

# **SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

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## **Preliminary Draft Staff Report Proposed Rule 1480 – Ambient Monitoring and Sampling of Metal Toxic Air Contaminants**

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## **CHAPTER 1: BACKGROUND**

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### **INTRODUCTION**

#### **SOUTH COAST AQMD AMBIENT AIR MONITORING**

#### **PROCESS TO IDENTIFY SOURCES**

Step 1: Identify the Facility or Facilities Possibly Contributing to Air Issue

Step 2: Within the Facility, Identify the Source or Sources

Step 3: Determine if Sources are Capable of Generating Emissions

Step 4: Determine if Emissions Can be Release to the Ambient Air

Ambient Air Monitoring Efforts that Used the Four-Step Process

#### **MECHANISMS TO ADDRESS HIGH CONCENTRATIONS OF METAL TACs**

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#### **2015 OFFICE OF ENVIRONMENTAL HUMAN HEALTH ASSESSMENT (OEHHA) RISK ASSESSMENT METHODOLOGY**

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Rule 1156 – Further Reductions of Particulate Emissions from Cement Manufacturing Facilities

Rules 1420, 1420.1, and 1420.2 – Emissions Standards for Lead

Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants

#### **AMBIENT AIR MONITORING TECHNOLOGY**

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#### **PUBLIC PROCESS**

## INTRODUCTION

Ambient air monitoring samples the air to measure concentrations of criteria pollutants, and gaseous and particulate toxic air contaminants (TACs). Over the past decade, ambient air monitoring near certain facilities with metal TACs such as lead, nickel, arsenic, and hexavalent chromium has identified air quality issues that were not previously known or revealed compliance issues with existing air quality requirements. In some situations, air quality issues have resulted in elevated health risks that have impacted residents, students, and other sensitive receptors surrounding these facilities. When the South Coast Air Quality Management District (South Coast AQMD) initiates ambient air monitoring and identifies a specific air quality issue, action is taken to implement interim measures to reduce the health risk to the community. However, it can take many months to several years until a facility has fully implemented permanent pollution controls to reduce the health risk to the surrounding community. To ensure public health is protected, the South Coast AQMD continues ambient air monitoring until permanent pollution controls have been fully implemented and TAC emissions are stabilized.

Proposed Rule 1480 – Ambient Monitoring and Sampling of Metal Toxic Air Contaminants (PR 1480) is designed to transfer the responsibility of conducting ambient air monitoring and sampling to the facility that is posing the health risk. PR 1480 establishes the process to notify and designate a facility to conduct ambient air monitoring. PR 1480 coordinates with Rule 1402 – Control of Toxic Air Contaminants from Existing Sources, and allows a facility to cease monitoring and sampling after implementation of measures in a Risk Reduction Plan in order to ensure public health is protected.

PR 1480 focuses on metal TACs which includes arsenic, cadmium, hexavalent chromium, lead, manganese, nickel, and selenium. Based on approved Health Risk Assessments conducted through the AB 2588 program, three facilities had estimated cancer risk that were in excess of 1,000 in a million, which is 10 times the Significant Risk Level threshold of 100 in a million. When these types of situations are identified, additional monitoring is needed to allow the South Coast AQMD to become aware of health risks and take appropriate action to protect public health until permanent pollution controls are fully implemented and emissions from toxic air contaminants from the facility are stable.

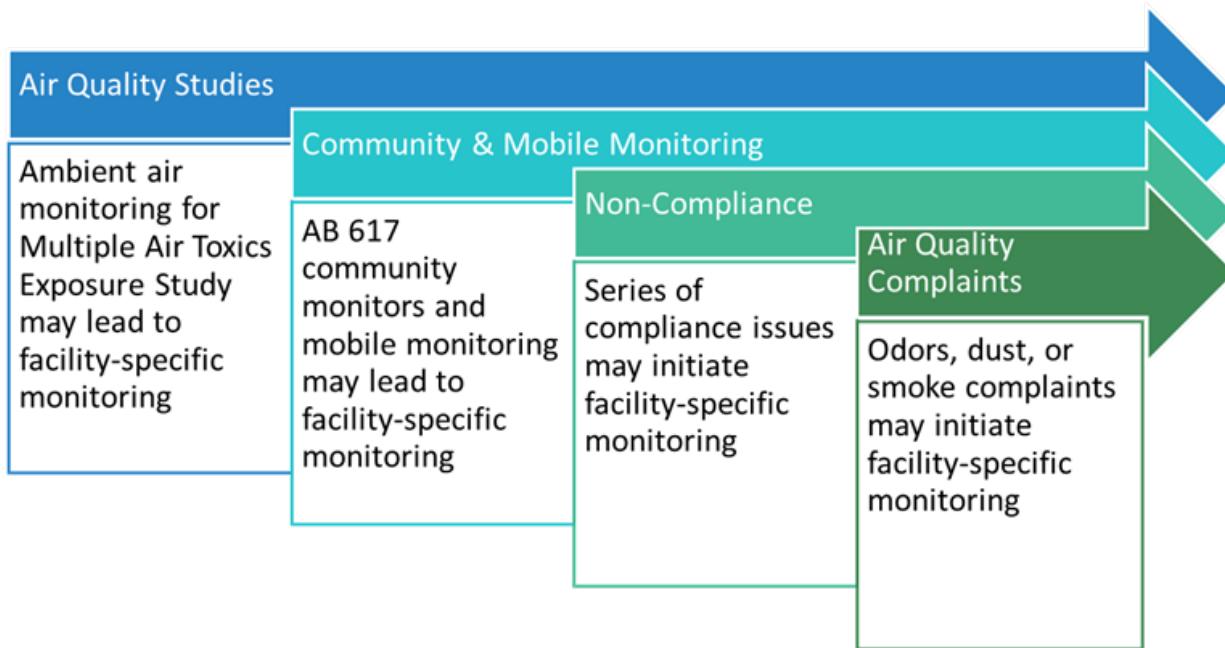
## SOUTH COAST AQMD AMBIENT AIR MONITORING

The South Coast AQMD conducts ambient air monitoring and sampling to measure criteria pollutants for state and federal air quality requirements. In addition, through the Multiple Air Toxics Exposure Study (MATES) ambient monitors are placed throughout the South Coast Air Basin to monitor and sample over 30 gaseous and particulate TACs. Criteria pollutant air monitoring and the MATES monitoring programs are generally used to monitor regional levels of specific pollutants, so monitors are not placed near a specific facility. Regional ambient air monitoring of TACs through the MATES program has led to the identification of facilities with elevated metal TAC emissions.

In addition to regional monitoring, the South Coast AQMD also conducts source-oriented ambient air monitoring, where mobile measurements are made nearby facilities and/or ambient air monitors are placed near or at a specific facility or near a group of facilities. The South Coast AQMD has initiated ambient air monitoring near facilities based on MATES monitoring, public complaints about a specific air quality issue, concerns for non-compliance issues, and community monitoring

efforts. Figure 1-1 shows various possible reasons why the South Coast AQMD may initiate facility-specific ambient air monitoring.

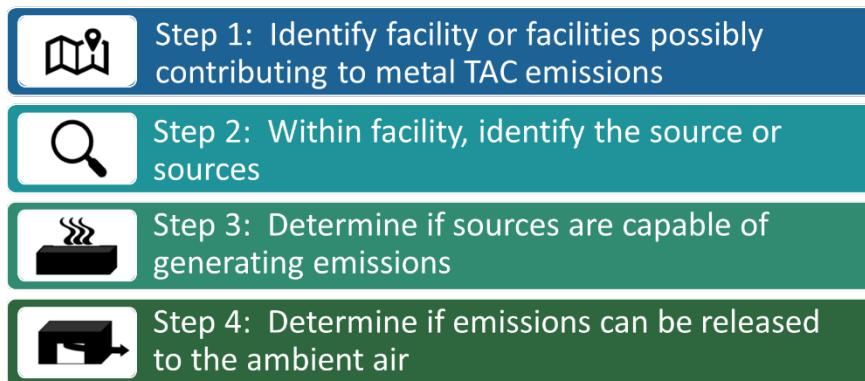
**Figure 1-1: Various Pathways to Initiate Facility-Specific Ambient Air Monitoring**



## PROCESS TO IDENTIFY SOURCES

Metal TACs are particulates, and unlike VOCs and other gaseous TACs, can be deposited and repeatedly entrained into the air as fugitive emissions, increasing the risk of exposure. The particulates may be created through various industrial processes, such as cement production, metal melting operations, anodizing and plating operations, and different types of metal working. Multiple incidents have occurred in the last several years where metal TACs were detected from existing sources, where some of these sources were not known to have metal TAC emissions that could substantially impact ambient levels.

The South Coast AQMD staff has used a four-step process to identify a facility or facilities that are contributing to elevated levels of metal TAC emissions in the ambient air. The four-step process includes: 1) Identifying the facility or facilities possibly contributing to metal TAC emissions; 2) Identifying the possible source or sources of emissions such as the equipment or process within the facility; 3) Determining if the particular source is capable of generating emissions; and 4) Determining if emissions can be released to the ambient air (see Figure 1-2).

**Figure 1-2: Four-Step Process Identification Process****Step 1: Identify the Facility or Facilities Possibly Contributing to Metal TAC Emissions**

When elevated levels of ambient metal TACs are identified through MATES, community monitoring, mobile monitoring, or air quality complaints, the South Coast AQMD works to locate the facility or facilities that are possibly contributing to metal TAC emissions. To identify the facility or facilities possibly contributing to an air issue, a general process has been used to identify the source of metal TAC emissions detected by ambient air monitors. There are a variety of tools used to identify the facility or facilities that could potentially contribute to the air quality issue such as using ambient monitors to better pinpoint the location of a facility or facilities, facility inspections and site visits of facilities in surrounding areas to identify any facilities that can potentially contribute to the air quality issue and eliminate facilities that are not conducting operations related to the air quality issue, and glass plate samples near a facility or facilities to assess if there is a concentration gradient that pinpoints a facility or its operation.

**Step 2: Within the Facility, Identify the Source or Sources**

After a facility or facilities are identified, the source or sources such as equipment, processes, and/or operations within the facility that could potentially contribute to the air quality issue are identified. There are a variety of tools that South Coast AQMD staff uses to identify the source or sources that could potentially contribute to the air quality issue such as a more detailed facility inspection and analysis of bulk samples such as liquid or solid samples. A more detailed facility inspection than in Step 1 includes, but is not limited to inspection of permitted and unpermitted equipment or processes, inspection of pollution control equipment, observations of housekeeping practices, review of processes, review of operating and purchasing records, review of previous inspection reports, etc. During the facility inspection, staff is assessing the location of equipment and processes such as: is the equipment or process inside or outside a building, and if the equipment or process is located in a building, is the equipment or process in close proximity to a building opening such as a door or window where there can be a cross-draft, vents, fans, etc. where emissions from the equipment or process can escape the building. Bulk samples such as dust samples on surfaces in and around the facility, ducting, and roof tops and liquid samples of tanks can be taken to identify if there is the presence of specific metal TAC.

**Step 3: Determine if Sources are Capable of Generating Emissions**

The next step is to determine whether the source or sources at the facility are capable of generating emissions. Emissions testing such as a screening or source testing quantifies emissions. Assessment of specific parameters of pollution controls such as collection efficiency, differential

pressure monitors across a filter, and visual inspection of pollution controls are also conducted to check whether pollution controls are properly operating. Improper operation or poor maintenance of pollution controls, or lack of pollution controls can lead to elevated ambient levels of metal TAC emissions. The collection efficiency of pollution control equipment can be measured using a hot-wired anemometer to measure the air flow from the source to the pollution controls. A smoke test or visual observations can also be used to visually verify that emissions from the source are moving toward the pollution control and are not moving outside of the collection device and the emissions are not being impeded by cross-drafts from building openings, fans, etc. Pressure monitors that measure the differential pressure across a filter in the pollution control system are also used to identify a breach or clog in filter media. Lastly, visual inspection of the pollution controls checks that filters are properly situated, there are no leaks or breaches in filter media, the proper filter media is being utilized, slots for collection devices are not clogged, and there are no gaps or openings in the ducting.

#### **Step 4: Determine if Emissions Can be Release to the Ambient Air**

The purpose of this step is to determine if emissions identified in Step 3 have the ability to be released to the ambient air. Although a source may use a metal TAC in their operations, it is possible that there is no mechanism for that metal TAC to be released because the material is contained in a closed container. This step combines information collected in Steps 2 and 3 with visual observations about the operations. The location of the operation can be critical. Equipment or a process that is being conducted outdoors with no pollution controls allows the emissions to be directly emitted in the open air. If a source is located within a building, openings such as vents, doors, and other openings can create cross-drafts where emissions can escape and be released to the ambient air. Poor housekeeping where metal particulate is generated can be tracked in and around the facility and re-entrained into the ambient air. Placement of upwind and downwind ambient air monitors near the facility can be used to confirm the source of ambient air monitoring results.

#### **Ambient Air Monitoring Efforts that Used the Four-Step Process**

The South Coast AQMD has used this four-step process to identify facilities and their sources during ambient air monitoring efforts. Table 1-1 summarizes ambient air monitoring near a cement manufacturing facility, three plating and anodizing facilities, a metal heat treating facility, and a metal forging facility that was conducting metal grinding. A variety of different tools were used, such as glass plate samples, ambient air monitoring near the facility, liquid and solid samples, site inspections, and emissions screening and source testing. All of the facilities listed in Table 1-1 have implemented additional measures and pollution controls to reduce emissions.

**Table 1-1**  
**Summary of Applications of the Four-Step Process**

<b>Facility (Metal TAC)</b>	<b>Results of Four-Step Process</b>	<b>How Emissions Addressed</b>
Cement manufacturing facility in Riverside (Hexavalent Chromium)	<ul style="list-style-type: none"> <li>• Samples of gray clinker storage piles—a loose, dry material consisting of various calcium silicates used in Portland cement manufacturing showed high levels of hexavalent chromium</li> <li>• Observed periodic fugitive dust emissions from the large unprotected storage piles</li> <li>• Dust from the clinker storage piles were a main contributor to elevated hexavalent chromium levels</li> </ul>	<ul style="list-style-type: none"> <li>• Rule 1156 was amended to require ambient air monitoring and controls</li> </ul>
Metal plating and anodizing facilities in Newport Beach, Paramount, and Long Beach (Hexavalent Chromium)	<ul style="list-style-type: none"> <li>• Large door openings, vents, and fans allowed hexavalent chromium emissions from anodizing and other tanks to leave the building</li> <li>• Unregulated heated sodium dichromate seal tank were a source of high ambient levels</li> <li>• Cross-drafts near chromic acid anodizing process allowed emissions to leave the building and interfered with collection efficiency of pollution controls</li> <li>• Poor housekeeping</li> </ul>	<ul style="list-style-type: none"> <li>• Order for Abatement</li> <li>• Risk Reduction Plan under Rule 1402</li> <li>• Amendments to Rule 1469</li> </ul>
Metal heat treating facility in Paramount (Hexavalent Chromium)	<ul style="list-style-type: none"> <li>• Hexavalent chromium emitted from furnaces with chromium workpieces or from other sources within the furnaces converted to hexavalent chromium</li> <li>• Hexavalent chromium was dispersed during fan cooling</li> <li>• Some cooling operations were conducted outside</li> <li>• Samples showed hexavalent chromium in quench tank – water from quench tank circulated through cooling tower</li> <li>• Mist from cooling tower contained hexavalent chromium</li> <li>• Large openings and vents in building allowed emissions to escape into the ambient air</li> <li>• Poor housekeeping</li> </ul>	<ul style="list-style-type: none"> <li>• Order for Abatement</li> <li>• Risk Reduction Plan under Rule 1402</li> <li>• Proposed Rule 1435</li> </ul>
Grinding operation at metal forging facility in Paramount (Nickel)	<ul style="list-style-type: none"> <li>• Sampling found metal grinding operations emitted high levels of metal particulate emissions</li> <li>• Large openings, modest housekeeping led to fugitive dust emissions</li> <li>• Pollution controls did not provide sufficient collection efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Implemented voluntary measures</li> <li>• Development of Rule 1430</li> </ul>

## MECHANISMS TO ADDRESS HIGH CONCENTRATIONS OF METAL TACs

Once the source or sources that are contributing to high concentrations of metal TACs at a facility are identified, corrective actions are needed to reduce metal TACs and reduce the health risk to the surrounding community. There are various mechanisms available to South Coast AQMD to address the source of the elevated concentrations and health risks, and achieve emissions reductions. The specific mechanisms used depend on the magnitude of the estimated health risk and whether the air quality issue is unique to the facility such as non-compliance with existing rules or is universal to other facilities with similar sources or operations. Another consideration is if a facility complying with a new rule requirement, and pollution controls are not yet installed. Generally the South Coast AQMD staff will work directly with a facility to discuss the air quality issue. Mechanisms that the South Coast AQMD has used are Orders for Abatement, development of new rules or amendments to existing rules to address the air quality issue, and implementation of Rule 1402.

In extreme cases where facilities are found to be causing imminent and substantial endangerment to public health or welfare, California Assembly Bill 1132—passed by the state legislature and signed by the governor in 2017—gives Air Pollution Control Officers the authority to issue interim orders for abatement that would take effect immediately, pending abatement hearings before the hearing board of the air district. To date however, the South Coast AQMD has not issued such an order. In most cases when staff identifies compliance issues with permit conditions or rule requirements, a notice for corrective action is issued to the facility which will bring an immediate reduction in associated metal TAC emissions, sometimes without any need for long-term changes to control other sources of the metal TAC emissions.

## ESTIMATED HEALTH RISKS

Under Rule 1402, the South Coast AQMD can require facilities to prepare a health risk assessment (HRA) to estimate their facility-wide health risk. Facilities where the South Coast AQMD had conducted ambient air monitoring have had some of the highest health risks since the implementation of Rule 1402. Under Rule 1402, a significant health risk is when the Maximum Individual Cancer Risk is greater than one hundred in one million ( $100 \times 10^{-6}$ ) or a total acute or chronic Hazard Index (HI) of five (5.0) for any target organ system at any receptor location. The estimated health risk depends on a variety of factors such as the specific metal TAC, the level of emission controls of the metal TACs, building and stack parameters, meteorology conditions, and the proximity to off-site workers or residential and sensitive receptors. Health risks for facilities where ambient air monitoring has been conducted have had cancer risks that are well over the significant health risk, with some facilities having a health risk more than 10 times the significant health risk level.

Under Rule 1402, facilities with health risks above the action risk level which is a Maximum Individual Cancer Risk of twenty-five in one million ( $25 \times 10^{-6}$ ), cancer burden of one half (0.5), a total acute or chronic HI of three (3.0) for any target organ system at any receptor location, or the National Ambient Air Quality Standard (NAAQS) for lead are required to implement risk reduction measures through an approved Risk Reduction Plan. Facilities with high health risk have implemented risk reduction measures to reduce their health risk, generally well below the Action Risk Level under Rule 1402. Table 1-2 shows the decreases in health risk to sensitive receptors after facilities implement their risk reduction measures.

**Table 1-2**  
**Health Risks to Sensitive Receptors from Facilities Identified Using Ambient Air Monitoring Data**

Facility (Primary Metal TAC)	Initial Cancer Risk*	Cancer Risk* After Risk Reduction Measures
Lead battery recycling facility in Vernon (Arsenic)	<ul style="list-style-type: none"> <li>• 22 in one million (based on a 2012 HRA)</li> </ul>	<ul style="list-style-type: none"> <li>• Not Available – Facility closed down</li> </ul>
Cement manufacturing facility in Riverside (Hexavalent Chromium)	<ul style="list-style-type: none"> <li>• 400-500 in one million based on 2.65 ng/m<sup>3</sup> adjacent to the facility in late 2007</li> </ul>	<ul style="list-style-type: none"> <li>• Not Available – Facility voluntarily shut down equipment and then closed down</li> </ul>
Metal plating and anodizing facility in Newport Beach (Hexavalent Chromium)	<ul style="list-style-type: none"> <li>• 1,502 in one million (based on 2013 HRA, recalculated using 2015 OEHHA guidelines)</li> </ul>	<ul style="list-style-type: none"> <li>• 15-20 in one million in approved HRA; adjusted by Executive Officer from initial value of 0.8 in one million</li> </ul>
Metal plating and anodizing facility in Paramount (Hexavalent Chromium)**	<ul style="list-style-type: none"> <li>• 931 in one million (based on 2016 HRA)</li> </ul>	<ul style="list-style-type: none"> <li>• First Risk Reduction Plan rejected; revised HRA under review</li> </ul>
Metal plating and anodizing facility in North Long Beach (Hexavalent Chromium)**	<ul style="list-style-type: none"> <li>• 441 in one million (based on air dispersion modeling)</li> </ul>	<ul style="list-style-type: none"> <li>• Pending review of HRA</li> </ul>
Metal heat treating facility in Paramount (Hexavalent Chromium)**	<ul style="list-style-type: none"> <li>• 1,900 in one million (based on 2016 HRA)</li> </ul>	<ul style="list-style-type: none"> <li>• &lt; 1.0 in one million in approved Risk Reduction Plan</li> </ul>
Grinding operation at metal forging facility in Paramount (Nickel)	<ul style="list-style-type: none"> <li>• 15.4 in one million (based on 2012 HRA)</li> </ul>	<ul style="list-style-type: none"> <li>• Risk reduction measures not required; Risk &lt; 25 in one million</li> </ul>

\* Health Risks from HRAs include all Toxic Air Contaminants

\*\* Facility designated Potentially High Risk Level Facility under Rule 1402

## **2015 OFFICE OF ENVIRONMENTAL HUMAN HEALTH ASSESSMENT (OEHHA) RISK ASSESSMENT METHODOLOGY**

Health risk assessments under Rule 1402 are conducted pursuant to the “Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments” prepared by the Office of Environmental Health Hazard Assessment (OEHHA) and approved on March 6, 2015 referred to herein as the “2015 OEHHA Guidelines.” The 2015 OEHHA Guidelines incorporates age sensitivity factors which increases cancer risk estimates to residential and sensitive receptors by approximately three times, and more than three times in some cases depending on whether the

TAC has multiple pathways of exposure in addition to inhalation. Many metal TACs have multiple pathways of exposure. The estimated health risk for hexavalent chromium for a residential and sensitive receptor increased by a factor of approximately three. Under the 2015 OEHHA Guidelines, even though the toxic emissions from a facility have not increased, the estimated cancer risk to a residential receptor will increase. Cancer risks for offsite worker receptors are similar between the existing and revised methodology because the methodology for adulthood exposures remains relatively unchanged. Unless noted on Table 1-2, health risk assessments conducted prior to 2015 used the 2003 OEHHA Guidelines which did not include the age sensitivity factors. Estimated health risks for residential and sensitive receptors would be substantially higher if the 2015 OEHHA Guidelines were applied.

## **RULE 1402 POTENTIALLY HIGH RISK LEVEL FACILITY**

In October 2016, the South Coast AQMD amended Rule 1402 to include provisions for Potentially High Risk Level Facilities. Under Rule 1402, a Potentially High Risk Level Facility is a facility that has a likely potential to either exceed or has exceeded the Significant Risk Level under Rule 1402. A facility designated as a Potentially High Risk Level Facility must submit an Early Action Reduction Plan within 90 days of being designated. The purpose of the Early Action Reduction Plan is to identify interim risk reduction measures that can be implemented quickly to address the high health risk. Potentially High Risk Level Facilities must also submit their Health Risk Assessment and Risk Reduction Plan, concurrently, and within 180 days of being designated to expedite the process. Under Rule 1402, Potentially High Risk Level Facilities must implement risk reduction measures as quickly as feasible and no longer than two years from the date the Risk Reduction Plan is approved. Risk reduction measures are the permanent and enforceable pollution controls and measures that are needed to ensure the facility maintains a health risk below the Action Risk Level. Beginning with the designation of a facility as a Potentially High Risk Level Facility, implementation of measures in the Risk Reduction Plan can take two to three years, depending on the length of time needed to approve or modify the Health Risk Assessment and Risk Reduction Plan.

## **EXISTING RULES WITH METAL TAC MONITORING REQUIREMENTS**

South Coast AQMD has existing rules that include ambient air monitoring requirements for cement manufacturing (Rule 1156 – Further Reductions of Particulate Emissions from Cement Manufacturing Facilities), lead from metal melting and battery recycling (Rule 1420 series), and soil handling (Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants). However there are many metal related rules that do not have ambient air monitoring requirements such as chrome plating and anodizing (Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations), chromium spraying operations (Rule 1469.1 – Spraying Operations Using Coatings Containing Chromium), non-chromium metal melting (Rule 1407 – Control of Emissions of Arsenic, Cadmium, and Nickel from Non-Ferrous Metal Melting Operations), and metal forging (Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities). PR 1480 is designed to be a comprehensive monitoring rule.

## **Rule 1156 – Further Reductions of Particulate Emissions from Cement Manufacturing Facilities**

Particulate matter emissions, including hexavalent chromium, are created during the cement manufacturing process. Rule 1156 requires ambient air monitoring that follows a Compliance Monitoring Plan. Plans have a minimum of three fence-line monitors for hexavalent chromium with a 24-hour sample taken at a 1-in-3 day frequency with a 30-day rolling average threshold limit of 0.20 ng/m<sup>3</sup>. If there is no exceedance of the threshold limit, which is based on a 90-day rolling average, the sampling frequency may be reduced to 1-in-6 days. If there is an exceedance of the threshold limit, the frequency reverts back to 1-in-3 days. Rule 1156 includes provisions to control and minimize metal TAC emissions.

## **Rules 1420, 1420.1, and 1420.2 – Emissions Standards for Lead**

Rule 1420.1 - Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities, requires lead emissions, as well as arsenic emissions from large battery recycling facilities to be monitored. In addition, Rule 1420.2 - Emission Standards for Lead from Metal Melting Facilities, requires large lead facilities to monitor ambient levels of lead. Rule 1420 - Emission Standards for Lead, requires facilities to monitor if certain criteria are triggered. Ambient air monitoring is conducted to ensure attainment and maintenance of the NAAQS for lead. Rule 1420 requires metal melting or lead processing facilities to meet a 30-day rolling average ambient air concentration of 0.150 ug/m<sup>3</sup> until December 31, 2020, and the limit will be lowered to 0.10 ug/m<sup>3</sup> starting on January 1, 2021. The ambient air concentration limit for lead for large lead-acid battery recyclers under Rule 1420.1 is currently 0.100 ug/m<sup>3</sup>. Rule 1420 also has a 24-hr average limit of 10 ng/m<sup>3</sup> for arsenic. These rules also include provisions to control and minimize fugitive lead-dust emissions. Rule 1420 requires ambient air monitoring once every six calendar days, while Rule 1420.1 requires both lead and arsenic samples be collected daily. The sampling frequency for Rule 1420.2 begins with a daily commission period for the first 30 days and transitions to a sampling frequency of once every six days. The sampling frequency increases to once every three days if the ambient air concentration over 30 consecutive days is between 0.100 and 0.150 ug/m<sup>3</sup> and to daily if it exceeds 0.150 ug/m<sup>3</sup>.

## **Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants**

As a surrogate for the TACs within the soils, dust emissions from earth-moving activities that contain TACs are required to be monitored using PM monitors. These emissions are generated during excavation, grading, handling, treating, stockpiling, transferring, and removal of soils from a site. Rule 1466 includes provisions to control and minimize TAC emissions.

## **AMBIENT AIR MONITORING TECHNOLOGY**

In prior investigations and existing rules, as discussed earlier, South Coast AQMD either utilized or required the use of source-oriented monitoring that identified concentrations of a metal toxic air contaminant. The monitor used depended on the pollutant measured, location of the facility, area available to site a monitor, and other variables. For example, during the Paramount investigation, BGI OMNIs were used as they are portable battery operated samplers that could be deployed on power poles and the only metal toxic air contaminant to be measured was hexavalent chromium. The monitors used to satisfy monitoring requirements in existing rules and for investigations have been mostly stationary and provide a daily integrated sample. Table 1-3 summarizes the stationary

monitors that have been used to satisfy rule requirements or for investigations that provide a daily integrated sample.

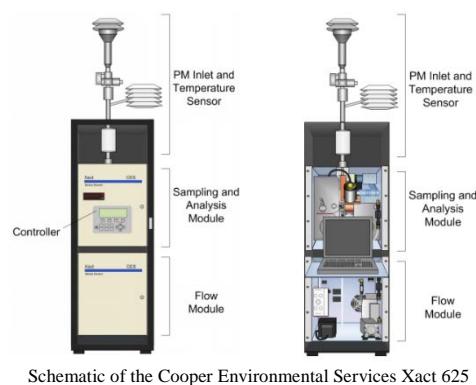
**Table 1-3 Types of Air Monitors Used by South Coast AQMD**

Type	BGI OMNI	BGI PQ100	Xon тек 924	Tisch HiVol
Cost	~\$4,800	~\$6,700	~\$24,000	~\$7,000
Filter Media	•Cellulose •Teflon	•Cellulose •Teflon	•Quartz •Cellulose	•Glass Fiber •Quartz
Mount Option	•Pole •Stand	•Tripod •Stand	•Stands	•Stand
Pollutant Analyzed	•Multi-metal •Cr <sup>+6</sup>	•Multi-metal •Cr <sup>+6</sup>	•Multi-metal •Cr <sup>+6</sup>	•Multi-metal
Power Source	•AC, DC and solar •Recharge if pole mounted	•AC, DC and solar	•AC	•AC
Flow Rate	•Set at 5 L/minute (Not Adjustable)	•2 L/minute - 25 L/minute •Typically set at 12 L/minute	•0 – 30 L/minute •Typically set at 12 L/minute	•1100-1700 L/minute
Key Characteristics	•Portable •Suitable for fence-line monitoring •1 Filter •Retrieve entire unit for analysis  •Used in Paramount and Compton	•Portable •1 filter •Used in Compton and at Newport Beach	•Permanent •4 filters (sequential or parallel) •Monitor multiple compounds simultaneously  •Used at Rule 1156 cement facilities and for MATES <sup>1</sup> and NATTS <sup>2</sup>	•Permanent •Hi-Volume •1 filter  •Used for Rules 1420, 1420.1 and 1420.2

<sup>1</sup> Multiple Air Toxics Exposure Study

<sup>2</sup> National Air Toxics Trends Stations

In addition to the stationary monitors that take an integrated daily sample, South Coast AQMD has utilized continuous emission monitoring and mobile surveys to identify or measure concentrations of metal toxic air contaminants. This approach to monitoring has not previously been used to satisfy existing rule requirements; however, it has been used in other applications.



Cooper Environmental Services, LLC (Cooper) is a vendor of multi-metals monitoring technology with monitors that utilize x-ray fluorescence (XRF) to determine concentrations of a specific list of metal compounds. After satisfactory evaluation tests, the South Coast AQMD purchased two Cooper Environmental Services Xact 625 units for continuous multi-metals monitoring. These monitors have been used to determine compliance with a Rule 1402 Risk Reduction Plan for a facility and has assisted in source identification by correlating metals concentrations to wind speed and direction.

One challenge in operating the Xact monitor in remote locations is that it requires to be operated in a temperature controlled environment such as an air conditioned shed. While the Xact monitor can measure multiple metal toxic air contaminants, it cannot measure hexavalent chromium. This continuous ambient air monitoring system has been reviewed by U.S. EPA through its Environmental Technology Verification Program. As part of additional evaluation tests to determine the suitability of the Xact monitor in mobile applications an Xact 625 monitor was temporarily installed in a specialized vehicle and used to identify hotspots and pinpoint areas for further investigation or placement of fixed monitoring sites.

## NEED FOR PROPOSED RULE 1480

PR 1480 is needed to ensure that ambient levels near facilities with significant risk levels are being monitored. Operations with metal TAC emissions can have significant fugitive emissions and monitoring near facilities has shown high levels of metal TACs. As previously discussed, some facilities have had cancer risks that were well above 1,000 in a million, more than 10 times the Rule 1402 Significant Risk Level threshold. When a Potentially High Risk Level Facility is identified through Rule 1402, it can take two to three years to install permanent pollution controls and measures required by the Risk Reduction Plan. During this interim period, ambient air monitoring can monitor emissions from the facility to ensure metal TAC emissions are not increasing. In addition, the ambient air monitoring data is a tool that can be used to verify reductions of metal TAC emissions during the implementation of the Early Action Reduction Plan as well as the Risk Reduction Plan. Additionally, the elevated levels alert the South Coast AQMD of certain activities that may generate emissions.

PR 1480 does not require measures to reduce emissions, but instead would provide information regarding emissions. The primary means in which metal TAC emissions would be reduced is through the requirements of Rule 1402 under the provisions for a Potentially High Risk Level Facility. The facility would be designated pursuant to Rule 1402 and PR 1480 if health risks exceed the Significant Risk Level for metal TACs. Since metal TACs are a subgroup of all TACs evaluated under Rule 1402, the criteria set forth in PR 1480 will affect a subset of sources potentially designated as Potentially Significant Risk Level Facilities under Rule 1402. PR 1480 focuses on residential and sensitive receptors and only metal TACs while Rule 1402 focuses on residential, sensitive and worker receptors and all TACs listed under Rule 1401 – New Source Review of Toxic Air Contaminants. In other words, PR 1480 has a narrower focus.

PR 1480 will provide a consistent approach, implementation, and uniformity for required metal TAC Monitoring across several universes of metal working or processing industries. PR 1480 would require the facility to conduct metal TAC monitoring and sampling until the Risk Reduction Plan under Rule 1402 is implemented or it is determined that a Risk Reduction Plan is not needed, whichever is sooner.

## AFFECTED INDUSTRIES

PR 1480 will affect facilities that emit metal TACs and contribute to a high health risk at a sensitive receptor. It is unknown the type or the number of facilities that will be affected by this proposed rule. Types of operations with potential metal TAC emissions include:

- Chromic acid anodizing and chromium plating facilities;
- Metal grinding and buffing operations;
- Metal melting facilities
- Forges and other hot metal working facilities
- Welding and hot cutting operations (not using a lubricant)
- Metal heat treaters
- Cement manufacturers
- Cement batch plants
- Scrapyards and recyclers that process metal and/or concrete
- Chromium-containing coating operations
- Leather tanneries

## PUBLIC PROCESS

Development of PR 1480 is being conducted through a public process. A PR 1480 Working Group has been formed to provide the public and stakeholders an opportunity to discuss important details about the proposed rule and provide South Coast AQMD staff with input during the rule development process. The PR 1480 Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. South Coast AQMD has held eight working group meetings at the South Coast AQMD Headquarters in Diamond Bar. The meetings were held on May 2, 2018, June 13, 2018, November 28, 2018, February 5, 2019, April 10, 2019, May 23, 2019, August 6, 2019, and August 29, 2019. In addition, a Public Workshop is scheduled to be held on October 2, 2019 to present the proposed rule and receive public comment.

## **CHAPTER 2: SUMMARY OF PROPOSED RULE 1480**

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### **OVERALL APPROACH**

#### **PROPOSED RULE 1480**

Purpose – Subdivision (a)

Applicability – Subdivision (b)

Definitions – Subdivision (c)

Designation of a Metal TAC Monitoring Facility – Subdivision (d)

Monitoring and Sampling Plan – Subdivision (e)

Monitoring and Sampling Requirements – Subdivision (f)

Alternative Monitoring and Sampling – Subdivision (g)

Reduced Monitoring and Sampling Frequency and/or Monitors – Subdivision (h)

Monitoring, Recordkeeping, and Reporting Requirements – Subdivision (i)

Request to Discontinue Metal TAC Monitoring – Subdivision (j)

Exemptions – Subdivision (k)

District Monitoring Fee – Appendix 1

## **OVERALL APPROACH**

PR 1480 establishes the process to designate a facility as a Metal TAC Monitoring Facility, and after a facility is designated, requirements to conduct ambient air monitoring for Metal TACs. The requirements include submittal of a Monitoring and Sampling Plan, conducting Metal TAC Monitoring, and reporting of the monitoring data to the Executive Officer.

Both PR1480 and Rule1402 include provisions for the designation of facilities as a Metal TAC Monitoring Facility and a Potentially High Risk Level Facility, respectively. The criteria set forth in PR 1480 will affect a subset of sources designated as Potentially High Risk Level Facilities under Rule 1402. Both designations are based on when the cancer risk is equal to or greater than one hundred in one million ( $100 \times 10^{-6}$ ) or the hazard index is equal to or greater than five (5.0) for any target organ system. Where they differ is that PR 1480 focuses on sensitive receptors and only metal TACs and Rule 1402 focuses on residential, sensitive, and worker receptors and all TACs listed in Rule 1401.

Since the universe of affected facilities under PR 1480 is a subset of Rule 1402, a facility subject to the Metal TAC Monitoring requirements of PR 1480 would also be required to reduce the TAC emissions as part of an Early Action Reduction Plan and Risk Reduction Plan under Rule 1402. Additionally a facility can implement voluntary measures to reduce TAC emissions. A facility would be eligible to cease Metal TAC Monitoring after the facility has fully implemented the required Rule 1402 Risk Reduction Plan, or the date of the approved Health Risk Assessment if it is determined that a Risk Reduction Plan was not required.

The following provides a general description of the requirements of PR 1480. For specific rule language, please refer to PR 1480.

## **PROPOSED RULE 1480**

### **Purpose – Subdivision (a)**

The purpose of the proposed rule is to require facilities that have been designated by the Executive Officer as a Metal TAC Monitoring Facility to conduct Monitoring and Sampling. A Metal TAC Monitoring Facility is a facility that meets the designation criteria discussed in paragraph (d)(8).

### **Applicability – Subdivision (b)**

PR 1480 applies to facilities that have Metal TAC emissions where a Metal TAC is a metal air pollutant as defined in paragraph (b)(8). This rule applies to the owner or operator of any facility that receives an Initial Notice pursuant to paragraph (d)(1). The Executive Officer will issue the Initial Notice to inform the facility that Monitoring and Sampling is being conducted.

### **Definitions – Subdivision (c)**

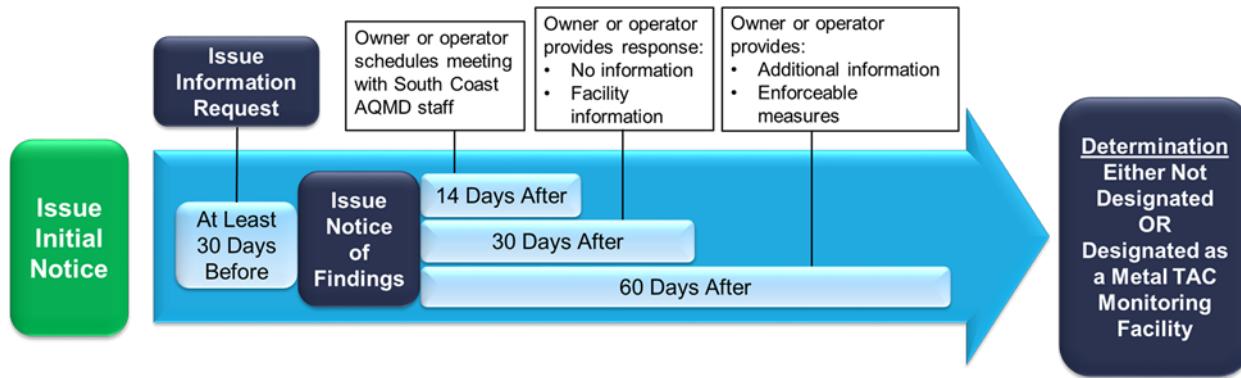
PR 1480 includes definitions for specific terms. Several of the definitions are based on definitions from existing South Coast AQMD rules with slight modifications, while other definitions are unique to PR 1480. For certain definitions, additional clarification is provided in this chapter where the definition is used within a specific provision. Please refer to PR 1480 subdivision (c) for definitions used in the proposed rule.

## Designation of a Metal TAC Monitoring Facility – Subdivision (d)

Subdivision (d) establishes the process to designate a facility as a Metal TAC Monitoring Facility. A Metal TAC Monitoring Facility that meets the criteria specified in paragraph (d)(8) will be required to conduct monitoring and sampling of specific Metal TACs. This designation process includes an Initial Notice pursuant to paragraph (d)(1), a Notice of Findings pursuant to paragraph (d)(3), and Designation of a Metal TAC Monitoring Facility pursuant to paragraph (d)(8). During the process, the owner or operator may receive Information Requests pursuant to paragraph (d)(2) from the Executive Officer or elect to provide additional information to the Executive Officer pursuant to paragraph (d)(5) to consider when determining if a facility will be designated as a Metal TAC Monitoring Facility. The Executive Officer will notify the facility in writing if the facility is or is not designated a Metal TAC Monitoring Facility pursuant to paragraph (d)(9).

Figure 2-1 provides an overview of the process of designating a facility as a Metal TAC Monitoring Facility.

**Figure 2-1 – Overview of Designation of Metal TAC Monitoring Facility**



### ***Initial Notice (d)(1) and Information Request (d)(2)***

During the development of PR 1480, stakeholders requested advance notice of monitoring that may lead to a facility being designated as Metal TAC Monitoring Facility and a pathway for an owner or operator of a facility to identify and correct issues that were associated with Metal TAC emissions detected by ambient monitors. Staff added the Initial Notice in paragraph (d)(1) to provide an early notice to the facility that the South Coast AQMD is conducting Monitoring and Sampling. The Executive Officer may issue future Initial Notices to the same facilities that were previously not designated as a Metal TAC Monitoring Facility. This could occur if new information is obtained or if there are changes at the facility.

In order to gather the information needed to decide if a facility should be designated a Metal TAC Monitoring Facility, the Executive Officer may issue one or more Information Requests pursuant to paragraph (d)(2) to an owner or operator of a facility. Emission testing of sources verifies that Metal TAC emissions are being generated from an operation or activity at a facility. For example, a facility may process a Metal TAC, but there may not be a method for emissions to be generated. Sample analyses can determine the contents of an operation and/or if there is Metal TAC material being deposited. The Information Request may include requiring the owner or operator to conduct

source tests and/or sample analyses. An owner or operator of a facility has a choice to either conduct this testing or provide the Executive Officer access to the facility to conduct the testing. If the owner or operator chooses to conduct their own testing, they will follow the protocol specified in the written request by the Executive Officer and provide the complete report to the Executive Officer. While the Executive Officer may have initially placed Metal TAC monitors as part of a preliminary investigation, the Metal TAC monitors may not have been sited to quantify Metal TAC emissions from the facility and it may be necessary for Metal TAC monitors to be sited on the property, near the fenceline to more accurately measure emissions from the facility. The Information Request may require placement of the Metal TAC monitors near the fenceline within the facility, or at the fenceline of the facility.

***Notice of Findings (d)(3)***

After evaluating the information collected regarding the facility, the Executive Officer may issue a Notice of Findings pursuant to paragraph (d)(3). A Notice of Findings is a formal notice from the Executive Officer that a facility may be designated a Metal TAC Monitoring Facility. As discussed in Chapter 1, the Executive Officer utilizes the 4-step process to determine if a facility is a source of emissions. The Notice of Findings would include the information that the Executive Officer used to determine not only that the facility is a source of Metal TAC emissions, but that the Metal TAC emissions are contributing to a health risk at a Sensitive Receptor that exceeds the Significant Risk Level.

Information collected either prior to or following the Initial Notice would be used to determine that Metal TAC emissions are being emitted from processes or operations at the facility. The Executive Officer would use source or screening test results with an emission rate or other known emission factors to model the health risks to a Sensitive Receptor. Cancer Risk and Chronic Hazard Index would be estimated using air dispersion modeling with AERMOD, or the most recent U.S. EPA approved dispersion modeling software, and the Tier 4 detailed risk assessment procedures in Rule 1401.

Stakeholders requested that the Notice of Findings include key deadlines of when the owner or operator of the facility would need to comply with specific PR 1480 requirements and the data collected by the South Coast AQMD. A Notice of Findings issued under PR 1480 would include the information and data that the South Coast AQMD is considering to use to designate the facility, the next steps in the process for the facility, along with the appropriate deadlines, and a link to the rule language.

If a Notice of Findings is not issued 180 days after an Initial Notice or 180 days after the due date in the most recent Information Request, the Executive Officer may issue a subsequent Initial Notice that could lead to a Notice of Findings.

***Facility Response After Notice of Findings (d)(4), (d)(5), (d)(6), and (d)(7)***

Paragraph (d)(4) gives an owner or operator of a facility that receives a Notice of Findings the option to meet with the Executive Officer to discuss the information in the Notice of Findings. Throughout the development of PR 1480, stakeholders requested that the facility have the opportunity to respond to the information included in the Notice of Findings and have the necessary time to respond. In paragraph (d)(5), owner or operators that need additional time, beyond 30 days, to prepare information must submit a written notice to the Executive Officer that

additional information will be submitted no later than 60 days from the date of the Notice of Findings.

Paragraph (d)(6) provides examples of the type of additional information that can be provided. An owner or operator of a facility may provide any additional information to substantiate that the equipment or processes are not contributing to some or all of the Metal TAC emissions, a list of Enforceable Measures (explained below), or information to substantiate that the Metal TAC emissions are not attributed to the facility. Examples include identifying other sources of Metal TAC emissions in the immediate vicinity of the facility and information that elevated Monitoring and Sampling results were due to exceptional events, such as fireworks on the Fourth of July or construction activities involving cement, or welding activities. Enforceable Measures are those measures that reduce or eliminate Metal TAC emissions that are real, permanent, quantifiable, and enforceable by the Executive Officer, and must be implemented at the time of the submittal of the additional information. This provision is intended for those facilities that have already gone through the permitting process and have installed pollution controls or new equipment to permanently reduce emissions or have removed equipment and surrendered their South Coast AQMD permit. Pollution controls or equipment still undergoing permit evaluation would not be considered Enforceable Measures.

#### ***Criteria to Designate a Metal TAC Monitoring Facility (d)(8)***

The Executive Officer would consider the information and data collected by the South Coast AQMD and the information and data provided by the owner or operator of the facility. Paragraph (d)(8) specifies the criteria used to designate a facility which is generally based on the 4-step process discussed in Chapter 1. The Executive Officer would use the information collected to estimate the health risks at the Sensitive Receptors by using air dispersion modeling such as AERMOD, or the most recent U.S. EPA approved dispersion modeling software, and the Tier 4 detailed risk assessment procedures in Rule 1401. The definition of sensitive receptor which is defined in paragraph (c)(13), includes schools which is defined in paragraph (c)(12). If the health risk from a facility at the Sensitive Receptor meets or exceeds the Significant Risk Level—which is a cancer risk equal to 100 in-a-million—or a total Individual Chronic Hazard Index equal to 5.0 for any target organ system, and the facility meets the other criteria specified in paragraphs (d)(8)(A) and (d)(8)(B) regarding Metal TAC emissions, the facility will be designated as a Metal TAC Monitoring Facility.

#### ***Notification of Designation as a Metal TAC Monitoring Facility (d)(9)***

Paragraph (d)(9) specifies the information that the Executive Officer would provide if the facility was designated a Metal TAC Monitoring Facility. A facility designated as a Metal TAC Monitoring Facility would be provided:

- Information that demonstrates that the facility met the designation criteria;
- Location of Sensitive Receptors that meet or exceed the Significant Risk Level and the estimated values;
- Metals of Concern, which are those Metal TACs that are contributing to the Significant Risk Level at a Sensitive Receptor; and
- Equipment and processes that are contributing to the Significant Risk Level at a Sensitive Receptor; and

- Initial number, type, and approximate locations of Metal TAC monitors and wind monitors required to conduct Monitoring and Sampling.

***Requirements for a Metal TAC Monitoring Facility (d)(10)***

After a facility is designated as a Metal TAC facility, the owner or operator would be required to submit a draft Basic Monitoring and Sampling Plan pursuant to subdivision (e) for review and approval. The approval letter for a Monitoring and Sampling Plan will specify when ambient air monitoring is to begin to comply with the Monitoring and Sampling requirements pursuant to subdivision (f).

**Monitoring and Sampling Plan – Subdivision (e)**

The Monitoring and Sampling Plan establishes procedures that the owner or operator of a Metal TAC Monitoring Facility must follow when conducting Monitoring and Sampling. The Executive Officer would need to approve the Monitoring and Sampling Plan prior to the start of monitoring and sampling. The information in the Monitoring and Sampling Plan provides details about the facility, such as information about the potential sources of Metals of Concern within the facility, a detailed map of the facility, and the Monitoring and Sampling equipment and procedures to be used. The Monitoring and Sampling Plan is a compliance plan subject to fees (see paragraphs (e)(9) and (e)(10)) and is enforceable.

Subdivision (e) specifies requirements for the Basic Monitoring and Sampling Plan, Alternative Monitoring and Sampling Plan, and Reduced Monitoring and Sampling Plan. A general description of each of these Monitoring and Sampling Plans and the information required is described below.

**Table 2-1: Comparison of Monitoring and Sampling Plans**

	<b>Basic Monitoring and Sampling Plan</b>	<b>Alternative Monitoring and Sampling Plan</b>	<b>Reduced Monitoring and Sampling Plan</b>
<b>Purpose</b>	Facility prepares Monitoring and Sampling Plan and uses third-party contractor to conduct Monitoring and Sampling	Facility elects to use Executive Officer to conduct Monitoring and Sampling; Executive Officer would prepare Monitoring and Sampling Plan	Facility operating under a Basic or Alternative Monitoring and Sampling Plan that meets criteria in subparagraphs (e)(5)(A) through (e)(5)(C) may elect to reduce Monitoring and Sampling frequency and/or number of monitors
<b>Information Required Pursuant to Paragraph (e)(1)</b>	All information in paragraph (e)(1)	Information in subparagraphs (e)(1)(A) through (e)(1)(D)	All information in paragraph (e)(1)
<b>Sampling Frequency</b>	1 in 3 days	1 in 3 days	1 in 6 days
<b>Denial of Revised Draft Monitoring and Sampling Plan</b>	Revised Draft Basic Monitoring and Sampling Plan will be modified and approved as an Alternative Monitoring and Sampling Plan, unless the facility ceases operation of equipment responsible for metal TAC emissions	Revised Draft Alternative Monitoring and Sampling Plan will be modified and approved as an Alternative Monitoring and Sampling Plan	No reduction in the Monitoring and Sampling frequency and/or number of monitors and existing approved Basic or Alternative Monitoring and Sampling Plan is still in effect

### ***Basic Monitoring and Sampling Plan***

Once a facility is designated as a Metal TAC Monitoring Facility, it must submit either a Basic or Alternative Monitoring and Sampling Plan. A Metal TAC Monitoring electing to conduct Monitoring and Sampling or hire a contractor to conduct Monitoring and Sampling is required to submit a Basic Monitoring and Sampling Plan.

For a Basic Monitoring and Sampling Plan all of the information specified in paragraph (e)(1) is required, which includes the facility details, such as a map of the facility, the equipment and processes that are sources of Metal TACs, the operating conditions of the equipment, and any source tests or emission tests. A Basic Monitoring and Sampling Plan would also include information regarding how the Monitoring and Sampling will be conducted to meet the requirements in subdivision (f), such as the monitoring equipment and methodology used to obtain ambient air samples (i.e. sample collection), the procedures that samples are removed from the

monitors and brought back for analysis (i.e. sample retrieval), sample analysis, quality assurance and quality control procedures; the proposed locations of the monitors; and the information for each company that will conduct monitoring and sampling, including the name of the laboratory that will be used.

### ***Alternative Monitoring and Sampling Plan***

An Alternative Monitoring and Sampling Plan is required if the owner or operator of a Metal TAC Monitoring Facility, rather than hiring a contractor to conduct Monitoring and Sampling, elects to have the South Coast AQMD conduct ambient air monitoring pursuant to subdivision (g). In an Alternative Monitoring and Sampling Plan, the owner or operator would provide the relevant facility details required under subparagraphs (e)(1)(A) through (e)(1)(D). However, information pertaining to the monitoring and sampling specified in subparagraphs (e)(1)(E) through (e)(1)(H) is not required. The South Coast AQMD will include monitoring and sampling information and the specifics of how Monitoring and Sampling will be conducted. The South Coast AQMD might hire a third-party contractor to conduct the monitoring and sampling.

### ***Reduced Monitoring and Sampling Plan***

An owner or operator of a Metal TAC Monitoring Facility that elects to reduce sampling frequency from 1 in 3 days to 1 in 6 days and/or to reduce the number of monitors, is required to submit a Reduced Monitoring and Sampling Plan pursuant to subdivision (h). In addition to the criteria for approval for the Basic or Alternative Monitoring Plan, a draft Reduced Monitoring and Sampling Plan must meet additional criteria in subparagraph (e)(5)(A) through (e)(5)(C) that ensures the health risk at any sensitive receptor is below the Reduced Risk Level, Early Action Risk Reduction Measures required under Rule 1402 have been implemented, and the owner or operator did not have a previously approved Reduced Monitoring and Sampling Plan. An owner or operator that is required to submit a draft Reduced Monitoring and Sampling Plan can base that plan on their approved Basic or Alternative Monitoring and Sampling Plan with revisions to the monitoring frequency and/or to remove a monitor.

### ***Approval of Basic, Alternative, or Reduced Monitoring and Sampling Plans***

Paragraphs (e)(3) through (e)(6) establish the process for approving or not approving the draft Basic, Alternative, and Reduced Monitoring and Sampling Plans. A draft Basic or Alternative Monitoring and Sampling Plan will be approved if it contains the information required in paragraphs (e)(1) or (e)(2). The option to reduce the monitoring and sampling frequency or the number of monitors is a one-time option, and if required to revert back to a Basic or Alternative Monitoring and Sampling Plan, an owner or operator of a facility cannot again reduce their monitoring and sampling frequency. Additional information on Reduced Monitoring and Sampling Plans is below in the section covering subdivision (h).

Upon approval of the Basic and Reduced Monitoring and Sampling Plans, the owner or operator would be required to begin Monitoring and Sampling by the date listed in the approval letter. Upon approval of the Alternative Monitoring and Sampling Plan, the owner or operator would be required meet the requirements of paragraph (g)(1) which includes providing access for the South Coast AQMD or its third-party contractor to conduct monitoring and sampling and paying the specified fees.

### ***Basic, Alternative, and Reduced Monitoring and Sampling Plans that are Not Approved***

Under paragraphs (e)(4) and (e)(6), if the Executive Officer determines that a draft Monitoring and Sampling Plan does not meet the approval criteria, the Executive Officer will notify the owner or operator that the draft Monitoring and Sampling Plan was not approved and provide the specific deficiencies. The owner or operator must submit a revised draft Basic, Alternative, or Reduced Monitoring and Sampling Plan within 30 days that addresses the deficiencies identified in the letter.

If a revised draft Basic Monitoring and Sampling Plan does not address the deficiencies, the Executive Officer will issue a denial letter. Within 7 days of the date of the denial letter, the owner or operator must either cease operations that contribute emissions of the Metals of Concern (as specified in subparagraph (d)(9)(D)) or notify the Executive Officer that the owner or operator elects to have the Executive Officer conduct Monitoring and Sampling pursuant to subdivision (g) and the revised draft Basic Monitoring and Sampling Plan will be modified by the Executive Officer and approved as an Alternative Sampling and Monitoring Plan.

A revised draft Alternative Sampling and Monitoring Plan that fails to meet the necessary requirements will be modified by the Executive Officer and approved. If a revised draft Reduced Sampling and Monitoring Plan is not approved, the owner or operator must continue to implement the most recently approved Basic Sampling and Monitoring Plan or the South Coast AQMD will continue conducting monitoring and sampling based on the most recently approved Alternative Monitoring and Sampling Plan, without a reduction in the Monitoring and Sampling frequency and/or number of monitors.

An owner or operator of a Metal TAC Monitoring Facility may appeal the Executive Officer's denial of a Monitoring and Sampling Plan by appealing to the Hearing Board pursuant to Rule 216 – Appeals.

### ***Modifications to an Approved Monitoring and Sampling Plan (e)(7) and (e)(8)***

Before an owner or operator makes any changes at the facility, the owner or operator would need to notify the Executive Officer of the proposed changes. The Executive Officer would review the changes and notify the owner or operator in writing if a modification of an approved Basic, Alternative, or Reduced Monitoring and Sampling Plan is required. The modified Basic, Alternative, or Reduced Monitoring and Sampling Plan would follow the same process to approve or not approve the Basic, Alternative, or Reduced Monitoring and Sampling Plan.

### ***Monitoring and Sampling Plan Fees (e)(9) and (e)(10)***

Evaluation of a Monitoring and Sampling Plan shall be subject to Rule 306 - Plan Fees. The fees for the preparation of an Alternative Monitoring and Sampling Plan is listed in Appendix 1, if Rule 301 – Permitting and Associated Fees, does not list the fee.

### ***Monitoring and Sampling Requirements – Subdivision (f)***

Subdivision (f) includes Monitoring and Sampling requirements. The owner or operator is required to:

- Have an approved Monitoring and Sampling Plan that includes all processes and equipment that emit Metals of Concern and represents current processes and operating conditions;

- Install a minimum of two monitors to conduct Monitoring and Sampling, unless an approved Monitoring and Sampling Plan allows one monitor;
- At least one sampling monitor should be placed as close to the point where the Maximum Expected Ground Level Concentration of the Metals of Concern is located, while taking into account logistical constraints.
- Collect one sample, with a continuous sampling time of at least 23 hours to no more than 25 hours from midnight to midnight, unless a different collection schedule (e.g. 8am to 8am) is specified in an approved Monitoring and Sampling Plan.
- For hexavalent chromium monitoring: if the owner or operator requires an alternate collection schedule for the 24-hour sample collection (e.g. 8am to 8am), to accommodate timely submission of hexavalent chromium samples for analysis, the owner or operator would need to specify the alternate schedule in the draft Monitoring and Sampling Plan for approval by the Executive Officer;
- Monitor and sample on a schedule that will either be one in three days or one in six days, when on a reduced sampling schedule pursuant to subdivision (h), unless receiving written notification from the Executive Officer to sample on another date in lieu of an atypical sampling day such as the Fourth of July or New Year's Eve;
- Operate and maintain all Monitoring and Sampling equipment in accordance with U.S. EPA approved methods or other methods approved by the Executive Officer in the approved Monitoring and Sampling Plan;
- Collect and analyze each sample in accordance with U.S. EPA approved methods or other methods in the approved Monitoring and Sampling Plan. A chain of custody record must be maintained for discrete samples, those samples that are retrieved and brought to a laboratory for analysis. The laboratory used to analyze the samples must be able to analyze low ambient levels of metal TACs, have previous experience in analyzing for hexavalent chromium and/or metals in the nanograms per cubic meter range, and follow a QA/QC program;
- Retain sample media for one year, or other period in an approved Monitoring and Sampling Plan, unless the entire sample media is consumed, in which case, there is no sample media left to retain. The solution rendered from the acid extraction and digestion of a filter must also be retained and properly stored for one year, unless the entire sample extract is consumed for analysis. The sample media or sample extract should be made available to the Executive Officer, upon request;
- Record wind speed and direction continuously;
- Do not miss more than one sample within a 30 consecutive calendar day period, unless the sample was missed due to mechanical failure of the Monitoring and Sampling equipment; and
- Do not conduct activities that may damage or bias the samples, including but not limited to tampering with or obstructing the Monitoring and Sampling equipment.

Please refer to PR 1480 for the specific monitoring and sampling requirements.

#### **Alternative Monitoring and Sampling – Subdivision (g)**

Paragraph (g)(1) allows the owner or operator of a Metal TAC Monitoring Facility to choose to have the Executive Officer conduct Metal TAC Monitoring in lieu of meeting the requirements of subparagraph(d)(10)(B) or pursuant to clause (e)(4)(B)(ii). The owner or operator of a Metal TAC Monitoring Facility shall provide access for the South Coast AQMD or its third-party contractor

to conduct Metal TAC Monitoring. This can include, but is not limited to, providing electricity to power equipment, space for Monitoring and Sampling equipment near the fenceline or at the fenceline within the facility, a suitable location for deployment of a wind monitor, and access to Monitoring and Sampling equipment. The owner or operator of a Metal TAC Monitoring Facility would be required to pay fees for the Monitoring and Sampling services on a quarterly basis. The fee structure would initially be established in Appendix 1 of PR 1480, however, the fees for Metal TAC Monitoring would eventually be incorporated into Rule 301 and periodically updated to reflect changes to the consumer price index or other situations. Appendix 1 of this rule would only be used for the Metal TAC Monitoring fees until the fees are incorporated into Rule 301. If the owner or operator elects to no longer have the Executive Officer conduct Monitoring and Sampling, the owner or operator must notify the Executive Officer and submit a draft Basic Monitoring and Sampling Plan. The owner or operator would be able to use the approved Alternative Monitoring and Sampling Plan and update the contractor information and resubmit that as a draft Basic Monitoring and Sampling Plan and follow the approval process in subdivision (e). The Executive Officer would continue Monitoring and Sampling under the Alternative Monitoring and Sampling Plan until the Basic Monitoring and Sampling Plan is approved.

### **Reduced Monitoring and Sampling Frequency and/or Monitors – Subdivision (h)**

#### ***Eligibility Criteria and the Reduced Monitoring and Sampling Plan (h)(1) and (h)(2)***

An owner or operator with an approved Basic or Alternative Monitoring and Sampling Plan is eligible to request a reduction in the Monitoring and Sampling frequency, from the initial, at least once every three days, to a reduced, at least once every six days, schedule and/or a reduction in the number of monitors, if the criteria in subparagraphs (e)(5)(A) through (e)(5)(C) are met. The owner or operator would submit a draft Reduced Monitoring and Sampling Plan and implement the Reduced Monitoring and Sampling Plan after the owner or operator gets approval from the Executive Officer.

A Metal TAC Monitoring Facility would not be eligible to reduce the monitoring frequency if the owner or operator previously implemented an approved Reduced Monitoring and Sampling Plan, but was required to increase the monitoring frequency by implementing a previously approved Basic Monitoring and Sampling Plan. During the rule development process, stakeholders requested that this ineligibility criteria be removed after a few years, allowing the owner or operator to once again request a reduced Monitoring and Sampling frequency. Staff did not make this change as it is anticipated that within a few years, the owner or operator would have fully implemented their Risk Reduction Plan under Rule 1402, making the owner or operator of a Metal TAC Monitoring facility eligible to discontinue Monitoring and Sampling pursuant to subdivision (j).

#### ***Exceedance of Benchmark Concentration (h)(3) and (h)(4)***

A Benchmark Concentration is the 30-day average concentration of a Metal TAC, for the 30 days preceding the submittal of the draft Reduced Monitoring and Sampling Plan. For facilities conducting their own monitoring and sampling, if three valid samples exceed 10 times the Benchmark Concentration, the owner or operator must provide notice to the Executive Officer with the date of the exceedances, the monitor, the concentration level of the Metal TAC, and an explanation, if any for the exceedance. The explanation can include any information to substantiate that the exceedances were not attributed to the facility. For facilities electing to have the South Coast AQMD conduct monitoring and sampling, the Executive Officer would notify the owner or

operator of the exceedances and the owner or operator can provide information to the Executive Officer with any information to substantiate that the exceedances were not attributed to the facility.

If the Executive Officer finds that the emissions are attributed to the facility, the facility must immediately return to an increased Monitoring and Sampling frequency of 1 in 3 days and/or increase the number of monitors to what was previously approved. The Executive Officer will notify the facility in writing and will take the facility's Reduced Monitoring and Sampling Plan, change the frequency and the number of monitors to revert back to what was in the previously approved Basic or Alternative Monitoring and Sampling Plan and provide the owner or operator with an approved Basic or Alternative Monitoring and Sampling Plan. The owner or operator would not be allowed to request a reduced monitoring and sampling frequency and/or monitors again. Although a facility may have reduced the number monitors when moving from a Basic or Alternative Monitoring and Sampling Plan to a Reduced Monitoring and Sampling Plan, all monitors should remain onsite or be available to be installed immediately, in the event that a facility is required to add monitors when reverting to a Basic or Alternative Monitoring and Sampling Plan.

### **Monitoring, Recordkeeping, and Reporting Requirements – Subdivision (i)**

This subdivision specifies the information the owner or operator of a Metal TAC Monitoring Facility shall report by the 21st of each month. Additionally a notification to the Executive Officer shall be made when there is an exceedance of ten times the Significant Risk Level. An owner or operator of a Metal TAC Monitoring Facility can provide information such as why the exceedance is not attributed to the facility or if there were certain activities occurring at the facility.

### **Request to Discontinue Metal TAC Monitoring – Subdivision (j)**

This subdivision establishes the process to request discontinuation of monitoring and sampling. The owner or operator of a Metal TAC Monitoring Facility is required to submit a Monitoring and Sampling Relief Plan that includes throughput records, housekeeping measures, and status of implementing a Risk Reduction Plan, and if a Risk Reduction Plan was not required under Rule 1402, the approval status of a Health Risk Assessment. It is possible that a facility that is designated under Rule 1402 as Potentially High Risk Level Facility may not be required to prepare and implement a Risk Reduction Plan if the approved Health Risk Assessment has a cancer risk of less than 25 in one million or a non-cancer chronic hazard index of less than 3. The Monitoring and Sampling Relief Plan is subject to the plan fees specified in Rule 306. Approval of the Monitoring and Sampling Relief Plan is based on whether the operations within the past 365 days were normal operating conditions, housekeeping measures are incorporated in the Monitoring and Sampling Relief Plan, and demonstration that the Risk Reduction Plan is fully implemented, and if a Risk Reduction Plan was not required, that the Health Risk Assessment is approved. Housekeeping provisions are needed to minimize fugitive emissions which tend to be a substantial component to ambient levels from operations with Metal TACs. If the sources are regulated under South Coast AQMD rules that have housekeeping provisions, those housekeeping provisions can be referenced and other housekeeping measures to address maintenance, construction, and other activities that can result in fugitive emissions can be included. The relief from Monitoring and Sampling is largely based on implementation of the Risk Reduction Plan as that represents completion of implementation of permanent pollution controls and measures to ensure the facility will maintain health risk levels below the Rule 1402 Action Risk Level.

After 90 days, the Executive Officer will provide the owner or operator of a Metal TAC Monitoring Facility with a status of the Monitoring and Sampling Relief Plan review. Once the Monitoring and Sampling Relief Plan is approved, the facility will no longer be designated a Metal TAC Monitoring Facility and not be required to conduct Monitoring and Sampling. The Executive Officer may re-designate a facility as a Metal TAC Monitoring Facility, but would follow the process outlined in subdivision (d).

### **Exemptions – Subdivision (k)**

PR 1480 includes two exemptions to account for those sources that are already regulated under rules that have ambient air monitoring requirements for lead or hexavalent chromium. While lead emissions addressed by Rule 1420 – Emissions Standard for Lead, Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities, or Rule 1420.2 – Emission Standards for Lead from Metal Melting Facilities are exempt, these facilities would still be subject to PR 1480 for Metal TAC(s) other than lead. Additionally, hexavalent chromium emissions monitored as required by Rule 1156 are exempt, however these facilities would still be subject to PR 1480 for other Metal TAC(s).

### **District Monitoring Fee – Appendix 1**

#### ***Principle***

This paragraph outlines that the owner or operator of a Metal TAC Monitoring Facility would pay the Executive Officer on a quarterly basis to conduct Monitoring and Sampling.

#### ***Preparation of a Monitoring and Sampling Plan***

Under PR 1480, facilities can submit a Basic Monitoring and Sampling Plan and use third party contractors to conduct the ambient air monitoring and sampling, or they can elect to have the Executive Officer prepare an Alternative Monitoring and Sampling Plan and conduct the ambient air monitoring and sampling. If a facility prepares a Basic Monitoring and Sampling Plan, it must be submitted to the Executive Officer for evaluation and be subjected to a plan review fee per Rule 306. If the latter option is chosen, this paragraph provides for a flat fee to recover the Executive Officer's reasonable costs of preparing the Alternative Monitoring and Sampling Plan. The proposed fees have been estimated based on the Executive Officer's experience preparing similar plans in other contexts, including monitoring plans required for other rules or for enforcement investigations. While the preparation of a Monitoring and Sampling Plan can vary with the complexity, staff will be following a pre-populated template and information identifying the approximate location where Metal TAC monitors and wind monitors would be best sited. The Alternative Monitoring and Sampling Plan would be prepared by a Monitoring Operations Manager. Input would be provided from a Meteorological Technician, Principal AQ Chemist, and an Air Quality Engineer II/Air Quality Specialist. A Meteorological Technician would verify the location of monitoring equipment and the type of equipment to be used. A Principal AQ Chemist would determine the appropriate methods for analysis, an Air Quality Engineer II/Air Quality Specialist would evaluate data collected by the South Coast AQMD and provided by the Metal TAC Monitoring Facility to determine the location of the monitors. Additional review would be performed by the Advanced Monitoring Operations Manager, Senior Engineer, Program Supervisor, and a Planning and Rules Manager. There are multiple departments involved in the preparation of an Alternative Monitoring and Sampling Plan. Prior to the approval each department must have a first level supervisor reviewed followed by a managerial review prior to the issuance

of the Alternative Monitoring and Sampling Plan. There is also time spent by a senior office assistant to create facility folders, scan reports, and perform administrative support to the evaluation staff.

### ***Metal TAC Monitoring Fee***

Table 1 – Quarterly Monitoring Fees listed the fees that will be assessed to the facility. The quarterly fees were calculated based on burdened staff rates. During the development of PR 1480, rule staff consulted with both laboratory staff and special monitoring/operations to determine the reasonable costs incurred by the South Coast AQMD when conducting monitoring, sampling, and analysis and the necessary cost recovery when a Metal TAC Monitoring Facility chooses the South Coast AQMD to perform such activities.

Special monitoring staff determined the rental estimates for hexavalent chromium, non-hexavalent chromium monitors, and wind monitors by dividing the purchase cost by the anticipated working life time annual quarters of the equipment. Labor costs were estimated using the fully burdened staff rates. Staff hours were determined based on the necessary steps to conduct monitoring and maintain the associated equipment. This included sample setup and collection, periodic calibration, travel time, and maintenance of monitoring equipment. Two staff members are required to conduct monitoring activities for safety purposes as the equipment can be in locations that involve climbing ladders or retrieving samples in precarious locations.

Laboratory staff determined the cost to prepare filters and analyze Metal TAC. The analysis and preparation of filters for a hexavalent chromium sample is more expensive due to the increase in time needed to prepare and analyze per sample compared to those for a non-hexavalent chromium Metal TAC. The fees were determined based on both the labor at fully burdened rates and the cost of materials. After the analysis of a sample is conducted there are multiple levels of review prior to the issuance of a sample report.

If the Executive Officer contracts with a third-party contractor to conduct Monitoring and Sampling, the fees would be specified by the third-party contractor.

The number, type, and location of the monitors is initially specified in the designation notice and maintained in the most recent Alternative Monitoring and Sampling Plan. The number of monitors would impact the quarterly fees with each Metal TAC Monitoring Facility having a base number of monitors depending on the Metals of Concern identified in the designation notice. Additional monitors would be needed to measure Metal TAC emissions coming from sources throughout the facility. The cost for each additional monitor beyond the base is specified in Table 1 – Quarterly Monitoring Fees.

The Executive Officer may require modification to the number, type, and location of the monitors needed to conduct Monitoring and Sampling based on new information from the date the facility was designated a Metal TAC Monitoring Facility by requiring the owner or operator of a Metal TAC Monitoring Facility to submit a draft Alternative Monitoring and Sampling Plan with the necessary modifications. The need for the modification would be explained in the notice.

### ***Payment Deadline***

The fees for operating and maintaining the monitors shall be billed on a quarterly basis with payments being due on or before January 1, April 1, July 1, and October 1, in advance of any three-month period for which Monitoring and Sampling is required and include any other unpaid

operating and maintenance fees. If the operating and maintenance fee is not paid in full within sixty (60) calendar days of its due date, a ten percent (10%) surcharge shall be imposed every sixty (60) calendar days from the due date.

***Pro-Rated Payments***

If Monitoring and Sampling will no longer be required to be conducted by the Executive Officer or if the sampling frequency is modified in the middle of a three month period, an owner or operator shall pay fees at a prorated amount

If the number and/or type of monitors is modified in the middle of a three month period, an owner or operator shall pay fees at a prorated amount.

## **CHAPTER 3: IMPACT ASSESSMENT**

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AFFECTED SOURCES

EMISSIONS IMPACT

CALIFORNIA ENVIRONMENTAL QUALITY ACT

SOCIOECONOMIC ASSESSMENT

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETYCODE SECTION  
40727

Requirements to Make Findings

Necessity

Authority

Clarity

Consistency

Non-Duplication

Reference

COMPARATIVE ANALYSIS

## AFFECTED SOURCES

PR 1480 applies to facilities that are sources of Metal TAC(s) after being notified by the Executive Officer through an Initial Notice. This includes facilities that conduct practices such as metal working including but not limited to metal heat treating, forging, melting, cutting, welding, grinding, polishing, and finishing. These facilities can potentially include cement operations and other operations that use metals in the process. Facilities that may have been previously exempt from permitting under Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II are potentially subject to the requirements of PR 1480 if it is designated a Metal TAC Monitoring Facility.

## EMISSIONS IMPACT

PR 1480 does not directly reduce emissions. A facility designated under PR 1480 will be designated as a Potentially High Risk Level Facility under Rule 1402 which will require implementation of an Early Action Risk Reduction Plan and a Risk Reduction Plan. If Metal TAC emissions are being released prior to implementing a Risk Reduction Plan, the South Coast AQMD can seek an order for abatement from the Hearing Board or use other legal tools to address elevated Metal TAC emissions.

## CALIFORNIA ENVIRONMENTAL QUALITY ACT

Pursuant to the California Environmental Quality Act (CEQA) and South Coast AQMD Rule 110, the South Coast AQMD, as lead agency for the proposed project, has reviewed PR 1480 pursuant to: 1) CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA. South Coast AQMD staff has determined that because PR 1480 does not contain any project elements requiring physical modifications that would cause an adverse effect on the environment, it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. PR 1480 is crafted to require facilities designated as Potentially Significant Facilities to conduct metal toxic air contaminant monitoring. Therefore, the proposed project is considered to be categorically exempt because it is designed to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment. Additionally, as provided in CEQA Guidelines Section 15306 – Information Collection, the proposed project is exempt because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts such a project for information-gathering purposes, or as part of a study leading to future action which the agency has not yet taken. Further, South Coast AQMD staff has determined that there is no substantial evidence indicating that any of the exceptions to the categorical exemptions apply to the proposed project pursuant to CEQA Guidelines Section 15300.2 – Exceptions. A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062 – Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

## **SOCIOECONOMIC ASSESSMENT**

A socioeconomic analysis will be conducted and released for public review and comment at least 30 days prior to the South Coast AQMD Governing Board Hearing on PR 1480, which is anticipated to be heard on December 6, 2019.

## **DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727**

### **Requirements to Make Findings**

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

#### **Necessity**

PR 1480 is needed to further protect public health by requiring a Metal TAC Monitoring Facility to conduct Metal TAC Monitoring to demonstrate what the monitored values would be. PR 1480 serves as both a tool to identify Metal TAC emissions and a method to verify that the Enforceable Measures enacted by an owner or operator of a Metal TAC Monitoring Facility were effective. Metal TAC Monitoring will monitor emissions coming from the facility and provide monitored values of Metal TAC to which a neighboring community is potentially exposed. The findings from PR 1480 may lead to the development of rules that reduces Metal TAC Emissions. Further, PR 1480 is needed to establish a fee schedule for Metal TAC Monitoring Facility that elect to have the Executive Officer conduct Metal TAC Monitoring.

#### **Authority**

The South Coast AQMD Governing Board has authority to adopt PR 1480 pursuant to the California Health and Safety Code Sections 39656 et seq., 40000, 40001, 40702, 40725 through 40728, 41510, 41512, 41512.5, 41700, 42303.

#### **Clarity**

PR 1480 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

#### **Consistency**

PR 1480 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

#### **Non-Duplication**

PR 1480 will not impose the same requirements as or in conflict with any existing state or federal regulations. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

#### **Reference**

By adopting PR 1480, the South Coast AQMD Governing Board will be implementing, interpreting or making specific the provisions of the California Health and Safety Code Section 39656 et seq. (toxic air contaminants), 40001 (non-vehicular air pollution), 40702 (adopt

regulations & execute duties), 41700 (nuisance), 41510 (right of entry), 41511 (rules to require source to determine emissions), 41512 (fees), 41512.5 (fees), 42303 (requests for information), and Federal Clean Air Act Section 116 (Retention of State authority).

## **COMPARATIVE ANALYSIS**

California Health and Safety Code Section 40727.2 requires a comparative analysis of the proposed rule requirements with those of any Federal or District rules and regulations applicable to the same equipment or source category. The comparative analysis will be conducted and released in the draft staff report at least 30 days prior to the South Coast AQMD Governing Board Hearing on PR 1480, which is anticipated to be heard on December 6, 2019.