



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

STAFF REPORT – PARTICULATE MATTER

Proposed Amendments to Regulation 6, Rule 1: General Requirements

2017 Clean Air Plan, Control Measure SS31



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June 2018

ACKNOWLEDGEMENTS

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STAFF REPORT

Regulation 6, Rule 1: General Requirements

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Attachment 1: Cost Estimates for Various Dust Controls

Attachment 2: Cost Estimates for Specific Bulk Material Storage and Handling Facilities

I. EXECUTIVE SUMMARY

The Bay Area Air Quality Management District (Air District) staff is proposing amendments to Regulation 6, Rule 1: General Requirements (Rule 6-1), the Air District's general particulate matter emissions limitation rule. This Staff Report has been developed to provide the information supporting the proposed amendments to Rule 6-1 and is intended to provide the public with information on draft amendments to Rule 6-1 in advance of Public Hearing the Air District will hold in Spring 2018.

The Air District is also proposing a new over-arching regulation for Particulate Matter, Regulation 6: Common Definitions and Test Methods (Reg 6) to accompany revisions to Rule 6-1. The new proposed Regulation 6 would provide common definitions and test methods that apply to existing Regulation 6 rules and other source-specific particulate matter rules as they are developed in the future.

The proposed amendments to Rule 6-1 are part of a rule-making process to fulfill a commitment by the Air District's Board of Directors to review Regulation 6, Rule 1, identified as Stationary Source Measure SS31 in the Air District's 2017 Clean Air Plan. Since the 2010 Clean Air Plan originally identified amending Rule 6-1 as a Stationary Source Control Measure, Air District staff further committed to taking steps to address the Bay Area's particulate matter challenges in a November 2012 report entitled *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area*. These draft amendments to Regulation 6, Rule 1 begin to fulfill these important commitments to reduce particulate matter emissions and improve public health.

Staff proposes amendments to Rule 6-1 because the amendments are needed to ensure the Bay Area standards are as health-protective as possible; other air districts in California have more stringent particulate matter standards; and the Air District's general requirement particulate standards have not been updated in decades. Control technology is available that facilities can use to comply at a reasonable cost. Staff found no facilities with PM emissions quantified by source test that are affected by the amendments to Rule 6-1. As mid-sized and smaller particulate matter sources begin to conduct source tests, some may find a need to install controls. However, most of these sources currently have more stringent permit limits than those being proposed. Staff estimates no emission reductions from these sources.

In the workshop phase of this rule development effort, Air District staff drafted a new regulation to control particulate matter, Regulation 6, Particulate Matter, Rule 8: Bulk Material Storage and Handling (Rule 6-8). Draft new Rule 6-8 would focus on fugitive dust from bulk material storage and handling operations, a large source of particulate matter and a moderate source of fine particulates (PM_{2.5}). Fugitive dust is dust that is generated from active operations such as vehicle traffic, loading and unloading solid materials; grinding, screening, or transporting solids using conveyors; and wind erosion on solids during storage and/or handling operations.

Rather than continue to the separate development of draft new Rule 6-8, staff recognized that fugitive dust control requirements from bulk material storage and handling facilities best fits within general requirements, and has incorporated these requirements into the proposed amendments to Rule 6-1. The new section proposed for Rule 6-1 addresses fugitive dust from active operations and from wind erosion of storage piles, disturbed surfaces, and any other activities where the solids can be exposed to the wind by setting limits on any allowable fugitive dust plume, and by prohibiting any visible emissions of fugitive dust from traveling or carrying beyond the site property. In addition, significant bulk material spills must be cleaned up so they do not become a source of fugitive dust. Bulk materials include coke and coal storage and handling. Coke and coal are particularly troublesome solids because the dust from these products is black, visible, and particularly annoying if any particles fall onto adjoining property.

This proposed new section of Rule 6-1 will affect approximately 120 facilities that store and handle bulk materials, ten of which handle petroleum coke, and three facilities that store and handle coal. Approximately 40 of these facilities already have controls for fugitive dust, mostly water sprays. Wind breaks are a very effective method to control wind erosion that initiates fugitive dust plumes, particularly when bulk materials are actively conveyed from one place to another. Costs for wind screens and improvements to watering systems are relatively minor. Emission reductions are estimated to be 0.37 tons per day (tpd) of particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀), with approximately 0.03 tpd of emissions being PM_{2.5}. Complaints from neighbors are expected to be reduced significantly. The new rule would reduce emissions of particulate matter in the Bay Area in a technically feasible and cost-effective manner, thereby improving public health and reducing nuisance dust deposited on nearby neighbors' property.

The Air District is proposing these amendments to Rule 6-1 as part of three proposals addressing fine particulate pollution. The three proposals include (i) a new Regulation 6 providing common definitions, expectation of monitoring emissions to remain in compliance, and test methods that apply generally to all of the particulate matter Rules under Regulation 6; (ii) amendments to Rule 6-1; and (iii) a new Rule 6-6: Prohibition of Trackout. More information about these related proposals can be found in their respective staff reports, which are being published concurrently with this report.

This Staff Report describes the review that staff has undertaken to analyze the various source categories addressed by Rule 6-1 and determine any significant emission reductions. Following this introduction and summary, Section II, Background refers to the parallel section in the Regulation 6 staff report supplemented with additional information regarding bulk material storage and handling. Section III, Proposed Requirements describes the specific requirements and emission limits, and rationale supporting each. Section IV, Emissions and Emission Reductions describes the expected emissions impacts. Section V provides estimated costs for implementation of Rule 6-1; assesses cost effectiveness of the emission reductions; summarizes the Socioeconomic Impacts on the affected industries, jobs market, and local economy; and covers the implementation impacts for the Air District. Section VI provides a discussion on how this rule fits into the existing structure of state and federal regulatory requirements. Section VII summarizes the environmental impacts, and references the California Environmental Quality Act analysis conducted for the amendments to Rule 6-1, in combination with new Regulation 6, and new Regulation 6, Rule 6: Prohibition of Trackout. A Negative Declaration is proposed as a result of the CEQA review. Section VIII describes the rule development and public participation process used to ensure all affected and interested parties participated in this rulemaking project. Section IX summarizes the findings required by the California Health and Safety Code to adopt an amended regulation, summarizes the staff conclusions, and lists the staff recommendations to the Board regarding Rule 6-1, and the Negative Declaration from the CEQA analysis. References are provided, and the associated CEQA Analysis, Socio-economic Analysis and Response to Comments are appendices to this staff report.

Staff recommends the Board of Directors adopt the proposed amendments to Regulation 6, Rule 1, and approve the associated CEQA Analysis Negative Declaration at the Public Hearing scheduled for Spring 2018.

The Air District invites all interested members of the public to review the proposed amendments to Rule 6-1 and this Staff Report, to provide comments on this proposal, and to participate in the Public Hearing. Air District staff will accept written comments, will respond to all comments received, and will present final proposals to the Air District's Board of Directors for their consideration. For further information in advance of the Public Hearing, please contact Guy Gimlen, Principal Air Quality Engineer, (415) 749-4734, ggimlen@baaqmd.gov.

II. BACKGROUND

Refer to the Background section of the staff report for new proposed Regulation 6, Section A for the broad review of all particulate matter sources in the Bay Area, including bulk material storage and handling. This background information provided the basis for the amendments to Rule 6-1, and discusses the recognition that most sources currently have more restrictive permit limits, so the more restrictive particulate matter standards result in very few if any emission reductions. That review also lead directly to the new section of Rule 6-1 addressing control of fugitive dust from bulk materials, including petroleum coke and coal storage and handling. Supplemental background information on petroleum coke and coal storage and handling is included here.

A. Industry / Source Description

There is potential for fugitive dust being emitted from any location that produces, handles or stores solid material, particularly where heavy truck and vehicle traffic are part of producing and selling these bulk materials. Bulk material is defined as any unpackaged sand, soil, gravel, aggregate, solid construction material, solid industrial chemical or other solid product less than two inches in length or diameter. Petroleum coke and coal handling facilities are included with bulk material sites.

1. Bulk Material Storage and Handling

Wind erosion at bulk material storage and handling facilities can create significant dust emissions, particularly when handling fine solids like gypsum, or even gravel and sand from rock quarries. Background on bulk material storage and handling is found in the Regulation 6 staff report, Section II.A.7: Opportunities for PM Emission Reductions. In addition, the Air District has received numerous complaints about coke dust and coal dust. Coke and coal loading / unloading and stockpiles are unique in that fugitive dust from these products is black and highly visible other more typical forms of dust.

PM Emissions from Petroleum Coke and Coal

Petroleum coke is a product of the oil refining process, converting residuum (the heavy asphaltic material from crude oil) into lighter gas oils and solid coke. Three of the five Bay Area refineries produce solid coke. The solid coke is formed in a large vessel called a coke drum, and removed from the drum with high pressure water. The solid coke usually falls into a pit, where it is scooped up, crushed to a manageable size, and conveyed to storage on a conveyor belt. Each refinery conveys, loads, and stores coke in stockpiles (either on-site or off-site). The solid coke may be loaded directly onto a truck and transported to a customer. Most petroleum coke is burned for fuel. One refiner also calcines a portion of their coke to produce a specialty product called calcined coke. One other refiner produces “fluid” coke, which has the consistency of black sand.

One cement manufacturer in Cupertino burns petroleum coke as fuel. Coke is transported to this facility by truck, offloaded via conveyor to a storage pile, and then fed into the process stream. Most of the coke produced in the Bay Area is shipped overseas. There are three coke shipping facilities, one located in the Richmond harbor, one in Pittsburg, and one in Benicia. Each of these shipping facilities receives solid coke by truck, off-loads it, conveys and stores it, then loads it onto ships. The facility in Richmond stores the coke in an open stockpile. The facility in Pittsburg is a state of the art facility, with enclosed off-loading, enclosed conveyors, and enclosed storage. The facility in Benicia is partially enclosed and handles fluid coke.

The Bay Area has two foundries that use coal as a raw material in the manufacturing process. One is in Oakland and the other is in Union City. Coal is received from out of state by railcar at each facility. One facility off-loads and conveys the coal to open storage, then scoops up coal as

needed to supply the manufacturing process. The other off-loads and conveys the coal to a series of silos where the coal is stored until used in the manufacturing process.

Coal dust is a concern throughout the transportation and handling process. Coal contains 2-5 wt. % silt (particles smaller than 70 microns), and the silt can create dust from wind erosion if not kept moist. Coal dust can be emitted from the open tops on railcars in transit. Additional silt is formed as coal jostles in the railcar but most of the coal dust silt is emitted from the railcar in the first few miles of travel. The Air District does not have authority to regulate rail transportation.

In addition, coal dust is a concern when off-loading the railcar into a hopper and conveyor system. Staff observed coal dust coming out of the top of the railcar during unloading, and coal dust surrounding the receipt hopper below the railcar. In addition, the facility that scoops up the coal to feed into the manufacturing processes had issues with coal spills into the vehicle path used to deliver the coal to the process equipment.

2. Pollutants and Emissions Sources

The pollutants of concern from bulk material sites are fugitive dust from the any of the solid materials being handled and stored, and any dust from vehicle traffic on unpaved roads within the site. Rock quarries, asphalt plants, construction sites, equipment storage yards that are not paved, landfills, and any industrial facility that handles solids has the potential to create dust that can add to the particulate load in the air, and that can impact neighbors.

3. Current Emissions Control Technology and Methods

As described in Background section of the staff report for new draft Regulation 6, Section A, the conventional controls for fugitive dust from bulk material storage sites include water trucks spraying water on stockpiles and roads, covers for stockpiles, limiting vehicles speeds on internal haul roads, water sprays for crushers, screens and conveyor belts, and cleanup of any spills.

B. Regulatory History

Refer to the Background section of the staff report for new draft Regulation 6, Section B for the broad review of Regulatory History.

C. Technical Review of Control Technologies

Refer to the Background section of the staff report for new draft Regulation 6, Section C for the broad review of control technologies. There are no new innovative technologies used for controlling fugitive dust from bulk material sites, but there are control technologies that are very effective that are currently under-utilized and can impact dust generation significantly. Wind screens are very effective, often more effective than using water to control dust. Staff strongly encourages use of wind screens rather than watering to control dust, particularly with the semi-constant drought that persists throughout California.

1. Wind Screens are Effective Dust Controls

Prevention of wind erosion for bulk materials, including coke and coal, is very similar to that needed for geologic fugitive dust:

- Minimize the surface area being exposed to wind erosion;
- Establish windbreaks, and limit work on windy days;
- Apply dust suppression measures including water fog or mist when needed;
- Limit traffic on surfaces with dusty silt, and limit vehicle speeds; and

- Prevent dirt, mud, and solids spills; and clean up any spills that have the potential to create dust immediately.

Staff observed the following areas of opportunity for better bulk material dust control:

- Protect locations where bulk materials are handled from wind erosion:
 - Unloading from a railcar or truck into a hopper that feeds a conveyor;
 - Unloading from a ship (this is seldom done, but uses a clamshell style scoop when it is done);
 - Conveyors are often up in the air and more susceptible to winds;
 - Conveyor transfer points (the transitions from the end of one conveyor onto another conveyor, or crusher or screening device);
 - Stockpiles; and
 - Loading onto trucks, railcars and ships.
- Reduce drop heights at conveyor transfer points, and drop heights onto stockpiles where the material is exposed to the wind;
- Prevent and cleanup spills that are subject to wind erosion; and
- Prevent bulk materials from migrating into vehicle traffic areas where it can be pulverized into silt, and entrained into the air from the turbulence of the vehicle traffic.

Staff visited most bulk material handling sites, and found each site (except the petroleum coke shipping facility in Pittsburg) needed improvements in a least two of the areas listed above.

Figure II-1: Typical Wind Screen - constructed to protect a down-wind stockpile.

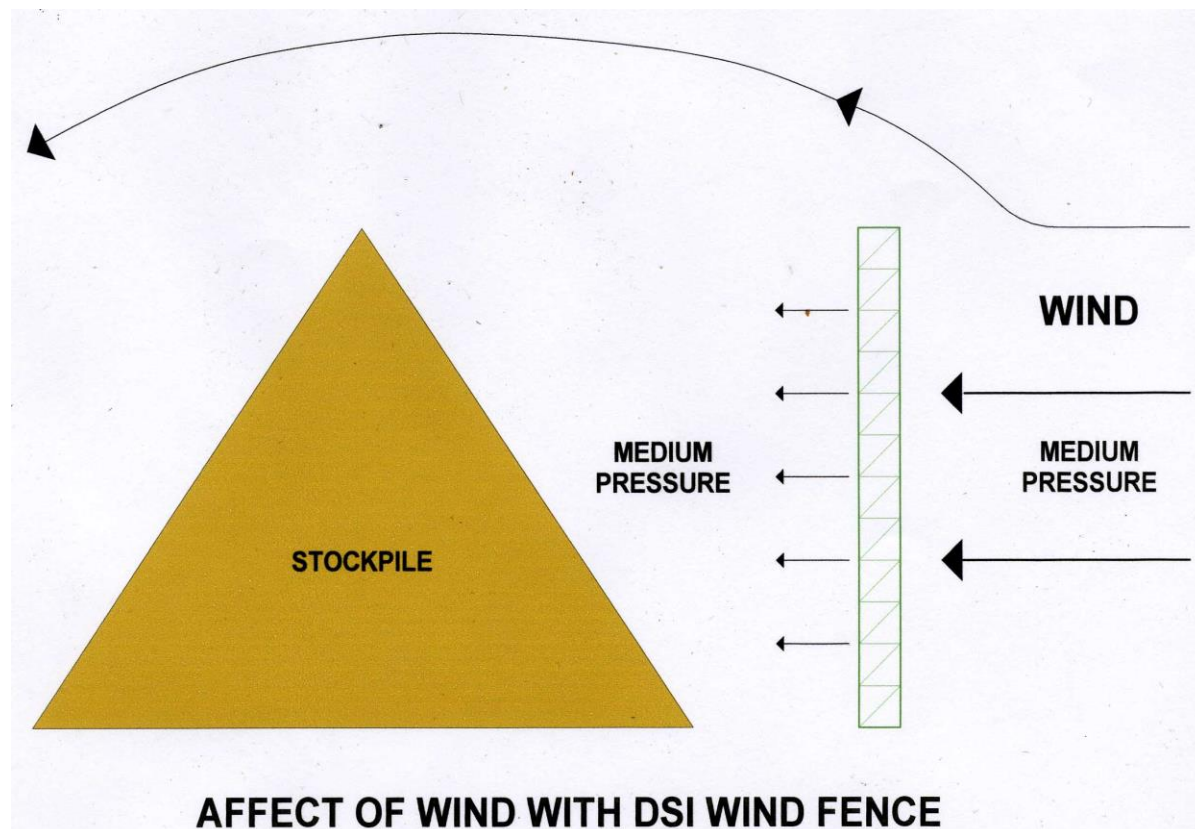


Wind barriers are very effective at reducing wind velocity and controlling wind erosion. Research on wind barrier design finds that the most effective designs¹ have 50 percent porosity (i.e. allows about half of the wind to blow through the wind screen), and the height of the windbreak should

¹ Windbreak Effectiveness for Storage-Pile Fugitive-Dust Control, Billman and Ayra, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University.

be as high as the bulk material handling operation or stockpile that it protects. The windbreak should be placed a distance no more than its height upwind from the potential dust source. Wind screens are estimated to be 70 percent effective at reducing fugitive dust. Figure II-2 shows the impact a wind barrier has on wind velocity. This example is provided by Dust Solutions, Inc., a company that provides a wide variety of dust solutions, including water misters and wind barriers. Wind screens with porosity allow enough wind to blow through the screen preventing a low-pressure area on the downwind side that can create eddy currents that aggravate wind erosion.

Figure II-2: Wind Barrier – from Dust Solutions, Inc.



Dust controls are similar during active dust generating operations. Dust control measures for active bulk material handling include:

- Provide wind barriers to prevent / minimize wind erosion, or enclose dusty material handling and storage areas.

Figure II-3: Wind Barrier surrounding a transfer point



Windbreaks on conveyors can be built or attached to the support structure for the conveyor, with adequate clean-out openings to accommodate conveyor spills. Conveyors may also need catch-pans to catch any small spills from conveyor operation. These catch-pans, however, are often difficult to retrofit onto an existing conveyor because the mechanical structure must be designed for the weight of the catch-pan plus any spills that may collect. Staff is not proposing to require catch-pans on conveyors because of this retrofit problem.

Fugitive dust from wind erosion is estimated based on wind speed above what is known as “the friction threshold velocity” (the wind speed required to get the first particle of fugitive dust into the air). Use of a wind screen reduces wind velocity by 50%. Average wind speed in the Bay Area during the dry summer season is typically about 10 mph with peak wind speed seldom over 20 mph, so wind screens can be up to 85% effective at controlling fugitive dust. Staff estimates that a combination of windscreens and judicious use of water fog and misting systems can control more than 90% of fugitive dust. However, since about one-third of bulk material handling facilities already use some combination of wind screens and water sprays, staff estimates that enhanced effort to control dust, particularly using wind screens, will be approximately 70% effective.

2. Judicious Water Use to Control Dust

In addition to wind screens, judicious use of water is the next most effective way to control dust. Water sprays and dust suppressants continue to be the most effective way to control dust from stockpiles and unpaved, unstabilized haul roads. Covers for stockpiles, and a low-silt gravel base for unpaved haul roads are effective and reduce water use.

In situations where active operations occur and fugitive dust is being generated, water fog and water mist are more effective at reducing dust. Rather than spraying significant volumes of water, fog and mist systems create small water droplets that are more effective at contacting small dust

particles. Most estimates of water fog and water mist systems indicate they are 10 – 20 times more effective at reducing fugitive dust per gallon of water. During this recurring drought in California, staff recommends water fog or mist systems, and recommends converting existing water spray systems to water fog/mist systems. These water fog systems can also be even more effective when a surfactant (typically a soap) is used to help the water contact and adhere to the solid particles of dust more easily.

Figure II-4: Use water fog or mist to control dust during active handling operations.



Figure II-5: Spray water fog and mist to keep disturbed surfaces damp during bulk material moving operations.



Staff estimates that water spray systems can control approximately 50 percent of fugitive dust generation, and water fog or water mist systems can be equally effective using less than 25 percent of the water used by water sprays.

Note the obvious concern about excessive use of water to control fugitive dust emissions, especially with the persistent recurring drought being experienced in California. This concern about water use drives the recommendation to use wind screens as a first approach to dust control, and to take advantage of the better effectiveness of water fog and water mist systems, rather than water sprays, water hoses, and water trucks. A complication of water fog and mist systems is that the fog or mist must be protected from the wind by an enclosure or a wind screen, because the fog or mist will be affected by the wind patterns.

3. Vehicle Traffic Controls

At many bulk material sites, vehicle traffic is the largest source of fugitive dust. Staff recommends the following control methods to prevent, and reduce dust from vehicles:

- Limit vehicle traffic to paved or stabilized surfaces;
- Limit vehicle speeds to less than 15 mph;
- Use barricades or barriers to prevent erosion of bulk materials onto the vehicle pathways where vehicles can pulverize the solids into fine particles; and
- Prevent dirt, mud and other solids from being tracked out or spilled onto paved roadways.

Staff has specifically not required these specific controls in the proposed rule language, because it is up to each bulk material site to use the controls that best fit their operations, as needed to prevent significant dust plumes and to prevent any visible dust plumes from being carried beyond the property line where the dust can impact neighbors.

III. PROPOSED AMENDMENTS

A. Purpose

This regulation limits the quantity of PM in the atmosphere by establishing limits on emission rates and concentrations from facilities with stacks and by establishing visible emission limits, including opacity standards for any source, including fugitive dust from bulk material storage and handling facilities.

B. Applicability

This is a general requirements rule, so it would apply to all sources of PM in the Bay Area. In addition, the general provisions in Regulation 1, and the common definitions and source test methods in Regulation 6 also apply to Rule 6-1 as cited in the rule. A proposed new section addresses fugitive dust from bulk material sites.

C. Exemptions

Rule 6-1 provides exemptions for sources that are subject to other source-specific rules addressing those operations. Section 6-1-110.1 exempts temporary sandblasting operations because they are currently subject to the provisions of Regulation 12, Rule 4. Section 6-1-110.2 exempts outdoor fires because they are currently subject to the provisions of Regulation 5. Section 6-1-110.3 exempts wood-burning devices because they are currently subject to the

provisions of Regulation 6, Rule 3. Section 6-1-110.4 exempts metal recycling and shredding operations because they are currently subject to the provisions of Regulation 6, Rule 4.

Section 6-1-111 provides a limited exemption for explosive blasting operations that have been permitted by the State of California Department of Industrial Relations, Division of Occupational Safety and Health (and other applicable local permitting authorities). It is very difficult to control dust during blasting operations. Staff has observed significant pre-watering of a blast site (for approximately 12 hours), yet there was very little impact on the resulting fugitive dust from the blast. This exemption applies to the blasting operations only. The storage and handling of bulk materials remain subject to the requirements of this rule.

Section 6-1-112 provides a limited exemption from new Section 307 regarding fugitive dust from bulk material handling, because Regulation 9-13-304 requires specific fugitive dust mitigation control measures. This section also provides a limited exemption to Section 6-1-310 (particulate matter concentration limits) and Section 6-1-311 (particulate matter weight limits) for Portland Cement manufacturing because these sources are subject to the specific requirements of Regulation 9, Rule 13.

Section 6-1-113 provides a limited exemption from the proposed more stringent amendments to Section 6-1-310 (particulate matter concentration limits), the proposed more stringent amendments to Section 6-1-311 (particulate matter weight limits), and from compliance testing required in Section 6-1-504 for commercial cooking, because these sources are subject to the provisions of Regulation 6, Rule 2. Similarly, salt processing operations are proposed to be exempt because pure (greater than 99 weight percent) salt air emissions do not have health consequences. Material Safety Data Sheet (MSDS) for salt cites no specific health impact limits.²

Staff considered a similar exemption for sugar processing operations, but found that the National Institute for Occupational Safety and Health (NIOSH) recommends no more than 5 mg/m³ of exposure to sugar dust, so the limited exemption was not included in the rule language.

Section 6-1-114 also provides a limited exemption from the proposed more stringent amendments to Section 6-1-310 (particulate matter concentration limits) and the proposed more stringent amendments to Section 6-1-311 (PM weight limits), for combustion from fuel fired indirect heat exchangers (furnaces, heaters, boilers, etc.) and gas-fuel fired control devices that control only gaseous emissions. Particulates from fuel combustion are generally the result of incomplete combustion, and the most practical method to control particulates is to install an oxidation system (either catalytic oxidation or afterburner) in the flue gas stream. Oxidation systems are currently Best Available Control Technology for new installations, but represent a significant alteration to an existing combustion flue gas stream, and can affect draft so induced draft fans are often necessary. Installation of any oxidation system is site specific and furnace/boiler specific, so beyond the scope of this general particulate control rulemaking project. Best Available Retrofit Control Technology that applies to these sources is "good combustion practice." In addition, gas-fuel fired indirect heat exchangers are exempt from compliance testing required in Section 6-1-504. Liquid- and solid-fuel fired indirect heat exchangers remain subject to compliance testing required in Section 6-1-504 so additional information can be developed on these sources.

Section 6-1-115 provides a delayed compliance date for the more stringent TSP concentration limits in Section 6-1-310.2 for one specific facility. This facility is a sewage treatment plant that currently incinerates sludge. Source test data indicate the sludge incinerator may occasionally have difficulty meeting the more stringent TSP concentration limits. A delayed compliance date

² Morton Salt Safety Data Sheet: CAS Number 7647-14-5, MSDS Code 100

will give this facility time to identify controls that both satisfy the TSP limit and also address toxic emissions requirements in Rule 11-18.

Section 6-1-116 exempts two specific sources at one facility from the more stringent TSP limits in Section 6-1-310.2 and 6-1-311.2. These sources are abated by a wet scrubber that has an Air District Permit to Operate, and the wet scrubber constitutes best available control technology (BACT) for particulates emitted from these sources.

Section 6-1-117 provides a delayed compliance date for the more stringent TSP limits in Section 6-1-310.2 and 6-1-311.2 for one specific facility. This facility plans to install additional control equipment based on the requirements of Regulation 9, Rule 14: Petroleum Coke Calcining Operations. This equipment will not be installed and in operation until late 2019. This limited exemption delays the more stringent PM requirements for two additional years, until January 1, 2022, to provide time needed for tuning this control equipment.

One limited exemption that was considered and rejected was for situations where wind gusts exceed 25 mph. Fugitive dust is very difficult to control in high wind situations, and facilities can implement all feasible control measures to limit fugitive dust and still have visible emissions that can travel or carry beyond the property line. Rather than provide a specific exemption for such situations, staff proposes using the current method of allowing Compliance and Enforcement personnel to use their collective judgement and discretion regarding the degree to which the Air District enforces Section 6-1-307 during high wind situations. Enforcement inspectors currently, and will continue to consider the background level of dust upwind of any specific source, and whether the owner/operator has a written dust control contingency plan and has implemented the dust control measures in the contingency plan. Potential dust control measures are identified in the Staff Report for Regulation 6, Attachment 1-5.

D. Definitions

The common definitions in Regulation 6 apply to Rule 6-1. In addition, Rule 6-1 provides definitions for “Exhaust Gas Volume” and “Process Weight Rate.” These two definitions are used in setting PM emission limits.

“Exhaust Gas Volume” is defined as the volume of gas discharged from an emission point, adjusted to standard conditions (defined in Reg. 1-228) excluding any water vapor or steam.

“Particle” is defined because it is used in Section 6-1-305. It is defined as a minute quantity of solid matter or liquid droplet.

“Process Weight” is defined as total weight of all material going into a process operation, including solid fuels and any process air needed (generally for cooling), but excluding:

- Any liquid or gas fuels,
- Air that is not consumed as a reactant, or not critical to the process,
- Air that is used only for dilution, and
- Combustion air.

This definition of process weight is designed to include the volume of gases needed by the process, but excluding combustion products and excluding any dilution air.

“Regulated Bulk Material” site is defined as a bulk material site that produces, handles, loads, unloads, stores or uses more than 10 tons per year of bulk materials; and is subject to an authority to construct and/or permit to operate specifically for bulk material storage and handling issued by the Bay Area Air Quality Management District. New draft more stringent limits on fugitive dust will apply regulated bulk material sites.

A stockpile is defined as a storage pile of bulk material that is open or unenclosed, external to any barns, pit or silo.

E. Emission Limits

Currently, Regulation 6, Rule 1: General Requirements Sections 6-1-301 and 302 establish a visible emissions limit from any source of no more than Ringelmann 1, or 20 percent opacity for no more than three minutes in any hour observation period (five percent of the time), using EPA Method 9. This requirement applies to all sources, except for those outlined in Sections 6-1-303 and 304. Other aspects of Sections 6-1-301 to 306 include minor edits for clarity. Reference to opacity sensing devices is deleted, because those references are now included in Regulation 6-602.

Staff considered altering the language defining the opacity observation period from “any hour” to “any sixty-minute period.” However, regarding facilities with Continuous Emissions Monitors (CEMs), the District Manual of Procedures, Volume V, Section 8.3.2 specifically identifies “clock hour” when determining any excess emission. Staff received feedback after the workshops indicating that several facilities rely on this interpretation in control of soot-blowing functions, and in calculations of CEM monthly summaries and excesses. Staff recommends leaving the opacity observation period definition as “any hour.”

Section 6-1-307 requires Regulated Bulk Material Sites to meet a more stringent fugitive dust plume requirement of no more than 10% opacity (equivalent to Ringelmann 0.5), that does not linger in the air for more than a cumulative three minutes in any 60-minute observation period (five percent of the time) and that is not larger than five feet long, five feet high, or five feet wide. This significance threshold is designed to allow a reasonable or small dust plume that may occur from vehicle traffic, some active operation on solid materials, or minor puffs of dust from the wind. However, if the plume becomes taller than a person or wider than a car, the 10 percent opacity and three minutes in any 60-minute observation period limits apply.

In addition, Section 6-1-307 prohibits any visible dust plume from traveling or being carried by the wind beyond the property line of the site. Visible emissions are determined by EPA Method 22, which is based on whether the particulate plume is visible or not. This limit is established to be sure dust is not leaving the site and impacting neighbors.

Section 6-1-307 also requires any bulk material spill that is more than 12 inches high or covers an area of more than 25 square feet must be cleaned up by the end of the workday, unless the spill is stabilized or protected by a wind screen to prevent fugitive dust. Cleanup activities must meet a 20 percent opacity limit for no more than three minutes in any sixty-minute period.

Section 6-1-310 establishes Total Suspended Particle (TSP) concentration limits that apply to facilities with a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured.

Section 6-1-310.1 retains the current limit of 343 milligrams/dry standard cubic meter (0.150 grains/dry standard cubic foot (gr/dscf)).

Section 6-1-310.2 establishes emission limits for any source where the Potential to Emit (defined in Regulation 2-1-217) is greater than 1,000 kilograms/year (approximately six lbs per day). Emission limits are provided in a table, ranging from 0.150 to 0.0100 gr/dscf, depending on volume of Exhaust Gas Rate. These emission limits are equal to limits currently in place in the South

Coast Air Quality Management District (South Coast) Rule 404, and have been achieved in practice. Section 6-1-310.2 goes into effect July 1, 2020.

Section 6-1-310.3 defines adjustments needed to standardize emissions concentrations, namely 12 volume percent carbon dioxide (CO₂) for incinerators and salvage operations, or six volume percent oxygen (O₂) for heat transfer operations.

Section 6-1-311 establishes TSP weight limits that apply to facilities with a stack or vent with sufficiently regular geometry so that both flow volume and contaminant concentrations can be measured.

Section 6-1-311.1 retains the current table of limits, but clarifies the exact range of process weight for each emission limit. Limits range from 1.8 to 40 lbs per hour.

Section 6-1-311.2 establishes emission limits for any source where the Potential to Emit (defined in Regulation 2-1-217) is greater than 1,000 kilograms per year(kg/yr) (approximately six lbs per day). Emission limits are provided in a table, ranging from 1.0 to 30 lbs per hour depending on process weight rate. These emission limits are equal to limits currently in place in the South Coast Rule 405, and have been achieved in practice. Similarly, Section 6-1-311.2 goes into effect July 1, 2020.

Sulfuric acid manufacturing plant acid mist emissions were not studied in the scope of this rule development project. Section 6-1-320 for Sulfuric Acid Manufacturing Plans has minor clarifications. TSP limits in Sections 6-1-310 and 311 continue to apply to sulfuric acid manufacturing plants. Review of sulfuric acid manufacturing plant source tests indicates these plants easily meet these emissions limits.

Sulfur recovery unit acid mist emissions were not studied in the scope of this rule development project. Section 6-1-330 for Sulfur Recovery Units has minor revisions for clarification. TSP limits in Section 6-1-310 and 311 continue to apply to sulfuric recovery units. Review of sulfur recovery unit source tests indicate these units easily meet these emissions limits.

F. Administrative Requirements

The monitoring requirement in Regulation 6-102 applies.

Section 6-1-402 provides an Alternate Source Test Frequency from the source testing requirements in Section 6-1-504 and 505. The APCO will consider applications for reducing source test frequency based on actual test results if three consecutive results are in compliance with the applicable standard.

G. Monitoring and Records

Sections 6-1-501 – 503 have minor clarifications.

Section 6-1-504 defines TSP compliance testing requirements, based on the extent of the TSP emissions. Compliance testing is required for any source with a District Permit to Operate and TSP emissions greater than 2,000 kilograms per year (approximately 12 lbs per day). Testing frequency ranges from annually for facilities emitting more than 16,000 kg/yr to once every five years for facilities emitting 2,000 – 8,000 kg/yr. Inactive sources do not require testing until they operate for more than 90 days.

Similarly, Section 6-1-505 defines sulfur trioxide (SO₃) / acid mist compliance testing requirements, based on the extent of the acid mist emissions. Compliance testing is required for any source with a District Permit to Operate and acid mist emissions greater than 2,000 kg/yr (approximately 12 lbs per day). Testing frequency ranges from annually for facilities emitting more than 16,000 kg/yr to once every five years for facilities emitting 2,000 – 8,000 kg/yr. Inactive sources do not require testing until they operate for more than 90 days.

Section 6-1-506 establishes the requirements for regulated bulk material site monitoring of fugitive dust visible emissions. These facilities are not expected to have a person certified to assess plume opacity; but they are expected to establish a management system to monitor sources and operations with the potential to generate fugitive dust, and take corrective actions if there is any indication that fugitive dust is becoming significant. These sites are not asked to make a “compliance determination.” Rather, they are asked to pay attention to the potential for fugitive dust, and take corrective actions if fugitive dust appears to become significant.

Each regulated bulk material site is required to monitor sources and active operations for fugitive dust visible emissions when the potential for dust is high due to wind conditions and/or work activities as follows:

- Monitor the nature and extent of fugitive dust visible emissions from each potential source or operation using simple observation of the emission, with the sun (or artificial light) positioned behind the observer:
 - Observe each source with the potential to generate fugitive dust that is located within 1,000 feet of the site property line on a workday when the wind is blowing from the source toward the property line – at least twice each such workday; and
 - Observe all sources with the potential to generate fugitive dust at least once each workday.
 - Petroleum coke, calcined coke and coal operations are required to monitor during daylight hours only, since black dust is virtually impossible to see at night.
- The APCO may specify the monitoring and frequency of monitoring if needed.
- Document the sources and operations monitored each workday.
- Maintain records in electronic, paper hard copy or log book format for two years and make these records and any other photographic or video records of fugitive dust the site may have available to the Air District upon request.
- Air District enforcement will occur through the normal process of site visits including visual observations and records reviews, and may be adjusted based on conditions found.

Monitoring is required during active operations regardless of when the workday starts or ends. Visible emission limits are in effect day and night, and subject to enforcement action by the District. Lighting at each facility varies, so monitoring at night is more difficult.

Any individual that monitors fugitive dust plumes is not expected to be proficient in either EPA Method 9 or EPA Method 22. However, when observing sources with the potential to create fugitive dust, they are expected to position themselves with the sun (or artificial light) behind them, as this is the positioning required in EPA Method 9.

H. Manual of Procedures

Section 6-1-601 affirms that the common test methods in Regulation 6 apply to this rule, including the test methods used to assess fugitive dust visible emissions.

Section 6-1-602.1 defines the test method for TSP as EPA Method 5 or an approved alternate method as described in Regulation 6-603. Source tests are not required if the sampling facilities are not adequate to conduct the source test as required by the test method. The Air District reserves the right to require modification of the sampling facilities as needed (when possible) per Regulation 1, Section 501 so that a proper source test can be conducted.

Section 6-1-602.2 defines the test method for acid mist as EPA Method 8 or an approved alternate. Source tests are not required if the sampling facilities are not adequate to conduct the source test as required by the test method. The Air District reserves the right to require modification of the sampling facilities as needed (when possible) per Regulation 1, Section 501 so that a proper source test can be conducted.

I. Comparative Analysis

Proposed amendments to Rule 6-1 bring it up to date with the most stringent regulations in California. TSP concentration and weight limits meet or exceed the most stringent in South Coast, San Joaquin Valley, and Sacramento Metro air districts.

Requirements for regulation bulk material storage and handling are analogous and more stringent than South Coast Rule 403 and Rule 403.1, and San Joaquin Valley Unified Air Pollution Control District (San Joaquin Valley) Rule 8031. Section 6-1-307 is performance based requiring plumes no greater than 10 percent opacity, where the South Coast and San Joaquin Valley rules require specific particulate control plans or specific control measures provided as options to control fugitive dust to less than 20 percent opacity (Ringelmann 1).

Acid mist limits for sulfuric acid manufacturing and sulfur recovery units equal those in the other air districts. Draft compliance testing requirements strengthen this rule. Source test methods are clarified.

IV. EMISSIONS and EMISSIONS REDUCTIONS

Table IV-1 summarizes the emissions and emission reductions anticipated from the draft amendments to Rule 6-1.

Table IV-1: Estimated Emissions Reductions from Draft Amendments to Rule 6-1:

Source Categories	TSP (tpd)	PM₁₀ (tpd)	PM_{2.5} (tpd)
Current Emissions:			
Other Industrial / Commercial Processes	16.7	9.83	5.78
Estimated Emission Reductions	0.45	0.37	0.03
Percent Reduction	2.7%	3.8%	0.5%

Current PM emissions estimates from the 2011 Emission Inventory total 174.2 tons per day (tpd) of TSP, 105.6 tpd PM₁₀, and 46.31 tpd PM_{2.5}. The emissions addressed by these proposed amendments are from the target category of “Other Industrial / Commercial Processes.”

A. Summary of Estimated Emission Reductions

The proposed more stringent TSP limits will impact only one moderate source of PM emissions. Most Bay Area source’s PM limits have been established through permit conditions when the source was installed or modified. The general nature of the TSP limits in Rule 6-1 require that they apply to all PM sources, so they are less restrictive than the permit conditions that may be

applied to any specific source. As a result, no emission reductions are expected to be realized from the proposed more stringent TSP limits.

One source, the Central Contra Costa Sanitary District sludge incinerator, is expected to install controls to address toxic air contaminant (TAC) emissions within the next several years to meet the requirements in Rule 11-18. These controls will also reduce TSP emissions by approximately 16 lb/day (three tons per year). However, such controls are not cost effective for a relatively minor three tons per year TSP reduction. In addition, the timeframe required for most public owned treatment works to install controls is a total of six years for budgeting, financing, design, installation and startup. Section 6-1-114 provides this facility a delayed compliance period of seven years from adoption to give the facility adequate time to address toxics and TSP emissions.

While developing possible amendments for Rule 6-1, staff identified Bay Area Rapid Transit (BART) four maintenance yards that each have BART car-cleaning facilities as having potential for significant PM emission reductions. However, staff discovered that the existing abatement systems (roto-clone wet scrubbers) were not accounted for in the existing emissions inventory. BART car-cleaning facilities are currently in compliance with the more restrictive emission limits in Rule 6-1.

The proposal contains more stringent TSP limits that may also impact two additional facilities: a bottle manufacturing facility in Oakland, and a facility in Santa Rosa that manufactures paper tape used to join and smooth two sections of wallboard. The glass manufacturing facility in Oakland is shut down with no plans to re-open. The current emissions performance from the paper tape manufacturer is estimated, with no supporting source test information available. Additional source tests are needed to determine whether additional controls will be required, and whether those controls would be cost effective. Based on these uncertainties, no emission reductions from these two facilities are included in this summary.

As affected facilities perform compliance source testing, some additional sources may be affected by the amendments to Rule 6-1. Cost effective control options are available for almost all types of sources.

Bulk Material Sources with more than six lbs per day TSP emissions

There are 72 facilities with 134 sources of more than six lbs per day of TSP emissions. Forty-four of these sources are already equipped with water spray systems, and the other 90 of these sources do not currently appear to have any dust controls. Staff estimates that the 44 sources may elect to upgrade their existing water sprays to water fog or water mist systems to reduce water use, but this will not significantly reduce emissions. Staff estimates that the remaining 90 sources will be controlled with wind screens, transfer point shrouds, and loading / unloading chutes. Some judicious use of water fog and water mist systems may be necessary in locations where it is difficult to fit wind screens or shrouds. Staff expects that less than half of the 90 sources will require supplemental water fog or sprays along with wind screens. In addition, staff estimates that only half of these sources will actually install controls, because the facilities will be able to improve their operations to meet the 10 percent opacity requirements. Emissions reductions are estimated based on only 45 sources adding additional emissions control. Staff assumes wind screens/shrouds and loading chutes are 70 percent effective, resulting in emission reductions of 0.37 tpd of PM₁₀, and 0.03 tpd of PM_{2.5}.

Bulk Material Sources with two to six lbs per day TSP emissions

There are 72 facilities with 123 sources of TSP emissions ranging from two to six lbs. per day (some of these facilities also have sources with greater than 6 lbs per day of TSP emissions). Forty of these sources are already equipped with water spray systems, and the other 83 of these sources do not currently appear to have any dust controls. Staff estimates that some of the 40 sources with water sprays may be upgraded to water fog or water mist systems to reduce water

use, but will not significantly reduce emissions. Staff estimates that the remaining sources will likely not be controlled with wind screens, transfer point shrouds, and loading/unloading chutes. Current emissions of two – six lbs per day may be small enough to meet the visible emissions performance objective of ten percent opacity without installing additional controls. Staff assumes no additional emissions reductions from these sources.

V. ECONOMIC IMPACTS

A. Cost Effectiveness

Proposed amendments to Rule 6-1 TSP concentration limits, and TSP weight limits are consistent with the requirements and emission limits that have been demonstrated in practice, as South Coast, San Joaquin Valley, and Sacramento Metro air districts have had similar regulations in place for several years. Control technologies that have been “achieved in practice” can be required as best available control technology (BACT) without having to make a cost effectiveness determination.³ In addition, since these more stringent TSP limits do not appear to trigger installation of any emission controls, no cost effectiveness analysis is required.

Central Contra Costa Sanitary District solid sludge incinerator is the only facility that would be required to meet the more stringent TSP concentration limits. An improved wet scrubber is estimated to cost \$17,000,000 in capital cost, and \$2,200,000 annualized costs including capital amortization, operating and maintenance costs. Emission reductions are only three tons per year, so any controls required specifically for PM do not appear to be cost effective. CCC Sanitary District staff indicate that they anticipate installing controls to address TAC emissions and expect PM emission reductions to be a side-benefit. Staff has excluded PM emission reductions from CCC Sanitary District because they are not a direct result of amendments to Rule 6-1.

The proposed more stringent TSP limits may also affect a facility in Santa Rosa that manufactures paper tape used to join and smooth two sections of wallboard. The current emissions performance from the paper tape manufacturer is estimated at 117 lbs per day. If these emissions are verified with a source test, additional controls are cost effective in reducing emissions. Staff estimates that a baghouse could be added downstream from the existing cyclone, reducing PM emissions by at least 90 percent and resulting in emission reductions of 105 lbs per day. A baghouse is estimated to cost \$315,000 in capital cost, amortized to \$45,000 per year plus additional utility and maintenance costs of \$50,000 per year. Total annual costs of \$95,000 per year for a reduction in 13.7 tons per year of PM results in a cost effectiveness of \$6,900 per ton of reduced TSP. This is well within the normal range for cost effectiveness.

Staff found no additional facilities with PM emissions quantified by source test that are affected by the amendments to Rule 6-1. As mid-sized and smaller particulate matter sources begin to conduct source tests, some may find a need to install controls. However, most of these sources currently have more stringent permit limits than those being proposed. Staff estimates no emission reductions from these sources.

Proposed new Section 6-1-307 will affect 72 facilities, with 134 sources with PM emissions currently estimated to exceed 6 lbs per day of TSP. Eighteen of these facilities already have water spray abatement in place, so staff assumes each facility will make minor improvements to the existing systems and be able to meet the requirements of this draft new requirement. Fifty-four of these facilities, with 90 sources may require controls. The sources have a wide range of scale for processing and handling bulk materials. The scope of the controls is directly set by the specific

³ BAAQMD Engineering Procedure: New or Updated BACT Determinations, December 19, 2006

bulk handling operation involved, and the size of the bulk material handling facilities. Section 6-1-307 may affect another 72 facilities with 123 sources with PM emissions currently estimated to range from two to six lbs per day of TSP. However, staff estimates PM emissions less than six lbs per day will not exceed the draft opacity limit.

Attachment 2, Table 2-1 describes each of the 90 sources that will potentially require controls. Emission reduction estimates assume half of these 90 sources will find ways to meet the opacity limit and other requirements without having to install significant controls. Staff assumes that only half of the facilities will actually install the controls shown in Table 2-1. Total estimated costs to control 45 sources is \$866,000 in capital costs, and \$206,000 in annual costs. Expected emission reductions are 747 lbs per day of PM₁₀ (136 tons per year).

Water Use and Cost

Five water fog systems are recommended in Table 2-1. Each of these water fog systems is anticipated to use 624,000 gallons of water per year, totaling 3,120,000 gallons of incremental water use. Thirty-four water mist systems are recommended in the table above. Each of these water mist systems is anticipated to use 312,000 gallons per year, totaling 10,608,000 gallons of incremental water use. Total incremental water use for the proposed wind screens, and judicious use of water is 13,728,000 gallons per year. Staff assumes all five of these water fog systems will be installed. Total cost for 13,728,000 gallons of water at \$0.01 per gallon is \$137,280 per year.

Total costs to control fugitive dust visible emissions from bulk material handling is estimated to be \$206,000 + \$137,280 = \$343,280 per year. Emission reductions are estimated to be 136 tons per year. Cost effectiveness for these controls is estimated to be \$2524 per ton of reduced PM₁₀. The poorest cost effectiveness is found for two controls: \$13,968 per ton for a water fog system at a quarry operation, and \$10,303 per ton for a stockpile windscreen at a second quarry operation. These cost effectiveness levels are within normal acceptable ranges for PM reductions.

Source Test Costs

Proposed amendments to Rule 6-1 explicitly require compliance testing of permitted sources ranging from annually to once every five years, depending on the extent of the emissions. The estimated cost to conduct an appropriate compliance source test is \$3,000 – 5,000. The estimated costs to modify sample ports to conduct these tests, if necessary, are estimated to cost less than \$10,000. Staff estimates approximately 50 sources will require source testing annually, 60 sources will require source testing biennially, and 250 sources will require source testing every five years. Staff estimates no more than 50 sources will require sample port modifications.

B. Incremental Cost Effectiveness

There are no controls required directly from amendments to the TSP concentration limits and TSP weight limits proposed for Rule 6-1, so no cost effectiveness analysis, and no incremental cost effectiveness analysis are required.

Each regulated bulk material storage and handling site will determine what controls are needed to limit fugitive dust plumes to meet the 10 percent opacity for significant plumes (greater than five feet high, five feet long, five feet wide). The next more stringent requirement would be to require any fugitive dust plume to meet the 10 percent opacity requirement. This requirement would include any small dust plume (from a wind current on a stockpile, or from the wheel of a truck driving down an unpaved road). Staff did not recommend this limit because of the concern that the more stringent limit would cause many facilities to use excessive water to control dust. The degree of stringency is based on concern about water use rather than a concern about incremental cost effectiveness.

C. Socioeconomic Impacts

The Air District contracts with an independent consultant to conduct a Socioeconomic Analysis of potential economic impacts from the proposed amendments to Rule 6-1. After staff received additional input during the workshop process, a final draft proposal and staff report have been used to finalize the Socioeconomic Analysis. The Socioeconomic Analysis is included in the final proposal, posted for public review and comment at least 30 days before the Public Hearing. At the Public Hearing, the Air District Board of Directors will consider the final proposal, and public input before taking any action on the amendments to Rule 6-1.

The Socioeconomic Analysis concludes that control costs are less than significant, will not impact small businesses, and will not lead to job reductions.

D. District Impacts

An exemption for small stationary sources with potential to emit either TSP or PM₁₀ emissions at less than 1,000 kg per year may create additional work for Air District permit engineers. Facilities that have permitted sources currently estimated to have emissions less than 2,000 kg per year may wish to take advantage of the proposed exemption by challenging the current estimating techniques and/or EPA AP-42 Emission Factors used. Permit engineers may be asked to review the current PM emissions factors, which can take approximately one hour of engineering time for each source.

Air District Meteorology and Measurement Division resources will be needed to consult with each permitted source to ensure each source has the proper sample ports, equipment and access facilities needed to conduct the required source test. Staff anticipates the source test section will fit this work into their normal day-to-day work, with no impact on personnel requirements or costs.

Compliance and Enforcement inspectors will not see any increase in workload because they currently have responsibility for inspecting regulated bulk material sites. Compliance and Enforcement currently conducts planned inspections of bulk material sites and permitted disturbed surface sites as part of their annual coverage of all permitted facilities.

Compliance and Enforcement has trained its inspectors to use an existing physical object, or traffic cone or other device of a known size to establish a frame of reference when assessing whether a plume is larger than five feet. The inspectors will likely take a picture of the plume to document its size, while conducting the opacity assessment to determine opacity. Inspectors have been equipped with tape measures to measure the area of a bulk material spill. Costs for these tape measures totaled \$700 at \$10 each for 70 inspectors.

Compliance and Enforcement will need to determine to what extent, and when they may want to implement EPA ALT-082, the digital camera technique that can be used to measure opacity as an alternate to EPA Test Method 9.

VI. REGULATORY IMPACTS

Regulatory impact analysis is required by [H&SC Section 40727.2](#), comparing the proposal to other Air District, State and federal rules addressing the same sources. The following table provides this regulatory impact analysis.

Amendments to Regulation 6, Rule 1: H&SC Section 40727.2 Regulatory Analysis

Section	Description (paraphrased)	Comparable State or Air District Provision	Comparable Federal Provision	Discussion
101	Description / Purpose	Consistent with SCAQMD 401 SCAQMD 1157, 1158 SJVUAPCD 4101 SMAQMD 401		
102	Applicability of General Provisions	From Regulation 6		
110	Exemption: Activities Subject to Other Rules	Consistent with Non-duplication requirements		
111	Limited Exemption: Blasting Operations	Consistent with SCAQMD 1157 SJVUAPCD 8021		
112	Limited Exemption: Portland Cement Manufacturing	Consistent with Non-duplication requirements		
113	Limited Exemption: TSP Concentration and Weight Limits	Consistent with non-duplication for commercial cooking, Unique exemption for pure salt and sugar, No controls readily available for combustion		Pure sugar and salt are readily adsorbed into humans, with very little health impact. Combustion controls out of scope for this rule-making.
114	Limited Exemption: TSP Concentration Limit	Unique situation for one specific facility		Delayed compliance date.
200	Definitions	Consistent with SCAQMD 102, 401 SJVUAPCD 1020, 4101 SMAQMD 101, 401		
300	Standards / Emission Limits			
301-306	Visible Emissions Limits	Consistent with SCAQMD 401 SJVUAPCD 4101 SMAQMD 401		20% opacity or Ringelmann 1 is consistent throughout California
307	Regulated Bulk Material Site fugitive dust visible emissions limits	SCAQMD Rule 403 SCAQMD Rule 1157 SCAQMD Rule 1158 SJVUAPCD Rule 8011		Consistent with Regulation 6 control measures cited in Reg 6 Staff Report, Attachment 1-5.

		SJVUAPCD Rule 8031		SCAQMD Rule 1157 requires no visible emissions > 100 feet which could be more stringent, or less stringent than the limit of the property line.
310	PM Concentration Limits	Consistent with SCAQMD 404 SJVUAPCD 4201 SJVUAPCD 4203 SMAQMD 404		Equal to most stringent in California
311	PM Weight Limits	Consistent with SCAQMD 405 SJVUAPCD 4202 SMAQMD 405		Equal to most stringent in California
320	Sulfuric Acid Manufacturing	Consistent with BAAQMD 12-6 SCAQMD 469 SJVUAPCD Rule 4802	40 CFR Part 60: Subpart H EPA-450/2-77-019	Acid mist controls out of scope for this rule-making.
330	Sulfur Recovery Units	Consistent with BAAQMD 9-1 SCAQMD 468	NSPS 40 CFR 60 Subpart J, Ja	Acid mist controls out of scope for this rule-making.
400	Administrative Requirements	Monitoring from Regulation 6		Monitoring required to ensure compliance.
500	Monitoring and Records	Consistent with BAAQMD Reg 1 SCAQMD 404, 405 SJVUAPCD 4201, 4202 SMAQMD 404, 405 SJVUAPCD Rule 8011		Demonstration of compliance requirements added. Consistent monitoring and records requirements.
600	Manual of Procedures	Consistent with EPA Source Test Methods 5, 8, 9, 22, 201a, 202, 203a,b,c	Consistent with EPA Source Test Methods 5, 8, 9, 22, 201a, 202, 203a,b,c	Source test methods added.

VII. ENVIRONMENTAL IMPACTS

A. Review of Potential Environmental Impacts Under CEQA

The Air District contracts with an independent consultant to conduct a California Environmental Quality Act (CEQA) analysis of potential environmental impacts of the new Regulation 6, and draft amendments to Rule 6-1. The consultant has made an initial assessment of any environmental impacts based on proposed new Regulation 6 and proposed amendments to Rule 6-1, and this staff report. In addition, the CEQA analysis has also been conducted on the proposed new Rule 6-6: Prohibition of Trackout. The CEQA analysis, attached as Appendix B, combines the analysis to review all impacts of the proposed new Regulation 6, proposed amendments to Rule 6-1 and Rule 6-6 together all as one project, so that the cumulative impact of these proposals can be considered.

The CEQA analysis shows that no significant environmental impacts are expected, and a Negative Declaration has been prepared. The CEQA Negative Declaration will be included with the final proposals, posted for public review and comment at least 30 days before the Public Hearing. At the Public Hearing, the Air District Board of Directors will consider the final proposals, and public input before taking any action on the new Regulation 6, amendments to Rule 6-1, and new Rule 6-6.

VIII. RULE DEVELOPMENT / PUBLIC PARTICIPATION PROCESS

A. Rule Development Process

The Air District's 2010 Clean Air Plan addressed PM, including significant health impacts associated with PM, and was approved on September 15, 2010. The 2010 Clean Air Plan included Stationary Source Measure SSM 6: General Particulate Matter Emission Limitation. In addition to developing amendments to Rule 6-1 to satisfy SSM 6, staff started work on this rule-making project in April 2010 by reviewing the entire inventory of PM emissions and identified source categories where PM (particularly PM_{2.5}) emissions are significant, the Air District has authority, and potential for substantial PM reductions are available.

The proposed amendments to Rule 6-1 are part of a rule-making process that began with the 2010 Clean Air Plan and continues to address a commitment by the Air District's Board of Directors to review Regulation 6, Rule 1, identified as Stationary Source Measure SS31 in the Air District's 2017 Clean Air Plan. Since the 2010 Clean Air Plan originally identified Rule 6-1 as a Stationary Source Control Measure, Air District staff further committed to taking steps to address the Bay Area's PM challenges in a November 2012 report entitled *Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area*. These proposed amendments to Regulation 6, Rule 1 begin to fulfill these important commitments to reduce PM emissions and improve public health.

Staff based the proposed amendments to Rule 6-1 on the 2011 emissions inventory. Staff identified the source categories to be considered during review of potential amendments, and identified the largest sources in each category. Staff selected 55 of the largest permitted stationary sources, and visited each one to more fully understand each facility's business, each unique emissions source, and discuss potential control techniques

available to reduce PM emissions. In addition, concerns about the lack of information regarding particle size distribution, possible sources of condensable PM, and potential secondary PM formation were discussed. Staff visited eight facilities that store and handle petroleum coke and coal to ensure the unique issues with these solids were incorporated into the rule development process. Staff used the information from these visits to develop the proposed amendments to Rule 6-1, an overarching Regulation 6 that applies to all Regulation 6 rules, and new draft Rule 6-6: Prohibition of Trackout; and to estimate the emission reductions that could be achieved by implementing these draft rule changes.

Staff conducted eight workshops throughout the Bay Area from January 30 – February 8, 2017. These workshops were conducted in parallel with open house forums for the 2017 Clean Air Plan. Many stakeholders voiced concern that the PM workshops were diminished by being scheduled with the Clean Air Plan Open Houses, and the combined open house / workshop format prevented staff from making a formal presentation regarding the preliminary drafts of each rule or engaging in direct questions / answers. Others felt the personal interaction with staff regarding the preliminary drafts for each rule provided better opportunity for genuine discussion, including questions / answers.

Comments received after the workshops provided additional input regarding the process used for outreach to the wide variety of affected parties. Many indicated that they had not heard about the workshops at all, or only at the last minute. Since some stakeholders considered the Public Outreach and Consultation process described below in Section B less effective than a workshop focused specifically on the rules, staff will mail Public Hearing notices to each Air District permitted facility with any significant PM emissions, and mail Public Hearing notices to additional facilities with similar Standard Industrial Classification (SIC) codes or North American Industry Classification System (NAICS) codes from a business database used by the Socioeconomic Analysis contractor called InfoUSA, including construction firms.

Proposed new Regulation 6 will provide the foundational regulation for current PM rules, and potential future source specific PM rules. Proposed new Regulation 6 rule language, proposed amendments to Rule 6-1 and this accompanying staff report are the next step in the rule development process to further address PM emissions. Staff anticipates that proposed new Regulation 6, and proposed amendments to Rule 6-1 will be considered together at a Public Hearing in Spring 2018. Proposed new Rule 6-6: Prohibition of Trackout and its associated staff report may also be considered at that Public Hearing.

A CEQA Analysis has conducted on the proposed new Regulation 6, proposed amendments to Rule 6-1, and proposed new Rule 6-6 as one project, so that cumulative impact of these three rule development projects can be considered. The Socioeconomic Analyses for each project were done separately.

B. Public Outreach and Consultation

In analyzing the inventory of PM emissions and source categories where PM (particularly PM_{2.5}) emissions are significant, where the Air District has authority, and the potential for substantial PM reductions, staff consulted with the following interested and affected parties:

Businesses	Governmental Agencies
Morton Salt – Newark	CALTRANS District 4 - Oakland
Cargill – Newark	Bay Area Regional Water Quality Board - Oakland

Criterion Catalysts - Pittsburg	North Coast Regional Water Quality Board – Santa Rosa
CertainTeed Gypsum – Napa	Bay Area Rapid Transit – Richmond Maintenance Yard
Maxwell House – San Leandro	Alameda County
C & H Sugar – Crockett	Contra Costa County
Con Agra – Oakland	Marin County
CEMEX – Oakland	Napa County
CEMEX – Clayton	Santa Clara County
Strategic Materials – San Leandro	San Francisco City & County
Dutra Materials – San Rafael	San Mateo County
Superior Supplies – Santa Rosa	Solano County
Granite Rock – Redwood City	Sonoma County
Hanson Aggregates – Clayton	Central Contra Costa Sanitary District
Bodean / Mark West Quarry – Santa Rosa	City of Hayward
PABCO Gypsum – Redwood City	City of Napa
Georgia Pacific Gypsum - Antioch	City of Oakland
Syar – Napa	City of San Jose
Syar – Santa Rosa	City of San Rafael
Syar – Vallejo	City of Santa Rosa
Soiland Quarry - Cotati	
Langley Hill Quarry - Woodside	Industry Associations
Granite Construction – Santa Clara	Association of Building Contractors
Granite Construction – San Jose	Associated Roofing Contractors of the Bay Area Counties
Willowbrook Feeds – Petaluma	California Asphalt Pavement Association
Hunt & Behrens – Petaluma	Construction Industry Air Quality Coalition
Owens-Corning – Santa Clara	Northern California Engineering Contractors
Owens-Brockway - Oakland	
Waste Management – San Leandro	
Zanker Road Material Processing – San Jose	
Waste Management - Altamont	
Redwood Landfill	
Guadalupe Landfill	
Ox Mountain Landfill – Half Moon Bay	
Clover Flat / Upper Valley Resources	
Potrero Hills Landfill	
Stavin	
McGuire & Hester Construction - Oakland	
Ghilotti Bros. Construction – San Rafael	
Universal Building Services – Richmond	
Statewide Sweeping – Milpitas	
Levin Richmond Terminal	
Lehigh Cement	
Phillips 66 Coker	
Phillips 66 Coke Calciner	
Shell Coker	
Tesoro Coker	

Valero Fluid Coker	
APS West	
Carbon Inc.	

These discussions led to a review of the Storm Water Pollution Prevention Plan (SWPPP) Best Management Practices, and the suggestion that any proposed requirements should be consistent with SWPPP requirements.

As described above, feedback indicates that outreach was could be been more robust. In light of this, Public Hearing notices will be mailed to all Air District permitted facilities with significant PM emissions and to all entities with similar Standard Industrial Classification (SIC) codes or North American Industry Classification System (NAICS) codes from a business database used by the Socioeconomic Analysis contractor called InfoUSA, including construction firms.

Public Hearings are the next step in these rulemaking processes. Air District staff will publish the Public Hearing package for proposed new Regulation 6: Common Definitions and Test Methods; and proposed amendments to Regulation 6, Rule 1: General Requirements. Air District staff will accept written comments, will respond to all comments received, and will present final proposals to the Air District’s Board of Directors for consideration. Response to comments is included as Appendix A of this staff report.

IX. CONCLUSION / RECOMMENDATIONS

Pursuant to the California Health and Safety Code [section 40727](#), before adopting, amending, or repealing a rule the Board of Directors must make findings of necessity, authority, clarity, consistency, non-duplication and reference. This section addresses each of these findings.

A. Necessity

“Necessity’ means that a need exists for the regulation, or for its amendment or repeal, as demonstrated by the record of the rulemaking authority.” H&SC [section 40727\(b\)\(1\)](#).

Proposed amendments to Regulation 6, Rule 1: General Requirements are needed to update emission limits that have not been reviewed for more than two decades, and to clarify compliance testing requirements and test methods. Proposed new Section 6-1-307 applies to bulk material storage and handling that are currently permitted by the Air District, and is needed to address the significant PM emissions from the source category of Other Industrial and Commercial Processes. Bulk Material Storage and Handling addresses a broad cross-section of these sources. Section 6-1-307 requires more stringent control of fugitive dust visible emissions, specific monitoring, and cleanup actions if fugitive dust is excessive. The Bay Area is not yet in attainment for either PM₁₀ or PM_{2.5} California Ambient Air Quality Standards.

B. Authority

“Authority’ means that a provision of law or of a state or federal regulation permits or requires the regional agency to adopt, amend, or repeal the regulation. H&SC [section 40727\(b\)\(2\)](#).”

The Air District has the authority to adopt this rule under Sections 40000, 40001, 40702, and 40725 through 40728.5 of the California Health and Safety Code.

C. Clarity

“Clarity’ means that the regulation is written or displayed so that its meaning can be easily understood by the persons directly affected by it.” H&SC [Section 40727\(b\)\(3\)](#)

Proposed amendments to Regulation 6, Rule 1 are written so that their meaning can be easily understood by the persons directly affected by them. Further details in the staff report clarify the proposals, affected emission sources, compliance options, and administrative requirements for the industries subject to this rule.

D. Consistency

“Consistency’ means that the regulation is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations.” H&SC [Section 40727\(b\)\(4\)](#)

The proposed new rule and amendments to the existing rule are consistent with other Air District rules, and not in conflict with state or federal law.

E. Non-Duplication

“Nonduplication’ means that a regulation does not impose the same requirements as an existing state or federal regulation unless a district finds that the requirements are necessary or proper to execute the powers and duties granted to, and imposed upon, a district.” H&SC [Section 40727\(b\)\(5\)](#)

Amendments to Rule 6-1 are non-duplicative of other statutes, rules or regulations. To the extent duplication exists, such duplication is appropriate for execution of powers and duties granted to, and imposed upon the Air District.

F. Reference

“Reference’ means the statute, court decision, or other provision of law that the district implements, interprets, or makes specific by adopting, amending, or repealing a regulation.” H&SC [Section 40727\(b\)\(6\)](#)

Implementing, interpreting or making specific the provisions of the California Health and Safety Code Sections 40000, 40001, 40702 and 40727.

The proposed rules have met all legal noticing requirements, have been discussed with the regulated community and other interested parties, and reflect consideration of the input and comments of many affected and interested stakeholders.

G. Recommendations

Air District staff recommends adoption of amendments to Regulation 6, Rule 1: General Requirements and adoption of the CEQA Negative Declaration.

REFERENCES

1. BAAQMD 2010 Clean Air Plan, September 15, 2010
2. BAAQMD Regulation 5: Open Burning
3. BAAQMD Regulation 6, Rule 2: Commercial Cooking Equipment
4. BAAQMD Regulation 6, Rule 3: Wood Burning Devices
5. BAAQMD Regulation 12, Rule 4: Sandblasting
6. BAAQMD Board Resolution 1390
7. BAAQMD Advisory Council, Ultrafine Particles: Ambient Monitoring and Field Studies presentation, 2/8/2012
8. BAAQMD Advisory Council, Ultrafine Particles: Ambient Monitoring and Field Studies presentation, Philip M. Fine, SCAQMD, 2/8/2012
9. BAAQMD Advisory Council, Concentrations of Ultrafine Particles and Related Air Pollutants on and Near Roadways and Other Urban Microenvironments presentation, Eric Fujita, Desert Research Institute, Reno, NV, 2/8/2012
10. EPA Stationary Source Control Techniques Document for Fine Particulate Matter, October 1998
11. EPA Test Methods 5, 5B, 5F, 9, 17, 22
12. EPA Test Methods 201A, 202, 203A, 203B, 203C
13. EPA RACT/BACT/LAER Clearinghouse
14. EPA AP42, Fifth Edition, Volume 1, Chapter 13: Miscellaneous Sources, 13.2
15. EPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures; EPA-450-92-004; September 1992.
16. California Health and Safety Code, §41700
17. California Health and Safety Code, §40000, §40001, §40702, §40725 - 40728,
18. California Air Resources Board - CALIFORNIA EMISSION INVENTORY AND REPORTING SYSTEM (CEIDARS), Particulate Matter (PM) Speciation Profiles, 7/28/2009
19. South Coast Air Quality Management District, Rules 401, 403, 403-1, 404, 405, 444, 445, 1105-1, 1112-1, 1133-1, 1137, 1155, 1156, 1157, 1158, 1186, 1186-1
20. San Joaquin Valley Air Pollution Control District, Rules 4101, 4103, 4106, 4201, 4202, 4203, 4303, 4901, 8011, 8021, 8031, 8041, 8051, 8061, 8071, 8081
21. San Joaquin Valley Air Pollution Control District, Draft Staff Report, BACM Amendments to Regulation VIII (Fugitive PM₁₀ Prohibitions), 9/27/2001
22. San Joaquin Valley Air Pollution Control District, Draft Staff Report – Appendix C, Cost Effectiveness Analysis of Regulation VIII (Fugitive PM₁₀ Prohibitions), 9/27/2001
23. Sacramento Air Quality Management District, Rules 401, 403, 404, 405, 406, 407, 409, 417, 421
24. Maricopa County, Arizona Regulation III, Rule 310: Fugitive Dust from Dust-Generating Operations
25. Maricopa County, Arizona Quick Reference Dust Control Guide
26. Northeast States for Coordinated Air Use Management, Assessment of Control Technology Options for BART-Eligible Sources, March 2005
27. California Water Resources Control Board, Construction Storm Water Program, http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml
!

28. 2009-0009-DWQ Construction general permit (*effective July 1, 2010*)
29. California Storm Water Quality Association, Storm water Best Management Practice Handbook Portal: Construction

Attachment 1: Cost Estimates for Various Dust Controls

Attachment 2: Cost Estimates for Specific Bulk Material Storage and Handling Facilities

APPENDICES

- A. Comments and Responses
- B. Socioeconomic Analysis
- C. CEQA Documents

Attachment 1: Cost Estimates for Various Dust Controls

Costs of Controls for Bulk Material Handling

Wind screens can be used to shield almost any bulk material stockpile, handling equipment, or loading/unloading operations. Wind screens around stockpiles are most effective if they are at least as high as the pile, and extend beyond each edge of the pile. Wind screens can also be used to protect bulk material handling equipment (crushers, conveyors, transfer points, screen, and loading facilities from wind erosion. The following provide the cost estimates for various wind screen equipment:

- Wind Screens for stockpiles
 - 100-foot section of 10-foot high fencing estimated to cost \$15 - \$40 / foot, or \$3,000 capital¹
 - Slats or nylon mesh to provide proper porosity costs up to \$5/foot²
 - Estimated costs for construction and foundations equals double the cost of materials
 - Total capital for 100 feet of 10-foot high wind screen is \$70/foot, equaling \$7,000 capital, amortized to \$1,050 per year
 - Estimated cost for 100-foot section of 20-foot high wind screen is \$140 / foot, equaling \$14,000 capital, amortized to \$2,100 per year
 - Estimated cost for 100-foot section of 30-foot high wind screen is \$280 / foot, equaling \$28,000 capital, amortized to \$4,200 per year
 - Can control erosion down-wind for approximately eight – 10 times the height of the barrier.
 - Total cost for a 10 feet tall stockpile requires 100 feet of windscreen – with capital costs of \$7,000, amortized to \$1,575 per year
 - Total cost for a 20 feet tall stockpile requires 200 feet of windscreen – with capital costs of \$28,000, amortized to \$4,200 per year
 - Total cost for a 30 feet tall stockpile requires 300 feet of windscreen – with capital costs of \$84,000, amortized to \$12,600 per year
- Wind Screens for conveyors
 - Typical conveyor is about 100-foot long
 - Must erect a wind screen on at least one side (preferably the upwind side) of the conveyor
 - Design check to be sure structural integrity is adequate - \$2,000
 - Materials costs for stainless steel wire mesh screen - \$1,500³
 - Additional structural steel to reinforce stainless mesh - \$500⁴
 - Labor to install – roughly equal to materials costs - \$2,000
 - Total costs – \$6,000 capital, amortized to \$900 per year
- Wind Screens for conveyor transfer points
 - 4-sided 4ft X 4ft stainless steel mesh for wind screen - \$250
 - 4 sided 4ft X 4ft plastic shrouds - \$150

¹ An 8'-12' tall commercial-grade chain-link fence to enclose a residential tennis or basketball court can cost \$15-\$40 or more a foot. Production Fence Works in Georgia estimates average cost for an 8' high, 60'x100' fence around a single tennis court with a single walk-in gate at \$9,200.

² Because of its open weave, a chain-link fence is transparent. To make it more opaque, metal, wood or vinyl privacy slats can be woven into the mesh. The slats can be purchased separately, at a cost of \$1-\$2 or more per foot of fencing, or a chain link fence with built-in privacy or a fabric screen can cost \$6-\$40 a foot (\$600-\$4,000 for 100'; \$1,800-\$12,000 for 300') depending on the type of materials, whether installation is included, and the height, gauge and mesh of the fence.

³ <http://www.twpinc.com/wire-mesh-material/stainless-steel/16-mesh-t316-stainless-35>

⁴ https://www.onlinemetals.com/merchant.cfm?pid=2&step=4&showunits=inches&id=3&top_cat=1

- Structural steel supports – \$200
- Labor to install – roughly equal to materials costs – \$600
- Total cost for each transfer point shroud – \$1,200 capital, amortized to \$180 per year
- Wind Screens for crushers, screening equipment, and loading and unloading facilities
 - Three-sided 4 ft. X 10 ft. stainless steel mesh for wind screen – \$500
 - Structural steel supports - \$400
 - Labor to install – roughly equal to materials costs – \$900
 - Total cost for each transfer point shroud - \$1,800 capital, amortized to \$270 per year

Loading and unloading bulk materials usually involved a front-end loader or a clamshell style scoop. Wind screens are useful during these operations, but additional efforts are needed to control the dust during the drop of material from the front-end loader or clamshell. Dropping more slowly helps, but a delivery chute to control the fall of the material is very effective, combined with a shroud around the chute to protect it from wind. The following are the estimated costs for these facilities:

- Portable Solids Transfer Chutes and Shrouds
 - Very similar to wind screen for crushers and screening equipment, but must be portable to adjust to wind direction and loading requirements.
 - Cost of portable loading chute with adjustable base – \$10,000, amortized to \$1,500 per year.
 - Cost of shroud with portable base to shelter loading/unloading operations – \$5,000, amortized to \$750 per year.

Two other control methods are useful in preventing dust plumes – control vehicle traffic within the facility, and clean up any spills. The following are the estimated costs for these facilities:

- Truck Traffic Control
 - Signs restricting traffic to certain areas – less than \$5,000 capital
 - Speed limit signs – less than \$5,000 capital
 - Barriers to prevent erosion of bulk material into traffic lanes – less than \$10,000 capital
 - Management time needed to enforce speed limits – normally no incremental costs.
- Bulk Material Spill Cleanup
 - Manual cleanup – \$75/hour for worker and hand-tools. One hour per day, 200 dry workdays - \$15,000 per year
 - Regenerative PM₁₀ efficient street sweeper - \$400,000 capital, amortized to \$60,000 per year, plus \$150,000 per year for fuel and operator.

Capital is amortized based on 7 percent interest, 15-year life, 1 percent taxes, 1 percent insurance, and typical 2 percent maintenance costs – resulting in an approximate 15 percent annual cost of capital.

Estimated costs of water fog, and water misting systems is as follows:

- Water
 - Cost of water - \$4-\$7 per 100 cubic feet (758 gallons) equates to approximately \$0.01 per gallon
 - Water Mist systems (Micro-Cool) is an industrial version of those used to cool Palm Springs open air patios:

- \$15,000 for pump, filters and piping system
- Plastic tubing to deliver mist to desired locations - \$1,000
- Portable water supply – 1-inch galvanized piping at \$10 per foot⁵ - \$5,000
- Amortized capital costs - \$3,150 per year
- Water use ~ 100 gallons per hour – say 60 hours per week, 52 weeks per year = 312,000 gallons per year at a cost of \$3,120
- Total costs to provide mist for a typical conveyor belt system - \$6,270 per year
- Water Fog systems for a stockpile
 - (Dust Boss, or Buffalo Monsoon) are large air blowers with air mist systems surrounding the flow of air:
 - \$25,000 for pump, filters and piping system
 - Portable water supply – 1-inch galvanized piping at \$10 per foot - \$5,000
 - Amortized capital costs - \$4,500 per year
 - Power – 5 HP - use 2 hours per day, 5 days per week, 52 weeks per year = 9,698 kWh = \$2,242.50 per year
 - Water use ~ 20 gallons per minute – use 2 hours per day, 5 days per week, 52 weeks per year = 624,000 gallons per year at a cost of \$6,240.00 per year
 - Total cost - \$12,992.50 per year

For reference, below are estimated costs for the typical watering system currently used at most construction sites, landfills, and bulk material handling facilities:

- Water Spray systems for a stockpile
 - Similar to golf course sprinkler systems⁶
 - \$15,000 for 150 feet of piping, 4 sprinklers, and controller
 - \$10,000 for installation and infrastructure
 - Amortized costs - \$3,750 per year
 - Water use approximately 10,000 gallons per day – 5 days per week, 52 weeks per year = 2,600,000 gallons per year at a cost of \$26,000.00
 - Total cost - \$29,7250 per year
- Firehose for watering specific locations
 - 1 ½” firehose – approximately 40 gpm⁷
 - Cost of firehose and nozzle – \$300
 - Worker to direct the firehose – \$25/hour, 2 hours per day, 5 days per week, 52 weeks per year = \$13,000
 - Water use approximately 40 gallons per minute – use 2 hours per day, 5 days per week, 52 weeks per year = 1,248,000 gallons per year at a cost of \$12,480 per year
 - Total costs – \$25,480 per year
- Water truck for roads and can be used to water stockpiles:
 - Truck - \$150,000 amortized to \$22,500 per year
 - Truck operator and fuel – \$75,000 per year
 - Water – 5,000-gallon truck, 2 deliveries per day to keep roadways stabilized – use 5 days per week, 52 weeks per year = 2,600,000 gallons per year at a cost of \$26,000 per year

⁵ http://www.discountsteel.com/items/Galvanized_Steel_Pipe.cfm?item_id=172&size_no=11

⁶ http://store.rainbird.com/sprinklers.html?impact_inlet=166

⁷ <http://www.elkhartbrass.com/files/aa/downloads/catalog/catalog-f6-T.pdf>

- Total costs – \$123,500 per year
- Dust Suppressants
 - Costs for surfactants are much higher than water.
 - However, surfactants are assumed competitive with water when the stockpile or disturbed area will be left stabilized for an extended period.

Attachment 2: Cost Estimates for Specific Facilities

Table 2-1: Estimated Cost of Bulk Material Handling Facilities controls

Facility	Source	Material	Throughput Tons per year	PM ₁₀ Emissions lb per day	Recommended Controls	\$ Capital	\$ Annualized	Potential PM ₁₀ Reductions lb per day
Granite Rock	MINERL> Storage, contained, Rock	Stone			Wind screen or shroud for storage PLUS Water mist system			
United States Pipe & Foundry	MTGL/SEC> Storage, Slag, 5 days/wk.	Slag			Wind screen for stock pile			
Berkeley Asphalt	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage			
Syar Industries, Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener			
Syar Industries, Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener			
Syar Industries, Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener PLUS Water mist system			
Syar Industries, Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener PLUS Water mist system			
PABCO Gypsum	MINERL> Grinding, Gypsum, 8 tons/hr max	Gypsum			Wind screen for grinder PLUS Water mist system			
ConAgra, Inc	FOOD/AG> Shipping & receiving	Wheat - grain			Wind screen or shroud for loading/unloading			
Granite Rock	MINERL> Storage, contained, Rock	Stone			Wind screen or shroud for storage			

Facility	Source	Material	Throughput Tons per year	PM ₁₀ Emissions lb per day	Recommended Controls	\$ Capital	\$ Annualized	Potential PM ₁₀ Reductions lb per day
CEMEX Construction Materials	MINERL> Screening, Rock, 340 tons/hr max	Stone			Wind screen for screener PLUS Water mist system			
CEMEX Construction Materials	MINERL> Mining/quarry, stockpiling	Stone			Wind screen for stock pile			
CEMEX Construction Materials	MINERL> Mining/quarry, Rock	Stone			Water fog system			
Hanson Aggregates	MINERL> Storage, open, Rock	Stone			Wind screen for stock pile			
Levin Richmond Terminal	MISC-HDLG> Material handling	Other Materials - other/not spec			Wind screen and shroud for handling			
Levin Richmond Terminal	MISC-HDLG> Material handling	Other Materials - other/not spec			Wind screen and shroud for handling			
Levin Richmond Terminal	MINERL> Storage, open, Multi-material	Coke			Wind screen for stock pile			
Levin Richmond Terminal	MISC-HDLG> Material handling	Iron ore			Wind screen and shroud for handling PLUS Water mist system			
Levin Richmond Terminal	MISC-HDLG> Material handling	Iron ore			Wind screen and shroud for handling PLUS Water mist system			
Levin Richmond Terminal	MINERL> Storage, open, Multi-material	Iron ore			Wind screen for stock pile			
Levin Richmond Terminal	MISC-HDLG> Material handling	Iron ore			Wind screen and shroud for handling			
Levin Richmond Terminal	MISC-HDLG> Material handling	Coke			Wind screen and shroud for handling			

Facility	Source	Material	Throughput Tons per year	PM ₁₀ Emissions lb per day	Recommended Controls	\$ Capital	\$ Annualized	Potential PM ₁₀ Reductions lb per day
Levin Richmond Terminal	MISC-HDLG> Material handling	Coke			Wind screen and shroud for handling			
Brenntag Pacific	MISC-HDLG> Storage, Potash, 5 days/wk.	Potash			Wind screen for stock pile			
Right Away Redy Mix	MINERL> Conveying, Gravel/sand	Sand/gravel			Wind screen for conveying and transfer points PLUS Water mist system			
Redwood Landfill	MISC-HDLG> Grinding, 80 tons/hr max	Wood - other/not spec			Wind screen for grinder PLUS Water mist system			
Superior Supplies	MINERL> Storage, contained, Concrete	Concrete			Wind screen or shroud for storage PLUS Water mist system			
Superior Supplies	MINERL> Storage, contained, Concrete	Concrete			Wind screen or shroud for storage PLUS Water mist system			
Soiland Co	MINERL> Mining/quarry, stockpiling	Stone			Wind screen for stock pile			
Hunt And Behrens	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points			
Hunt And Behrens	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points PLUS Water mist system			

Facility	Source	Material	Throughput Tons per year	PM ₁₀ Emissions lb per day	Recommended Controls	\$ Capital	\$ Annualized	Potential PM ₁₀ Reductions lb per day
Hunt And Behrens	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points PLUS Water mist system			
Hunt And Behrens	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points PLUS Water mist system			
Central Concrete Supply	MINERL> Loading/unloading, Concrete	Concrete			Portable shroud and chute for loading/unloading			
Central Concrete Supply	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage PLUS Water mist system			
Central Concrete Supply	MINERL> Conveying, Gravel/sand	Sand/gravel			Wind screen for conveying and transfer points PLUS Water mist system			
Marin Sanitary Service	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling PLUS Water mist system			
Syar Industries Inc	MINERL> Conveying, Rock, 160 tons/hr max	Stone			Wind screen for conveying and transfer points PLUS Water mist system			

Facility	Source	Material	Throughput Tons per year	PM ₁₀ Emissions lb per day	Recommended Controls	\$ Capital	\$ Annualized	Potential PM ₁₀ Reductions lb per day
Syar Industries Inc	MINERL> Loading, feed/surge/weigh bins	Sand/gravel			Wind screen and shroud for loading PLUS Water mist system			
Syar Industries Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener			
Syar Industries Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener PLUS Water mist system			
Syar Industries Inc	MINERL> Screening, Gravel/sand	Sand/gravel			Wind screen for screener PLUS Water mist system			
City of Berkeley, Dept. of Public Works	Misc. MINERL, 560 tons/hr max, 7 days/wk.	Waste material - other/not spec			Water fog system			
Sugar City Building Materials	Misc. MINERL, Gravel/sand	Sand/gravel			Wind screen and shroud for handling			
CEMEX Construction Materials	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage PLUS Water mist system			
CEMEX Construction Materials	MINERL> Concrete batching, Concrete	Concrete			Wind screen and shroud for handling PLUS Water mist system			
Davis Street SMART	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling PLUS Water mist system			

Facility	Source	Material	Throughput Tons per year	PM ₁₀ Emissions lb per day	Recommended Controls	\$ Capital	\$ Annualized	Potential PM ₁₀ Reductions lb per day
CEMEX Construction Materials	MTGL/SEC> Storage, Cement, 5 days/wk.	Cement			Wind screen and shroud for handling			
Langley Hill Quarry	MINERL> Mining/quarry, stockpiling	Stone			Wind screen for stock pile			
Langley Hill Quarry	Misc. MINERL, Rock, 200 tons/hr max	Stone			Water fog system			
CEMEX Construction Materials	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage PLUS Water mist system			
CEMEX Construction Materials	Truck Loadout	Sand/gravel			Portable shroud and chute for loading/unloading			
Oldcastle Precast (Pleasanton)	MINERL> Conveying, Cement	Cement			Wind screen for conveying and transfer points			
CEMEX Construction Materials	MINERL> Conveying, Gravel/sand	Sand/gravel			Wind screen for conveying and transfer points			
Hydro Conduit Corporation	Misc. MINERL, Gravel/sand, 20 tons/hr max	Sand/gravel			Wind screen and shroud for handling			
Associated Concrete Co	MINERL> Storage, contained, 35 min/batch	Cement - dry process mfg.			Wind screen or shroud for storage PLUS Water mist system			
Sonoma Compost	MISC-HDLG> Material handling	Fertilizer - other/not spec			Wind screen and shroud for handling			
Mission Trail Waste Systems	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling			

Facility	Source	Material	Throughput Tons per year	PM ₁₀ Emissions lb per day	Recommended Controls	\$ Capital	\$ Annualized	Potential PM ₁₀ Reductions lb per day
Vulcan Materials/Calmat Company	MINERL> Storage, contained, Gravel/sand	Sand/gravel			Wind screen or shroud for storage PLUS Water mist system			
Vulcan Materials/Calmat Company	MINERL> Screening, Rock, 407 tons/hr max	Stone			Wind screen for screener			
RC Ready Mix Co	MINERL> Storage, contained, Cement	Cement			Wind screen or shroud for storage			
Concrete Ready Mix, Inc	MINERL> Conveying, Concrete	Concrete			Wind screen for conveying and transfer points			
Willowbrook Feeds	FOOD/AG> Storage, Feed grains, 5 days/wk.	Grains - feed			Wind screen or shroud for storage			
Willowbrook Feeds	FOOD/AG> Conveying/transferring	Grains - feed			Wind screen for conveying and transfer points			
Willowbrook Feeds	FOOD/AG> Shipping & receiving	Grains - feed			Portable shroud and chute for loading/unloading			
Allied Waste Services of North	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling			
Right Away Redy Mix	MINERL> Storage, contained, Cement	Cement			Wind screen or shroud for storage PLUS Water mist system			
Feed Sources, Inc	FOOD/AG> Pressing, Barley, feed	Barley - feed			Wind screen for presser			
Soiland Co, Inc	MINERL> Mining/quarry, crushing, Rock	Stone			Water fog system, wind screen for crusher			
Quikrete Northern California	MINERL> Loading, feed/surge/weigh bins	Sand/gravel			Portable shroud and chute for loading/unloading			

Facility	Source	Material	Throughput Tons per year	PM ₁₀ Emissions lb per day	Recommended Controls	\$ Capital	\$ Annualized	Potential PM ₁₀ Reductions lb per day
Quikrete Northern California	MINERL> Loading, feed/surge/weigh bins	Sand/gravel			Portable shroud and chute for loading/unloading			
San Jose Concrete Pipe Co Inc	MINERL> Concrete batching, Gravel/sand	Sand/gravel			Wind screen and shroud for handling			
CEMEX Construction Materials	MINERL> Conveying, Limestone	Sand/gravel			Wind screen for conveying and transfer points			
Shell Chemical LP	MISC-HDLG> Material handling	Heterogeneous catalyst			Wind screen and shroud for handling			
Tyco Electronics Corporation	MISC-HDLG> Mixing, 4.5 min/batch	Other Materials - other/not spec			Wind screen for mixer PLUS Water mist system			
Central Concrete Supply, Inc	MINERL> Conveying, Gravel/sand	Sand/gravel			Wind screen for conveying and transfer points PLUS Water mist system			
BoDean Company	MINERL> Mining/quarry, stockpiling	Sand/gravel			Wind screen for stock pile			
Tesoro Refining & Marketing Co	MISC-HDLG> Material handling, Coke	Coke			Wind screen and shroud for handling PLUS Water mist system			
Napa Recycling & Waste Service	MISC-HDLG> Material handling	Waste material - other/not spec			Wind screen and shroud for handling PLUS Water mist system			
Recall North America	MISC-HDLG> Material handling, Paper	Paper			Wind screen and shroud for handling PLUS			

Facility	Source	Material	Throughput Tons per year	PM ₁₀ Emissions lb per day	Recommended Controls	\$ Capital	\$ Annualized	Potential PM ₁₀ Reductions lb per day
					Water mist system			
CEMEX Pacific Holdings, LLC	MINERL> Loading, feed/surge/weigh bins	Sand/gravel			Wind screen for loading bins			
CEMEX	Wet Plant Aggregate bin system: 10 bins	Sand/gravel			Wind screen for bins			
South Bay Recycling, LLC (SBR)	Solid Waste Transfer Station	Waste material - other/not spec			Water fog system			
G3 Minerals, Byron Plant	Coarse Waste Sand Stockpile	Sand/gravel			Wind screen for stock pile			
G3 Minerals, Byron Plant	No. 1 Dryer Feed Bin	Sand/gravel			Wind screen for dryer			
G3 Minerals, Byron Plant	No. 2 Dryer Feed Bin	Sand/gravel			Wind screen for dryer			
G3 Minerals, Byron Plant	Quarry Operation	Sand/gravel			Water fog system			
Phillips 66 Carbon Plant	Portable Conveyor	Coke			Wind screen for conveying and transfer points			
Phillips 66 Carbon Plant	Portable Conveyor	Coke			Wind screen for conveying and transfer points			
Phillips 66 Carbon Plant	Stockpile Fugitive Emissions; Including All Transfers	Coke			Wind screen for stock pile			
					Totals	\$1,722,600	\$412,640	1,493.2 #/day

Staff expects only half of these potential control measures to be implemented, and expects to accrue only half of the emission reductions, based on some facilities and sources may be able to achieve the opacity limit currently, or through other minor improvements to their existing operation.

Expected capital investment for control measure to be approximately \$866,000 capital, with resulting annual operating expenses of \$206,000. Emission reductions are estimated to be 747 lbs per day of PM₁₀, or 136 tons per year. Average cost effectiveness is \$206,000 / 136 = \$1,515 per ton. The poorest cost effectiveness is found for two controls: \$13,968 per ton for a water fog system at a quarry operation, and \$10,303 per ton for a stockpile windscreen at a second quarry operation. These cost effectiveness levels are within normal acceptable ranges for particulate emission reductions.

Water Use

Five water fog systems are recommended in the table above. Each of these water fog systems is anticipated to use 624,000 gallons per year, totaling 3,120,000 gallons of incremental water use. Staff assumes all five will be installed.

Thirty-four water mist systems are recommended in the table above. Each of these water mist systems is anticipated to use 312,000 gallons per year, totaling 10,608,000 gallons of incremental water use. Staff assumes all 34 will be installed.

Total incremental water use for the proposed wind screens, and judicious use of water is 13,728,000 gallons per year, or 37,611 gallons per day. Water is conservatively estimated to cost \$7.48 per 100 cubic feet =748 gallons, equaling \$0.01 per gallon. 13,728,000 gallons per year cost \$137,280 per year

The CEQA threshold for housing development water use is based on water use needed for 500 dwelling units. Water use is estimated for 225 – 400 gallons per day for each dwelling unit, so the threshold ranges from 41,000,000 – 74,000,000 gallons of water.

The proposed particulate controls will use 33% of the CEQA threshold for incremental water use. If twice as many bulk material handling facilities opt to use water rather than wind screens, water use would be no more than 66% of the CEQA water consumption threshold

Typical urban water use is 8 million acre-feet of water per year = equaling 2.6 trillion gallons per year. 13.728 million gallons of proposed water use equals 5.3 millionths of the typical water supply. The threshold of 41 million gallons of water equals about 16 millionths of the typical water supply.

Attachment 1: Background Research on Bay Area PM Emissions

Attachment 1-1: 2011 Particulate Emissions Inventory¹ - tons per day

Source Categories	TSP	PM ₁₀	PM _{2.5}
Petroleum Refining Subtotal	0.38	0.27	0.16
Other Industrial / Commercial Processes			
Chemical Manufacturing	0.43	0.39	0.38
Cooking	2.81	2.81	1.80
Other Food and Agricultural Processes	0.63	0.44	0.26
Metallurgical Foundries & Forging	0.98	0.61	0.46
Metal Recycling and Shredding	0.14	0.10	0.07
Wood Products Manufacturing	0.15	0.10	0.06
Cement Manufacturing	0.12	0.11	0.08
Asphalt Concrete Plants	0.55	0.22	0.18
Concrete Batching	1.21	1.11	0.75
Glass & Related Products	0.71	0.69	0.68
Stone, Sand & Gravel	0.86	0.43	0.06
Sand Blasting	0.35	0.17	0.01
Landfills	6.35	1.56	0.22
Waste Management - other	0.35	0.34	0.32
Other Industrial / Commercial	1.07	0.75	0.45
Subtotal	16.71	9.83	5.78
Combustion – Stationary Sources			
Domestic Combustion - space heating	0.70	0.70	0.70
Domestic Combustion - water heating	0.47	0.47	0.47
Wood Stoves	2.59	2.42	2.33
Fireplaces	8.88	8.31	8.00
Gas Turbines	0.89	0.88	0.88
Petroleum Refinery Combustion	2.51	2.51	2.45
Landfill Flares	0.11	0.11	0.11
Other Natural Gas Combustion	1.41	1.41	1.41
Planned Fires (prunings, crops, weeds, etc.)	0.32	0.29	0.27
Subtotal	17.88	17.10	16.62
Off-Road Mobile Sources			
Lawn & Garden Equipment - Gasoline	0.21	0.21	0.21
Refrigeration Units - Diesel	0.19	0.18	0.17
Agricultural Equipment - Diesel	0.33	0.32	0.31
Construction & Mining Equipment - Gasoline	0.11	0.11	0.11
Construction & Mining Equipment - Diesel	0.59	0.56	0.55
Industrial Equipment - Diesel	0.10	0.10	0.09
Light Commercial Equipment - Gasoline	0.34	0.34	0.34
Light Commercial Equipment - Diesel	0.34	0.32	0.31
Locomotive Operations - Diesel	0.20	0.20	0.19
Ships In Transit - Diesel	0.29	0.29	0.28
Ships In Transit – Fuel Oil	0.73	0.73	0.71
Commercial Harbor Craft	0.75	0.75	0.75
Recreational Boats - Gasoline	1.39	1.39	1.38
Commercial Aircraft	0.12	0.12	0.12
General Aviation Aircraft	0.14	0.14	0.14
Subtotal	5.83	5.76	5.66
On-Road Motor Vehicles			
Light Duty Passenger Vehicles - Exhaust	0.29	0.28	0.26
Light Duty Passenger Vehicles - Tire Wear	0.83	0.83	0.21

¹ Base Year 2011 Bay Area Emissions Inventory, August 2013

Light Duty Passenger Vehicles - Brake Wear	3.88	3.81	1.63
Light Duty Trucks I - Exhaust	0.09	0.09	0.08
Light Duty Trucks I - Tire Wear	0.10	0.10	0.02
Light Duty Trucks I - Brake Wear	0.45	0.44	0.19
Light Duty Trucks II - Exhaust	0.10	0.09	0.09
Light Duty Trucks II - Tire Wear	0.27	0.27	0.07
Light Duty Trucks II - Brake Wear	1.27	1.24	0.53
Medium Duty Trucks - Exhaust	0.09	0.08	0.08
Medium Duty Trucks - Tire Wear	0.20	0.20	0.05
Medium Duty Trucks - Brake Wear	0.94	0.92	0.40
Light Heavy Duty Trucks I - Exhaust	0.13	0.13	0.12
Light Heavy Duty Trucks I - Brake Wear	0.34	0.34	0.15
Medium Heavy Duty Trucks - Exhaust	0.67	0.67	0.62
Medium Heavy Duty Trucks - Brake Wear	0.31	0.30	0.13
Heavy Heavy Duty Trucks - Exhaust	1.60	1.60	1.47
Heavy Heavy Duty Trucks - Tire Wear	0.13	0.13	0.03
Heavy Heavy Duty Trucks - Brake Wear	0.23	0.22	0.09
Urban Buses - Exhaust	0.19	0.19	0.17
Urban Buses - Brake Wear	0.50	0.49	0.21
Other Buses - Exhaust	0.09	0.09	0.09
Subtotal	12.70	12.51	6.69
Miscellaneous			
Construction Operations - Residential	5.09	2.49	0.25
Construction Operations - Commercial	4.99	2.44	0.24
Construction Operations - Institutional	5.02	2.46	0.25
Construction Operations - Industrial	2.34	1.14	0.11
Construction Operations - Roads	6.00	2.94	0.29
Subtotal	23.44	11.47	1.14
Farming Operations - Land Preparation	2.27	1.03	0.15
Farming Operations - Harvest	1.21	0.55	0.08
Subtotal	3.48	1.58	0.23
Accidental Fires - structural	0.21	0.21	0.19
Accidental Fires - all vegetation	1.18	1.04	1.01
Subtotal	1.39	1.25	1.20
Entrained Road Dust - Paved Freeways	12.81	5.86	0.88
Entrained Road Dust - Paved Major Roads	15.49	7.08	1.06
Entrained Road Dust - Paved Collectors	3.13	1.43	0.21
Entrained Road Dust - Paved Local Streets	21.50	9.83	1.47
Entrained Road Dust - Unpaved Forest/Park Roads	5.95	3.53	0.35
Entrained Road Dust - Unpaved Farm Roads	0.54	0.32	0.03
Subtotal	59.42	28.05	4.00
Animal Waste - Dairy Cattle	1.07	0.52	0.06
Animal Waste - Range Cattle	1.80	0.87	0.10
Animal Waste - Broilers	5.05	2.43	0.28
Animal Waste - Layers	3.76	1.81	0.21
Animal Waste - Turkeys	2.43	1.17	0.13
Animal Waste - Sheep	0.92	0.44	0.05
Animal Waste - Horses	0.21	0.10	0.01
Animal Waste - Other	3.81	1.83	0.21
Subtotal	19.05	9.17	1.05
Wind Blown Dust - Agricultural Land	9.81	4.90	0.98
Wind Blown Dust - Other	0.59	0.35	0.05
Subtotal	10.40	5.25	1.03
Cigarette/Tobacco Smoking	0.61	0.54	0.52
Various other minor PM sources	2.91	2.85	2.23
Total	174.20	105.63	46.31

Note: Source categories shown with more than 0.10 tpd TSP emissions. Resulting sub-totals are slightly less than total PM emissions inventory.

Attachment 1-2: Significant PM Emissions Source Categories

A. Air District PM Emissions Inventory

The first step in developing the draft amendments was to identify PM source categories with the potential for significant emission reductions. Staff used the Air District's 2011 Emissions Inventory as the basis for this review. The 2011 Emissions Inventory provides a comprehensive estimate of the total amount of PM emitted within the Bay Area, subdivided into estimates of Total Suspended Particulates (TSP), PM₁₀, and PM_{2.5}. The total estimated 2011 emissions are as follows:

TSP:	174 tons per day (tpd)
PM ₁₀ :	106 tpd
PM _{2.5} :	46 tpd

The Emissions Inventory breaks down the Bay Area's total PM emissions into multiple source categories. Staff reviewed each source category where PM emissions were estimated to exceed 0.1 tons per day. The contribution of each major grouping of source categories to total emissions of TSP, PM₁₀, and PM_{2.5} are shown in Figures 1-2.1 through 2.3 below. These figures provide a graphic illustration of the contribution of each "Summary Category," or grouping of related source categories, to the region's PM emissions inventory.

Figure 1-2.1: 2011 Emissions Inventory – TSP Summary Categories

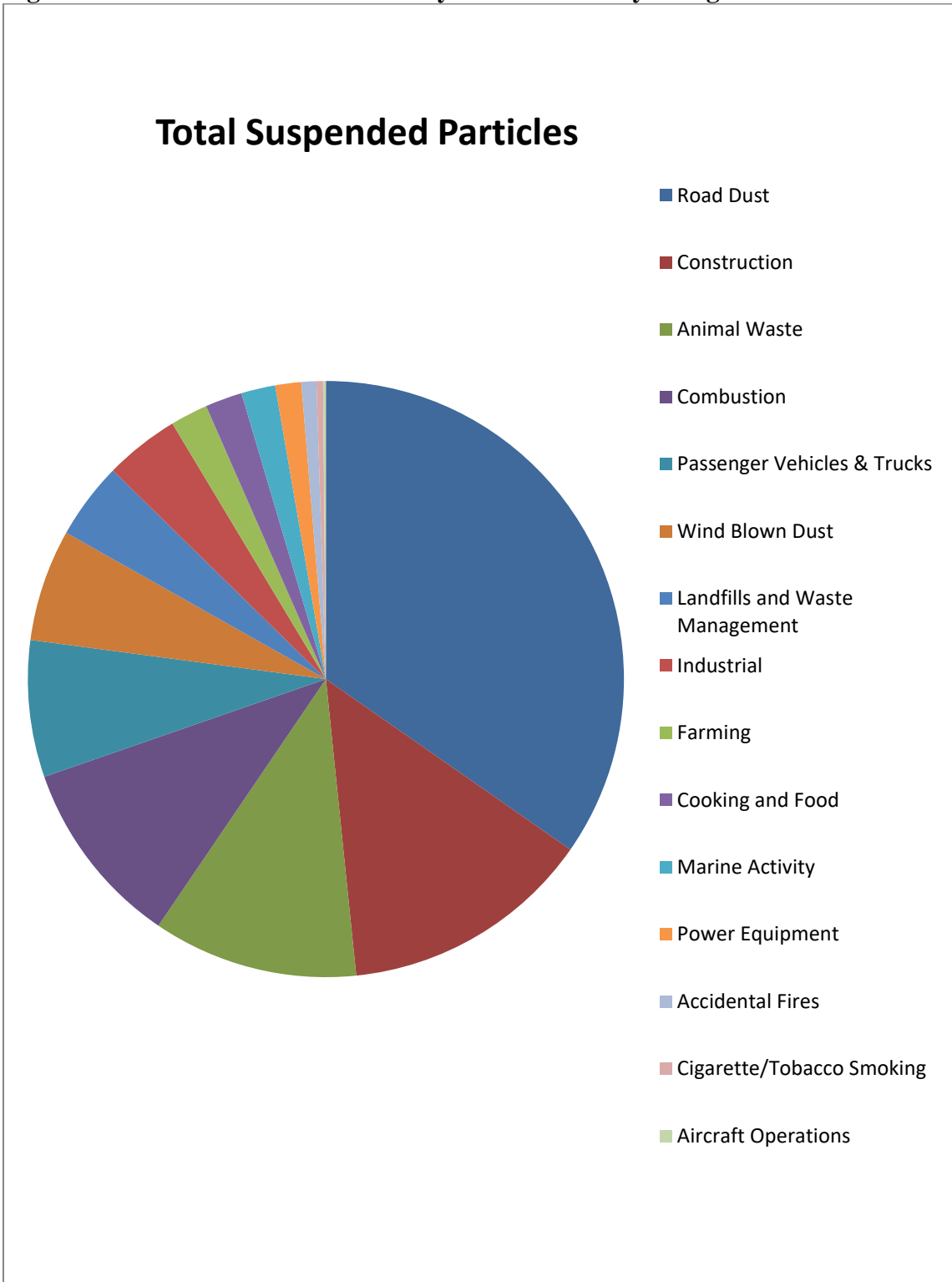
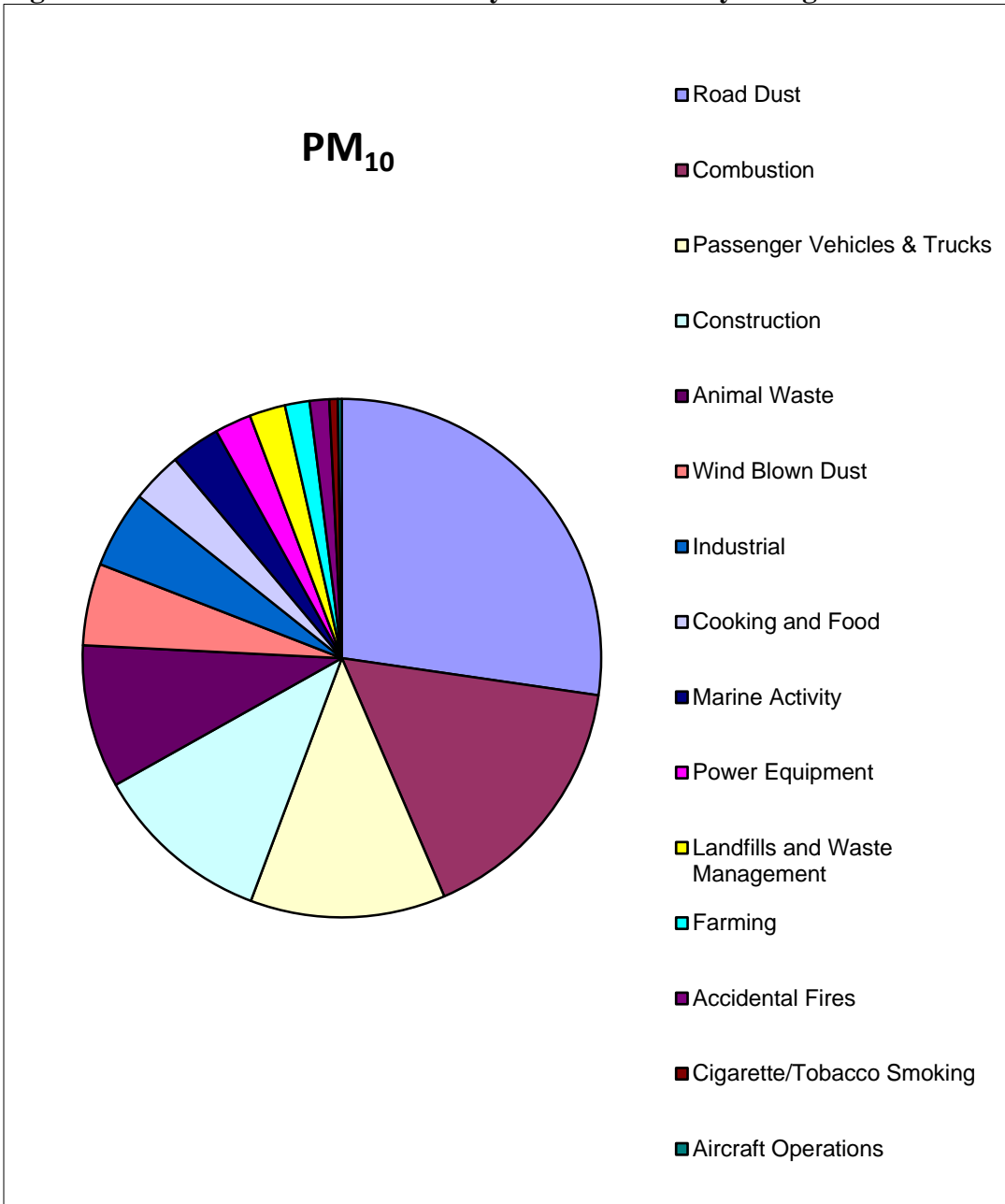


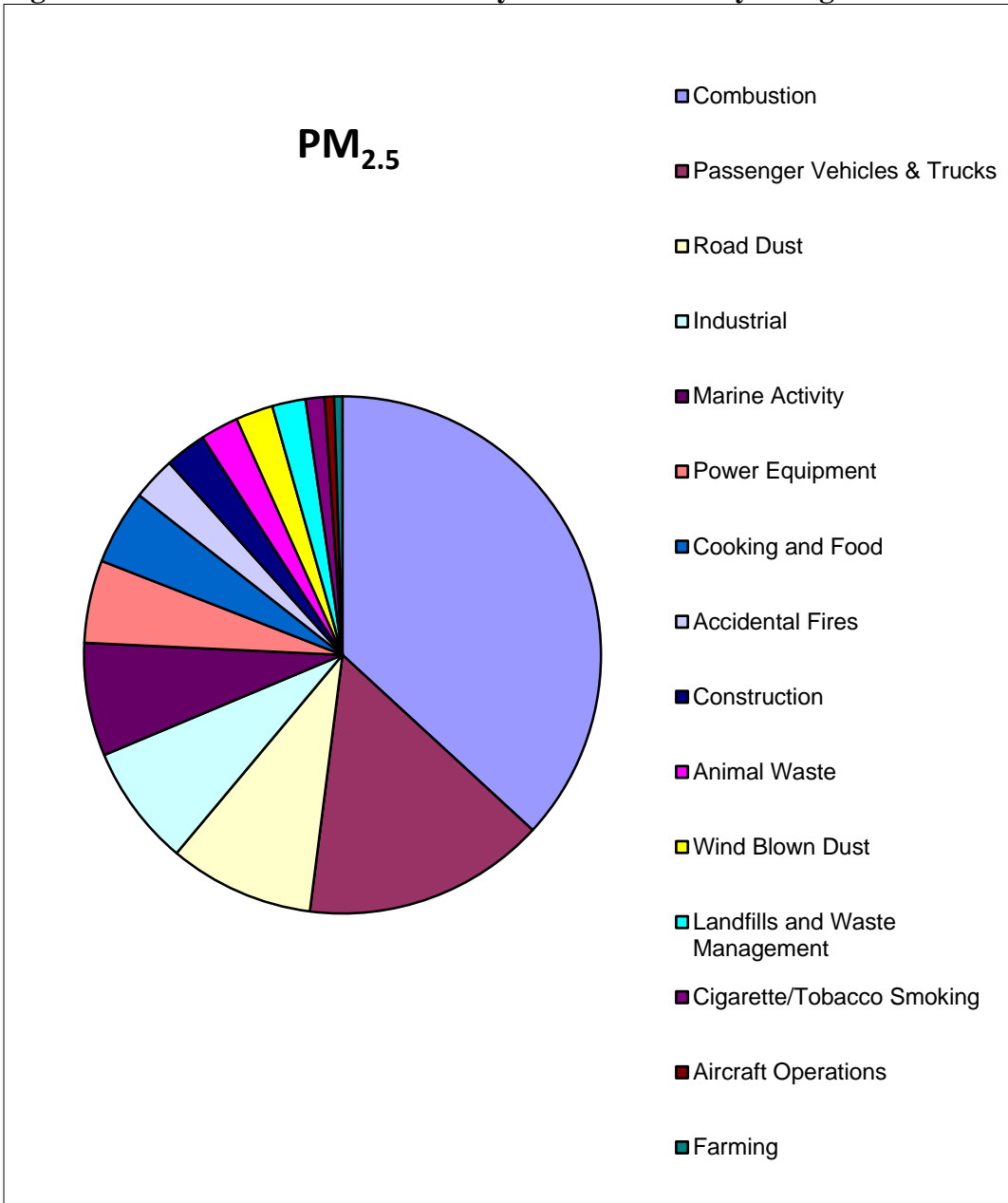
Figure 1-2.2: 2011 Emissions Inventory – PM₁₀ Summary Categories



As these figures show, the conclusions for TSP (Figure 1-2.1) and PM₁₀ (Figure 1-2.2) are similar - the most significant Summary Categories of emissions are the same six categories:

Summary Category	% of Total TSP	% of Total PM ₁₀
Road Dust	34.7	27.3
Combustion of fuel from various sources	10.2	16.2
Passenger Vehicles & Trucks	7.4	12.2
Construction	13.7	11.2
Animal Waste	11.1	8.9
Wind Blown Dust	6.1	5.1

Figure 1-2.3: 2011 Emissions Inventory – PM_{2.5} Summary Categories



The conclusions for PM_{2.5} are somewhat different. The first three most significant PM_{2.5} Summary Categories are the same as those for TSP and PM₁₀:

Summary Category	% of Total PM _{2.5}
Combustion of fuel from various sources	36.8
Passenger Vehicles & Trucks	15.2
Road Dust	9.1

However, the next three most significant PM_{2.5} Summary Categories are:

Summary Category	% of Total PM _{2.5}
Industrial sources	7.6
Marine Activity	7.1
Power Equipment	5.2

B. PM Emissions from Combustion

As discussed above in describing PM controls, there are very few effective ways to control PM from natural gas or refinery fuel gas combustion. CARB has developed requirements for control of diesel fuel combustion. Control of jet fuel combustion is outside the authority of the Air District, since no gas turbines in the district currently burn liquid fuels. Control of PM from combustion of solid fuels (specifically petroleum coke) require site-specific analysis.

C. Identification of Source Categories with Potential for Significant PM Reductions

The purpose of draft rule amendments to Rule 6-1 is to significantly reduce PM₁₀ and PM_{2.5} emissions. The 2011 Emissions Inventory has been used as the basis for this analysis, and each source category with emissions of greater than 0.10 ton per day for TSP, PM₁₀, or PM_{2.5} was considered. There are 88 source categories that capture 95 – 98 percent of total estimated PM emissions, and represent all significant emissions where reductions may be feasible.

Each of the 88 source categories are shown in Attachment 1. Draft amendments to Rule 6-1 are proposed for each source category where a significant quantity of emissions (especially PM_{2.5}) is emitted and where potential control can yield significant PM reductions. Several source categories are excluded from this rule development project based on the following criteria:

- There is a current rule in place for the source category, or other recent rule amendments that are not yet fully implemented; or
- Other rulemaking is currently underway or included in the 2017 Clean Air Plan; or
- The source category is outside of Air District jurisdiction; or
- No control methods are currently available that can have significant impact on emissions from the source category.

Future rulemaking to reduce PM emissions will reconsider these categories to identify the sources with greatest opportunity for improvement. Future PM rules will most likely be focused on specific source categories and specific sources, with specific control techniques and specific emission limits.

Twenty-two of the 88 source categories are being considered for possible control and emissions reductions. These categories include 43 percent of the total estimated PM₁₀ emissions, and 19 percent of the total estimated PM_{2.5} emissions. The largest of these categories are Construction Dust and Entrained Road Dust. Proposals to control Construction Dust and Entrained Road Dust (summarized as Fugitive Dust) were considered when developing the potential draft amendments for Rule 6-1.

Table 1-2.1: Source Categories considered for Rule 6-1 amendments

<u>Source Category</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>
Petroleum Refinery Processing ^e	0.27 tpd	0.16 tpd
Chemical Manufacturing	0.39	0.38
Other Food and Agricultural Processes	0.44	0.26
Wood Products Manufacturing	0.10	0.06
Asphaltic Concrete Plants	0.22	0.18
Concrete Batching	1.11	0.75
Glass & Related Products	0.69	0.68
Stone, Sand & Gravel	0.43	0.06
Landfills	1.56	0.22
Waste Management – other	0.34	0.32
Other Industrial / Commercial	0.75	0.45
Construction – 5 source categories	11.47	1.14
Entrained Road Dust – 6 source categories	<u>28.05</u>	<u>4.00</u>
Total:	45.82	8.66

^e excluding refinery combustion

D. Source Categories Not Being Considered for Additional Regulatory Requirements

Of the 88 source categories identified in the 2011 Emissions Inventory with PM emissions of over 0.10 ton per day, only 22 are being considered for additional emissions controls. The other 66 were excluded from consideration for various reasons, as discussed below.

Six source categories have rules in place, or recent rule amendments (including state Air Toxic Control Measures) that are not yet fully implemented. These six categories are not currently being considered for potential amendments to Rule 6-1. Three of these source categories are significant sources of both PM₁₀ and PM_{2.5} emissions: cooking, wood stoves and fireplaces collectively represent 22 percent of the PM₁₀ and 41 percent of the PM_{2.5} emissions. The other three source categories have much lower emissions.

Table 1-2.2: Source Categories with existing or partially implemented rules

<u>Source Category</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>
• Cooking	2.81 tpd	1.80 tpd
• Sand Blasting	0.17	0.01
• Domestic Combustion – water heating	0.47	0.47
• Wood Stoves	2.42	2.33
• Fireplaces	8.31	8.00
• Gas Turbines	<u>0.88</u>	<u>0.88</u>
Total	15.06	13.49

Eight categories are not being considered for potential amendments to Rule 6-1 because they are addressed by new rules that have recently been approved, or are included in the stationary source measure in the 2017 Clean Air Plan. Some of these sources are currently regulated and the other sources are the subject of Further Study Measures currently included in the 2017 Clean Air Plan. Petroleum Refinery Combustion is also a significant

source of PM. Regulation 9, Rule 10 was recently amended to address these sources' NO_x emissions, and include a provision for CO monitoring as an indicator for complete combustion. Additional research is needed to better control PM emissions from refinery process gas combustion. These eight source categories represent five percent of the PM₁₀ and nine percent of the PM_{2.5} emissions.

Table 1-2.3: Source Categories with new rules recently approved, or included in the 2017 CAP

<u>Source Category</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>
• Metallurgical Foundries and Forging	0.61 tpd	0.46 tpd
• Metal Recycling and Shredding	0.10	0.07
• Cement Manufacturing	0.11	0.08
• Domestic Combustion – space heating	0.70	0.70
• Petroleum Refinery Combustion	2.51	2.45
• Planned Fires (prunings, crops, weeds)	0.29	0.27
• Animal Waste - Dairy Cattle	0.52	0.06
• Animal Waste - Range Cattle	<u>0.87</u>	<u>0.10</u>
Total	5.71	4.19

Thirty-eight source categories are not within the jurisdiction of the Air District, so are not being considered for potential amendments to Rule 6-1. These 38 source categories represent 18 percent of the PM₁₀ and 28 percent of the PM_{2.5} emissions.

Table 1-2.4: Source Categories outside the jurisdiction of the Air District

<u>Source Category</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>
• Lawn & Garden Equipment	0.21 tpd	0.21 tpd
• Refrigeration Units – Diesel	0.18	0.17
• Agricultural Equipment - Diesel	0.32	0.31
• Construction & Mining Equipment – Gasoline	0.11	0.11
• Construction & Mining Equipment – Diesel	0.56	0.55
• Industrial Equipment – Diesel	0.10	0.09
• Light Commercial Equipment – Gasoline	0.34	0.34
• Light Commercial Equipment – Diesel	0.32	0.31
• Locomotive Operations – Diesel	0.20	0.19
• Ships in Transit – Diesel	0.29	0.28
• Ships in Transit – Fuel Oil	0.73	0.71
• Commercial Harbor Craft	0.75	0.75
• Recreational Boats – Gasoline	1.39	1.38
• Commercial Aircraft	0.12	0.12
• General Aviation Aircraft	0.14	0.14
• Light Duty Passenger Vehicles – Exhaust	0.28	0.26
• Light Duty Passenger Vehicles – Tire Wear	0.83	0.21
• Light Duty Passenger Vehicles – Brake Wear	3.81	1.63
• Light Duty Trucks I – Exhaust	0.09	0.08
• Light Duty Trucks I – Tire Wear	0.10	0.02
• Light Duty Trucks I – Brake Wear	0.44	0.19

• Light Duty Trucks II - Exhaust	0.09	0.09
• Light Duty Trucks II – Tire Wear	0.27	0.07
• Light Duty Trucks II – Brake Wear	1.24	0.53
• Medium Duty Trucks - Exhaust	0.08	0.08
• Medium Duty Trucks – Tire Wear	0.20	0.05
• Medium Duty Trucks – Brake Wear	0.92	0.40
• Light Heavy Duty Trucks I - Exhaust	0.13	0.12
• Light Heavy Duty Trucks I – Brake Wear	0.34	0.15
• Medium Heavy Duty Trucks - Exhaust	0.67	0.62
• Medium Heavy Duty Trucks – Brake Wear	0.30	0.13
• Heavy Heavy Duty Trucks - Exhaust	1.60	1.47
• Heavy Heavy Duty Trucks – Tire Wear	0.13	0.03
• Heavy Heavy Duty Trucks – Brake Wear	0.22	0.09
• Urban Buses – Exhaust	0.19	0.17
• Urban Buses – Brake Wear	0.49	0.21
• Other Buses – Exhaust	0.09	0.09
• Cigarette/Tobacco Smoking	<u>0.54</u>	<u>0.52</u>
Total	18.81	12.87

Staff proposes omitting fourteen source categories from consideration for possible control and emission reductions. Staff is not considering these source categories based on:

- i) their current emissions are relatively small,
- ii) current rulemaking will provide a basis for future work (regarding control of PM from dairy cattle / range cattle on other types of animals),
- iii) additional study is needed to address farming operations, or
- iv) control techniques are not currently available to address these categories.

These 14 source categories represent 17 percent of the total PM₁₀ and 11 percent of the total PM_{2.5} emissions.

Table 1-2.5 – Source Categories with relatively small PM emissions, without practical controls, or where current work will help develop future control strategies

<u>Source Category</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>
• Landfill Flares	0.11 tpd	0.11 tpd
• Other Natural Gas Combustion	1.41	1.41
• Farming Operations – Land Preparation	1.03	0.15
• Farming Operations – Harvest	0.55	0.08
• Accidental Fires – structural	0.21	0.19
• Accidental Fires – all vegetation	1.04	1.01
• Animal Waste – Broilers	2.43	0.28
• Animal Waste – Layers	1.81	0.21
• Animal Waste – Turkeys	1.17	0.13
• Animal Waste – Sheep	0.44	0.05
• Animal Waste – Horses	0.10	0.01
• Animal Waste – Other	1.83	0.21
• Wind Blown Dust – Agricultural Land	4.90	0.98

• Wind Blown Dust – Other	<u>0.35</u>	<u>0.05</u>
Total	17.38	4.87

Combustion sources of all types are a cumulative large source of particulates, yet each individual source is a relatively small source of particulate matter. Combustion is a large contributor to the generation of fine PM. Particulates emissions from diesel and fuel oil combustion are common and readily visible. Combustion of natural gas can create ultrafine PM in addition to the small amounts of larger PM. Gas turbines that burn natural gas have been source tested often, and most of the time very little PM is found due to the large volume of exhaust flow. Emission rates of PM_{2.5} can be significant even when the PM concentration is very dilute. Source test results for these sources indicate PM emissions are 0.0006 grains PM₁₀/dscf or lower. The control technology used for this type of source is “good combustion practice,” which means ensuring that combustion is as complete as possible. Low CO concentrations in flue gas are an indication of complete combustion. There are no practical controls to reduce particulates beyond “good combustion practice” available for these stationary sources. The 2017 Clean Air Plan stationary source control measure entitled “combustion strategy” will review all sources of combustion with the intent of identifying efficiency measures that will reduce the amount of fuel consumed, and will also consider impact on neighbors.

Attachment 1-3: Analysis of Potential PM Controls on Affected Facilities

A. Source Categories Identified for Potential Emission Reductions Through PM Controls

Twenty-two source categories were reviewed as initial steps to reduce PM emissions. In those 22 source categories there are 2455 permitted stationary sources with particulate matter emissions. These sources were screened to focus on the largest of these facilities, 55 of which have more than 90 lb/day of particulate emissions. These 55 large sources represent slightly more than 2.2 percent of the permitted sources and approximately 85 percent of the total emissions from these categories.

Facilities in some of these 22 source categories may be affected by the more stringent TSP concentration and mass emissions limits. Staff visited each of these 55 facilities to assess the current situation, and understand what impact PM controls would have on these operations. Background information and potential for reduced PM emissions are discussed for each of these categories below. These assessments provide the basis for estimated PM emissions reductions, and estimated costs for these facilities to comply with the draft amendments.

Basic Refining Processes

Four of the large sources of PM are refinery fluid catalytic cracking (FCC) units. Flue gas from the regenerator contains catalyst dust, and is controlled with cyclones and electrostatic precipitators (ESP) to limit particulate emissions. These refining processes and the associated control equipment are very sophisticated, and they currently achieve relatively low emissions of filterable PM (typical filterable PM concentrations range from 0.001 – 0.01 grains of PM/dry standard cubic foot).

These sources also contain condensable PM and ammonia, which is a PM precursor. Regulation 6, Rule 5: Particulate Emissions from Refinery Fluidized Catalytic Cracking Units was recently adopted to address the ammonia emissions and optimize ammonia levels in the effluent to minimize particulate emissions from the ESP's.

These facilities are already equipped with Best Available Control Technology for the solid (filterable) particulates. Implementation of Rule 6-5 will address the condensable particulates. No other general or source specific regulations are recommended at this time.

Chemical Manufacturing

One of the large sources of PM in the Bay Area is a petroleum coke calciner. Particulate emissions come from the transportation and storage of green coke, the calcining process, and storage and transportation of the calcined coke product. The primary opportunity for improvement appears to be control of fugitive dust from the storage and handling of the calcined coke product. Regulation 9, Rule 14: Petroleum Coke Calcining Operations was

recently adopted to address significant SO₂ emissions, which is a PM precursor. In addition, Rule 9-14 directly addresses particulate matter emissions by requiring a dust control plan, so this facility is exempted from the draft proposed new requirements.

One of the large sources of PM is a facility that manufactures catalysts used in oil refining. These catalysts are made from alumina powder that is shipped in by rail. The manufacturing facility is contained within buildings, and has baghouses on the process drying streams and on the ventilation from each of the buildings. There does not appear to be significant opportunity for additional cost effective emission reductions at this time.

Other Food and Agricultural Processes

Two large facilities make salt. Salt dust is contained by ducting surrounding the solids handling systems, and wet mechanical scrubbers (known as roto-clones) are used to control salt emissions. There are several baghouses and one water scrubber used as control devices as well. Wet mechanical scrubbers have relatively poor control effectiveness, but since salt particles are absorbed by the body, these particles may not create the same health impacts as other fine particulates. The Morton Salt Material Safety Data Sheet shows no specific health impacts from exposure to salt dust emissions. Staff recommends an exemption from more stringent PM requirements for salt manufacturing.

One large facility is a sugar refinery. Their solids handling processes are abated with wet mechanical scrubbers, and baghouses. One system uses char to absorb color bodies from the raw sugar, and is abated with a baghouse. There does not appear to be significant opportunity for additional cost effective emission reductions at this time. Staff considered providing an exemption for sugar manufacturing similar to salt manufacturing. However, the National Institute for Occupational Safety and Health (NIOSH) recommends no more than 5 mg/m³ of exposure to sugar dust, so the limited exemption was not included in the rule language. Source test studies for this facility show their emissions are well below the more stringent emission limits proposed in the amendments to Rule 6-1.

One of the large sources is a flour mill. The facility currently produces 1,000,000 lbs. of flour per year, and is in the process of expanding production. They have an extensive system of baghouses and are upgrading the baghouses involved in the expansion as required by Regulation 2, Rule 2. The expanded facilities must meet Best Available Control Technology (BACT) requirements. The facilities current emission limits are 0.02 gr/dscf, and new permit requirements for the expansion will reduce emission limits to the 0.002 – 0.004 gr/dscf range. Staff recommends no further analysis of flour manufacturing at this time, as there does not appear to be significant opportunity for additional cost effective emission reductions.

One large facility is a coffee roaster. There are many cyclone and baghouse combinations for bean and ground coffee handling. The coffee roasting is abated for NO_x and hydrocarbons, but is not abated for PM. There have been several source tests conducted on the coffee roasters – indicating PM emissions are 0.012 gr/dscf totaling approximately 0.2 lb/hr, with an additional 0.014 gr/dscf of condensable PM (also approximately 0.2 lb/hr). Staff recommends no further analysis of coffee roasting at this time, as there does not appear to be significant opportunity for additional cost effective emission reductions.

Two large facilities produce livestock feed from various grains. One facility has baghouses to control the grain conveyors and elevators, and the hammer-mill for grinding the grain. The other facility has cyclones to control these types of sources. The cyclones at the second facility are quite old, and estimated to be only 65 percent efficient. Since these cyclones are much less efficient than baghouses, this facility may be an area of opportunity for improvement. However, secondary abatement is seldom cost effective since more than half of the PM emissions are already removed by the cyclones. The grain unloading areas in both facilities are uncontrolled, although the dusting is relatively minor and occurs only during interim periods when the grain initially falls from the truck into the pit. Compliance testing requirements in draft amendments to Rule 6-1 will identify if further controls are needed for either of these facilities.

Asphaltic Concrete Plants

Five of the large facilities produce asphaltic concrete for road paving. The process for handling and drying aggregate for use in asphalt is controlled, including NO_x controls for the drier and a baghouse to control PM from the drier, handling and storage systems. The area of opportunity for asphaltic concrete facilities is where significant clouds of “blue smoke” occur each time a batch of asphalt mix is delivered from the storage bin into a delivery truck (called load-out). This smoke appears to be vaporized and possibly partially oxidized asphalt. The asphaltic concrete mixture for Warm Mix asphalt is kept at 235 – 275°F in storage, and is hot enough to create this “blue smoke” plume when dropped from the storage vessel into the truck. The asphaltic concrete mixture for Hot Mix asphalt is kept at 300 – 325°F in storage, and makes significantly more “blue smoke.” The volume of the plume can be minimized by reducing the free-fall distance into the truck and possibly using a delivery chute.

The California Department of Transportation (CALTRANS) at times requires paving with “rubberized” asphalt. This rubberized asphaltic concrete includes crumb rubber from recycled tires. Rubberized asphaltic concrete is applied at temperatures from 325 – 375°F. These higher temperatures can cause sulfur in the crumb rubber to evolve as hydrogen sulfide (H₂S), an odorous chemical (smells like rotten eggs). In addition, the resulting asphalt mix is in the 300 – 325°F range, and creates significant quantities of “blue smoke.”

“Blue smoke” abatement is installed on two of the five large facilities, and currently being added to a third facility. These systems include an enclosure around the truck-loading ramp, and use an induced draft fan to draw air surrounding the loading zone into an abatement device. This control system is estimated to capture 90 percent of the “blue smoke”, and routes it to a filtration system that is estimated to recover 85 percent of the vaporized oil. While this appears to be an area of opportunity for asphalt concrete mix plants, the existing blue smoke abatement systems collect very little material. The blue smoke is deceiving – although it appears to be a significant volume of smoke, there are very few pounds of particles collected. Some blue smoke abatement systems only require cleaning monthly. Based on existing examples of blue smoke abatement, it does not appear to be cost effective to require installation of this equipment at these facilities to remove the minor amounts of PM_{2.5} at this time.

An additional concern is that this blue smoke can occur a second time when the truck delivers its load of asphaltic concrete to the paver at the jobsite. The cloud of blue smoke

at the jobsite is usually much smaller because the asphaltic concrete is generally delivered by sliding the asphalt mix from the dump truck into the paver in a slower and more controlled manner. There does not appear to be a feasible method to control blue smoke at the paving jobsite.

Blue smoke also occurs when an asphaltic surface treatment (generally known as chip-seal paving) is used to seal cracks on an existing paved road, or when layered with fine aggregate to form a roadway that normally sees very low volume of motor vehicle traffic. Blue smoke occurs when hot liquid asphalt is sprayed on an existing paved roadway or aggregate. The cloud of blue smoke at the jobsite can be significant when the hot liquid asphalt includes recycled rubber. Abatement is currently available – a portable modular system similar to the blue smoke abatement systems used at asphalt plants. These systems include an enclosure around the liquid asphalt spray nozzles, and an induced draft fan to draw significant quantities of air surrounding the spray zone into an abatement device. This approach is estimated to capture 85 percent of the “blue smoke,” and routes it to a filtration system that is estimated to recover 85 percent of the vaporized oil. This also appears to be an area of opportunity to reduce PM emissions, but the amount of asphalt recovered is very small, so staff does not recommend blue smoke abatement at this time.

Additional analysis of possible toxic impacts of blue smoke will be considered in future Health Risk Assessments of these sources.

Roofing Asphalt

Roofing asphalt is an area with potential for emission reductions. Roofing asphalt is typically heated to 450 – 500°F in small heating units called asphalt kettles, and pumped to the roof. Smoke and odors can emanate from the kettle (particularly if the asphalt is overheated), and from the asphalt as it is spread on the roof. Smoke and odors also occur when the kettle is opened to add additional asphalt. One manufacturer of roofing asphalt has now added a polymer that forms a skim-layer on the surface of the hot liquid asphalt in the kettle, and has been shown to reduce smoke and odors by up to 80 percent. This product, known as low-fuming roofing asphalt, appears to be an improvement in worker exposure to fumes, as well as a reduction in PM emissions and odors.

During the workshop process, staff received feedback that low-fuming roofing asphalt is available from only one supplier. Other suppliers provide a low-odor roofing asphalt, but the additive is only an odorant to make the fumes smell better, not reduce the evolution of the hot roofing asphalt fumes. In addition, the cost of low-fuming asphalt was found to be significantly more expensive (incremental \$5 – 10 per 100 lb. plug) than anticipated. Low-fuming roofing asphalt no longer appears to be a cost-effective method to control roofing asphalt fumes.

The draft new regulation to address roofing asphalt is being withdrawn, and further study is needed to identify additional options for control of roofing asphalt.

Concrete Batching

Two of the large facilities are concrete batch mix plants. The cement and aggregate flow through a cylindrical chute into the receiving hopper on a delivery truck. An induced draft

fan is often used to draw air surrounding the loading zone into an abatement device. This approach is estimated to capture 90 percent of the cement and aggregate dust, and routes it to a baghouse that is estimated to recover 99 percent of the dust. Plastic flexible shrouds are often positioned around all four sides of the delivery chute to protect the delivery from the wind. Water is often sprayed on the outside of the shrouds to control any dust that may escape the induced draft fan suction during the delivery. Staff recommends no further analysis of concrete batching operations at this time, as there does not appear to be significant opportunity for additional cost effective emission reductions.

Glass & Related Products Manufacturing

One large facility is a glass recycling facility, that receives glass, sorts it into specific colors and types, and then delivers it to glass manufacturing facilities. Glass comes in via trucks and rail cars. The glass is dumped into piles, scooped up with a large front-end loader, and fed into a hopper / crusher / screening process. Plastic bottles and aluminum cans are removed by hand. A magnet is used to remove trash metals. Water sprays are used for abatement of the conveyors. Baghouses are used for abatement of the recycled glass loaded into trucks for delivery. Occasionally recycled glass is loaded directly into trucks using a large front-end loader. There does not seem to be a significant area of opportunity for additional cost effective emission reductions at this time because there is relatively little dust coming from the transportation and storage of the broken glass.

One facility manufactures fiberglass for insulation. Delivery trucks drop recycled glass into a hopper where it is conveyed to a storage silo. The entire recycled glass supply operation is abated with an induced draft fan and baghouse. Glass is melted with a “cold top” electric arc furnace. There appears to be very little PM emissions from this furnace. Molten glass is then spun into fiberglass abated by large induced draft fan and cyclones. Source test information finds the PM emissions from these sources range from 0.01 – 0.04 grains/dry standard cubic foot, and two to eight lbs/hr from each of four parallel fiberglass spinning heads. This spinning process seems to be a source of very fine (0.1 – 1.0 microns) particulates. The facility’s corporate engineering group believes the PM_{2.5} comes from volatilization of the molten glass during the spinning process. They have installed electrostatic precipitators (ESP’s) at other corporate locations, and find them to be only 50 – 80 percent effective. Their cyclones could be upgraded to include baghouses or an ESP, but control efficiency is uncertain until particle size distributions are more clearly defined. The fiberglass is then coated with a binder, and this binder is a large source of PM emissions. A recent source test measured about 450 lbs. of PM₁₀ per day (including condensable PM). However, this facility is in the process of converting to a different binder, so modification of their permit will drive any improvements needed to achieve BACT controls on the binder coating system. The fiberglass is cooled, formed into mats, and cut into finished sizes, all abated with induced draft fans, cyclones and high efficiency air filters. Source-specific rule making will be needed to address the very fine particulate matter coming from the fiberglass spinning process.

One facility manufactures glass containers; however, this facility is no longer a concern because it has recently shut down operations.

Stone, Sand & Gravel

Nine of the large facilities are rock quarries. In general, staff observed that those quarries that made efforts to control dust did a good job of preventing significant dust plumes. On the other hand, those quarries that made little or no effort to control dust had visible dust plumes from crushers, conveyors, stockpiles, and from vehicles on the unpaved roads.

The source and quality of rock from a quarry can vary significantly, so the final products and uses vary as well. However, most quarries have a similar production process: blasting, scooping up the rock with large front-end loaders, crushing the rock, transporting the rock via conveyors, screening the rock into various sizes, additional crushing if necessary, and conveying the various sized rock products to storage piles. Blasting at a quarry creates a significant plume of dust. If the wind is still, this dust can linger for quite some time. If the wind is strong, the wind can carry this dust off-site, and create a nuisance for neighbors. No pre-watering or other methods appear to be practical to prevent or control dust from blasting. Some quarries have a water wash facility to rinse dirt and sand from the various aggregate products.

Most quarries use water sprays as their only dust mitigation strategy. They spray water on the crushers and conveyors, and on the product stockpiles to control dust. Water fog and water misting systems are much more effective because they produce small water droplets that contact the small dust particles more effectively. Some water sprays appeared to be effective, while others needed additional spray nozzles or more regular maintenance of the existing spray nozzles. Almost all quarries load the finished product into trucks with a front-end loader. Loading the finished products into trucks can be a significant source of dust, depending on the time and care used in depositing the rock or aggregate into the truck. Those operators that drop the entire load into a truck quickly from a height of two to three feet create a significant dust plume. Those that slowly and gently slide the load of rock into the truck from a height of no more than one to two feet create a much more modest dust plume. A separate rulemaking for controlling fugitive dust from quarries and other facilities that store and handle bulk materials is being proposed.

Truck traffic on unpaved roads within a quarry can also be a significant source of PM emissions. Most quarries spray water on their unpaved roadways to prevent dust. However, water on unpaved roads can create mud that adheres to the truck tires and truck body, resulting in mud deposits on the paved roads at the exits from these quarries. This mud is known as “trackout” because the trucks and truck tires “track out” mud onto the paved roads. Most quarries have a set of widely spaced bars (known as “grizzlies”) near the quarry exit that are designed to knock mud off the trucks, and flex the tire treads to be sure no mud adheres to the tire treads, thus preventing “trackout” onto the public roadway. These grizzly bar systems must also have a place to collect the mud, and the mud must be removed regularly to prevent it from building up to the point where it renders the system ineffective. Some quarries have truck wash stations to clean the trucks and wash mud from the tires before they leave the facility. Trackout can become a significant fugitive dust problem when allowed onto the public roads adjacent to the quarry. The mud can dry into fine silt and local traffic can entrain (and re-entrain) the silt into a localized dust plume. A separate rulemaking for prohibition of trackout will require about one-third of all quarries to improve control of trackout.

Landfills and Other Waste Management

Twelve landfills in the Bay Area are large sources of PM. Similar to quarries, staff observed that the landfills that made efforts to control dust did a good job of preventing significant dust plumes. On the other hand, those landfills that made little or no effort to control dust had visible dust plumes from vehicles on the unpaved roads.

Landfill particulate matter emissions parallel the emissions from construction sites and rock quarries. In addition, landfills may have a variety of other operations including tire recycling; paper, wood, plastic and glass recycling; and green waste recycling. Minor sources of dust are:

- dumping of municipal waste, and construction/demolition debris;
- cuts made in other parts of the landfill to provide cover soil;
- transfer and sorting of recyclables;
- recycling of concrete; and
- recycling and chipping wood.

Most landfills currently have stringent permit conditions in place to control PM emissions. The vast majority of dust at a landfill comes from vehicle traffic. All roads and the area next to the active fill site are normally kept wet to minimize fugitive dust. Landfill sites often use their own leachate as the water source for keeping the roads and active fill site wet. This leachate can have odor issues at times, but it seldom seems to create an odor problem when used to wet the landfill gravel and dirt roads. Landfills also have issues with “trackout” of mud that can accumulate on trucks from the wet gravel and dirt roads. Most landfills have a truck grizzly bar / rumble strip facilities to prevent trackout onto the public roadways. Some facilities have truck wash stations, and others have long paved roads that they either wash down or attempt to keep clean with street sweepers. The primary opportunity for cost effective emissions reductions appears to be more disciplined prevention of trackout onto public roads.

In addition, five other locations in the category of “other” waste management appear to be large sources of PM emissions. These are waste transfer stations, where waste is segregated into various recyclables: green waste, plastic, paper, wood, metals, tires, and concrete for example. Again, PM emissions come primarily from handling of the waste as it is separated into the various recycle streams, and from truck traffic in and out of the facility. Water spray from permanent spray nozzles, or manually from a fire hose is used to wet the waste before it is transferred to a conveyor belt for sorting. Fresh water or reclaimed water is normally used for these water sprays. Water fog or water mist systems are far more effective and use less water. Water sprays appear to be effective, and no significant PM emission reductions are expected. Water is used to control road dust on paved roads and any gravel roads at each facility. Trackout is generally less of a problem at waste transfer stations because most of the roadways are paved. Staff recommends no further analysis of other waste management operations at this time, as there does not appear to be significant opportunity for additional cost effective emission reductions.

Other Industrial & Commercial Processes

There are three gypsum related facilities in the Bay Area. Gypsum is used in fertilizer,

cement manufacturing, and is the primary component of wallboard. Gypsum is a soft, powdered mineral salt that is mined and transported as a dry material, and dust from gypsum is approximately 90 percent PM₁₀, and nearly 50 percent PM_{2.5}.

One of the facilities receives gypsum, conveys it to a large storage pile, and loads it into trucks as supply to a cement manufacturing facility. This facility has a baghouse on the receiving system, and water sprays on the conveyor system. The primary area of opportunity for cost effective emission reductions is fugitive dust from traffic in the area, particularly with a large skip loader used to load gypsum into the product delivery trucks. A second facility receives gypsum, conveys it to a large storage pile, and manufactures wallboard. This facility has baghouses on the gypsum receiving and storage facility, on the crushed gypsum and conveyor to the wallboard plant, and on the gypsum calcining operation within the plant. The area of opportunity for emission reduction is concentrated on fugitive dust from a recycled gypsum storage pile and the truck traffic within the facility. These two gypsum facilities will be affected by the draft rule for bulk material storage and handling.

A third facility manufactures the paper tape used to join and smooth out the interface between two sections of wallboard. This facility generates PM from the mechanical process used to texturize the paper tape so the wallboard joint compound will adhere to the paper tape. This facility has a cyclone to capture the paper dust created by texturizing the paper tape. A baghouse can provide more effective control than a cyclone, so there is an opportunity for reducing emissions by adding a baghouse to the discharge from the cyclone. The discharge of the cyclone appears clear with little residue on the discharge ducts, so no additional controls may be warranted. There are no source tests on this emission point, so the compliance testing required in the draft amendments to Rule 6-1 will determine whether this facility needs to install better control equipment.

Bay Area Rapid Transit Car Cleaning Facilities

Bay Area Rapid Transit (BART) has four maintenance yards that each have BART car cleaning facilities. Particulate matter from rail wear, electric motor wear, and brake pad wear accumulate under the BART cars, and can be emitted to the air during the cleaning process. These cleaning facilities are enclosed, and abated with wet mechanical scrubbers (roto-clones) that seem to work effectively – there is no tell-tale dust or stain on the discharge of the scrubbers. However, emissions from each of these wet scrubbers were incorrectly estimated to be more than 200 lb/day, so staff identified these facilities as an area of opportunity for PM controls. The actual emissions are much lower, so additional controls such as a baghouse or a wet electrostatic precipitator are not cost effective.

BART also has a rail-grinding car that is designed to smooth out the system's rails. This rail-grinding car has an induced draft fan to capture rail dust, and a baghouse to control the discharge of the fan. It appears to work effectively, and does not appear to have much potential for cost effective emission reductions.

Contra Costa County Sanitary District

The Contra Cost County Sanitary District has a sewage treatment facility in Martinez that incinerates solid sludge. It is currently equipped with a wet scrubber to control particulate

emissions. Source tests indicate this wet scrubber is effective most of the time, but occasionally the test results could exceed the more stringent limits included in the amendments to Rule 6-1. Staff from the Contra Costa County Sanitary District indicate that they intend to upgrade these wet scrubbers with more effective scrubbers, with the potential to include a wet Electro Static Precipitator (ESP) and a chloride removal system to address Toxic Air Contaminant (TAC) emissions. Installation of these enhanced controls is not cost effective for the relatively small PM emission reductions that can be gained.

CCC Sanitary District is part of a Publicly Owned Treatment Works group that has indicated they need 6 years to budget, fund, design, procure, construct and startup abatement equipment. Accommodation for this extended time period is included in the proposed amendments to Rule 6-1.

Smaller Sources

The remaining 2,400 permitted stationary sources emit significantly less than 90 pounds per day. They collectively account for the remaining 15 percent of the total emissions of the 22 source categories that are being considered for this first phase of PM emission reductions. They represent an array of sources similar to the larger stationary sources - just lower in emissions. Staff will work with these smaller sources during the workshop phase of the rule development process to discover any unique specific issues that may be raised by these smaller sources.

Construction Operations (Residential, Commercial, Institutional, Industrial, and Roads)

Construction is a large source of fugitive dust, and provides a significant opportunity for emission reductions. Construction dust is currently limited by the visible emission standard in Rule 6-1; and Air District Rule 11-14, Asbestos-Containing Serpentine and the California Air Resources Board Air Toxic Control Measures limit construction operations involving naturally occurring asbestos (known as serpentine rock) for Surfacing Applications and for Construction, Grading, Quarrying, and Surface Mining Operations. Construction dust is also limited by the Regional Water Quality Control Board requirements for Storm Water Pollution Prevention Plans (SWPPP). SWPPP’s are required for any construction site over 1 acre.

PM emissions from construction operations are separated into five different categories in the emission inventory, as follows:

<u>Source Category</u>	<u>TSP</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>
Residential	5.09 tpd	2.49 tpd	0.25 tpd
Commercial	4.99	2.44	0.24
Institutional	5.02	2.46	0.25
Industrial	2.34	1.14	0.11
Roads	<u>6.00</u>	<u>2.94</u>	<u>0.29</u>
Total:	23.44	11.47	1.14

CARB guidelines indicate typical dust from construction and other disturbed surfaces is approximately 49 percent PM₁₀, and only approximately five percent PM_{2.5}. Staff is not

proposing any draft amendments for Rule 6-1 to address fugitive dust, or any new rules for general control of fugitive dust at this time. Instead, staff proposes to focus on trackout that creates road dust, and the potential for subsequent vehicle traffic to pulverize the trackout into silt and PM_{2.5}.

As mentioned previously, the State Regional Water Quality Control Board requires Storm Water Pollution Prevention Plans for large construction projects, and provides a variety of Best Management Practices to control silt in water runoff, wind erosion, and trackout onto paved roads. SWPPP Best Management Practices summarized in Attachment 1-5A of this workshop report.

Attachment 1-5B of this workshop report provides a summary of wind erosion and fugitive dust control methodologies, divided into various categories of potential dust generating activities. These categories are:

1. Bulk Materials – Onsite Handling / Processing Operations
 - Conveying
 - Crushing
 - Screening
 - Stockpiles
2. Bulk Materials – Onsite Hauling / Transporting
 - Loading
 - Unloading
 - Stacking
 - Hauling
 - Transporting
3. Bulk Materials – Offsite Hauling / Transporting
 - Crossing or using paved roads accessible to the Public
4. Concrete and Demolition Work
 - Clearing concrete forms
 - Mechanical and manual demolition
5. Disturbed Surface Areas
6. Earth-moving Activities
 - Earth cutting and filling,
 - Drilling,
 - Grading,
 - Leveling,
 - Clearing and/or grubbing,
 - Excavating,
 - Trenching,
 - Landscaping,
 - Road shoulder maintenance
 - Soil mulching
 - Landfill operations,
 - Weed abatement by discing or blading.
7. Open Area and Vacant Land
8. Stabilization Requirements
9. Trackout, Carryout, & Spillage, Erosion Requirements
10. Traffic in Unpaved Work Sites

11. Unpaved Parking Areas, Staging Areas, Material Storage Areas, and Unpaved Access Roads and Haul Roads
12. Other Potential Dust Generating Operations / Control Measures

The SWPPP BMP's and these fugitive dust control methodologies are provided here as a reference for the future when a new rule(s) for control of fugitive dust is developed.

Entrained Road Dust

Road dust is divided into six categories based on the estimated emissions from each type of road: Paved Freeways; Paved Major Roads; Paved Collectors; Paved Local Streets; Unpaved Forest/Park Roads; and Unpaved Farm Roads. Each road type accumulates dust from four primary sources:

- Erosion in the form of dirt and debris that blows from the side of the road onto the road by gusts of wind, or that is washed onto the roadway during heavy rains, floods, or irrigation system malfunctions;
- Dirt or other bulk materials that may blow out of a truck, or may leak or spill from a truck as it travels down the road (known as carryout);
- Dirt or mud that adheres to a vehicle's tires or undercarriage which then dries and falls onto the roadway (known as trackout); and
- Particles from the road surface itself that can be eroded by vehicle traffic. These particles are very small when eroded from a paved or concrete road.

Two other sources of particulate can accumulate near roadways - particles from tire wear and brake pad wear. However, they are considered separate categories in the emissions inventory. Staff has no recommendations on how to address either tire wear or break pad wear.

Any dirt that accumulates on a roadway can be pulverized into fine particles by vehicle tires, and entrained into the air by the turbulence from passing vehicles. Any larger particles (larger than PM₁₀) fall back to the earth quickly (typically within a 100 - 200 feet), while the smaller particles (PM_{2.5}) either fall back to earth more slowly or become dissipated with the surrounding air. A study of near freeway particulate measurements indicates diesel and other ultra-fine PM from freeways tend to reach background concentrations about 250 meters away from the freeway.^{2 3}

Entrained Road Dust is identified as six different categories in the emission inventory, as follows:

<u>Source Category</u>	<u>TSP</u>	<u>PM₁₀</u>	<u>PM_{2.5}</u>
Paved Freeways	12.81 tpd	5.86 tpd	0.88 tpd
Paved Major Roads	15.49	7.08	1.06
Paved Collectors	3.13	1.43	0.21

² Improving Air Quality and Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective and Path Forward (2004 – 2014), April 2014, page 76.

³ Zhu, Y.F., W.C. Hinds, S. Kim, S Shen, C. Sioutas, 2002. Study of ultrafine particles near a major highway with heavy-duty diesel traffic. Atmospheric Environment, 36, 4323-4335. doi:10.1016/S1352-2310(02)00354-0.

Paved Local Streets	21.50	9.83	1.47
Unpaved Forest/Park Roads	5.95	3.53	0.35
Unpaved Farm Roads	<u>0.54</u>	<u>0.32</u>	<u>0.03</u>
Total:	59.42	28.05	4.00

CARB estimates of particle size distribution vary with the type of roadway. Paved road dust is estimated to be 46 percent PM₁₀, and seven percent PM_{2.5}, with the remainder being particles larger than ten microns. Unpaved road dust is estimated to be 59 percent PM₁₀, and 6 percent PM_{2.5}, with the remainder being particles larger than 10 microns.

Entrained road dust from paved roads can be limited by requiring prevention of trackout, carryout, and erosion onto paved roads. Dust and silt are not usually found in the travel lanes, but rather accumulate along the sides of the roads (either in gutters or road shoulders) and on median strips. In some air districts, the various Public Works Departments have paved road shoulders and median strips, but that approach has the disadvantage of creating impermeable surfaces, which can aggravate concerns about water runoff into nearby storm drains and silt deposition into groundwater. A better solution is to provide low-silt gravel or vegetation along road shoulders and median strips to reduce the impact of air turbulence.

There are typically three ways to mitigate road dust:

- Support vegetation on median strips and next to road shoulders to minimize wind erosion
- Water flush
- Mechanical sweeping or Vacuum sweeping

The vegetation strategy is best when built into the design of highways and freeways. Water flushing is effective, but creates the concern of flushing silt into the groundwater. Street sweeping is often the most practical, and has the advantage of removing trash, litter and other debris from the roadway. However, mechanical sweepers often create as much dust as they prevent.

Entrained road dust from unpaved city, county, forest, park, and farm roads with very light traffic are much more difficult to address. Control of PM emissions from unpaved roads is simple, through paving, covering the road with low silt gravel, or covering with a petroleum road emulsion. However, since unpaved roads are so widely distributed around the Air District's nine counties, only on rare occasions is there enough traffic to create significant entrained road dust and only then is control of unpaved road dust likely to be cost effective.

Bulk Material Storage and Handling, Including Coke and Coal Operations

Bulk material storage and handling are significant sources of PM emissions, and have also been a source of public complaints. Bulk materials are unpackaged solids less than two inches in length or diameter, such as soil, sand, gravel, aggregate, construction materials, coke and coal. Wind erosion from storage and handling of these materials can contribute to fine particulate matter pollution when bulk material dust gets carried into the atmosphere by the wind or by being handled in the open air. Coke and coal are particularly troublesome because the dust is black. Coke or coal dust is far more visible than typical geologic dust, and black residue on people's cars, windows and patio furniture is especially annoying. Black coke and coal dust also absorb sunlight, so they have a greater impact on climate

change than most typical dust sources.

The Air District has approximately 120 facilities that store and handle bulk materials, 10 of which handle petroleum coke, and three facilities that store and handle coal. Approximately 40 of these facilities already have controls for fugitive dust, mostly water sprays. Wind breaks are a very effective method to control wind erosion that initiates fugitive dust plumes, particularly when bulk materials are actively conveyed from one place to another. Costs for wind screens and improvements to watering systems are relatively minor. Neighbor complaints are expected to be reduced significantly. A separate rulemaking for controlling fugitive dust from bulk material storage and handling sites is proposed.

Attachment 1-4: Applicable Federal Standards

The United States Environmental Protection Agency has adopted the following New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) that address PM emissions:

Federal New Source Performance Standards (40 C.F.R. Part 60)

Source Category	Subpart and Section	Description
All	Subpart A, § 60.11	General Provisions
Sulfuric Acid Production Units	Subpart Cd, § 60.31d	Emissions Guidelines and Compliance Times
Fossil-Fuel-Fired Steam Generators	Subpart D, § 60.42	Standards of Performance
Electric Utility Steam Generating Units	Subpart Da, § 60.42Da	Standards of Performance
Industrial-Commercial-Institutional Steam Generating Units	Subpart Db; §§ 60.43b & 60.48b	Standards of Performance
Small Industrial-Commercial-Institutional Steam Generating Units	Subpart Dc, § 60.43c	Standards of Performance
Incinerators	Subpart E, § 60.52	Standards of Performance
Large Municipal Waste Combustors	Subpart Eb, § 60.55b	Standards of Performance
Standards of Performance for Hospital/Medical/Infectious Waste Incinerators	Subpart Ec, § 60.52c	Standards of Performance
Sulfuric Acid Plants	Subpart H, § 60.83	Standards of Performance
Hot Mix Asphalt Facilities	Subpart I, § 60.92	Standards of Performance
Petroleum Refineries	Subpart J, § 60.102; Subpart Ja, § 60.102a & § 60.105a	Standards of Performance
Secondary Lead Smelters	Subpart L, § 60.122	Standards of Performance
Secondary Brass and Bronze Production Plants	Subpart M, § 60.132	Standards of Performance
Primary Emissions from Basic Oxygen Process Furnaces Constructed after June 11, 1973	Subpart N, § 60.142	Standards of Performance
Secondary Emissions from Basic Oxygen Process Steelmaking Facilities Constructed after January 20, 1983	Subpart Na, § 60.142a	Standards of Performance
Sewage Treatment Plants	Subpart O, § 60.152	Standards of Performance
Glass Manufacturing Plants	Subpart CC, § 60.292	Standards of Performance
Grain Elevators	Subpart DD, § 60.302	Standards of Performance
Lime Manufacturing	Subpart HH, § 60.342	Standards of Performance
Metallic Mineral Processing Plants	Subpart LL, § 60.382	Standards of Performance
Phosphate Rock Plants	Subpart NN, § 60.402	Standards of Performance
Ammonium Sulfate Manufacture	Subpart PP, § 60.442	Standards of Performance
Asphalt Processing and Asphalt Roofing Manufacture	Subpart UU, § 60.472	Standards of Performance
New Residential Wood Heaters	Subpart AAA, § 60.532	Standards of Performance
Nonmetallic Mineral Processing Plants	Subpart OOO, § 60.672	Standards of Performance
Wool Fiberglass Insulation Manufacturing Plants	Subpart PPP, § 60.682	Standards of Performance
Calciners and Dryers in Mineral Industries;	Subpart UUU, § 60.732	Standards of Performance
Municipal Solid Waste Landfills	Subpart WWW, § 60.752	Standards of Performance

Federal National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 C.F.R. Part 63)

Source Category	Subpart and Section	Description
Petroleum Refineries	Subpart CC, § 63.642	National Emission Standards for Hazardous Air Pollutants
Mineral Wool Production	Subpart DDD, § 63.1178	National Emission Standards for Hazardous Air Pollutants
Hazardous Waste Combustors; Incinerators, Cement Kilns & Lightweight Aggregate Kilns (Interim Standards)	Subpart EEE, § 63.1203, § 63.1205, § 63.1219, § 63.1221	National Emission Standards for Hazardous Air Pollutants
Wool Fiberglass Manufacturing	Subpart NNN, § 63.1382	National Emission Standards for Hazardous Air Pollutants
Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units, and Bypass Lines	Subpart UUU, § 63.1564, § 63.1565, § 63.1566, § 63.1567, § 63.1568, § 63.1569, § 63.1570	National Emission Standards for Hazardous Air Pollutants
Lime Manufacturing Plants	Subpart AAAAA, § 63.7090	National Emission Standards for Hazardous Air Pollutants
Industrial, Commercial, and Institutional Boilers and Process Heaters	Subpart DDDDD, § 63.7500	National Emission Standards for Hazardous Air Pollutants
Brick and Structural Clay Products Manufacturing	Subpart JJJJ, § 63.8405	National Emission Standards for Hazardous Air Pollutants
Clay Ceramics Manufacturing Emission Limitations and Work Practice Standards	Subpart KKKKK, § 63.8555	National Emission Standards for Hazardous Air Pollutants
Asphalt Processing and Asphalt Roofing Manufacturing Emission Limitations	Subpart LLLLL, § 63.8684	National Emission Standards for Hazardous Air Pollutants
Refractory Products Manufacturing Emission Limitations and Work Practice Standards	Subpart SSSSS, § 63.9788	National Emission Standards for Hazardous Air Pollutants
Secondary Nonferrous Metals Processing Area Sources Standards, Compliance, and Monitoring Requirements	Subpart TTTTTT, § 63.114655	National Emission Standards for Hazardous Air Pollutants
Asphalt Processing and Asphalt Roofing Manufacturing Standards and Compliance Requirements	Subpart AAAAAAA, § 63.11561	National Emission Standards for Hazardous Air Pollutants
Chemical Preparations Industry Standards and Compliance Requirements	Subpart BBBBBBB, § 63.11581	National Emission Standards for Hazardous Air Pollutants
Prepared Feeds Manufacturing Standards, Monitoring, and Compliance Requirements	Subpart DDDDDDD, § 63.11621	National Emission Standards for Hazardous Air Pollutants

ATTACHMENT 1-5: Examples of Control Measures / Best Management Practices for Dust Control

Fugitive Dust Control Measure: A technique, practice, equipment or procedure used to prevent, minimize or mitigate the generation, emissions, entrainment, suspension, and/or airborne transport of fugitive dust. For the purposes of this rule, Storm Water Pollution Prevention Plan (SWPPP) Best Management Practices (BMP), and other dust prevention techniques used to meet CEQA mitigation requirements or local ordinances are considered control measures. Control measures also include:

- 1 Application of water and dust suppressants;
- 2 Application of low-silt gravel, asphaltic emulsion, and vegetative or synthetic cover;
- 3 Physical restriction of fugitive dust, soil erosion and motive forces of fugitive dust (wind and water), including curbing, paving, wind breaks, chutes, shrouds, enclosures, buildings; and
- 4 Work practice standards including restricting vehicle speeds, controlling drops of bulk materials, using wash down pads, and keeping cargo beds in good repair and covered.

Attachment 1-5A

Applicable Storm Water Pollution Prevention Plan – Relevant Best Management Practices

Source Category	Best Management Practices
Erosion Control	EC-1 Scheduling EC-2 Preservation of Existing Vegetation EC-3 Hydraulic Mulch EC-4 Hydro seeding EC-5 Soil Binders EC-6 Straw Mulch EC-7 Geotextiles & Mats EC-8 Wood Mulching EC-15 Soil Preparation / Roughening EC-16 Non-Vegetative Stabilization
Sediment Control	SE-7 Street Sweeping and Vacuuming
Wind Erosion Control	WE-1 Wind Erosion Control
Tracking Control	TC-1 Stabilized Construction Entrance/Exit TC-2 Stabilized Construction Roadway TC-3 Entrance/Outlet Tire Wash
Non-Storm Water Management	NS-3 Paving and Grinding Operations NS-13 Concrete Finishing NS-16 Temporary Batch Plants
Waste Management & Materials	WM-1 Material Delivery and Storage WM-2 Material Use WM-3 Stockpile Management WM-4 Spill Prevention and Control WM-5 Solid Waste Management WM-8 Concrete Waste Management

Attachment 1-5B

Example Control Measures / Best Management Practices

Source Category	Control Measure	Guidance	Records
1.0 Bulk Materials – Onsite Handling / Processing Operations	<u>During Active Operations</u>		
<ul style="list-style-type: none"> • Conveying • Crushing • Screening • Stockpiles 	1.1 Stabilize material before, during, and after conveying, crushing, or screening to prevent visible dust plumes.	1.1.1 Stabilize bulk material with water mist/fog or spray, or chemical/organic dust suppressant.	1.1.1 Establish records indicating stabilization methods and actions for each potential dust source.
	1.2 Use water misting/fogging systems or water sprays, to mitigate fine dust.		1.2.1 Monitor and log key operating parameters of abatement systems.
	1.3 Stabilize material on stockpiles with any indication of windblown visible dust emissions.	1.3.1 Maintain stockpiles to avoid steep sides or faces.	1.3.1 Monitor and record visible dust emissions observations.
	1.4 Use water spray trucks or water spray systems as necessary. Water truck / water spray system must cover entire stockpile.		1.4.1 Monitor and record visible dust emissions observations.
	1.5 Assess operational status of water misting/fog/spray abatement systems regularly and record status.		1.5.1 Monitor and log key operating parameters of abatement systems.
	1.6 Limit stockpiles within 100 yards of an occupied building to less than 8 feet in height.		1.6.1 Monitor and record visible dust emissions observations.
	1.7 Stabilize areas surrounding material stockpiles and conduct housekeeping to ensure materials remain consolidated in storage areas and away from vehicle travel paths.	1.7.1 Stabilize surrounding areas with water, silt free gravel, or dust suppressant.	1.7.1 Monitor and log housekeeping actions, and any cleanup necessary.
	1.8 Incorporate wind breaks, enclosures, or area covers as needed.	1.8.1 Wind barrier with no more than 50% porosity upwind of stockpiles and processing facilities. Height of the wind barrier equals the height of the pile. Distance of the barrier from the pile no more than twice the height of the pile.	
	1.9 Use transfer chutes and shrouds to mitigate dusting from the energy of solids handling and solids falling into and out of delivery trucks, and into processing equipment and onto conveyor belts.		1.9.1 Monitor and record visible dust emissions observations.

	1.10 Record stabilization methods, actions and results.	1.10.1 Document stabilization status in records.	1.10.1 Monitor and log key operating parameters of abatement systems.
	1.11 Clean up any spilled materials that could create dust plumes with wet vacuum or HEPA filter equipped vacuum system.		1.11.1 Record any cleanup necessary.
	1.12 If wind gusts exceed 25 mph, apply water to the stockpile a minimum of twice per hour, or install temporary coverings.		1.12.1 Document wind gusts, and contingency actions taken.
	1.13 Consider water wash of bulk materials to remove PM less than 10 microns.		
	<u>During Periods of Inactive Operations</u>		
	1.14 When not loading, unloading or stacking operations: cover, or stabilize stockpile and maintain soil crust.	1.14.1 Maintain soil crust.	1.14.1 Document stabilization actions for inactive sources.
	1.15 If stockpiles are inactive for more than 14 days, cover with tarp/plastic/other suitable material.	1.15.1 Cover with tarp, plastic or other suitable material and anchor adequately to prevent wind erosion.	
2.0 Bulk Materials – Onsite Hauling / Transporting	<u>During Active Operations</u>		
<ul style="list-style-type: none"> • Loading • Unloading • Stacking • Hauling • Transporting 	2.1 Pre-water material prior to loading.	2.1.1 Stabilize bulk material with water or chemical/organic dust suppressant.	2.1.1 Record stabilization methods and actions for each potential dust source.
	2.2 Stabilize material while loading, unloading, and stacking to prevent visible dust plumes.		2.2.1 Monitor and log key operating parameters of abatement systems.
	2.3 Use water misting/fogging systems or water sprays to mitigate fine dust.		2.3.1 Monitor and record visible dust emissions observations.
	2.4 Use water spray trucks or water spray systems as necessary. Water truck / water spray system must cover entire stockpile.		2.4.1 Monitor and log key operating parameters of abatement systems.
	2.5 Assess operational status of water misting/fogging/spray abatement systems regularly, and record status.		2.5.1 Monitor and log key operating parameters of

			abatement systems.
	2.6 Add or remove material from the downwind portion of the stockpile.	2.6.1 Maintain stockpiles to avoid steep sides or faces	
	2.7 Conduct housekeeping to ensure bulk materials remain consolidated onto stockpiles, and remain away from vehicle travel paths.		2.7.1 Monitor and log housekeeping actions, and any cleanup necessary.
	2.8 Incorporate wind breaks, enclosures, or area covers as needed		
	2.9 Use transfer chutes and shrouds to mitigate dusting from the energy of solids handling and solids falling into and out of delivery trucks, and into processing equipment and onto conveyor belts.		
	2.10 Fully enclose or shroud conveyors.		
	2.11 Inspect cargo compartments for holes and other openings to prevent spillage.	2.11.1 Check belly-dump truck seals regularly. 2.11.2 Remove any trapped rocks to prevent spillage	2.11.1 Document leak check inspections, and any corrections or cleanup necessary.
	2.12 Empty loader bucket slowly and minimize drop height from loader bucket to prevent dust plumes		
	2.13 Ensure minimum of 6 inches freeboard in haul truck.		2.13.1 Monitor and record freeboard.
	2.14 Maintain highest point of bulk material below the edges of the cargo container;		2.13.1 Monitor and record material height.
	2.15 Ensure empty cargo compartments are clean, or covered with a tarp or other suitable closure;	2.15.2 Use tarps or other suitable enclosures on haul truck.	
	2.16 If trucks are also used for offsite hauling, ensure they comply with California DMV Vehicle Code Section 23114.		
	2.17 Limit vehicle traffic to established haul routes and parking lots by installing traffic barriers as necessary;		2.17.1 Document traffic control actions.
	2.18 Conduct vehicle traffic counts to determine daily vehicle traffic (DVT).	2.18.1 Traffic control reduces stabilization requirements.	2.18.1 Document actual DVT.
	2.19 When Daily Vehicle Traffic (DVT) exceeds 75, or AADVT exceeds 50, or DVT exceeds 25 from vehicles with 3 or more axles, stabilize unpaved roads or unpaved traffic areas.	2.19.1 Stabilize by watering, uniform layer of low silt gravel, chemical dust suppressant, vegetative materials, paving, road mix, or other method demonstrated to be effective and approved by the	

		APCO.	
	2.20 Limit vehicle speed to no more than 15 mph.		2.20.1 Document speed limit control actions.
	2.21 Record stabilization methods, actions and results.		2.21.1 Monitor and log key operating parameters of abatement systems.
	2.22 Clean up any spilled materials that could create dust plumes with wet vacuum or HEPA filter equipped vacuum system.		2.22.1 Record any cleanup necessary.
	2.23 If wind gusts exceed 25 mph, discontinue truck loading operations, and stop all vehicle traffic or cover all haul vehicles.		2.23.1 Document wind gusts, and contingency actions taken.
3.0 Bulk Materials – Offsite Hauling /	<u>During Active Operations</u>		
Transporting, crossing or using paved roads and paved areas accessible to the Public	3.1 Stabilize material or cover cargo compartment before hauling to prevent visible dust plumes.	3.1.1 Stabilize bulk material with water or chemical/organic dust suppressant. 3.1.2 Use tarps or other suitable enclosures on haul trucks.	3.1.1 Record stabilization methods and actions for each potential dust source.
	3.2 Record stabilization methods and actions.		
	3.3 Inspect cargo compartments for holes and other openings to prevent spillage.	3.3.1 Check belly-dump truck seals regularly. 3.3.2 Remove any trapped rocks to prevent spillage.	3.3.1 Document leak check inspections, and any cleanup necessary.
	3.4 Ensure minimum of 6 inches freeboard in haul truck.		3.4.1 Monitor and record freeboard.
	3.5 Maintain highest point of bulk material below the edges of the cargo container.		
	3.6 Ensure empty cargo compartments are clean, or covered with a tarp or other suitable closure.		3.6.1 Monitor and log compartment cleanliness, covers.
	3.7 Limit vehicle traffic to established haul routes and parking lots by installing traffic barriers as necessary.	3.7.1 Traffic control reduces stabilization requirements.	3.7.1 Document traffic control actions.
	3.8 Comply with California DMV Vehicle Code Section 23114.		
	3.9 Conduct vehicle traffic counts to determine daily vehicle traffic (DVT).		3.9.1 Document actual DVT.
	3.10 Where Daily Vehicle Traffic (DVT) exceeds 75, or AADVT exceeds 50, or DVT exceeds 25 from vehicles with 3	3.10.1 Stabilize by watering, uniform layer of low silt gravel,	

	or more axles, stabilize unpaved roads or unpaved traffic areas.	chemical dust suppressant, vegetative materials, paving, road mix, or other method demonstrated to be effective and approved by the APCO.	
	3.11 Limit vehicle speed to no more than 15 mph.		3.11.1 Document vehicle speed control actions.
	3.12 Record stabilization methods, actions and results.		3.12.1 Monitor and record visible dust emissions observations.
	3.13 Clean up any spilled materials that could create dust plumes with wet vacuum or HEPA filter equipped vacuum system.		3.13.1 Document leak check inspections, and any cleanup necessary.
	3.14 If wind gusts exceed 25 mph, stop all vehicle traffic or cover all haul vehicles.		3.14.1 Document wind gusts, and contingency actions taken.
	3.15 Prevent trackout onto paved public roads, per Section 9.0.		
4.0 Concrete & Demolition Work	<u>Clearing Concrete Forms</u>		
<ul style="list-style-type: none"> • Clearing concrete forms • Demolition – mechanical & manual 	4.1 Use sweeping and water spray to clear forms.	4.1.1 Do not use high pressure air to clear forms.	4.1.1 Record cleanup methods and actions for concrete forms.
	4.2 Use vacuum system equipped with HEPA filtration to clear forms.		
	<u>Demolition</u>		
	4.3 Divide demolition activities into phases to minimize the amount of demolition debris exposed at any one time.		
	4.4 Stabilize building exterior surfaces and other wind erodible surfaces.		4.4.1 Monitor and record visible dust emissions observations.
	4.5 Apply sufficient water fog or mist during demolition to prevent visible dust plumes.	4.5.1 Stabilize demolished material with water or chemical/organic dust suppressant.	4.5.1 Record stabilization methods and actions for each potential dust source.
	4.6 Stabilize surface soil where support equipment and vehicles will operate.		4.6.1 Monitor and record visible dust emissions observations.
	4.7 Stabilize loose soil and demolition debris within 100 ft. of demolition work site.		4.7.1 Monitor and record visible dust emissions observations.

	4.8 If a wind gust occurs (wind speed exceeds 25 mph), discontinue demolition.		4.8.1 Document wind gusts, and contingency actions taken.
	4.9 Apply water mist or fog, or dust suppressant after demolition to establish a crust and prevent wind erosion.	4.9.1 Stabilize demolished material with water or chemical/organic dust suppressant.	4.9.1 Monitor and record soil crust observations.
5.0 Disturbed Surface Areas	<u>Preparation Activity</u>		
	5.1 Divide creation of disturbed surfaces areas into phases to minimize the disturbed surface areas exposed at any one time.		
	5.2 Maintain live perennial vegetation where possible.		
	5.3 Pre-water surface areas to depths of planned cuts or land shaping, allowing time for penetration.		
	<u>During Active Operations</u>		
	5.4 Stabilize disturbed surface areas as they are being created.	5.4.1 Stabilize disturbed surfaces with water or chemical/organic dust suppressant.	5.4.1 Record stabilization methods and actions for each potential dust source.
	5.5 Stabilize disturbed soil throughout the construction site and between structures to prevent visible dust plumes.	5.5.1 Apply suitable dust suppressant to create a soil crust.	5.5.1 Monitor and record soil crust observations.
	5.6 Limit vehicular traffic on disturbed soil to the extent possible.		
	5.7 Incorporate furrows, compacting, wind breaks, enclosures, or area covers as needed to reduce wind soil erosion.	5.7.1 Construct wind barriers with no more than 50% porosity to control windblown fugitive dust. The distance from wind barrier to the disturbed area should be no more than twice the height of the wind barrier. Each 1 foot of wind barrier height will typically protect 8 – 10 feet of disturbed surface. 5.7.2 When interior block walls are planned, install as early as possible.	5.7.1 Record prevention measures and actions for erosion control.
	5.8 Utilize work practices and/or structural provisions to prevent wind and water soil erosion onto paved areas accessible to the public.		5.8.1 Record prevention measures and actions for erosion control.
	5.9 Stabilize disturbed surface areas upon completion; on the last day of active operations prior to a weekend or holiday, or if inactive for more than 14 days.		5.9.1 Monitor and record soil crust observations.
	5.10 Record stabilization methods and actions as required.	5.10.1 Maintain soil moisture content at least 12% as measured by	5.10.1 Monitor and record visible dust emissions

		ASTM D2216-05. For areas where optimum moisture content for compaction is less than 12%, maintain at least 70% of optimum soil moisture content.	observations.
	5.11 If wind gusts exceed 25 mph, apply water a minimum of every 8 hours. If there is any evidence of wind driven fugitive dust, increase watering frequency to a minimum of every 6 hours.		5.11.1 Document wind gusts, and contingency actions taken.
	<u>During Periods of Inactivity</u>		
	5.13 When dust generating operation is inactive for 30 days or more: <ul style="list-style-type: none"> i. Pave, apply low silt gravel, or apply a suitable dust suppressant; or ii. Establish sufficient vegetative ground cover; and iii. Restrict vehicle access to the area through use of fences, ditches, vegetation, berms, or other suitable barriers; iv. Restore area as described in Section 15.15. 		5.13.1 Monitor and record soil crust observations.
	5.14 If work site is a Large Operation, apply requirements in 5.13 after 21 days.		5.14.1 Document timeliness of soil stabilization.
	5.15 Re-establish ground cover as soon as reasonably possible, but no longer than 90 days, in sufficient quantity and density to expose less than 30% of unstabilized ground. Use aggregates, berms, or wind screens in combination with seeding and watering, chemical stabilizers and ground cover such that in total, these actions apply to all the disturbed surface areas.		5.15.1 Document completion of soil stabilization.
6.0 Earth-moving activities	<u>Preparation Activity</u>		
Use of any equipment for any activity where soil is being disturbed, moved or uncovered that may generate fugitive dust emissions, and shall include but not limited to the following:	6.1 Phase work schedule to reduce the amount of disturbed surface area at any one time; and to allow for more effective interim watering and stabilization to minimize potential dust generation.	6.1.1 Grade each project phase separately, timed to coincide with construction. 6.1.2 Apply interim watering and stabilization to minimize potential for dust generation.	
<ul style="list-style-type: none"> • Earth cutting and filling, • Drilling, • Grading, 	6.2 Pre-apply water and allow time for penetration to stabilize soil prior to earth-moving activities.	6.2.1 Apply mist/fog, water sprays, or chemical/dust suppressant to stabilize soil and backfill material.	6.2.1 Document stabilization methods and actions for each potential dust source.

<ul style="list-style-type: none"> • Leveling, • Clearing and/or grubbing, • Excavating, • Trenching, • Landscaping, • Road shoulder maintenance • Soil mulching • Landfill operations, • Weed abatement by discing or blading. 			
	6.3 Maintain live perennial vegetation where possible.		
	<u>During Active Operations</u>		
	6.4 Dedicate water truck or high capacity water fog to work site.	6.4.1 Or dedicate water mist/fog equipment to work site and backfilling equipment.	
	6.5 Pre-water and maintain surface soils in stable condition where vehicles and support equipment operate.	6.5.1 Apply water or chemical dust suppressant to unpaved vehicle equipment traffic areas sufficient to limit visible dust emissions.	6.5.1 Monitor and record visible dust emissions observations.
	6.6 Pre-apply water to depth of proposed cuts; and allow time for penetration to stabilize soil prior to cutting, or trenching. For deep trenching, trench in 18 inches increments, then re-apply water.		6.6.1 Record prevention measures and actions.
	6.7 Apply water or chemical/organic dust suppressant in sufficient quantities to prevent visible dust.	6.7.1 Stabilize soil with water or chemical/organic dust suppressant.	6.7.1 Monitor and record soil crust observations.
	6.8 Re-apply water as necessary to maintain soils in a damp condition.		
	6.9 Stabilize cut and fill material during trenching and handling.		
	6.10 Stabilize cut and fill material when not actively handling.		
	6.11 Empty loader bucket slowly and minimize drop height from loader bucket to prevent dust plumes.		
	6.12 Stabilize soil during and immediately after clearing and grubbing activities;		6.12.1 Monitor and record soil crust observations.
	6.13 Record stabilization methods and actions as required.		
	6.14 Construct furrows, use compaction, or erect 3-5 foot high wind barriers or three-side barriers with no more than 50% porosity upwind of earthmoving activities to limit the impact	6.14.1 Construct wind barriers with no more than 50% porosity to control windblown fugitive dust.	

	of the wind.	The distance from wind barrier to the disturbed area should be no more than twice the height of the wind barrier. Each 1 foot of wind barrier height will typically protect 8 – 10 feet of disturbed surface. In instances where backfill material is piled, the wind barrier height should be equal to or greater than the height of the pile, and the distance from wind barrier to the pile should be no more than twice the height of the pile.	
	6.15 Wash mud and soil from equipment at completion of each task.		
	6.16 Restrict vehicles access and traffic during periods of inactivity to the extent possible.		6.16.1 Monitor and document traffic controls.
	6.17 Stabilize soils once earth-moving activities are complete.		
	6.18 Utilize work practices and/or structural provisions to prevent wind and water soil erosion onto paved areas accessible to the public.		6.18.1 Document actions taken to prevent trackout and erosion.
	6.19 Stabilize sloping surfaces using seeding and soil binders until vegetation or ground cover can effectively stabilize the slopes.		
	6.20 If wind gusts exceed 25 mph, discontinue/cease cut and fill operations, trenching, clearing and grubbing, road shoulder maintenance, and weed abatement operations.		6.20.1 Document wind gusts, and contingency actions taken.
	<u>During Periods of Inactive Operations</u>		
	6.22 Restrict access to vehicle traffic during periods of inactivity to the extent possible.		
	6.23 If area remains inactive for 14 days or more, apply water or chemical dust suppressant to create a stabilized surface.		6.23.1 Monitor and record soil crust observations.
	6.24 Apply chemical dust suppressants and/or low silt gravel to maintain a stabilized surface after completing road shoulder maintenance.	6.24.1 Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs. 6.24.2 Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder weed abatement and	6.24.1 Document timeliness of soil stabilization.

		maintenance costs.	
7.0 Open Area and Vacant land	7.1 Apply water or chemical/organic dust suppressant in sufficient quantities to prevent visible dust plumes.	7.1.1 Stabilize open areas with water or chemical/organic dust suppressant.	7.1.1 Document stabilization methods and actions for each potential dust source.
	7.2 Stabilize sloping surfaces using seeding and soil binders until vegetation or ground cover can effectively stabilize the open area.		7.2.1 Document stabilization methods and actions for sloping surfaces and open areas.
	7.3 Install barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures to prevent motor vehicle traffic and off-road vehicle traffic on vacant land.		
8.0 Stabilization Requirements	<u>Unpaved roads, parking lots and material storage area:</u>		
	8.1 Stabilize for a centerline distance of at least 100 feet and a width of at least 20 feet to the point of intersection with any paved area accessible to the public.	8.1.1 Stabilizers must stand up to vehicle traffic.	8.1.1 Document stabilization methods and actions for each potential dust source.
	8.2 Cover with at least 3 inches base of gravel with less than 5% silt content. Ensure that unpaved road base silt loading remains less than 8% silt content, or less than 0.33 oz./ft ² .		8.2.1 Silt content is measured by ASTM Method C136-06. Silt is characterized as material less than 75 microns and can pass through a No. 200 sieve.
	8.3 Stabilize with petroleum emulsion.		
	8.4 Pave.		
	8.5 Keep adequately wetted.		
	8.6 Prevent trackout onto paved roads accessible to the public, per Section 9.0		
	<u>Disturbed Surface Area</u>		
	8.7 Stabilize with one of the following: i. Water; ii. Chemical stabilizers; iii. A synthetic cover; iv. Planted vegetative cover; v. Other equivalent methods or techniques.	8.7.1 Stabilize until permanent structure, or vegetation is in place.	8.7.1 Monitor and record soil stability observations.
	8.8 The owner/operator of any disturbed surface area on which no dust generating operation is occurring (a work site that is under construction, or temporarily or permanently inactive) shall be considered stabilized by meeting at least one of the	8.8.1 Sample and test stabilization as needed to ensure no visible dust emissions.	8.8.1 Document soil stability observations.

	<p>following requirements:</p> <ul style="list-style-type: none"> i. Maintain a visible soil crust. Crust is measured by test method cited in Attachment 6; ii. Maintain a wind erosion threshold friction velocity (TFV) for the area (corrected for non-erodible elements) of 100 cm/second or higher, as cited in Attachment 6; iii. Maintain at least 50% of the surface area in flat vegetative cover (i.e. rooted vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation and not subject to movement by wind); iv. Maintain at least 30% of the surface area in standing vegetative cover (i.e. rooted vegetation with a predominant vertical orientation); v. Maintain at least 10% of the surface area in standing vegetative cover (i.e. rooted vegetation with a predominant vertical orientation), and where the threshold friction velocity (TFV) for the area (corrected for non-erodible elements) is 43 cm/second or higher; vi. Maintain at least 10% of the surface area in non-erodible elements such as rocks, stones, or hard-packed clumps of soil; or vii. Comply with an alternate test method, upon written approval from the APCO. 		
	8.9 Should a disturbed surface area contain more than one type of visibly distinguishable stabilization, the owner/operator shall test each representative surface separately for stability using the appropriate test methods described in Section 8.7, and aggregate the results to determine compliance with the stability requirements.		8.9.1 Document soil stability observations and aggregate results.
9.0 Trackout, Carryout & Spillage, Erosion Requirements	9.1 Any owner/operator or agency with jurisdiction over unpaved areas with access to public paved roads shall prevent trackout, carryout, spillage and erosion onto these paved public roads.		9.1.1 Document monitoring of prevention processes, results, and corrective actions taken.
	9.2 Each owner/operator or agency shall monitor public paved roads adjacent to their unpaved areas to ensure no visible roadway dust accumulates on such public paved roads.	9.2.1 Monitor at least twice each workday to ensure prevention of dirt on public roadways.	9.2.1 Document monitoring of adjacent paved roads, results, and corrective

			actions taken.
	9.3 Each owner/operator or agency whose unpaved area is the source of visible roadway dust on public paved roads shall clean the public paved road.		9.3.1 Document any cleanup actions taken, and timeline for completion.
	<u>Trackout Control</u>		
	9.4 All vehicles and equipment owned or operated by a facility shall pass through trackout control device prior to exiting the facility onto public paved roads;	9.4.1 Route traffic to ensure all vehicles pass through trackout control.	
	9.5 Install, maintain and use a trackout control device that prevents and controls trackout by removing particulate matter from tires and the exterior surfaces of haul trucks and motor vehicles that exit the work site onto public paved roads.		
	9.6 Owner/operator shall prevent trackout by implementing at least one of the following: <ul style="list-style-type: none"> i. Pave at least 100 feet and a width of at least 20 feet to the point of intersection with the paved area accessible to the public. ii. Install a 100 feet long X 20 feet wide gravel pad comprised of at least 3 inches base of gravel with less than 5% silt content. Ensure that unpaved road base silt loading remains less than 8% silt content, or less than 0.33 oz./ft². iii. Install a grizzly/rumble grate that consists of raised dividers (rails, pipes, or grates) a minimum of three inches tall, six inches apart, and 20 feet long to create vibration that shakes particulate matter off the entire circumference of each wheel as the vehicle passes over the grizzly or rumble grate. iv. Install a wheel wash system at each exit onto paved areas accessible to the public. 	9.6.1 Monitor paved public road to ensure no trackout or visible roadway dust. 9.6.2 Monitor critical parameters of trackout control to ensure proper operation.	9.6.1 Document monitoring and results of trackout control.
	<u>Prevention of Carryout and Spillage</u>		
	9.7 When loading haul vehicles, maintain at least 6 inches of freeboard.	9.7.1 Monitor loading periodically for freeboard.	9.7.1 Document checks for prevention of carryout and spillage.
	9.8 Maintain highest point of bulk material below the edges of the cargo container.	9.8.1 Monitor loading periodically for overfill.	
	9.9 Inspect cargo compartment for leaks or compromised seals to prevent spillage.	9.9.1 Monitor for potential leaks.	
	9.10 Ensure empty cargo compartments are clean, or covered with a tarp or other suitable closure.	9.10.1 Monitor for cleanliness, and adequate cover.	

	9.11 Comply with California DMV Vehicle Code Section 23114.		
	<u>Prevention of Erosion</u>		
	9.12 Monitor perimeter of facility, particularly near any paved areas accessible to the public to ensure no wind or water erosion deposits mud, dirt or visible road dust onto paved roads.	9.12.1 Monitor for erosion, and any visible road dust.	9.12.1 Document prevention of erosion and road dust.
	9.13 Utilize work practices and/or structural provisions to prevent wind and water soil erosion onto paved areas accessible to the public.		
	<u>Cleanup of Trackout</u>		
	9.14 Removal of any visible trackout, carryout or any visible roadway dust from any source on a paved public road shall be accomplished using wet sweeping (rotary brush or wet broom) with sufficient water, including but not limited to kick broom, steel bristle broom, Teflon broom, or a HEPA filter equipped vacuum device at the speed recommended by the manufacturer.	9.14.1 Cleanup any mud or visible roadway dust as required.	9.14.1 Document discovery of mud, dirt, or visible roadway dust, and timeliness of cleanup.
	9.15 Operate a PM ₁₀ -efficient street sweeper that has pickup efficiency of at least 80%, and equipped with rotary brush or wet broom with sufficient water, including but not limited to kick broom, steel bristle broom, Teflon broom, vacuum, at the speed recommended by the manufacturer.		
	9.16 Flush with water if curbs or gutters are not present and where the use of water will not result in residue remaining as further source of trackout, or result in adverse impact on storm water drainage systems.		
	9.17 Manually sweep up or vacuum up deposits with a vacuum equipped with a HEPA filter.		
	9.18 Use of blower devices or dry rotary brushes or brooms for removal from paved public roads is expressly prohibited. The removal of trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required.		
	<u>Cleanup Timeliness</u>		
	9.19 Each owner/operator or agency whose operations or unpaved area is the source of visible roadway dust on public paved roads shall clean up trackout, spillage, and/or erosion from paved areas accessible to the public as required.		
10.0 Traffic in construction sites and on unpaved roads	10.1 Limit vehicle speed to less than 15 mph.		

and other unpaved surfaces			
	10.2 Post speed limit signs that meet State Department of Transportation standards at each unpaved road entrance and post at least every ¼ mile, with signs readable in both directions of travel.		
	10.3 Require construction traffic to use established haul routes. Use barriers to ensure vehicles use only established parking areas and haul routes.		
	10.4 Establish vehicle speed enforcement process that includes the following: <ul style="list-style-type: none"> • Customers or visitors found to be travelling in excess of the posted speed limit: <ol style="list-style-type: none"> 1) issue verbal warning; then 2) facility access to be limited; then 3) facility access to be denied. • Employees found to be travelling in excess of the posted speed limit: <ol style="list-style-type: none"> 1) issue verbal warning; then 2) progressive discipline up to and including termination. • Contractors and subcontractors found to be travelling in excess of the posted speed limit: <ol style="list-style-type: none"> 1) issue verbal warning; then 2) site removal and future facility access denied. 	10.4.1 Monitor vehicle traffic speeds periodically.	10.4.1 Maintain records demonstrating compliance with the vehicle speed enforcement process.
11.0 Unpaved parking areas, staging areas, and material storage areas; and unpaved access road and haul roads.	11.1 Limit number and size of unpaved areas.		
	11.2 Limit number and size of entrances and exits to unpaved areas.		
	11.3 Stabilize unpaved roads, parking, staging, and material storage areas during use to prevent visible dust plumes.	11.3.1 With water, chemical dust suppressant, vegetative materials, paving, road mix, or low silt gravel, or other method demonstrated to be effective and approved by the APCO.	11.3.1 Document stabilization of unpaved roads, and other unpaved areas. 11.3.2 Monitor and document visible dust plumes from unpaved roads and unpaved areas.
	11.4 Consider paving.		

	11.5 Apply material with low silt content (i.e. asphalt, concrete, recycled road base, or gravel to a minimum depth of 3 inches.		
	11.6 Limit vehicle access to unpaved access roads and haul routes, parking areas, staging areas, and material storage areas with barriers.	11.6.1 Reduces stabilization requirements.	
	11.7 Limit vehicles trips to less than 20 per day.	11.7.1 Document daily vehicle trips past busiest locations, at least twice annually.	11.7.1 Document annual vehicle daily trip monitoring, and results.
	11.8 Limit vehicles speeds to less than 15 mph.		11.9 Document how vehicle speed limits are managed.
	11.10 If wind gusts exceed 25 mph, stop all vehicle traffic or apply water every 15 minutes during active operations.		11.10.1 Document actions taken during wind gusts.
	11.11 In areas not used for more than 14 days, stabilize exposed soil to prevent visible dust plumes.		
	11.12 Stabilize parking, staging, and material storage areas at project completion.	11.12.1 Soil stabilization, uniform layer of low silt gravel, or paving.	11.12.1 Document stabilization and test results.
12.0 Other Control Measures	12.1 Any other control measure approved by the APCO and U.S. EPA as equivalent to the methods described in this table.		

Attachment 1-6: Test Methods for Determining Soil Stabilization

Determination of Adequately Wetted: Field determination of “adequately wetted” shall be as follows:

- Sample at least one quart of solids from the top three inches of a road, bare area or surface of a stockpile.
- The sample shall be poured out from a height of four (4) feet onto a clean hard surface. The material shall be considered to be adequately wetted if there is no observable dust emitted when the material hits the hard surface.

Determination of Soil Moisture Content: Soil moisture content requirements shall be determined as follows:

- Apply water to maintain soil moisture content at a minimum of 12% as determined by ASTM Method D2216-05 or other equivalent method approved by the APCO.
- For areas that have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-02e1 or other equivalent method approved by the APCO, maintain at least 70% of the optimum soil moisture content.

Determination of Surface Crusting: Measurement of the stability of surface crusting on horizontal surfaces shall be conducted in accordance with the following test method (reference - San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 2):

- Where a visible crust exists, drop a steel ball with a diameter of 15.9 millimeters (0.625 inches) and a mass ranging from 16 to 17 grams from a distance of 30 centimeters (one foot) directly above (at a 90-degree angle perpendicular to) the ground surface. If blow sand (thin deposits of loose grains covering less than 50 percent of the surface that have not originated from the surface being tested) is present, clear the blow sand from the surfaces to be tested before dropping the steel ball.
- A sufficient crust is determined to exist if, when the ball is dropped according to Section 6-5-613.1, the ball does not sink into the surface so that it is partially or fully surrounded by loose grains and, upon removing the ball, the surface on which it was dropped has not been pulverized so that loose grains are visible.
- Drop the ball three times each in three representative test areas within a survey area measuring 1 foot by 1 foot that represents a random portion of the surface being evaluated. The test area shall be deemed to have passed if at least two of the three times the ball was dropped; the results met the criteria in Section 6-5-613.2. If all three test areas pass, the area shall be deemed to be “sufficiently crusted”.

Determination of Threshold Friction Velocity (TFV): For disturbed surface areas that are not crusted or partially covered with vegetation, determine threshold friction velocity (TFV) in accordance with the following test method (reference - San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 4):

- Obtain and stack a set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm, and 0.25 mm or obtain and stack a set of standard/commonly available sieves. Place the sieves in order according to size openings, beginning with the largest size opening at the top. Place a collector pan underneath the bottom (0.25 mm) sieve. Collect a sample of loose surface material from an area at least 30 cm by 30 cm in size to a depth of approximately 1 cm using a brush and dustpan or other similar device. Only collect soil samples from dry surfaces (i.e. when the surface is not damp to the touch). Remove any rocks larger than 1 cm in diameter from the sample. Pour the sample into the top sieve (4 mm opening) and cover the sieve/collector pan unit with a lid. Minimize escape of particles into the air when transferring surface soil into the sieve/collector pan unit. Move the covered sieve/collector pan unit by hand using a broad, circular arm motion in the horizontal plane. Complete twenty circular arm

movements, ten clockwise and ten counterclockwise, at a speed just necessary to achieve some relative horizontal motion between the sieves and the particles. Remove the lid from the sieve/collector pan unit and disassemble each sieve separately beginning with the largest sieve. As each sieve is removed, examine it for loose particles. If loose particles have not been sifted to the finest sieve through which they can pass, reassemble and cover the sieve/collector pan unit and gently rotate it an additional ten times. After disassembling the sieve/collector pan unit, slightly tilt and gently tap each sieve and the collector pan so that material aligns along one side. In doing so, minimize escape of particles into the air. Line up the sieves and collector pan in a row and visibly inspect the relative quantities of catch in order to determine which sieve (or whether the collector pan) contains the greatest volume of material. If a visual determination of relative volumes of catch among sieves is difficult, use a graduated cylinder to measure the volume.

- Estimate TFV for the sieve catch with the greatest volume using Table 1 of this attachment, which provides a correlation between sieve opening size and TFV.

Table 1. Determination of Threshold Friction Velocity

<u>Tyler Sieve No.</u>	ASTM 11 <u>Sieve No.</u>	Opening <u>(mm)</u>	TFV <u>(cm/s)</u>
5	5	4	135
9	10	2	100
16	18	1	76
32	35	0.5	58
60	60	0.25	43
Collector Pan	---	--	30

- Collect at least three soil samples which represent random portions of the overall conditions of the site, repeat the above TFV test method for each sample and average the resulting TFVs together to determine the TFV uncorrected for non-erodible elements. Non-erodible elements are distinct elements, in the random portion of the overall conditions of the site, that are larger than 1 cm in diameter, remain firmly in place during a wind gust, and inhibit soil loss by protecting disturbed surface from the shear stress of the wind. Non-erodible elements include stones and bulk surface material but do not include flat or standing vegetation. For surfaces with non-erodible elements, determine corrections to the TFV by identifying the fraction of the survey area, as viewed from directly overhead, that is occupied by non-erodible elements using the following procedure. For a more detailed description of this procedure, see Section 6 (Test Methods for Stabilization-Rock Test Method) of this attachment. Select a survey area of 1 meter by 1 meter that represents a random portion of the overall conditions of the site. Where many non-erodible elements lie within the survey area, separate the non-erodible elements into groups according to size. For each group, calculate the overhead area for the non-erodible elements according to the following equations:

$$\text{Average Dimensions} = (\text{Average Length}) \times (\text{Average Width}) \quad \text{Eq. 1}$$

$$\text{Overhead Area} = (\text{Average Dimensions}) \times (\text{Number of Elements}) \quad \text{Eq. 2}$$

$$\begin{aligned} \text{Total Overhead Area} = & \\ \text{Overhead Area of Group 1} + \text{Overhead Area of Group 2 (etc.)} & \end{aligned} \quad \text{Eq. 3}$$

$$\begin{aligned} \text{Total Frontal Area} = & \\ \text{Total Overhead Area}/2 & \end{aligned} \quad \text{Eq. 4}$$

$$\begin{aligned} \text{Percent Cover of Non-Erodible Elements} = & \\ (\text{Total Frontal Area}/\text{Survey Area}) \times 100 & \end{aligned} \quad \text{Eq. 5}$$

Note: Ensure consistent units of measurement (e.g., square meters or square inches when calculating percent cover).

Repeat this procedure on an additional two distinct survey areas that represent a random portion of the overall conditions of the site and average the results. Use Table 2 of this attachment to identify the correction factor for the percent cover of non-erodible elements. Multiply the TFV by the corresponding correction factor to calculate the TFV corrected for non-erodible elements.

Table 2. Correction Factors for Threshold Friction Velocity

<u>Percent Cover of Non-Erodible Elements</u>	<u>Correction Factor</u>
Greater than or equal to 10%	+ 5
Greater than or equal to 5% and less than 10%	+ 3
Less than 5% and greater than or equal to 1%	+ 2
Less than 1%	None

Determination of Flat Vegetative Cover: For disturbed surface areas with partial vegetative cover, determine the proportion of flat vegetative cover according to the test method in San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 5.

Determination of Standing Vegetative Cover: For disturbed surface areas with partial vegetative cover, determine the proportion of standing vegetative cover according to the test method in San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 6.

Determination of Non-Erodible Elements Cover: For disturbed surface areas with partial rock and other non-erodible elements cover, determine the proportion of non-erodibles according to the Rock Test method in San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation 8011, Appendix B, Section 7.

Appendix A: Comments and Responses

Regulation 6 Particulate Matter, Rule 1: General Requirements Amendments dated June 20, 2018

California Asphalt Pavement Association (CalAPA) and California Construction and Industrial Materials Association (CALCIMA) – dated July 5, 2018

Comment

We appreciate the time you have taken to meet with us and our membership on this important issue as well as the modifications made to the rule as a result of that input. The clarifications and modifications made were absolutely necessary for industry to comply with the rule. We believe there is one more change that is absolutely critical for the certainty of compliance, and that is to recognize the uncontrollable impacts of high winds on operations. We respect that BAAQMD staff would prefer to handle this issue as it has previously, by relying on enforcement inspector discretion. However, as industry we believe there needs to be regulatory certainty and consistency when developing a regulation of this scope and with such large potential impacts.

Request to Add High Wind Contingency Plan

There are many windy areas within the Bay Area AQMD jurisdiction, and the regulations as currently written do not recognize the impacts high winds can have on an operation's ability to meet the proposed new compliance standards. We very much appreciate comments in the staff report which note,

“One limited exemption that was considered and rejected was for situations where wind gusts exceed 25 mph. Fugitive dust is very difficult to control in high wind situations, and facilities can implement all feasible control measures to limit fugitive dust and still have visible emissions that can travel or carry beyond the property line. Rather than provide a specific exemption for such situations, staff proposes using the current method of allowing Compliance and Enforcement personnel to use their collective judgement and discretion regarding the degree to which the Air District enforces Section 6-1-307 during high wind situations. Enforcement inspectors currently, and will continue to consider the background level of dust upwind of any specific source, and whether the owner/operator has a written dust control contingency plan and has implemented the dust control measures in the contingency plan. Potential dust control measures are identified in the Staff Report for Regulation 6, Attachment 1-5.”

We very much believe the contingency plan, which is very similar to SCAQMD's Table 3 from Rule 403 into Regulation 6, is important to include within the actual language of the regulation. It is absolutely necessary to give industries and enforcement inspectors guidance of what steps would constitute compliance during high wind upset conditions. A limited exemption designed around the operation having a high wind contingency plan meeting specified components

gives industry certainty and provides a baseline of expectations for enforcement inspectors. This helps ensure facilities get held to similar expectations across the District and helps enforcement inspectors conduct objective and defensible inspections. A contingency plan will also drive improvements: facilities will be more inclined to invest in measures that are agreed as being in compliance by all parties. We would suggest that what should be included within a “high wind contingency plan” be incorporated within the rule so that businesses can have certainty of what steps to take to achieve compliance.

We recognize it also may be necessary to include within such a contingency table some discretion for inspectors to recognize other dust control methods that are equally effective aside but not specifically listed. Such judgement may well be valuable due to the wide variety of activities that are regulated by Regulation 6. It also allows for future improvements in technologies and practices.

We have included Table 3 from SCAQMD’s Rule 403 below. It serves much as the concept of contingency plan from your staff report within SCAQMD’s dust regulations. However it has the certainty of compliance that lets businesses manage and invest for compliance. We believe Regulation 6 absolutely needs such a high wind contingency table to guide inspectors.

**TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS**

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

We would again like to thank you for the time spent explaining the revisions and intent of these rules. We appreciate your consideration of our comments. Please do not hesitate to contact us with any questions regarding these comments.

Lehigh Hanson – dated July 6, 2018

Comment

Lehigh Hanson (Hanson) submits these comments to the proposed draft of Regulation 6, Rule 1 (General Requirements). We greatly appreciate the opportunity to provide input, and commend Bay Area Air Quality Management District (BAAQMD) staff on their willingness to listen to feedback from the regulated community. Hanson supports the goal of limiting fugitive emissions, and has implemented and invested in numerous practices at its facilities to avoid generation of dust. However, we are concerned that the regulations do not provide clear guidance regarding the impacts of uncontrollable high winds and a facility's ability to comply with the visible emissions requirements.

The staff report for Regulation 6, Rule 1 acknowledges the impacts wind can have on operations, and notes on page 11 that: "*Fugitive dust is very difficult to control in high wind situations, and facilities can implement all feasible control measures to limit fugitive dust and still have visible emissions that can travel or carry beyond the property line.*" The staff report explicitly states that a facility can do all it can, and still be in violation of the proposed regulations. Hanson understands that BAAQMD staff would like to rely on an enforcement inspector's discretion and judgement to determine when a site is not in violation due to high winds. However, this approach is not specifically allowed for in the regulation; as it is written, there is no method or guideline for considering high winds as a mitigating factor to non-compliance nor for an enforcement inspector to make a judgement call.

A staff report is not regulation. When there is a question about compliance, simply having a comment in a staff report is insufficient to establish enforcement policy for facilities that are acting in good faith during high wind situations or for inspectors to be able use their discretion in determining whether or not to issue a notice of violation.

It is imperative that a high wind allowance be incorporated explicitly into the Regulation.

Response

During the workshop phase of this rule development project, draft Rule 6-8: Bulk Material Handling contained a provision to accommodate high winds. This provision was removed based on the concern that it provided a substantial loophole in the fugitive dust requirements. Regulated Bulk Material Sites are expected to control dust, and prevent dust from blowing onto neighboring properties, including during high winds. However, in situations like this the Air District Compliance & Enforcement inspectors have used, and will continue to use enforcement discretion to account for unusual circumstances, as described in the Rule 6-1 Staff Report, referenced in the comment above.

Verbal follow-up with CalCIMA regarding this issue highlighted the concern about inconsistencies in how this enforcement discretion may be applied. CalCIMA, CalAPA and Lehigh Hanson have subsequently strongly advocated for including a limited exemption “designed around the operation having a high wind contingency plan meeting specified components gives industry certainty and provides a baseline of expectations for enforcement inspectors. This helps ensure facilities get held to similar expectations across the District and helps enforcement inspectors conduct objective and defensible inspections. A contingency plan will also drive improvements: facilities will be more inclined to invest in measures that are agreed as being in compliance by all parties.”

Staff recognizes and agrees that controlling dust can be difficult when wind gusts more than 25 mph. However, Compliance and Enforcement staff point out that the current fugitive dust emissions limit is no more than 20% opacity for no more than three minutes in any hour, and staff has written no Notices of Violation for excessive dust during high winds. The intention of setting fugitive dust limits at 10% opacity and a 5 feet size threshold for dust plumes is to enable site personnel to recognize when dust control methods are not adequate, and take corrective actions. Backup dust controls are needed if the primary controls are not adequate. A dust control contingency plan for any unusual circumstances, including high winds, is a necessary part of building the organizational capacity to “take corrective actions” when needed.

During high winds the 10% opacity limit may be a concern, but plumes of dust are very unlikely because high winds tend to dissipate almost any dust plume almost immediately (apart from a dirt tornado, aka “dirt devil”). The most significant concern is dust blowing beyond the property line. Staff heard many complaints from neighbors of bulk material handling sites during the rule development workshops. The complaints were about dust on their cars, patio furniture, window sills, and other property. The commenters suggest an exemption to the requirements in 6-1-307.1b if wind gusts exceed 25 mph. However, such an exemption would place higher priority on relief from the challenges in controlling dust than the priority of protecting the neighbors who may be impacted by the blowing dust. Dust can be controlled during high wind events if the right dust controls and facilities are put in place. Limiting or shutting down operations, appropriately placed three-side wind screens, tarps used to cover stockpiles, watering and/or dust suppressants and traffic controls are each very effective at controlling fugitive dust regardless of wind speed.

As cited in the Staff Report for Regulation 6, Attachment 1-5, there are a wide variety of control methods available to control dust. Owner/operators at each facility know their operations best, and staff expects each site to have primary dust controls in place, and develop secondary dust controls (i.e. contingency plans) for situations where the primary controls are not adequate. Both primary and secondary dust controls must be supported with the facilities/tools/equipment needed to implement the actions needed. Any excessive dust that occurs in spite of these contingent actions are an indication the contingency plans/facilities need to be improved. Note the Air District is not in a position to review or approve contingency plans. Section 6-1-307 is a performance based rule, not a rule filled with required actions, best management practices, and other approaches that may or may not control fugitive dust.

Every owner/operator needs to prevent dust plumes and dust blowing beyond the property line under all expected wind conditions. Including these comments and this response in the Appendix for the Rule 6-1 staff report is an acknowledgement that Air District Compliance & Enforcement inspectors will consider any dust that is blowing onto a site, and whether that dust is the source of dust blowing beyond the property line. The Air District inspectors will consider degree to which the contingency plan has been implemented when determining any non-compliance with fugitive dust visible emissions limits in Section 6-1-307. The Air District always has the ability to refrain from issuing a Notice of Violation in unique circumstances where enforcement action is not warranted, but such enforcement discretion is used in only the most unusual circumstances. Control of dust plumes and dust beyond the property line is necessary so neighbors don't have dust spoiling their property just because the wind happens to be blowing.

Particulate matter is the air pollutant with greatest health impacts. Preventing dust from blowing onto neighboring property is a necessary step in protecting public health.

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Appendix A: Comments and Responses - continued

These comments regarding March 23 version of Rule 6-1 were received, and several comments were incorporated into the final rule language, posted on June 20, 2018

Regulation 6 Particulate Matter, Rule 1: General Requirements Amendments dated 03/23/2018

Western States Petroleum Association

Comment

We would like the District to provide the citation for their authority to regulate Total Suspended Particulate (TSP) as opposed to PM₁₀ or PM_{2.5}. We do not believe the District has the authority to do so.

Response

The Air District has broad regulatory authority under Health & Safety Code Section 39002 and related provisions of the Health & Safety Code. Section 39002 gives the District “primary responsibility for control of air pollution from all sources other than vehicular sources,” and authorizes it to “establish stricter standards than those set by law or the state board for nonvehicular sources.” The authority to regulate “air pollution” under this provision is defined broadly, with “air pollution” explicitly defined to include “particulate matter” without any limitation to specific forms of particulate matter such as PM₁₀ or PM_{2.5}.

In addition, by definition Total Suspended Particulate includes PM₁₀ and PM_{2.5}, which are simply terms that refer to suspended particulates of a given size. Thus, even without the broad authority conferred by Section 39002, emissions limits restricting the amount of Total Suspended Particulate emitted will be effective to address PM₁₀ and PM_{2.5}, which the commenter concedes the Air District has the authority to regulate.

Western States Petroleum Association

Comment

It is our understanding that the District’s intent was not to apply the rule to any liquid sulfur storage. We would request the District clarify this with an addition to the General Requirements in Section 6-1-100.

Response

The Air District does not anticipate that TSP emissions limits in Sections 6-1-310 or 6-1-311, or SO₃ / H₂SO₄ limits in Section 6-1-330 apply to liquid sulfur storage. Visible emissions limits in Sections 6-1-301 and 6-1-302 do continue to apply to any vent or breather stack from any liquid sulfur pit or liquid sulfur storage tank.

Granite Construction

Comment

Many Regulated Bulk Material Sites have existing BAAQMD permits that were thoughtfully prepared and reviewed. Businesses should not be subject to redundant regulations, especially within one agency. Sites should be exempt from any new regulation when existing permits already addresses a specific process that could create particulate matter by requiring best management practices, monitoring, and /or testing.

Valero

Comment

Regulation 6-1

Valero respectfully requires that an exemption for sources with an Authority to Construct prior to rule adoption date be excluded from the requirements of the proposed regulation.

Waste Management – via SCS Engineers

Water Usage

Comment

It is commonly acknowledged that in the Bay Area, and more widely throughout California and the western U.S., fresh water is among our most precious resource; and due to climate change and population growth, water becomes scarcer with each passing year. As such, we feel strongly that any environmental regulations, including air quality regulations, should foster wise and environmentally-sound use of water; or at the very least, not make the water shortage problem worse. WMAC estimates that over 100,000,000 gallons (324 acre-feet) of fresh water would be required per year to keep the soil moist enough to prevent dust emissions in excess of these proposed standards^{1,1}. Underlying any dust mitigation measures that require application of water should be a well-considered balance of air quality benefit and water conservation. Has discussion and consideration of this issue been incorporated into these proposed changes to District regulations? Do the proposed changes reflect an effort to minimize the unnecessary or excessive application of water to control dust? WMAC did not see this issue evaluated in the various environmental documents available on the proposed rules and are very concerned that this environmental issue has not been adequately addressed.

We reviewed the California Environmental Quality Act (CEQA) document prepared for the rulemaking and found the water quality section to be lacking because it understated the amount of water usage that might be necessary to maintain compliance. It also compared that water usage to CEQA significance

^{1 1} Based on pan evaporation rate of 77.7 inches in Livermore, California.

thresholds that have not been adjusted for drought conditions and are designed for large infrastructure projects or housing developments. No attempt was made to assess whether the emission benefits were cost effective in light of the fact that the cost of fresh water is likely to increase substantially in the future as population growth and drought conditions continue.

Response

Staff agrees that concern about fresh water supply and water consumption is a critical issue. Staff estimated incremental water consumption at 13,728,000 gallons per year. The estimate of 100 million gallons per year of water consumption from Waste Management is based on pan evaporation from fifty (50) acres of land kept wet all year long, in Livermore. Fifty acres may be a reasonable estimate for the baseline water use to keep potentially dusty sources damp. However, incremental water consumption estimates use the current performance of facilities as the baseline, and consider only the incremental effort (and related incremental water consumption) needed in areas where performance may not meet the proposed dust control standards. Consideration of water use, and concern about incremental water use are addressed in the staff report. As outlined in the staff report, staff estimated that large sources (more than 6 lbs per day PM emissions) that currently use water may choose to upgrade their water systems to mist, rather than continue to use water sprays so water use will be more effective, and no incremental water is needed. Costs and incremental water consumption were estimated based on five specific water mist systems for specific facilities proposed in Table 2-1. Staff estimated that small sources (less than 6 lbs per day PM emissions) will find ways to meet the dust limits without significant investment in wind screens, transfer point shrouds or loading/unloading chutes and will not use any incremental water.

The second comment challenges both the cost of water in the future as water supplies become more stressed with drought and greater population in California, and whether the threshold in the CEQA analysis is appropriate. Water costs are based on today's rates. Use of any other cost basis is speculative. CEQA thresholds are based on large infrastructure or housing development projects, the best comparisons available for any project that may impact water use.

Waste Management – via SCS Engineers

PM 2.5 vs. Larger PM

Comment

In considering particulate emissions, the smaller the particle size, the greater the health impact. As such, PM less than 2.5 microns (PM 2.5) is considered a toxic air contaminant by the BAAQMD. However, for landfill sites and many other types of facilities that will be affected by the proposed rule changes, the predominant component of dust emissions generated are much larger particles. In addition, and as discussed in the District's Staff Report for Regulation 6, Rule 6, PM 2.5 tends to remain suspended in the atmosphere, while larger PM

particles tend fall back to the earth within 1,000 feet of where they became airborne. It is also estimated in the Staff Report that less than 7% of the projected reductions in dust due to implementation of the rule are PM 2.5. Therefore, the expected health benefits from the proposed rule changes are minimal, and the likelihood, for a large facility like a landfill, that the effects of any excessive dust will extend off site are also minimal. Because the expected benefits are so limited, the additional limits, monitoring, preventative and corrective actions, and recordkeeping, as well as increased water usage, seem out of proportion to the expected air quality benefits.

Response

The Air District is required by the Health and Safety Code to take all feasible measures to reduce emissions when the Air District is in non-attainment for a criteria pollutant. The Bay Area is in non-attainment for both PM₁₀ and PM_{2.5}. Rule 6-1 addresses Total Suspended Particles and fugitive dust that are made up of both PM₁₀ and PM_{2.5}. Staff made explicit calculations to estimate emission reductions of both PM₁₀ and PM_{2.5}. The proposed limits are currently achieved in practice at most facilities most of the time. These limits, monitoring and recordkeeping are technically and economically feasible, and designed to ensure facilities meet the proposed limits at all times, with particular emphasis on ensuring no emissions affect local residents.

Waste Management – via SCS Engineers

Facilities Required to Have Dust Plans

Comment

Many landfill sites within the BAAQMD are already required, as part of their existing air permits, to maintain and follow a facility Dust Mitigation Plan. The Plan's scope and content is specified in the permit conditions. As such, we question what the need is for a new layer of dust mitigation requirements if the District is already requiring a site to follow such a Plan. We propose that any facility that is in compliance with a District-approved (and District-required) Dust Mitigation Plan or site specific Title V permits that includes dust restrictions should be deemed to be in compliance with Regulation 6 for any activity or operation covered by the Plan. This will avoid duplication of requirements and uneven enforcement of two similar requirements.

We have provided in this letter specific comments to the proposed rules for completeness, but WMAC requests that facilities subject to existing dust plans be exempt from the new rules for reasons listed above.

Response

A general exemption for sources with an Air District Authority to Construct or Permit to Operate prior to rule adoption would exempt almost all sources. Existing permits and permit conditions may or may not address the same sources and emissions, and may or may not be consistent with or as stringent as the proposed rule language.

Proposed amendments to Rule 6-1 are performance based, feasible and cost effective. A facility must meet the permit conditions set at the time of the permit review, and any regulations that apply to that facility. Rule 6-1 is designed to be a performance based regulation, rather than rely on Best Management Practices (BMPs) that may be incorporated into Dust Mitigation Plans or permit conditions to deliver required emissions. Fugitive dust requirements and most related permit conditions have conventionally been set at no more than 20% opacity for no more than 3 minutes in any hour. Section 6-1-307 makes those requirements more stringent at no more than 5 feet high, 5 feet long, or 5 feet wide and an opacity limit of 10% opacity for no more than 3 minutes in any 60-minute period. This approach leaves determining how to best achieve the performance needed in the hands of the people most expert at their business, the owner/operators and employees. The performance based requirements will continue to apply to these facilities, regardless of their permit conditions, Dust Mitigation Plans or BMP requirements. Presumably, these practices are currently delivering the dust control required.

The fugitive dust requirements and monitoring/recordkeeping are not a new layer of dust mitigation requirements. These performance based limits specify the performance required from facility Dust Mitigation Plans.

Pacific Gas and Electric Company

II. Regulation 6-1: Particulate Matter – General Requirements Definition of “Regulated Bulk Material Site”

Comment

Facilities that handle bulk materials are sources of PM. The staff report states that 55 permitted stationary sources represent approximately 85 percent of the PM emitted by the 22 source categories that were evaluated for additional PM emission controls. These 55 facilities include refining operations, chemical manufacturing, food and agricultural processes, concrete batching, and landfills, among others. The remaining 2,400 permitted stationary sources collectively account for the remaining 15 percent of the PM emitted by the 22 source categories evaluated.

As currently proposed, Regulation 6-1 defines “Regulated Bulk Material Site” and there are two criteria needed for a facility to meet the definition. One of the criteria is for the facility to be subject to any BAAQMD permitting. This criterion should be modified to explicitly call out facilities that are subject to bulk material storage/handling permitting requirements. Please consider the following suggested language:

Regulated Bulk Material Site: A bulk material site that (i) produces, handles, loads, unloads, stores or uses more than 10 tons per year of bulk materials; and (ii) is subject to an authority to construct and/or permit to operate [for bulk material storage and handling](#) issued by the Bay Area Air Quality Management District.

The typical PG&E facility has BAAQMD permits for emission sources such as emergency engines and gasoline dispensing operations. PG&E's most common stationary source in the Bay Area region is what we call a Service Center – a facility that primarily consists of office buildings, warehouses, and vehicle maintenance buildings with large paved areas for fleet vehicle parking and utility equipment outdoor storage. A Service Center typically has a small paved or unpaved area to store bulk materials – such as clean backfill material and spoils (typically dirt/rock excavated during normal utility field operations). The facility has the potential to exceed 10 tons per year of bulk material, but likely would never exceed the throughput thresholds needed to trigger BAAQMD permitting requirements for bulk material storage and handling. However, since the facility has an emergency engine, for instance, the facility would be subject to the Regulated Bulk Material Site requirements. These types of low PM emitting facilities should not have the same requirements as the 55 facilities that account for 85 percent of the PM emissions.

Response

The definition for Regulated Bulk Material Site has been adjusted to explicitly clarify that the facility is subject to an authority to construct and/or permit to operate specifically for bulk material storage and handling.

Phillips 66

Regulation 6: General Provisions, Definitions and Test Methods

Comment

Sections of the Regulation 6 rules apply to facilities with “stockpiles” on site that are greater than 5 feet high or with a footprint greater than 100 square feet. As “stockpile” is currently not defined, Phillips 66 proposes that a definition be added to clarify, such as, [“Stockpile: an open exposed pile of bulk material with the potential to generate fugitive dust exceeding standards stipulated in Regulation 6.”](#)

Western States Petroleum Association

Comment

The term “stockpile” is used in the definitions of Bulk Material, Bulk Material Site, and elsewhere in the rule. However, it is not defined and needs to be. We understand that the rule is intended to apply to exposed piles, but not coke pits or enclosures (e.g., barns and silos). WSPA requests this be specified in the definitions. Below is an example definition to clarify our request:

6-1-xxx *Stockpile: an open or unenclosed storage pile, external to any barn, pit, or silo.*

WSPA requests the District confirm whether Title V facilities that may have temporary stockpiles for one-time construction projects would be required to meet relevant monitoring (6-1-307) and recordkeeping (6-1-506) standards while those stockpiles are on site. This would include once or twice per day monitoring records of date, time, sources and operations monitored.

Response

Thank you for the suggestion. A proposed definition for stockpile has been added to the rule language as definition 6-208, and referred to again in definition 6-1-209.

The Air District does not anticipate that Section 6-1-307 or Section 6-1-506 would apply to temporary stockpiles for construction projects at facilities that are not Regulated Bulk Material Sites. The definition for Regulated Bulk Material Site has been adjusted to explicitly clarify that the facility is subject to an authority to construct and/or permit to operate specifically for bulk material storage and handling.

California Asphalt Pavement Association (CalAPA) and California Construction and Industrial Materials Association (CALCIMA)

Comment

Section 6-1-111 exempts blasting operations that have been permitted by the California Division of Industrial Safety. The California Division of Industrial Safety has been replaced by the State of California Department of Industrial Relations Division of Occupational Safety and Health (DOSH or Cal/OSHA). While Cal/OSHA has a Mining and Tunneling Unit, Cal/OSHA does not issue permits to surface mines and quarries. Cal/OSHA licenses blasters to use explosives for mining in the State of California; this license is provided to an individual certified experienced blaster, not the mine site itself. Many surface mines and quarries do not employ certified experienced blasters but contract the blasting activities to licensed third parties. Authority to blast may not be limited to possessing a Cal/OSHA certification. Some local agencies, such as a County, have their own blasting ordinances and permitting mechanisms for blasting activities while vested surface mines and quarries often have no permitting requirements, simply reclamation requirements. As such, we suggest including these local permits and blasting operations conducted by certified blasters into this exemption:

Blasting operations that are conducted by certified blasters who have ~~been met~~ the blasting ordinances and requirements for licensing and permitting by the ~~California Division of Industrial Safety~~ State of California Department of Industrial Relations Division of Occupational Safety and Health or other applicable local permitting authority are not subject to Sections 6-1-307 and 6-1-506.

Lehigh Hansen West Region

Comment

Regulation 6-1: General Requirements

6-1-111: Exemption of blasting operations should allow for other types of permits

Section 6-1-111 exempts blasting operations that have been permitted by the California Division of Industrial Safety. Hanson would like to note that the California Division of Industrial Safety has been replaced by the State of California Department of Industrial Relations Division of Occupational Safety and Health (DOSH or Cal/OSHA). While Cal/OSHA has a Mining and Tunneling Unit, Cal/OSHA does not issue permits to surface mines and quarries, which Hanson believes was the subject of the study conducted by the BAAQMD and the basis of the proposed exemptions from the visible emissions, opacity, and particulate matter requirements of Regulation 6 Rule 1. Cal/OSHA licenses blasters to use explosives for mining in the State of California; this license is provided to an individual certified experienced blaster, not the mine site itself. Many surface mines and quarries do not employ certified experienced blasters but contract the blasting activities to licensed third parties. Authority to blast may not be limited to possessing a Cal/OSHA certification. Some local agencies, such as a County, have their own blasting ordinances and permitting mechanisms for blasting activities while vested surface mines and quarries often have no permitting requirements, simply reclamation requirements. As such, we suggest including these local permits and blasting operations conducted by certified blasters into this exemption:

Blasting operations that are conducted by certified blasters who have been met the blasting ordinances and requirements for licensing and permitting by the ~~California Division of Industrial Safety~~ State of California Department of Industrial Relations Division of Occupational Safety and Health or other applicable local permitting authority are not subject to Sections 6-1-307 and 6-1-506.

Response

Thank you for the clarification on the State of California and local licensing requirements. The rule language has been adjusted using the recommended language.

Western States Petroleum Association

Comment

Additionally, we believe the exemptions for gas-fired indirect heat exchangers in Section 6-1-114 would also apply to gas-fired control equipment (e.g., rental thermal oxidizers used for controlling emissions from tank degassing, etc.) Since the latter might not be considered “heat exchangers”, WSPA requests this be clarified so that gas-fired thermal oxidizers are also exempted. We propose language below (in underline/~~strikeout~~):

6-1-114.1 *Gas-, liquid- and solid-fuel fired indirect heat exchangers, including furnaces, heaters, boilers, gas turbines and supplemental fuel-fired heat recovery steam generators, but excluding Carbon Monoxide Boilers downstream of Petroleum Refinery Fluid Catalytic Cracking Unit Generators.*

6-1-114.2 *Gas-fired control devices that are controlling gaseous emissions.*

6-1-114.3 *Section 6-1-504 shall not apply to gas-fuel fired indirect heat exchangers or gas-fuel fired control devices that are controlling gaseous emissions. Liquid- and solid-fuel fired indirect heat exchangers shall remain subject to Section 6-1-504.*

Response

Thank you for the suggestion. New 6-1-114.2 and the suggested addition to 6-1-114.3 have been added to the rule language to incorporate gas-fired control devices controlling only gaseous emissions.

Valero

Comment

Valero Refinery CO furnaces S-1059 and S-1060 are subject to a BACT limit for PM10 pursuant to BAAQMD Permit Condition 20820, Parts 63 and 68. This condition was issued in 2011 to Valero by BAAQMD as part of the New Source Review for the Valero Improvement Project A/N 16937. Because Valero has received this BACT requirement in 2011, it should not be subject to further PM10 requirements. Valero has met and will continue to comply with the BACT limit for PM10.

Response

Staff agrees and new exemption, Section 6-1-117, has been added to the rule language to clarify that this is the case.

Lehigh Hansen West Region

Section 6-1-201—Definition of Active Operations is unclear

Comment

As currently written, the definition of Active Operations includes “*any activity with the potential to create particulate emissions from any source or fugitive dust emissions.*” As it is written, “*any activity with the potential*” is quite broad and it is unclear if this definition includes instances when there are no industrial activities occurring at a facility but there are office personnel or janitorial staff. Hanson requests that “*any activity*” be modified to “*any industrial activity*” to make it clear what constitutes part of the Workday. Please note that this type of clarification is consistent in other regulations; for example, the definition of Scheduled Facility Operating Hours in the General Permit for Storm Water Discharges Associated with Industrial Activities focuses on industrial activity and excludes routine

maintenance, emergency response, security, and/or janitorial services from the definition.

Hanson requests that this change be mirrored in the definition of Active Operations for Regulation 6-6 as well.

Response

Active operations definition is currently proposed as follows:

6-1-201 [Active Operations: As defined in Regulation 6-201, any activity with the potential to create particulate emissions from any source or fugitive dust emissions.](#)

Workday definition is currently proposed as follows:

6-1-210 [Workday: As defined in Regulation 6-209, any period, typically 8 – 12 hour shifts, when active operations occur on the site.](#)

The comment is that “any activity” is too broad, and it should be changed to “any industrial activity”. However, the definition is: “any activity with the potential to create particulate emissions from any source or fugitive dust emissions.” The definition needs to include industrial operations, construction operations, recycling operations, and so on. The example of the definition of Scheduled Facility Operating Hours in the General Permit for Storm Water Discharges Associated with Industrial Activities focuses on industrial activity and excludes routine maintenance, emergency response, security, and/or janitorial services from the definition. That definition is not applicable – as operations beyond industrial activity (i.e. routine maintenance, etc.) may create particulate emissions. If any of those other operations do have the potential to create particulate emissions, they should be included in this definition.

The proposed rule language is to remain unchanged.

Owens Corning Insulating Systems, LLC (OCIS)

Section 6-1-206—Definition of Process Weight

Comment

With context from the published Staff Report, OCIS understands the intent of this definition is designed to include the volume of gases needed by the process (generally for cooling purposes), but excluding combustion products and excluding any dilution air.

OCIS’ concern is with the exclusion for “air not consumed as a reactant”. Our process air is not a reactant, therefore there is ambiguity as to whether the above exclusion would apply.

At our facility, we have two “forming” sources on our main production lines that requires process air to form the fiberglass pack. The air is blown through the fiberglass as it is first formed to cool the molten glass and attenuate it to desired

diameters and lengths. This process air is critical to the formation of the fiberglass product and we would not be able to operate the process without it. While this air is integral to the process, it is not consumed as a reactant.

Our initial comment on the draft definition included a small addition clearly detailing the criticality of process air:

The total weight of all material introduced into an operation, including solid fuels and process air, but excluding (i) liquids and gases used solely as fuels, (ii) air that is not consumed as a reactant [or is not critical to the process](#), (iii) air that is used only for dilution, and (iv) combustion air.

OCIS kindly requests that the definition of process weight be modified to clarify the ambiguity. Alternatively, we request that the District formally recognizes our process air as a valid material for the process weight calculation.

Response

Staff recognizes that process air used for cooling is critical to the process, and is intended to be included in the process weight calculation, identified as “process air” in the current definition. Staff recognizes that OCIS’s process air used to form and cool the fiberglass pack is valid material that is included in the process weight calculation, and will adjust the rule definition language using the recommended language.

Lehigh Hansen West Region

Section 6-1-307.1: Cleanup of bulk material spill should not be included in the listed activities

Comment

Hanson understands that BAAQMD staff is concerned with the level of dust that can be generated from certain mechanical sweepers, and that this was the impetus for including cleanup of bulk materials in the list of activities impacted by the visible emissions restrictions. BAAQMD has noted that, in place of a mechanical sweeper, cleanup could be conducted with minimal visible emissions by employees with respirators, shovels, brooms and other hand equipment. Hanson respectfully but strongly disagrees with this position. It is highly unsafe for employees to be on the ground with respirators and shovels. Most of the bulk material spills are in high traffic areas with heavy mobile equipment operating. Track-out, by definition, is on public streets so employees would be forced to sweep in the midst of cars, buses, and big rigs traveling at relatively high speeds in heavy industrial zones. The chances of an injury or even worse, a fatality, are much too great for Hanson to contemplate regular hand sweeping as a viable means to comply with this requirement.

We understand that some sweepers can be problematic sources of dust. But at this point in time, mechanical sweepers are the only safe, effective, and economical tool we have to clean up spilled bulk material. Every mechanical sweeper will generate some level of dust. Even top of the line, filter equipped

vacuum sweepers generate a certain level of dust (i.e. more than the 10% as currently written) during the cleanup process. Further, there are not many such filter equipped sweepers in the market currently, and so demand will outpace the supply. Until the market equilibrates (assuming it ever does) there will be many facilities unable to obtain such sweepers and thus would be unable to comply, perhaps for many years, with the regulations as written.

In order to encourage facilities to clean up spilled bulk material, Hanson recommends removing obstacles to cleanup activities. To achieve this, we respectfully request “*cleanup of bulk material spill*” removed from the list of regulated activities in Section 6-1-307.1.

Response

Cleanup of a bulk material spill has been removed from Section 6-1-307.1. Cleanup activities have been inserted into Section 6-1-307.2 with a visible emissions limits of no more than 20% opacity for no more than 3 minutes in any 60-minute period.

California Asphalt Pavement Association (CalAPA) and California Construction and Industrial Materials Association (CALCIMA)

Rule 6-1-307.1 and 6-6-302—Adjust Visible Emissions from 10% Opacity to 20% Opacity

Comments

In reviewing these sections, we appreciate the decision to add a plume size to the District’s opacity processes. However, a 10% opacity standard is not a feasible standard at a large facility whose primary function is to produce earthen materials for the construction market. It becomes essentially a standard where visible dust of a very limited nature creates a violation, instead of triggering further actions to limit dust. We do not see how such a standard can be met during clean-up and other mechanized activities at mineral and construction material sites. We do agree dust should not exceed 20% opacity for three minutes in any one hour during normal activities and it is the margin between the first visible signs of dust around 10% and before reaching 20% where successful reactive dust suppression efforts take place at well managed facilities. Further, we believe even the best street sweepers would generate more than 10% opacity over 5 feet, but to generate over 20% for that distance would likely reflect poor operating controls.

We strongly request the district adopt a 20% opacity standard based on three minutes in any one hour for 6-1-307.1 and 6-6-302. This is consistent with other Air Districts in California, including South Coast Air Quality Management District Rule 403 and San Joaquin Valley Air Pollution Control District Rule 8031.

Granite Construction

Section 6-1-307.1—Opacity Limits

Comment

With this rule, a site will be out of compliance if an active operation creates particulate matter over 10% opacity. This is not a practical standard and, for many operations, will not allow a Site to be aware of a problem before it can be addressed. We recommend changing the wording to require Sites to maintain 20% opacity (or Ringelmann 1) for three minutes in any one hour. This is a standard requirement for fugitive dust in other California air districts. The amount of fugitive dust created by this regulation would be minimal and it allows a Site to become aware of a problem and address it before being out of compliance.

Lehigh Hansen West Region

Comment

Section 6-1-307.1.a: 10% opacity is unreasonably low

Section 6-1-307.1.a currently restricts opacity to 10%. Hanson finds this limit to be unreasonably low, especially since it is to be applied to a broad spectrum of activities and fugitive sources. A small puff of dust from wind or a truck driving through the yard can easily exceed 10% opacity. Often when we see visible emissions around 10%, we are triggered to implement corrective actions (e.g. run the water truck, water a stockpile, etc.), however it would be difficult to respond within the required 3 minutes. Hanson requests that the opacity limit be adjusted to 20% opacity; a 20% opacity would still be protective of the environment, and would allow the facilities more of a buffer in which to appropriately respond.

Phillips 66

Rule 6-1-307.1: Opacity Limits

Comment

This section proposes a violation for any fugitive dust visible emission that exceeds 5 feet long, wide or high and exceeds 10% opacity (1/2 Ringelmann shade) for any 3 minutes in a 60-minute period (6-1-307.1.a), and for any fugitive dust visible emission that travels or carries beyond the site property line (6-1-307.1.b). For cases where controls are being applied (e.g., regular watering), but there are spots that get through, Phillips 66 proposes a system granting credit for attempting to control the dust, but having some situations beyond control. For example, during high wind events, the normal controls may not be sufficient. Phillips 66 proposes something similar to that allowed for bulk material spills in 6-1-307.2, such as [“307.1.c An event under 307.1.a or 307.1.b is not a violation if the facility can demonstrate adequate attempted controls such as wetting, covering, or protecting by a wind screen with no more than 50 percent porosity that is \(i\) equal to or higher than the height of the emissions source; and \(ii\)](#)

placed upwind of the emissions source at a distance no greater than the height of the wind screen.”

Phillips 66 also proposes that the emission limitation be aligned with the Ringelmann standard of 1 consistent with other Regulation 6 rules, since a Ringelmann standard of ½ can include any visible wisp that may not be indicative of significant ambient air pollution.

Waste Management – via SCS Engineers

6-1-307.1: Visible Emissions Within and From Bulk Material Site: Establishes opacity and size limits on dust plumes within or from bulk material sites

Comment

This provision sets a limit of a 5-foot diameter for a dust plume from active operations at a bulk material site. This limit encompasses relatively small plumes, which are likely to be generated occasionally during typical landfill operations; therefore, the limit is a concern for landfill operators. Our primary objection to this provision is that it imposes the limit on any dust plume within the site, without regard to whether or not the plume is maintained long enough to be transported off site. Furthermore, for any plume that does carry beyond the site property line, this provision, as written, establishes no minimum size limit at all. Any dust plume, no matter how small, that carries off-site could apparently be considered a violation.

We wish to emphasize that the particulate matter generated by landfill sites consists predominantly of large particle sizes as well as the fact that landfill sites typically comprise very large areas (hundreds of acres). As such, while a landfill may generate dust plumes throughout a workday, the large-particle plumes would typically settle out of the air within a distance of less than 500 feet. Therefore, under typical circumstances and conditions, dust plumes from landfills do not create off-site visible emissions.

We propose a simple change to this provision that would eliminate the prohibition of dust plume that do not carry off site, and would set a higher minimum size limit for any plume that does carry off site. We propose the following language:
307.1: ...shall not cause or allow a fugitive dust visible emission ...that
307.1a: Exceeds 25 feet long, 25 feet wide, or 25 feet high, and 10% opacity...;
and 307.1b: Travels or carries beyond the site property line.

Response

The criteria for an excessive fugitive dust visible emission in Section 6-1-307.1.a are a plume larger than 5 feet long, 5 feet wide, or 5 feet high, **and** no more than 10% opacity for more than 3 minutes in any 60-minute period. The current fugitive dust visible emission limit is Ringelmann 1 (Section 6-1-301) or 20% opacity (Section 6-1-302) for no more than three minutes in any hour. It takes extensive training for a certified opacity observer to reliably differentiate between 10% and 20% opacity. Most bulk material site employees do not have this

training, so these employees are uncertain if dust within the facility is excessive or not. The criteria for excessive fugitive dust were established specifically so that anyone who works on the site can be trained to recognize that fugitive dust plumes that are visible and larger than 5 feet in any direction require corrective actions. The intention of setting this limit on fugitive dust is to enable management at bulk material handling facilities to establish an environmental culture where the employees react when such a dust plume is visible. In addition, setting the fugitive dust visible emission limit at 20% would represent no change in the current requirements.

Ten percent opacity was selected as a point where a fugitive dust emission is visible to a person not trained in opacity readings, yet detectable so that excessive fugitive dust can be identified and corrective actions to control the dust can be taken. The additional criteria for excessive fugitive dust was set so that a dust plume must be significant, i.e. longer than 5 feet, wider than 5 feet, or higher than 5 feet. This size criteria are intended to limit concern about a small puff of dust coming from truck tires, or an occasional gust of wind briefly blowing a small volume of dust from an internal roadway or stockpile. Five (5) feet was selected as a reasonable frame of reference – most people are 5 feet tall or taller; passenger cars are about 5 feet wide and 5 feet high. No special training or equipment (i.e. tape measures) are required for the average worker at a bulk material handling site to discern:

- if they can see any dust, corrective actions may be needed, and
- if the dust cloud / plume is larger than 5 feet in any direction, it is a significant issue and corrective actions are needed.

The comment asserts “a 10% opacity standard is not a feasible standard at a large facility whose primary function is to produce earthen materials for the construction market.” Staff observed a wide variety of facilities that had traffic controls, vehicle speed limits, and used water sprays and water trucks to control fugitive dust. Staff observed only two facilities that used water mist systems rather than water sprays. Staff observed approximately 25% of the facilities had windscreens on conveyor systems. Staff observed only four facilities that used load-out chutes rather than free-fall load-out. Staff observed only one facility that used a wind screen to protect a stockpile. In spite of these seeming lack of additional potential control methods, fugitive dust was generally not a significant issue in most cases. Staff observed that most facilities meet the excessive fugitive dust standard (10% opacity PLUS the plume size criteria of 5 feet) almost all the time. Specific additional controls may be needed for specific sources in specific situations. Improvements including water mist systems and wind screens may be needed for some of the smaller facilities, as described in the staff report. The proposed criteria for excessive fugitive dust visible emissions will remain the same.

An additional comment is “We do not see how such a standard can be met during clean-up and other mechanized activities at mineral and construction material sites.” Staff agrees with this concern about cleanup activities. Each cleanup can be unique, and may result in creating a localized fugitive dust problem. Staff has separated the cleanup activities from the requirements for

normal operations in Section 6-1-307.1, and provided a 20% opacity limit for cleanup activities in Section 6-1-307.2. Similarly, staff has provided a 20% opacity limit for cleanup activities in Section 6-6-302.

Lehigh Hansen West Region

6-1-307.1.b: Prohibition of fugitive emissions beyond property line is infeasible

Comment

Section 6-1-307.1.b prohibits *any* fugitive emissions, even those generated from cleaning of spilled bulk material, from traveling beyond the site property line without any time allowance or recognition of extenuating circumstances. This concept of “zero emissions” at the property boundary is simply infeasible for most operations to comply with. All of Hanson’s facilities employ sweepers to clean up track out and accumulated material at entrance/exit areas and on the public streets in front of our facilities. As noted above, all sweepers generate some level of dust during cleanup. In fact, even if an employee were allowed to sweep accumulated material at the exit gates with a broom, this activity would generate some dust that would extend past the property boundary. We would thus be caught between a rock and a hard place: we could cleanup track-out and be in violation of Section 6-1-307.1.b, or not cleanup track-out and be in violation of the requirements in Rule 6-6. Hanson thus respectfully requests that cleanup activities be excluded from the list of prohibited activities in 307.1, or include a reasonable time allowance in Section 6-1-307.1.b similar to that allowed in Section 6-1-307.1.a.

Response

Cleanup activities have been excluded from Section 6-1-307.1 as requested. Cleanup activities have been included in Section 6-1-307.2 with a fugitive dust visible emissions limit of 20% opacity for no more than 3 minutes in any 60-minute period.

Phillips 66

6-1-307.2: Cleanup of any “bulk material spill

Comment

This section requires cleanup of any “bulk material spill of more than 12 inches high or more than 25 square feet by the end of the workday,” however “bulk material spill” is not defined. Phillips 66 may have a number of stockpiles or working areas of the plant where stored material may exceed those dimensions, but not be considered a “spill.” A suggested definition may be: [Bulk material spill: an unplanned, unexpected volume of material more than 12 inches high or more than 25 square feet that is deposited from a fugitive dust creating operation.](#)

Response

The dictionary.com definition of spill is “*cause or allow (liquid) to flow over the edge of its container, especially unintentionally.*” That definition describes the intent of Section 6-1-307.2. if (liquid) is replaced with (bulk material). Staff sees no need for a definition in the rule language that is consistent with the dictionary definition.

Waste Management – via SCS Engineers

6-1-307.2: Bulk Material Spills: Cleanup required unless spill is adequately wetted, covered, or screened

Comment

Bulk material spills subject to this provision are defined as > 12 inches high or > 25 square feet in area. This threshold is unreasonably low, and does not make sense for facilities such as landfills that typically handle millions of cubic yards per year of soil and solid waste. With hundreds of haul vehicles per day and thousands of feet of roadway and areas, numerous facility staff would need to be constantly patrolling throughout the site looking for piles of soil so small as to easily escape notice within the busy and sprawling environment of a typical landfill. We feel this cleanup provision is unreasonable, unmanageable, unnecessary, and not cost effective. We request that a spill be defined by its potential to create visible emissions on a paved roadway.

Additionally, most of the surface area of a typical landfill property consists of surfaces that are unpaved, including soil surfaces. Spilling soil onto soil should not be considered a spill. As such, we request that the regulation be further clarified to define a spill as occurring on a paved surface within the landfill property.

Proposed Part 6-1-307.1 already prohibits dust plumes in excess of the specified minimum size from any bulk material handling activity, including spills. If a spill is causing visible emissions that carry off site, then it needs to be cleaned up. This cleanup provision is redundant and unnecessary.

Response

The requirement for cleanup of bulk material spills by the end of the workday is based on preventing wind erosion of spilled material during evening hours when the facility may no longer be actively operating. Spills that protrude 12 inches or more above the surrounding surface are subject to wind erosion, and have the potential to create fugitive dust even when there are no active operations at the site. A spill is defined to be more than 12 inches high or greater than 25 square feet so that only a significant spill or pile of material requires cleanup.

Waste Management – via SCS Engineers

Air District Staff Note: These comments are based on the Workshop drafts of Regulation 6, Rule 8 which has subsequently been incorporated into the amendments to Rule 6-1, Section 307. Staff contacted SCS Engineers and directed them to the current rule proposals. Staff will respond to any additional comments received from SCS Engineers on the rule proposals. In the meantime, responses to the comments focused on Rule 6-8 are included here, to the degree the comments apply to Sections 6-1-307 and 506.

Reg. 6, Rule 8 (Bulk Material Storage and Handling)

Comment

We wish to note that, although a landfill is not primarily a bulk material facility, quantities of soils that trigger the applicability threshold are typically handled at landfill sites. That said, the majority of hauling and other activity at a landfill facility are associated with other materials (e.g., municipal solid waste and yard waste) that would not be subject to requirements specifically associated with bulk materials, as they are defined in Regulation 6.

Response

Requirements of Sections 6-1-307 and 506 will apply to soils and other solids less than two inches handled at landfills.

California Asphalt Pavement Association (CalAPA) and California Construction and Industrial Materials Association (CALCIMA)

Rule 6-1: Contains No High Wind Speed Provision:

Comment

There are many windy areas within the Bay Area AQMD jurisdiction and the current draft regulation does not incorporate a High Wind allowance for the new compliance standards. It is our industries' experience that such provisions are critical to compliance in high wind areas, when a facility can take all feasible steps to keep fugitive dust to a minimum but are unable to defend against exceedingly high winds. This approach is consistent with other Air Districts. The following Table 3 is the table of controls South Coast Air Quality Management District applies as contingency measures for large facilities during high wind events:

**TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS**

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Recognizing the Bay Area AQMD's compliance situation with PM is not equivalent to the South Coast's, we would hope the wind speed exemption would be more reflective of Bay Area's situation. Thus, we strongly suggest the District incorporate a high wind provision in Regulation 6-1 for wind gusts over 25 MPH. Ceasing operations and delaying construction projects, and the associated expense of those delays, simply isn't viable. Neither is operating in violation of the law. A High Wind Exemption is a reasonable approach to address this concern.

Granite Construction

Comment

Regarding Rule 6-1 General Requirements, this rule does not provide exemptions for high winds or particulate matter that is first blown onto a site. We suggest a high wind provision for gusts of wind over 25 MPH. We also suggest

an exemption for particulate matter that was airborne prior to crossing onto the site.

Phillips 66

Rule 6-1-307.1: Opacity Limits

Comment

This section proposes a violation for any fugitive dust visible emission that exceeds 5 feet long, wide or high and exceeds 10% opacity (1/2 Ringelmann shade) for any 3 minutes in a 60-minute period (6-1-307.1.a), and for any fugitive dust visible emission that travels or carries beyond the site property line (6-1-307.1.b). For cases where controls are being applied (e.g., regular watering), but there are spots that get through, Phillips 66 proposes a system granting credit for attempting to control the dust, but having some situations beyond control. For example, during high wind events, the normal controls may not be sufficient. Phillips 66 proposes something similar to that allowed for bulk material spills in 6-1-307.2, such as [“307.1.c An event under 307.1.a or 307.1.b is not a violation if the facility can demonstrate adequate attempted controls such as wetting, covering, or protecting by a wind screen with no more than 50 percent porosity that is \(i\) equal to or higher than the height of the emissions source; and \(ii\) placed upwind of the emissions source at a distance no greater than the height of the wind screen.”](#)

Phillips 66 also proposes that the emission limitation be aligned with the Ringelmann standard of 1 consistent with other Regulation 6 rules, since a Ringelmann standard of ½ can include any visible wisp that may not be indicative of significant ambient air pollution.

Waste Management – via SCS Engineers

Section 6-8-112: Limited Exemption. Wind Gusts Over 25 MPH—Must have “implemented all reasonably feasible measures to limit fugitive dust emissions” to claim this exemption;

Comment

The underlined term is not adequately defined and has the potential to leave a facility exposed to unintentional violations. We request that the criteria to be covered by this exemption be further clarified. We also wish to note that it is not uncommon for landfill sites to experience wind speeds at this level, so it is critical that the requirements are clear.

Response

During the workshop phase of this rule development project, draft Rule 6-8: Bulk Material Handling contained a provision to accommodate high wind events. This provision was removed based on the concern that it provided a substantial loophole in the fugitive dust requirements. In situations like this, the Air District

have used, and will continue to use enforcement discretion to account for unusual circumstances, as described in the Rule 6-1 Staff Report.

Verbal follow-up with CalCIMA regarding this issue highlighted the concern about inconsistencies in how this enforcement discretion may be applied.

Staff recognizes and agrees that controlling dust can be extremely difficult when wind gusts more than 25 mph. Air District Inspection staff notes that the current fugitive dust emissions limit is no more than 20% opacity for no more than three minutes in any hour, and staff has written no Notices of Violation for excessive dust during high wind situations. As stated above, the intention of 10% opacity and 5 feet size threshold for dust plumes is to enable site personnel to recognize and take action when dust control methods are not effective. During high winds or anytime the primary dust controls are not adequate, each facility is expected to have a contingency plan, and implement the actions in the contingency plan.

Attachment 1-5 in the Regulation 6 staff report provides a comprehensive of potential control measures that can be used when developing contingency plans for high wind events.

Waste Management – via SCS Engineers

Section 6-8-303: Bulk Material Spills—Cleanup required unless spill is adequately wetted, covered, or screened.

Comment

Spills are defined as more than 6 inches high or greater than 25 square feet in area, so as little as a shovel full of dirt could be the basis for a violation. This threshold is unreasonably low, and does not make sense for facilities such as landfills that process so much soil. Also, no timeframe is given as to how quickly it needs to be controlled or cleaned up. With numerous haul vehicles and thousands of feet of roadway and areas, landfill facility staff would need to be constantly patrolling throughout the site looking for as little as a shovel full of dirt that may have spilled and creating a potential safety issue for employees to be working to clean these spills in active roadways. It is unreasonable, unmanageable, unnecessary, and not cost effective. We request that a spill is defined by its potential to create visible emissions on a paved roadway.

Additionally, most of the surface area of a typical landfill property consists of surfaces that are unpaved, including soil surfaces. Spilling soil onto soil should not be considered a spill. As such, we request that the regulation be clarified to define a spill as occurring on a paved surface within the landfill property.

Section 6-8-302 already prohibits dust plumes greater than 5 feet in diameter from any bulk material handling activity, including spills. If a spill is causing visible emissions, then it needs to be cleaned up. This cleanup provision is redundant and unnecessary.

If the District determines that a bulk materials spill cleanup requirement must be included in this Rule section, then it should be required by the end of each workday, unless a spill results in excessive dust emissions. As noted in the March 3, 2017 comment letter provided by CALCIMA, constant or frequent visual assessments by site staff throughout the day would present a hazard in the midst of an active facility. End of workday assessments would be much safer and preferred due to low activity and traffic levels.

Response

The requirement for cleanup of bulk material spills by the end of the workday is based on preventing wind erosion of spilled material during evening hours when the facility may no longer be actively operating. Spills that protrude 12 inches or more above the surrounding surface are subject to wind erosion, and have the potential to create fugitive dust even when there are no active operations at the site. So even a spill of soil onto soil can increase the probability of wind erosion if it protrudes above the surrounding surface. A spill is defined to be more than 12 inches high or greater than 25 square feet so that only a significant spill or pile of unauthorized material requires cleanup.

A spill that is more than 12 inches high or more than 25 square feet must be cleaned up by the end of the workday, unless mitigated by water, cover, or a windscreen.

Rule language in Section 6-1-307.2 has been modified to set fugitive dust visible emissions limits during cleanup at no more than 20% opacity for no more than 3 minutes in any 60-minute period.

Waste Management – via SCS Engineers

Section 6-8-304.1: Vehicle Traffic Within Regulated Bulk Material Sites—Ensure that physical barriers prevent material from eroding into vehicle traffic areas;

Comment

This provision is not sufficiently clear. It appears to be intended to prohibit stockpiled bulk material from eroding onto roadways, but as drafted, could be interpreted as a requirement to put some kind of physical barrier along all roadways. At most, it should be much more narrowly focused, and clarified to specify physical barriers to be installed where stockpiles are adjacent to roadways; or to state that barriers should be installed as needed, to prevent erosion onto roadways.

Section 6-8-304.2 Ensure that vehicles within the facility travel only on [unpaved] roadways stabilized by moisture, chemical stabilizer, or aggregate;

Comment

This provision appears to require application of stabilizers (including water) to all active and non-active unpaved roadways at all times when the ground is not obviously wet, regardless of whether or not conditions are conducive to

generating excessive dust. Most facilities already have a visible emissions prohibition. Facility operators should be given some discretion as to how visible emissions are controlled. As written, this provision appears to us to be a requirement for significant, indiscriminate water usage/waste. We request this provision be removed as it is already covered under the visible emissions prohibition.

Response

These provisions have been removed from the proposed Rule 6-1-307.

Waste Management – via SCS Engineers

Section 6-8-306: Prevention of Carryout

Comment

This provision specifically applies to haul vehicles carrying bulk materials. It is not intended to apply to any material greater than 2 inches in diameter, and so is understood, for landfill facilities, not to be applicable to loads of MSW or yard waste or any other material not meeting the definition of bulk materials. It should apply, at landfill sites, primarily or exclusively to soil (leaving the landfill property), which is included in the definition of bulk materials.

In addition, because this rule part is better suited to a processing facility than a landfill, which typically has numerous vehicles that operate solely on-site, and because this part is intended to prevent excessive dust from getting off-site, the tarping requirements should be clarified as applying only to vehicles leaving the site, and only vehicles hauling bulk materials as defined in the regulation. The entire landfill is essentially a loading/unloading area.

Response

These provisions have been removed from the proposed Rule 6-1.

Lehigh Hansen West Region

Section 6-1-310: Total Suspended Particulate (TSP) Concentration Limits are confusing and unclear

Comment

Section 6-1-310 provides limits to Total Suspended Particulates (TSP), and bases these limits on the Potential to Emit rather than a facility's actual emissions. This section also institutes source testing requirements for facilities based on TSP emissions. It is unclear how a facility should calculate the Potential to Emit TSP using the various tables and thus, it is unclear to Hanson what compliance actions our facilities would need to take. In discussion with the BAAQMD staff, it seems as if it would be difficult, if not impossible, for a facility to calculate their own Potential to Emit TSP; instead, the BAAQMD Permit Engineer would need to get involved.

It seems unreasonable to place source testing requirements and limits on a facility if that facility is unable to readily determine its own compliance. Further, relying on the BAAQMD Permit Engineers to complete such calculations would take up a lot of the District's resources, and would take a significant amount of time to complete for all of the regulated facilities in the District. It is also unclear how these limits would impact current operating air permit limits, and if all of our facilities' operating air permits would have to be modified in response to this rule.

Hanson requests that the BAAQMD develop a guidance document or a calculation tool to assist facilities in determining their own Potential to Emit TSP. Further, Hanson requests that the proposed compliance deadlines in the draft Rule be delayed until the issuance of guidance documents and tools so that facilities have time to complete the Potential to Emit TSP calculations, assess the impacts to their operations, and develop action response plans accordingly.

Response

The rule language in Sections 6-1-310 and 311 has been modified to clarify the use of Potential to Emit as a threshold for application of the emissions limits. The emissions limits in Section 6-1-310 and 311 apply to the source of the actual emissions. They do not apply to the source's Potential to Emit Total Suspended Particles (TSP). The Potential to Emit is a calculated value that multiplies that source's emission factor times activity level (throughput, feedrate, or similar indicator of facility utilization). Potential to Emit is used as a threshold to determine whether the emissions limits apply, or do not apply. Sections 6-1-310 and 311 emission limits apply to sources with Potential to Emit TSP that is greater than 1,000 kg/year (about 6 lbs per day). If any facility has a grandfathered source, the Potential to Emit for TSP is determined by the emission factor for that source, multiplied times the maximum rate for that source.

Permits do not need to be modified. Whichever emission limit is most stringent (either the permit limit or the rule limit) applies. Research for the rule development project found no example where the general requirements in Rule 6-1 are more stringent than the facility source permit limits.

Phillips 66

Section 6-1-310: TSP Concentration and Weight Limits

Comment

The Phillips 66 Carbon Plant is subject to new BAAQMD Regulation 9, Rule 14 which will require additional SO₂ control in future years. Phillips 66 is preparing capital projects to ensure compliance with this rule, which may include increasing the rate of sorbent injection to increase SO₂ control. As a result, there is the possibility that PM emissions could increase due to new fine material being injected to enhance SO₂ control. Phillips 66 requests an extension on the effective date until 2025 of the new numerical PM limits until testing and

alignment be completed that shows the technical feasibility to meet the proposed more stringent PM limits at 6-1-310.2. For example, Phillips 66 proposes to add the Carbon Plant to the limited exemption under 6-1-115 currently addressing the Central Contra Costa Sanitary District to read, "[6-1-115 Limited Exemption, Total Suspended Particulate \(TSP\) Concentration Limitation: Section 6-1-310.2 and 311.2 shall not apply to particulate emission from Central Contra Cos Sanitary District, Facility 907 and the Phillips 66 Carbon Plant, Facility 22, until July 1, 2025.](#)"

Response

New Limited exemption, Section 6-1-117, has been added to accommodate this need. Sorbent injection facilities will be in operation by the end of 2019. End date for this limited exemption is set at January 1, 2022 to provide two years of adjustment and fine tuning of both sorbent injection and any particulate control upgrades (baghouse bags, bag cleaning cycle upgrades, etc.) needed.

Waste Management – via SCS Engineers

Section 6-1-310, 311 – TSP Concentration and Weight Limits

Comment

These provisions appear to be applicable exclusively to point-source emissions, and not fugitive dust-generating operations such as typical landfilling and related activities. In addition, the source testing provision (6-1-504) would also be applicable only to point-source emissions. We propose that this applicability be clarified in the appropriate parts of this Rule.

Response

Rule language clarified in Section 6-1-310, 311, and 602 indicating these TSP limits apply only to sources where the proper source test can be conducted. The Air District reserves the right to ask for sampling facility modification if needed to conduct the proper source test, per Regulation 1, Section 501.

Lehigh Hansen West Region

Section 6-1-402: Alternate Source Test frequency requests should be clarified

Comment

The current regulations require a facility to submit a written request to the APCO for approval or denial of a reduction in source test results. Hanson agrees that having a method to reduce the source test frequency is appropriate, and appreciates this section's inclusion. However, it would be helpful if the rule specifies what would be considered acceptable to the APCO. Hanson suggests the following addition:

“The APCO may authorize a person to reduce the frequency of source tests required in Section 6-1-504 or 505 if [two](#) prior source test results indicate compliance with the applicable standard.”

Having the number of source tests specified would provide clarity to the regulated community and limit unnecessary requests. Hanson also requests that the regulation specify what the grounds for denial would be, so that a regulated facility would have certainty and clarity of the process.

Response

Good suggestion. Rule language in Section 6-1-402 has been adjusted to indicate that the APCO may authorize a change in source test frequency if “[at least three \(3\) consecutive](#)” prior source test results indicate compliance with the applicable standard.

The rule will not provide grounds for denial, because any decision to reduce testing frequency cannot be established in advance. Each decision is based on the specific source and specific situation at the time the decision is made.

Western States Petroleum Association

Permitted Source Undefined

Comment

The testing requirements identified in 6-1-504 and -505 refer to a “*permitted source*”, but this term is not defined. The term could be misinterpreted to mean a source that had to obtain an authority to construct under 2-1-301 or any “permitted source” identified in a Title V permit; it could be also misinterpreted to include grandfathered sources that existed prior to the applicability of 2-1-301 requirements. WSPA asks the District to clarify the rule intent.

Response

The rule language in both Sections 6-1-504 and 505 have been adjusted to eliminate “permitted source”, replacing with “source with a District permit to operate.” The intent of the rule is that compliance testing is required for any source that has a District permit to operate and the source’s Potential to Emit is greater than 2,000 kg/year. Most grandfathered sources have permits to operate. A “grandfathered” source is a source that was built before Air District regulations were adopted, so the source never went through New Source Review. However, a grandfathered source still must have an Air District permit to operate unless they are exempt. Title V permits clearly identify sources that are exempt.

Potential to Emit can be calculated by multiplying the source emission factor times the maximum permitted or maximum activity level (throughput, or feedrate, or similar indicator of facility utilization) for that source.

Phillips 66

6-1-504: Source Testing

Comment

This section requires source testing using EPA Method 5 or 8 for any source that emissions total suspended particulate (TSP), particulate matter with diameter of 10 microns or less (PM10), or sulfuric acid mist above 2,000 kg/year (approximately 2.2 tpy). Phillips 66 request that the source testing be limited to sources with a defined stack. Sources without defined stacks or that cannot be tested using Methods 5 or 8 for other reasons, such as flares and cooling towers, should be exempt from this provision.

Phillips 66 proposes that the source test exemption apply generally to any source for which Method 5 or 8 is not possible since there may be other examples than flares and cooling towers that may have unforeseen consequences. For example, “6-1-504 [...] Source tests required under this section shall be conducted in accordance with Section 6-1-602.1. [“Source tests are not required if source test requirements under Section 6-1-602.1. are not physically possible \(e.g., for sources without a defined stack\).”](#)

Western States Petroleum Association

Section 6-1-504 and Flaring

Comment

It is our understanding that testing requirements in Section 6-1-504 are not intended to apply to certain source types that by design cannot be tested using promulgated test methods. We would ask that the rule incorporate an exemption from 6-1-504 for all such units, which include (but are not limited to) the following:

- a. Cooling towers
- b. Coker vents
- c. Flares

Flares should be exempted from testing for two important reasons. There are no promulgated test methods for flares and it does not make sense to induce a flaring event for the sake of testing.

Response

Rule language in Section 6-1-504 says “Source tests required under this section shall be conducted in accordance with Section 6-1-602.1.” Section 6-1-505 specifically says “Source tests required under this section shall be conducted in accordance with Section 6-1-602.2.” This means that each source must be source tested using the specific test method cited for the source test to be considered a compliance test. Generally, Sections 6-1-310, 311, 320 and 330 apply to sources with a Type A Emissions Points. The examples cited in the

comment (cooling towers, coker vents, and flares) typically do not have Type A Emissions Points. Type A and Type B Emissions Points are defined in Regulation 1-230 and 1-231.

Rule language in Section 6-1-602 has been modified to add the suggested sentence, "Source tests are not required if sources cannot be modified to comply with source test requirements and testing is not physically possible." The Air District reserves the right to request sampling and testing facilities as needed to conduct source test methods properly, as described in Regulation 1, Section 501.

Lehigh Hansen West Region

6-1-505: Title of this section should be clarified

Comment

It is Hanson's understanding that BAAQMD staff intended Section 6-1-505 to apply to Sulfuric Acid Manufacturing Plants as described in Section 6-1-320. However, this is not entirely clear as it is currently written. As such, Hanson requests the following addition to the title of this section:

6-1-505: [Sulfuric Acid Manufacturing Plants](#) Demonstration of SO₃ and H₂SO₄ Compliance

Response

Sulfur trioxide (SO₃) or H₂SO₄ limits are established in Section 6-1-320 for Sulfuric Acid Manufacturing Plants, and in Section 6-1-330 for Sulfur Recovery Units. Section 6-1-505 establishes the compliance testing requirements to demonstrate compliance with the SO₃ or H₂SO₄ limits. Section 6-1-505 does not apply to sources other than Sulfuric Acid Manufacturing Plants, and Sulfur Recovery Units.

California Asphalt Pavement Association (CalAPA) and California Construction and Industrial Materials Association (CALCIMA)

Section 6-1-504 – Demonstration of Total Suspended Particles (TSP) Compliance: Include a by rule phase down of source test frequency, add a sunset date, and lower base frequency of source testing.

Comment

The source testing contemplated within this rule represents a significant and ongoing challenge. We respect staff's desire to develop initial data beyond the source test conducted at start-up. However, after some time the District will have the data which shows the controls are working or are not, and thus the mandate should sunset.

We appreciate an opportunity to request a different schedule from the APCO but would like to request a by rule frequency reduction in source testing as well. We

believe it should be appropriate for an automatic reduction in frequency schedule to the next lower frequency on the table based upon two successive tests demonstrating compliance. This incentivizes facilities to conduct the monitoring and ensure compliance, while also providing a mechanism to reduce District workload. Further we believe it is critical to explicitly note that inactive facilities are not required to test unless they become active. Finally, we propose modifications to table 6-1-504. be incorporated and the overall source testing obligations be lowered through modifications to table 6-1-504. We request the changes below.

“6-1-504 Demonstration of Total Suspended Particles (TSP) Compliance:

Effective July 1, 2019 [through July 1, 2031](#), the owner/operator of a permitted source with a Potential to Emit TSP (as defined in Regulation 2-1-217) of greater than 2,000 kg per year shall conduct source testing to demonstrate compliance with Section 6-1-310 and 311 according to the testing frequencies listed in Table 6-1-504. [A facility that tests in compliance two times in a row may move to the next lower testing frequency on the table if there is a lower level.](#) Unless the owner/operator receives written approval from the APCO for a different testing frequency, as described in Section 6-1- 402. Source tests required under this section shall be conducted in accordance with Section 6-1-602.1. [However, inactive permitted sources shall not be required to source test unless they become active at which point they shall test on the schedule specified in table 6-1-504. If their active date begins after they would have had to conduct a source test by table 6-1-504 a source test will be conducted within six months of becoming active. A facility becomes active if it operates more than 90 days in a calendar year.](#)

We also request changes to the source control frequency table 6-1-504 as follows;

<u>Potential to Emit TSP (kg/year)</u>	<u>Compliance Test Frequency</u>	<u>Min. Time Between Tests</u>	<u>Max. Time Between Tests</u>
> 16,000	Annually Biennially	9 Months 18 Months	15 Months 30 Months
> 8,000-16,000	Biennially Triennially	18 Months 30 Months	30 Months 42 Months
> 2,000-8,000	Every Five Years	48 Months	72 Months

Granite Construction

Section 6-1-504: Demonstration of Total Suspended Particle (TSP) Compliance

Comment

Source testing is not a simple process. For example, an Asphalt Plant’s source test must be scheduled when a large amount of asphalt we be made so that the plant will run for several hours. Clients frequently reschedule large projects which can bounce the test date over several weeks. Testing is done by a third-

party consultant and costs thousands of dollars. It is understood that the rule is requiring this testing in order for BAAQMD to collect data. We recommend that the rule sunset after a period of data collection and that Sites that show compliance in their source tests be allowed a less frequent testing schedule. We also suggest an exemption for inactive equipment.

Response

Staff addresses the issue of perceived excessive source testing by establishing criteria for reducing source test frequency in Section 6-1-402. Criteria have been added to clarify the requirement for reducing source test frequency. If three consecutive source tests meet the emission limit, the owner/operator may request a reduction in source test frequency.

Source testing is not required for the Air District to collect data. Rather, it is required to ensure a source is in compliance with its emissions standards.

Rule language in Sections 6-1-504 and 505 have been adjusted to clarify that inactive sources do not need to be source tested. When inactive sources become active by operating more than 90 days in a calendar year, they need to be source tested.

Phillips 66

6-1-506: Monitoring and Recordkeeping at Regulated Bulk Material Sites

Comment

This section stipulates monitoring and recordkeeping requirements at “sources and operations at the site subject to the requirements in Section 6-1-307.” Section 6-1-307 applies to “active operations at the site, a bulk material stockpile, a bulk material spill, or cleanup of a bulk material spill.” “Active operations” is defined at 6-1-201 as “any activity with the potential to create particulate emissions from any source or fugitive dust emission.” There are many activities with the potential to create particulate emissions, for example, this could include combustion emission sources. The daily monitoring and recordkeeping requirements do not seem intended for point source emissions; for example, enhanced monitoring (twice daily instead of once daily) observation is required on windy days, implying the monitoring/recordkeeping requirement is meant to apply to sources of fugitive dust. If so, Phillips request this language be clarified such that the monitoring and recordkeeping only apply to sources of fugitive dust emissions. For example, Phillips 66 proposes, “6-1-506.1.a For any source or operations [that generates fugitive dust as defined in 6-204](#) located within 1000 feet of the site property . . . “and “6-1-506.1.b For all sources and operations [that generate fugitive dust as defined in 6-204,](#) at least once during each workday.

Response

As suggested, clarification has been added to the rule language in Section 6-1-506.1.a and 6-1-506.1.b to qualify sources and operations “[with the potential to generate fugitive dust](#)” consistent with the language in Section 6-1-506.1 that

refers to “monitoring the nature and extent of any fugitive dust visible emissions from each source or operation” . . .

Lehigh Hansen West Region

Section 6-1-506.1.a: Clarification of inspection frequency

Comment

Section 6-1-506.1.a requires an increased inspection frequency for any source or operation within 1,000 feet of the site property, however as it is written there appears to be a conflict as to when the increased frequency would be required. Per discussions with BAAQMD staff, the intent is to have inspections occur twice each day when the wind is blowing from the source toward the property line. As such, Hanson requests the following clarification:

*Section 6-1-506.1.a: For any source or operation located within 1000 feet of the site property line on a **workday** when the wind is blowing from the source toward the property line, at least twice during each **such** workday.*

Response

Good suggestion. Proposed Rule language has been adjusted as suggested.

Lehigh Hansen West Region

Monitoring Requirements

Comment

In both Rule 6-1 and Rule 6-6, there are requirements to document the date, time, and location of each inspection conducted. In Rule 6-1, there is a daily inspection with twice a day for certain sources. For Rule 6-6, there is a twice daily inspection. Assuming a standard 262 work days a year, this results in as many as 1,048 inspection reports to complete. Note that in our industry, it is common to work on weekends and some holidays to respond to construction schedules, so there could be many more inspection reports to complete. More than one thousand inspection forms is an extremely burdensome requirement that does not provide much benefit. The true benefit is focusing on conducting useful inspections and responding appropriately, not on whether inspection form # 999 was completed properly. Having a requirement to formally document each inspection would result in an unreasonable and unattainable administrative burden. Hanson requests that the prescriptive inspection documentation be removed and instead, documentation be required only if a corrective action is needed. This would reduce the unnecessary paperwork and provide the District with assurances that the facility is responsive to potential visible emissions or track-out concerns.

Pacific Gas and Electric Company

Section 6-1-506.1 Monitoring and Recordkeeping at Regulated Bulk Material Sites

Comment

Proposed Section 6-1-506.1 would require monitoring fugitive dust visible emissions from Regulated Bulk Material Sites. Subsection (a) of this paragraph calls for the operator to evaluate the source's distance to the site property line and wind direction. This may be overly complex for the operator. Please consider simply requiring one fugitive dust observation per workday for all sources and operations.

Proposed Section 6-1-506.2 would require documenting the date, time, sources and operations monitored each workday for fugitive dust emissions. I am not aware of another California air district with similar record-keeping requirements. San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII – Fugitive PM10 Prohibitions (Rule 8011 – General Requirements, Section 6.2 – Recordkeeping Requirements) requires operators to record the application of dust control measures. Please consider the following suggested language:

506.2 Document the date, time, and ~~sources and operations monitored each workday.~~ Of fugitive dust emission events exceeding the standards of Section 6-1-307. Document the control measure(s) applied to achieve compliance with the standards of Section 6-1-307.

Waste Management – via SCS Engineers

Section 6-1-506 Monitoring and Recordkeeping at Regulated Bulk Material Sites:

Comment

This rule provision specifies monitoring and recordkeeping requirements, as the title indicates. For monitoring, “simple observation of the source or operation...at times when the potential for fugitive dust visible emissions is at its highest...” is required. Our concern is that the language defining what must be monitored is too general, to the extent that it could potentially require facility staff to monitor concurrently at times when high winds are occurring each piece of equipment and vehicle, activity, etc. at the facility. With regard to frequency of visible emissions monitoring, it is not uncommon for landfill sites to be required by their air permits to conduct visible emissions monitoring on an annual basis. As such, we are proposing a monthly frequency rather than the onerous frequency of every four hours required in the draft rule.

In order to better define and clarify what is and is not required to be monitored, and to require a more reasonable monitoring frequency, we propose the following revised language:

--506.1 Monitor on a monthly basis the nature and extent of any fugitive dust emissions from each permitted source or operation that is actively handling or processing bulk materials..."

Waste Management – via SCS Engineers

Section 6-8-501.1: Monitoring and Recordkeeping—Check each source or operation every four hours during working hours to observe whether there are any visible fugitive dust emissions coming from the source or operation.

Comment

We propose that a frequency of one time per week is reasonable, and will effectively accomplish the monitoring goal. Every four hours is unnecessarily restrictive for landfill facilities.

Response

Staff is sensitive to the concern of creating “an extremely burdensome requirement that does not provide much benefit.” However, during the workshop phase of this rule development project, staff consistently received comments from bulk material site neighbors complaining about dust spoiling their backyards and accumulating on their cars, patio furniture and windows.

Staff requires monitoring sources within 1000 feet of the property line twice each day only when the wind is blowing from the source toward the property line. Staff believes that spot-checks on dust control methods for a source that is susceptible to creating emissions that can carry beyond the property line during mid-day and at the end of each day are necessary, even if not currently part of the daily work culture. It is consistent with the management systems of good performers that conduct spot-checks of their entire operation as a normal part of their daily work. It is burdensome only when approached as a special requirement, inspection or effort beyond normal activities. These sources may be monitored only once daily, consistent with the requirement to monitor all sources when the wind is not blowing towards the property line. This approach was taken to minimize monitoring and administrative burden, yet actively monitor sources with the highest potential to carry dust over the property line.

In addition, this rule language addresses issues identified during staff visits to various solids handling sites:

- about 10 - 20 percent of quarries had inadequate maintenance of water spray systems used to control dust
- about 50 percent of quarries and other solids handling sites that use front-end loaders to load product into delivery trucks dropped the materials into the truck slowly and carefully to control dust. The remaining half did not - creating significant dust with each load-out. Windscreens and load-out chutes are facilities that can help reduce dust if training employees to load more slowly and carefully proves ineffective.

Some commenters take the position that the minority of poor performers are triggering unnecessary and burdensome requirements on the majority of good performers. Staff observes that the majority of good performers do spot-checks of their entire operation as a normal part of their daily work. This requirement is a matter of requiring each location to “notice” whether operations are being conducted properly. Monitoring and documentation is integral to a management system that is accountable, and more importantly supports the need to train every employee on-site that dust, and in this case dust control methods, must be “noticed” and addressed if needed. Suggestion of weekly or monthly monitoring are not consistent with a management system that is attentive to, and prioritizes prevention of fugitive dust. Staff does not prescribe how to set up this management and recordkeeping system.

The suggestion to require documentation only if a corrective action is needed undermines the need to be proactive in monitoring the conditions that prevent dust.

Section 6-1-506.1, 506.2 and 506.3 rule language has been adapted to reduce recordkeeping burden yet still hold the site accountable for managing the conditions that prevent dust.

Pacific Gas and Electric Company

Definition of “Workday”

Comment

The monitoring and record-keeping requirements of proposed Regulation 6-1 do not address the situation where site activity occurs but the material storage piles remain inactive. As discussed above, the typical PG&E facility may have a small material storage operation, but it is certainly far from being a major part of the overall facility operations. There are many days within the year where there are employees working in the office building, warehouse, vehicle maintenance garage, or other parts of the facility, but no activity with the material storage piles occur. This is common on weekends and holidays. Monitoring and record-keeping should not be required on days when there is no activity involving the material storage piles. Please consider modifying the definition of “Workday”:

Workday: Any period, typically 8-12-hour shifts, when active [material storage and handling](#) operations occur on the site.

Response

Rather than adjust the definition of workday, staff agrees with this concern and proposes to address the monitoring and record-keeping by including the clarification in Section 6-1-506.2.

California Asphalt Pavement Association (CalAPA) and California Construction and Industrial Materials Association (CALCIMA)

Sections 6-1-506 – Monitoring and Recordkeeping – Change to Weekly Monitoring and Recordkeeping.

Comment

Similar to our comments above we believe that a weekly schedule of monitoring and recordkeeping is more appropriate and suggest the following modifications. In addition, some facilities have already exacting permits which specify activities to control PM emissions from sites. We believe that these facilities which have specific BMPs within their permits to control dust emissions should not be included in these monitoring provisions due to the specifics of their permits. As such we request the following changes;

“6-1-506 Monitoring and Recordkeeping at Regulated Bulk Material Sites: The owner/operator of any Regulated Bulk Material Site, [which does not have a permit which specifies management practices for dust and fugitive emissions](#) shall monitor sources and operations at the site subject to the requirements in Section 6-1-307 as follows:

506.1 Monitor the nature and extent of any fugitive dust visible emissions from each source or operation, using simple observation of the source or operation with the sun or light positioned behind the observer, at times when the potential for fugitive dust visible emissions is at its highest due to wind conditions and/or work activities, or as otherwise specified by the APCO, according to the following frequencies:

- a. For any source or operation located within 1000 feet of the site property line on a day when the wind is blowing from the source toward the property line, ~~at least twice~~ [once](#) during each ~~week~~ [workday](#);
- b. For all sources and operations, at least once during each ~~week~~ [workday](#).
- c. Monitoring of petroleum coke, calcined coke, or coal operations are required during daylight hours only.

506.2 Document the date, time, sources and operations monitored each ~~week~~ [workday](#).

506.3 Maintain records required by Section 6-1-506.2 for two years, in electronic or log book format, and make these records available to the APCO upon request.”

Granite Construction

Rule 6-1-506: Monitoring and Recordkeeping at Regulated Bulk Material Sites

Comment

This rule will require fugitive dust monitoring and recordkeeping twice a day. This is unnecessarily burdensome. We suggest that any mandatory inspections be required weekly. Weekly inspections will provide necessary information about operations that should be addressed in order to perform to the required standard.

Response

Facilities that have both regulations that apply, and permit conditions that apply are required to meet the most stringent requirements. Rule 6-1 is designed to be a performance based regulation, rather than rely on Best Management Practices (BMPs) or permit conditions to deliver required emissions. This approach leaves determining how to best achieve the performance needed in the hands of the people most expert at their business, the owner/operators and employees. The performance based requirements will continue to apply to these facilities, regardless of their permit conditions or BMP requirements.

This comment challenges the need for daily monitoring and recordkeeping, similar to a comment made regarding Rule 6-6, and that weekly monitoring and recordkeeping is more appropriate. Staff strongly agrees with the need to establish an environmental culture where employees “notice” when operations are not consistent with environmental requirements, and take corrective actions. Management systems need to be in place to support and reinforce noticing if there is a problem with fugitive dust, and having authority to take corrective actions as needed. However, staff does not believe that reducing monitoring of operations and environmental compliance to a weekly requirement will support building the culture needed. Staff proposes to retain daily monitoring and recordkeeping.

Staff has adjusted the rule language in 6-1-506.1 to clarify twice daily monitoring of sources located within 1000 feet of the facility fence line, only when the wind is blowing from the source towards the fence line. Section 6-1-506.2 has been clarified to require monitoring and documentation of only active material handling and storage operations.

Staff has included “paper hard copy” into the rule language in 6-1-506.3 to clarify that each facility may incorporate trackout monitoring and recordkeeping into their existing management systems.

The following comments and responses did not result in any changes to the rule language:

Cathy Helgerson, Cupertino, California 95014

Regulation 6 Particulate Matter – Rule 1

Section 6-1-100 General

Section 6-1-101 Description: The purpose of this Regulation is to limit the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, emission concentrations, visible emissions and opacity.

Comment

If this stated description is true to form than there needs to be real enforcement by the BAAQMD and if so there should be no real problem with applying this enforcement to the fullest.

Response

Staff agrees – enforcement is as important as the Best Available Retrofit Control Technology (BARCT) limits in the regulation.

Section 6-1-102 Applicability of General Provisions: The general provisions and definitions in Regulation 1 and Regulation 6 shall apply to this rule.

Comment

The public demands strong Regulations that will make sure that they are protected from the ongoing pollutions coming from the destructive polluters that continue to pollute causing serious health issues and even death to the public. 6-1-110 Exemptions for Activities Subject to Other Rules and Regulations: 110.1 States: Sandblasting Operations: The provisions of this rule shall not apply to Sandblasting operations such operations are subject to the provisions of Regulation 12, Rule 4.

Comment

I could not locate Regulation 12 Rule 4 this needs to be reviewed and when was it first adopted? Sandblasting Operations under Regulation 6 Rule 1 should not be exempted because Sandblasting Operations under any situation it is a Health Hazard to the people who live around the area, next to, or near the Sandblasting processes. There is also a great health risk to the works that conduct the Sandblasting air born dust especially smaller particles, (10 Microns or smaller) can bypass the lings filtering system and penetrate deep into the respiratory system. Dust can contain metals such as lead, cadmium, and manganese, can be extremely toxic when inhaled. Workers should use respirators but, so many times this is overlocked. The public who work in companies and have homes near these Sandblasting Operations are not protected and they should be. The Regulation 6 rule 1 needs to demonstrate that more is being done than even Regulation 12, Rule 4 and the question is how do we find this information and how long ago was this Regulation and Rule established? Does this cover all bases and if so it needs to be stated as such before allowing it to be exempted.

Question why even mention exemptions at all if you have it covered under another Regulation and Rule? It seems to me there is so much referencing back information that it gets very redundant and confusing can the BAAQMD do something about this process making it easier to review? Note: If a Provision is exempted and a Regulation or Rule is mentioned as handling this portion the document needs to state what the original rule stated in order to support the exemption. I suppose this would not be necessary if it is covered under an old rule it need not be mentioned at all which would make the new Regulation and Rule easier to read.

Response

Rule 12-4 is available on our rules webpage. Rule 12-4 applies to temporary sandblasting operations. Rule 6-1 applies to permanent sandblasting operations. Rule language has been amended to clarify this difference.

Section 6-1-110.2 Open Outdoor Fires: The provisions of this rule shall not apply to emissions arising from open outdoor fires. Such open outdoor fires are subject to the provisions of Regulation 5.

Comment

I will state again that Exemptions for Activities Subject to Other Rules and Regulations really do not need to be mentioned. For your information: Wood Burning Fireplaces are not allowed if there is a Spare the Air Day with the BAAQMD in the Silicon Valley and surrounding areas. My concern is with the Lehigh Southwest Cement and Quarry that is the major contributor to the pollution. The BAAQMD continually blames the people who are burning wood in the fire places and also on car emissions and they completely disregard Lehigh and their emission pollution why is that? If the BAAQMD required Lehigh Southwest Cement have an on the fence monitor than we would all realize what actually is causing the Spare the Air Days and the terrible pollution in Cupertino and the Valley.

Response

Exemptions are provided to clarify where rules apply and where they do not apply.

Section 6-1-110.4 Metal Recycling and Shredding Operations. The provisions of this rule shall not apply to sources subject to the provisions of Regulation 6, Rule 4.

Comment

What does apply to this Regulation 6 Particulate Matter Rule 1 General Requirements nothing is stated this is confusing. I looked at the Regulation 6, Rule 4 and it looks mostly as a self- reporting process for the Company that does this work and it shows the forms they use and need to fill out. The BAAQMD has not put in a truly effective way of regulating companies and why they have them reporting on themselves there is room for error and worse. There is an example the Sims Metal Management Company in Redwood City and I believe that the BAAQMD should measure the Particulate Matter independently and not leave

this up to the polluter. I understand from Guy that he does go out to some of the sites but I wonder if he is measuring anything seems it would take a great deal of time to make sure the regulated company is honestly properly measuring its emissions and taking precautions. There is another problem with monitoring companies at these sites pertaining to water pollution it seems the BAAQMD are only interested in what actually pertains to them and if there is water pollution at these sites it goes unnoticed. I think it is time that all the agencies work together in order to protect the public from pollution. This facility is a perfect example of Air, Water and Soil pollution that goes unregulated and without enforcement. It is stated -The Rule 11-18 will conduct site-specific screening analyses for all facilities that report toxic air contaminant emissions, and calculate health prioritization scores based on the amount of toxic air pollution emitted the degree of toxicity of these pollutants, and the proximity of these facilities to local communities. Based on the health risk assessment, facilities found to have potential health risk above the Risk Action Level would be required to reduce their risk below Risk Level, or install Best Available Retrofit Control Technology for toxics on all significant sources of toxic emissions. I was told by Guy Gimlen that there over 450 companies that come under the Regulation 6 Rule 1 and he does not visit all of them therefore they are not listed on the listing. I have asked for a copy of the list and was told I had to file a Freedom of Information Act Request to get a copy of the list this should not be necessary.

I talked to David Ralston about the list of companies that pertain to rule 11-18 and have been waiting for a list of companies for some time now, and understand that there are 2,000 thousand companies overall but they are only going to work o 400 hundred companies. I am not sure if this list also covers Regulation 6 Rule 1, are they the same companies? It seems that maybe this is the same list that Guy Gimlen works on but I am not sure he said he will talk to David. It seems that the BAAQMD Departments are not talking to one another and that there needs to also be more transparency with the public as well.

Response

The concern expressed in this comment is self-monitoring and reporting. The vast majority of facilities are responsible and self-monitoring and reporting approach works effectively. For facilities that do not comply, Compliance and Enforcement will development enforcement plans to ensure compliance.

An additional comment raised concern about the regulation or staff report not specifically listing the companies where Rule 6-1 applies. We do not list specific companies. We do describe the source categories, and the socioeconomic analysis describes the industrial source codes that are affected.

Section 6-1-6-1-111 Limited Exemptions, Blasting Operations: Blasting operations that have been permitted by the California Division of Industrial Safety are not subject to Sections 6-1-307 and 6-1-506.

Comment

This Limited Exemption for Blasting Operations is not clear regarding the California Division of Industrial Safety rules and permits how would anyone really

understand without stating what is covered under the California Division of Industrial Safety rules and how they distribute their permits? Then further relate to the Limited Exemption, Blasting Operations what is covered under that? The real question here is, are we regulating dust from the Blasting Operations or not and it would seem we are not this needs to be stated one way or another, and it is not. The California Division of Industrial Safety does not regulate the Particulate Matter Dust and this is a very serious matter the BAAQMD needs to incorporate subject matter related to this issue. It is also obvious that Section 6-1-307 and 6-1-506 do not apply to Blasting so there is no need to mention this at all. Please open up this area of the Regulation 6 and Rule 1 to include dust and this should not fall under any exemption or limited exemption.

Response

Rule 6-1 does not apply to blasting because there is no feasible methods for sites to control fugitive dust from blasting.

Section 6-1-112 Limited Exemptions, Portland Cement Manufacturing: Sections 6-1-307, 310 and 311 shall not apply to particulate emissions from sources subject to the provisions of Regulation 9, Rule 13.

Comment

I will mention again if a Regulations already exists such as Regulation 9, Rule 13 covering particulate emissions from source subjects than why mention it at all because it just makes things more complicated. This section is very unclear and I wonder what should be placed here under Limited Exemptions, Portland Cement Manufacturing?

Response

Exemptions are provided to clarify where rules apply and where they do not apply.

Section 6-1-113 Limited Exemption, Total Suspended Particulate (TSP) & more -

Comment

I really do not understand why does this have a Limited Exemption? The two sources 113.1 and 113.2 are left out of sections maybe they should have been put in another area does not seem to fit here. There is a matter of a continued difficulty reading this Regulation and Rule.

Section 6-1-114 Limited Exemption, Total Suspended Particulate (TSP) Emission Limits for Fuel Combustion: & more-

Comment

Again I really do not understand why does this have a Limited Exemption? The two sources 113.3 & 113.4 are left out of sections maybe they should have been put in another area does not seem to fit here. There is a matter of a continued difficulty reading this Regulation and Rule.

Note: This constant going back and forth in the Regulation 6 and Rule 1 is

difficult to read I truly think that there should have been no separation between the two areas of information so that the reader does not have to bounce back and forth.

Section 6-1-115 Limited Exemption, Total Suspended Particulate (TSP) Concentration Limitation:

Comment

Listing this under the Section 6-1-310.2 would have been easier again going back and forth is confusing and makes things complicated and some information could be overlooked because of this.

Section 6-1-205 Particle: A minute quantity of solid matter or liquid droplet

Comment

6-1-202 Particulate Matter this item needs to be rewritten and should include 6-1-205 Particle: A minute quantity of solid matter or liquid droplets it is very vague and confusing no real information for this definition.

6-1-208 Requested Bulk Material Site: more –

Comment

This definition should read any amount of Bulk Material that stores or uses produces, handles, loads unloads and stores is subject to an authority to construct and/or permit to operate issued by the Bay Area Air Quality Management District.

Response

Rule 6-1 is designed to apply to significant bulk material handling facilities with significant potential to create fugitive dust emissions. Staff believes this is a reasonable first step to controlling bulk material handling emissions. If warranted, this rule can be amended to apply to smaller sources at a later date.

Section 6-1-209 Workday: As defined in Regulation 6-209, any period, typically 8-12 hour shifts, when active operations occur on the site.

Comment

This is confusing it should be spelled out to reflect all kinds of facilities including the ones that operate 24 hours 7 days a week around the clock such as the Lehigh Southwest Cement Plant and Quarry in Cupertino, Ca. this is important. The 6-1-209 definition does not reflect all of the companies on the list with BAAQMD and it should. The public needs to know that this definition does not leave out facilities that need to operate beyond the 8-12 hrs. shifts description.

Response

The definition includes any period when active operations occur on the site.

Section 6-1-300 Standards

Section 6-1-301 Ringelmann No. 1 Limitation: Except as provided in Sections 6-

1-303, 304 and 306, a person shall not emit from any source for a period or aggregate periods of more than three minutes in an hour, a visible emissions that is as dark or darker than No 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.

Comment

This 6-1-301 should reflect more than what is being stated there are emission always coming out of the Lehigh Southwest Cement plant even if they are not dark or darker than No 1 these emissions are not regulated with any opacity sensing device and the only method used to determine the Ringelmann is with an inspector going out to the side after the public calls to complain about a plum. I am sure there are other companies that are also regulated this way and this is not acceptable because it does not protect the public from the ongoing pollution. I also must mention it does not matter what how many minutes in an hour as stated aggregate periods of more than three minutes in an hour, a visible emission is used it will not save the public from the terrible pollution. The other problem is that the inspector goes out and views the opacity in a certain way and mentions the sun behind him and its reflection which shows clear and acceptable this is not correct we need sensing and viewing devices that are more accurate and can be used 24/7 days a week. The Lehigh Southwest Cement and Quarry operated 24/7 days per week and emit continually with no video equipment viewing its pollution emissions this needs to change and this information should go directly to the BAAQMD and the EPA Region 9 to make sure that they are not breaking the rules and polluting.

Response

The proposed visible emission limits are the most stringent in the state.

Section 6-1-302 Opacity Limitations: Except as provided in Section 6-1-303, 304 and 306, a person shall not emit from any source for a period or aggregate periods of more Bay Area Air Quality Management District than three minutes in any hour an emission equal to or greater than 20% opacity.

Comment

This Regulation 6 Rule 1 red line crosses out the following continues as perceived by an opacity sensing device, where such device is required by District regulations. There has never been the use of an opacity sensing device and there should have been it was written but the BAAQMD never implemented such a device and that is wrong. I do believe that maybe it is time for such a device and also a video showing emission pollution visual levels and siting the polluter immediately and also closing down the facility or company until they can comply. It seems to me that the public is polluted no matter what the emission level is and that the BAAQMD does not take into consideration the cumulative issues that this pollution causes. The many serious pollution coming from the Lehigh Southwest Cement and Quarry are a perfect example of the negligence by the BAAQMD to keep the public safe who are continually getting sick from the serious pollution emitted 24/7 days per week. I have had many serious health issues and so have my family been subjected to this contamination of the Air, Water and Soil and this needs to end. I am also asking for on the fence monitoring of the Lehigh

Southwest Cement and Quarry. There is also the Steven Creek Quarry that is polluting the Air, Water and Soil with serious pollution released to the creeks and the Steven Creek Reservoir. The BAAQMD is responsible for what is coming from these two polluters and the public wants true enforcement not just fees or fines to be paid in which the offending party just uses this expense to do business and does not take these matters seriously.

Response

Opacity monitoring device clause was removed from Rule 6-1 and added to Regulation 6 because that clause applies to all Regulation 6 rules, not just Rule 6-1.

Commenter suggests onsite, independently verifiable PM measurement to provide oversight to facilities with PM emissions. Proposed rules strengthen the PM emissions and fugitive dust visible emissions requirements, and define monitoring and recordkeeping requirements needed to ensure effective operations management systems that notice and correct excessive emissions. The vast majority of good performing facilities currently use or will improve their management systems as needed. The minority poor performers will be identified so Compliance and Enforcement can develop compliance / enforcement plans as needed to improve their performance to acceptable levels.

Technologies to build onsite, independently verifiable PM measurement systems that communicate directly to Air District are developing rapidly, but are just now starting to be piloted in local communities with excessive air pollution burden. Costs for such systems are currently unclear, and benefits to enhanced monitoring through direct measurement is equally unclear. Staff cannot recommend onsite, independently verifiable PM measurement and communication systems at this time.

Section 6-1-303 Ringelmann No. 2 Limitations: more –

Comment

Similar to 6-1-303 except it states opacity at greater than 40 percent opacity 303.1, 303.2 303.3 and 303.4 Question here needs to be who enforces these levels and rules the BAAQMD cannot possibly be out there monitoring this and neither can the companies that use Internal Combustions Engines, Engines, Laboratory Equipment, and Portable brazing, soldering or welding equipment. I see that there is no way for the BAAQMD to ever hold any of these companies including Lehigh Southwest Cement responsible for any violations because it is very difficult to measure any violations and there is also no information of any equipment that can be purchased by the companies to monitor.

I suppose somehow this all looks good on paper and that is all it is, no real enforcement because it is impossible to enforce violations if an inspector is not at all the locations all of the time, impossible. I see that it further is impossible for companies to regulate themselves.

Response

Staff agrees that enforcement is a critical element of any regulatory action.

Section 6-1-304 Tube Cleaning: more –

Comment

Tube Cleaning again I must say no opacity sensing device red lined closed out but the BAAQMD never enforced this requirement with a opacity sensing device and therefore no information is on file. I need to bring up the Lehigh Southwest Cement and Quarry Company who has a kiln that operates and is fueled with Petroleum Coke which contains radio activity matter and they also use coal. The Cement Plant has a kiln and a smoke stack which emits ongoing pollution 24/7 days a week this kiln is old and continually breaks down it needs to be replaced and retrofitted. I understand every time that it does break down and it has to be turned on again it releases more pollution that the public is subjected to and this needs to end. I am sure that Lehigh is not the only company that has problems with this type of pollution and I wonder who can really keep up with inspections to monitor the polluters it looks good on paper. I must mention that if there was a system that could relay information from a sensing device that is attached to the company equipment which could catch any violations and this information could be immediately relayed to the BAAQMD who would immediately be able to enforce the Regulations and Rules.

Response

Staff is not aware of any evidence that validates petroleum coke contains radioactive material.

Regarding emissions during cement kiln startups, CEMs are used to directly measure nitrogen oxides, sulfur oxides, mercury, total hydrocarbons, ammonia and opacity, as well as other air emissions and parameters from Lehigh's kiln on a continuous basis. Parametric monitoring is used to continuously measure compounds such as dioxin/furans, which uses the surrogate parameter of kiln stack temperature to measure those compounds.

Please continue to call in a complaint when you suspect an ongoing visible emissions violation. Our complaint line number is: 1-800 334-ODOR (6367).

Continuous PM sensing instrumentation requirements were moved to Regulation 6, Section 602, as described above in response to the comment on Rule 6-1-302. As mentioned above, independently verifiable PM measurement and communication to the Air District is not yet mature enough to warrant installation.

Section 6-1-305 Visible Particles: more –

Comment

I wonder who will enforce this Regulation and Rule Visible Particles are a annoyance and are a nuisance this is ongoing with the Lehigh Southwest Cement and Quarry and the Steven Creek Quarry and no one at the BAAQMD or Santa Clara County are doing anything about it. The dust particulate matter is

every place all over our homes this dust is breathed into our lungs and we are ingesting it down our throats 24/7. It does not matter the size of the particulate matter but the small particulate is the most dangerous I wonder how can the BAAQMD manage the many companies that are emitting all kinds of pollutants and dust so far in the past they have not. There needs to be new technologies implemented such as high power HVAC Systems required to catch the dust, and pollutants but the companies are not required to implement these devices. I live next to the Apple Computer R & D Facility and they have a large HVAC System with the outlet pointed away from my but even with that I can assume that it is really not enough. This facility should not be near a residential area and I have tried to have it moved to the point of even going to court, contacting the City of Cupertino and contacting the EPA and still this facility is here polluting my community and there is nothing I can. I have mentioned this to the BAAQMD and they will do nothing about it so I do hope this facility will be put on the list for further work.

Response

Air District Compliance & Enforcement inspectors enforce the Air District regulations. The inspectors are trained in opacity observations, and are out in the community every day conducting regular inspections and responding to issues and complaints.

Section 6-1-306 Pile driving Hammers: more –

Comment

I see we are allowing the company to regulate and keep records themselves how can we be sure they are not making mistakes or plan out telling lies about visible emissions again the Ringelmann Chart reference dark or darker this looks good on paper but cannot truly be enforced. It would seem that new technologies need to be developed so that we do not emit pollution but some agency needs to move in that direction.

Response

Continuous PM sensing instrumentation requirements were moved to Regulation 6, Section 602. As described above in response to the comment on Rule 6-1-302, costs and benefits of independently verifiable PM measurement with immediate communication directly to the Air District is not yet clear enough to warrant requiring these facilities.

Section 6-1-307 Prohibition of Visible Emissions Within and From a Regulated Bulk Material Site: 307.1 and 307.2 more –

Comment

This Regulation and Rule pertains to owner/operator of a Regulated Bulk Material Site shall not cause or allow a fugitive dust visible emissions from active operations site it mentions Ringelmann Chart of opacity as dark in shade and talking about spill cleanup requirement all looks good on paper. The Bulk Material dirt creating dust should be covered up but many times this is not

happening and it goes unreported and if it is reported to the BAAQMD, Santa Clara County or the Cities just warn the violator and no fines are imposed. This happened to me with the building of a home behind my house dust was not watered down and it was allowed to fly over my fence and cumulate on my property causing me to pay for cleanup. The builder jackknifed my fence with their Bob Cat equipment and the City of Cupertino and the Police. The City kept coming out and warning them over and over but the builder ignored them they should have fined. I cannot imagine what the BAAQMD can do about violators it would take a great many workers and constant inspections. The public can call and report violations but will the BAAQMD be the true enforcement agency?

The Lehigh Southwest Cement Plant has 606 Storage Piles Area 1 (1.2 acres) & 607 Storage Piles Area 2 (2.7 acres) under Regulation 2 permits Reference Title V Permit II Equipment list pg. 10. These piles I believe are for Petroleum Coke and Coal used to fuel the kiln which are not stored properly and also are not delivered to the Plant via covered cement truck. There are regulations pertaining to transport and storage of Petroleum Coke and Coal that are not being adhered to and Santa Clara County is aware of this problem and has done nothing to correct the problem. I am not sure at this point what type of enclosure that they are in at the plant but in the past they have only been contained on open ground and covered on 3 sides with the front open and covered on top. The problem has been exposure to the air and to rain water which has washed into the pond near by polluting the pond again nothing has been done.

There is an extended Equipment List that is part of the Title V Permit and carries many parts and functions that is subject to great emissions the capacity of many of these items carry many ton allowances released per hour and give off a great deal of pollution that seems to be acceptable to the BAAQMD, Lehigh and Santa Clara County. My question is how has this determination of what is allowed and what the public can stand in pollution determined and by who? The other question is who monitors these set levels of acceptance and what equipment is used to monitor them? The public is contaminated by this pollution and it seems by some means the cumulative effect on humans and animals have been completely over looked. Note: I am bringing up all of this because it seems no one is doing anything about it.

Response

Covering dirt is only one of the many methods available to control fugitive dust.

California Motor Vehicle Code Section 3.3.6 prohibits spills and carryout from transport trucks.

Regarding concern about dust contaminating the nearby pond and creek, the Air District works directly with the Regional Water Quality Control Board on these kinds of issues. While the Air District does not have jurisdiction over run-off of contaminants into local bodies of water, our Air District inspector monitors these stockpiles regularly, and has observed the containment barriers used to control solid materials from contaminating the water. In addition, the inspector monitors these stockpiles to ensure they are adequately wetted, and are not creating

fugitive dust.

Section 6-1-310 Total Suspended Particulate (TSP) Concentration Limits: 310.1 No person shall emit TSP from any source in excess of 343 mg per dscm (0.15 gr per dscf) of exhaust gas volume. 310.2 Effective July 1, 2020, no person shall emit TSP from any source with a Potential to emit TSP (as defined in Regulation 2-1-217) greater than 1,000 kg per year at a concentration in excess of the limit indicated for the source's Exhaust Gas Rate in Table 6-1-310.2: more – See Table listed

Comment

Effective July 1, 2020 why such a long way this should not be a problem with companies and especially not a problem with the Lehigh Southwest Cement Company and their kiln's emissions. I think there needs to be even stronger level limits imposed than are stated. Note: There seems to be a problem with information what Regulation is the BAAQMD referring to when it references 2-1-217 that is an item not a regulation? The table Exhaust Gas Rate mentions dscm/min 50 or less, dscf/min 1,766 or less, TSP Concentrations Limit mg/dscm 343 and gr/dscf 0.150. The problem is it states under 310.2 that 1,000 kg per year is the limit for source's Exhaust Gas Rate in the Table 6-1-310.2 this is different it seems in the table to give the dscf/min up to 1,766 or less so which is it going to be? I see the maximum extended this should not be in order to protect the public. I will stress here that no matter the level is still a health issue with the public and who decides what the public can and can't tolerate and how do they come up with these tolerable levels? There needs to be new technologies created and established in order to protect the public from pollution and we the public are asking for these technologies to be developed.

Comment

Sections 310.1, 310.2 and 310.3 For the purposes of Section 6-1-310 item 310.3 has been rewritten to omit any mention of particulate matter, this item is completely wrong the reference to actual measured concentrations of particulate matter in the exhaust gas from any incineration operations or salvage operations has to be measured and mentioned and it is not. I have to wonder here why this written this way all together it is very confusing to everyone concerned and especially to the public.

The Lehigh Southwest Cement Plant should be considered overall as an incineration plant and it is not the particulate matter from the plant needs to be addressed and it is not, I must ask why not? Incineration plants have certain strong regulations but it seems here that they will not be regulated to the extent that is necessary to protect the public if we do not include the particulate matter releases. There needs to be special equipment added to each company that emits in this way and there needs to be stronger restrictions in order to protect the public and believe it is the job of the BAAQMD to make sure that these regulations are started immediately.

Response

Implementation date for more stringent TSP limits is based on the lead time needed to facilities to identify control equipment needed, then design and install the equipment. Nominally two years from time of rule adoption is shorter than many rule implementation periods.

The comment says more stringent limits should be imposed. The proposed limits are the most stringent in California as general requirements. Source specific rules are needed to reduce emissions limits further.

The commenter confuses the threshold level for application of Table 6-1-310.2 limits with the limits themselves. Table 6-1-310.2 limits are concentration limits, not mass emissions limits.

Lehigh cement is not an incineration plant.

Section 6-1-311 Total Suspended Particulate (TSP) Weight Limits: No person shall emit TSP from any source at a rate in excess of the limit indicated for the source's Process Weight Rate in Table 6-1-311.1. This section shall not apply to gas-, liquid-or solid—fuel fired indirect heat exchangers.

Comment

I am very sorry to say this 6-1-311 is very confusing if it does not apply to the above than what does it apply to there is no mention why is that? The Table 6-1-311-1 Process Weight Rate vs. Allowable TSP Emissions Limits leaves out any mention of the equation accomplished why was this taken out it is import information. The BAAQMD needs to make it clear how the levels are reached and how did they decide on these levels.

Section 1-1-311.2 Same problem as above

Response

Comment confuses the threshold level for application of Table 6-1-311.1 and 311.2 limits with the limits themselves. Table 6-1-311.1 and 311.2 limits are mass emissions limits.

The equation was removed because it caused confusion. The tables now establish the mass emissions limits.

Section 6-1-320 Sulfuric Acid Manufacturing Plants: A person shall not emit from any operation manufacturing sulfuric acid using a principal raw material any sulfur-containing material, any emissions having a concentration of SO₃ or H₂SO₄, or both, converted to and qualified as 100% H₂SO₄, exceeding 92 mg per dscm (0.04 gr/dscf) of exhaust gas volume.

Comment

The Lehigh Southwest Cement plant emits Sulfuric Acid at high levels but the BAAQMD sets these levels and does not consider the cumulative effect. Sulfuric Acid Manufacturing Plants are also a great polluter and it seems that the

BAAQMD sets the level of emissions at these plants, as well how are these levels decided upon and what formula is used? I am also wondering who enforces these levels and how?

Section 6-1-330 Same issues as above.

Response

Rule 6-1-320 applies specifically to sulfuric acid manufacturing plants.
Rule 6-1-330 applies specifically to sulfur recovery units.

These emissions are enforced through source testing as described in Section 6-1-505.

Section 6-1-400 Administrative Requirements

Section 6-1-401 Appearance of Emissions: Persons subject to this Rule are subject to and shall comply with the requirements of Regulation 6-102

Comment

This is confusing what does 6-102 say? I believe more needs to be added here a great deal of information was taken out reference pg. 6-1-10

Section 6-1-402 Alternate Source Test Frequency: more -

Comment

Source tests are necessary and I do not believe that the frequency should be tampered with if anything they should be done more frequently. The results of these Source tests should be made public on the web for all to see and review.

Response

Compliance test frequencies are set based on emission rates. Higher emitters must conduct compliance source tests more frequently. Section 6-1-402 provides adjustment to testing frequency when test results are consistently in compliance.

Source test results are currently review by our technical people, and the facility permit engineer.

Section 6-1-500 Monitoring and Records

Section 6-1-501 Sampling Facilities and Instruments Required:

Comment

The records should be available to the BAAQMD right from the equipment and it should be also logged with them. More information should have been added here to make things clear.

Response

Information from continuous emissions monitors is not currently available directly to the Air District. This emissions information goes through a Quality Assurance check before being transmitted to the Air District.

Continuous PM sensing instrumentation requirements were moved to Regulation 6, Section 602. As described above in response to the comment on Rule 6-1-302, costs and benefits of independently verifiable PM measurement with immediate communication directly to the Air District is not yet clear enough to warrant requiring these facilities.

Section 6-1-502: Data, Records and Reporting

Comment

The BAAQMD needs to have equipment that can pull information from the company right away and it should come directly off of the equipment and listed on the BAAQMD web site. The other important issue is regarding violations there needs to be a much better system which could be put up on the web right away. The fact we are in the computer age and all this information can be listed immediately on the web so that the public can view the violations and fines imposed is foolish.

Section 6-1-503 Records: In order to be eligible for the Ringelmann No. 2 limitations set forth in section 6-1-302.2, the person responsible for the operation of a pile-driving hammer must maintain and have available inspection records that establish the use of kerosene, smoke suppressing fuel additives and synthetic lubricating oil.

Comment

This is a matter of the company monitoring themselves how can we ever know that there is the correct information in the records? I wonder who will be going out to the site to even check up on the records that are kept what we need to do is measure the emissions from the equipment we should not forget that the persons using the equipment are subjected to harmful pollution. I believe more should be said here in that regard in order to protect workers and the public.

Response

Continuous PM sensing instrumentation requirements were moved to Regulation 6, Section 602. As described above in response to the comment on Rule 6-1-302, costs and benefits of independently verifiable PM measurement with immediate communication directly to the Air District is not yet clear enough to warrant requiring these facilities.

Section 6-1-504 Demonstration of Total Suspended Particles (TSP) Compliance – more

Comment

The source testing should be frequent and particulates should be recorded not just Particles. I believe more frequent source tests should be performed.

Section 6-1-505 Demonstration of SO3 and H2SO4 Compliance

Comment: same as above

Response

Compliance testing frequency is defined in Sections 6-1-504 and 505, based on emissions rates.

Section 6-1-506 Monitoring and Recordkeeping at Regulated Bulk Material Sites:

The owner/operator of any Regulated Bulk Material Site shall monitor sources and operations at the site subject to the requirements in Section 6-1-307 as follows:

506.1 Monitor the nature and extent of any fugitive dust visible emissions from each source or operation, using sample observation of the source or operation with the sun or light positioned behind the observer, at times when the potential for fugitive dust visible emissions is at its highest due to wind conditions and/or work activities, or as otherwise specified by the APCO, according to the following frequencies: a. For any source or operations located within 1000 feet of the site property line in a day when the wind is blowing from the source toward the property line, at least twice during each workday: b. For all sources and operations, at least once during each workday. Monitoring of petroleum coke, calcined coke, or coal operations are required during daylight hours only.

Comment

The process of monitoring the fugitive dust visible emissions is not accurate and outdated there needs to be fugitive dust visible monitors installed at any and all companies especially at the Lehigh Southwest Cement and Quarry Company in Cupertino. The emissions emitted are extremely dangerous to the public and the notion that they should not be viewed during the night and only in the daytime is extremely foolish. There is equipment that can monitor at night under darkness and during this time many companies including the Lehigh Southwest Cement Company are working 24/7 around the clock so why can this equipment be purchased and installed? I am sure many more companies could also use this new equipment and the information should be relayed from the equipment to the BAAQMD right away. I think that this process may also save the BAAQMD a great deal of money the inspector would not have to be at the site so frequently.

Section 6-1-506.2 Document the date, time sources and operations monitored each workday.

Comment

The companies would not have to monitor by hand written reports if there was computer equipment that could do the job for them making the information gathered reliable.

Section 6-1-506.3 Maintain records required by Section 6-1-506.2 for two years, in electronic or log book format, and make these records available to the APCO upon request.

Comment

The Companies would not have to keep hard copy records or even store any records on their computers because the BAAQMD would have this information

right off of the equipment installed and it would be kept at the BAAQMD for anyone to view. This would also include any violations and fines that needed to be addressed. There would be a complete record of all the companies and how they are doing and performing. I am sure there are many companies out there that could help the BAAQMD with this new process and would love the work. It is time to come out of the old and into the new.

Section 6-1-600 manual of Procedures

Section 6-1-601 Applicability of Test Methods: The common test methods cited in Regulation 6 shall apply to this Rule, including the methods, cited in Regulation 6-601: Assessment of Visible Emissions, and Regulation 6-602: Assessment of Opacity.

Comment

Particulate Matter, Sampling Facilities, 6-1-601 was changed this should not have happened. The Particulate Matter that the public is subjected to needs to be included and recognized this is very important.

Section 6-1-602 Methods for Determining Compliance: 602.1 and 602.2 more -

Comment

I have mentioned a great deal about Particulate matter and hope the BAAQMD will address all of the emissions along with any new technologies that would help to stop the ongoing pollution with all of the companies who pollute especially the Lehigh Southwest Cement and Quarry and the Stevens Creek Quarry.

Response

Continuous PM sensing instrumentation requirements were moved to Regulation 6, Section 602. As described above in response to the comment on Rule 6-1-302, costs and benefits of independently verifiable PM measurement with immediate communication directly to the Air District is not yet clear enough to warrant requiring these facilities.