option is based on actual emissions during a specified time period
- Operating conditions for the chrome spraying operations may still be within the established permitted conditions, but different than the actual emissions used to estimate health risk
- Other conditions outside of the chrome spraying operation such as additions or modifications to other sources of toxic air contaminants may affect the overall facility-wide health risk
- Staff is also concerned that the Annual Emission Limit Option did not account for other non-hexavalent chromium sources that may be contributing to the overall health risk

Changes in Types and Location of Receptors

Types and Location of Receptors

- Changes in surrounding land uses can affect the estimated health risk
- Both the Annual Emission and Facility-Wide Health Risk Assessment Options are based on the type and distance of residential and sensitive receptors
- The one-time demonstration is a snapshot of surrounding land uses
- Currently, if a resident or school moves closer to the facility, there is no trigger requirement
- If a trigger is added to PAR1469.1, a facility may find that HEPA filtration is needed after a lesser pollution control option is installed because a school moved closer to the facility
- Staff is also concerned that the definition of “sensitive receptor” evolves as more information becomes available and may not be inclusive of the newest information such as the addition of early education programs

Key Concerns with Annual Emission Limit and Facility-Wide Cancer Risk Options

- A technology-based approach provides greater certainty that all hexavalent chromium spraying operations are meeting the same standard
- Risk-based approach relies on a snapshot of a variety of conditions that can change such as:
  - Guidelines for estimating health risk and adding or changing health values of toxic air contaminants
  - Operating conditions at the facility with the spraying operation and other toxic air contaminant emitting sources
  - Types and locations of sensitive receptors near the facility
- As a key variable changes, the estimated health risk could increase impacting surrounding residents and sensitive receptors
- A technology-based approach provides greater health protection for the surrounding community

Initial Recommendation for Point Source Requirements

- All point sources required to install and utilize HEPA, or equivalent filtration
- Remove options that allow meeting an annual emission limit or a facility-wide health risk threshold
  - Staff is working with affected facilities to discuss the implementation schedule and approach
- Update subparagraph (d)(3)(B) to clarify air pollution control equipment with higher rated control efficiencies for smaller particles is acceptable such as Ultra Low Particulate Air (ULPA) filters
- Update subdivision (c) HEPA definition to include… filter(s) that are individually dioctyl phthalate tested and certified by manufacturer, or an equivalent manufacturer-certified test…

Source Testing and Monitoring

Background on Source Testing

- Majority of 1469.1 facilities comply with point source control option of HEPA filtration or better
- Source tests can verify that control equipment is meeting point source requirements (control efficiency) and provides documentation of the device effectiveness
  - CARB Test Method 425, “Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources”

Current Rule 1469.1 Source Testing Requirements

- Source testing is not required under Rule 1469.1
- Staff did contemplate adding a source testing provision in Proposed Amendments to Rule 1469.1
- Staff believes that source testing provides the overall performance of the pollution controls to ensure emissions are appropriately controlled
- Two key challenges with requiring source testing for chromium spraying operations:
  - Establishing a point source standard
  - Minimum sampling time

Establishing a Point Source Standard

- Establishing an hourly mass emission limit is more challenging for chromium spraying operations because the operation is generally not continuous
- A point source standard based on control efficiency would also be challenging
  - A control efficiency of 99.97% (HEPA) is difficult to demonstrate because the inlet and outlet emissions will be very low
  - In other toxics rules where a control efficiency is established, an alternative mass emission limit is also provided (which is difficult since the spraying operation is not continuous)

Minimum Sampling Time Needed

- Outlet measurements for source tests generally require 4 hours of sampling for a compliance source test
- Spraying activities are typically not continuous and operators may use a variety of different chromate based coatings
  - Source testing would not be representative since typically spraying operations do not operate continuously for 4 hours
  - If a source was required to operate continuously for 4 hours, it would likely not be representative of “typical” operating conditions at the facility

Overall Approach for Testing and Monitoring

- Staff is recommending that PAR 1469.1 maintain existing provisions for source testing
- To ensure proper operation of pollution controls and to minimize emissions from chromium spraying operations staff is proposing to strengthen and enhance:

Parameter monitoring of pollution controls

Best management practices

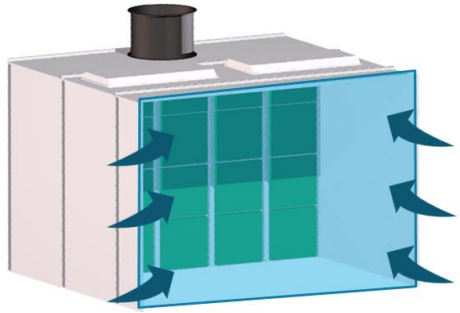
Today’s Presentation

- Provide general background information about parameter monitoring and best management practices
- Provide topic areas that staff is focusing on for parameter monitoring and best management practices
- Staff will provide more details at the next Working Group meeting
  - Existing provisions
  - Proposed enhancements

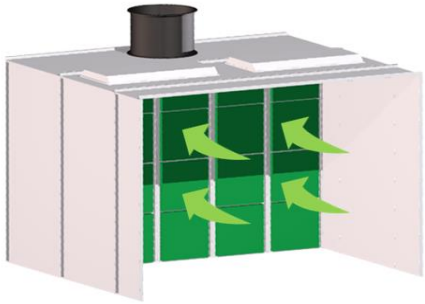
Parameter Monitoring

- Monitoring of key parameters of pollution controls can identify operational issues of air pollution control equipment
- Benefits of parametric monitoring:
  - Provides a more continuous status of operating conditions
  - Can provide indication if emissions are not well controlled
  - Can alert the operator of operational issues or needed maintenance on the pollution control equipment

Parameter Monitoring Areas of Focus



Inward face velocity at the opening of an open face spray booths



Inward face velocity near the filter (open or closed spray booth)

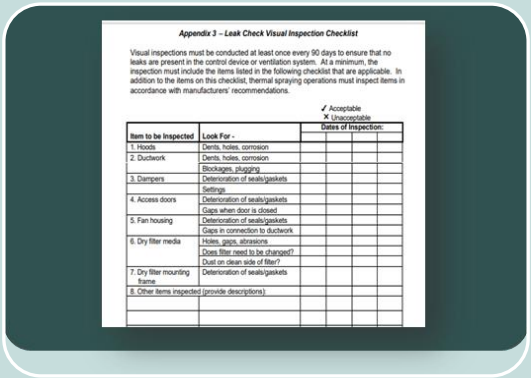
Differential pressure across the filter media

Best Management Practices

- Best management practices include a suite of different types of requirements that when implemented can ensure:
  - Proper operation of pollution controls
  - Spraying operations are being conducted in a manner to maximize the efficacy of pollution controls
  - Fugitive emissions from spraying and related operations are minimized
- Some examples of best management practices that staff is evaluating include
  - Optimizing the distance of spraying operations
  - Improvements to visual inspections

Best Management Practices

Practices to ensure hexavalent chromium emissions are contained within the spray booth



Appendix 3 – Leak Check Visual Inspection Checklist

Visual inspections must be conducted at least once every 90 days to ensure that no leaks are present in the control device or ventilation system. At a minimum, the inspection must include the items listed in the following checklist that are applicable. In addition to the items on this checklist, thermal spraying operations must inspect items in accordance with manufacturers' recommendations.

✓ Acceptable
✕ Unacceptable

Item to be Inspected	Look For -	Dates of Inspection:			
1. Hoods	Dents, holes, corrosion				
2. Ductwork	Dents, holes, corrosion				
	Blockages, plugging				
3. Dampers	Deterioration of seals/gaskets				
	Settings				
4. Access doors	Deterioration of seals/gaskets				
	Gaps when door is closed				
5. Fan housing	Deterioration of seals/gaskets				
	Gaps in connection to ductwork				
6. Dry filter media	Holes, gaps, abrasions				
	Does filter need to be changed?				
	Dust on clean side of filter?				
7. Dry filter mounting frame	Deterioration of seals/gaskets				
8. Other items inspected (provide descriptions)					

Visual inspections of pollution controls and spray booths

Practices to ensure maximum transfer efficiency and efficacy of pollution controls

Next Steps

Next Steps


Hold monthly working group meetings
Working Group #4: Rule concepts for Parameter Monitoring and Best Management Practices
Governing Board Meeting – First Quarter 2021

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