

**RULE 1156. FURTHER REDUCTIONS OF PARTICULATE EMISSIONS  
FROM CEMENT MANUFACTURING FACILITIES**

(a) Purpose

The purpose of this rule is to further reduce particulate matter (PM) emissions and minimize hexavalent chromium emissions from cement manufacturing operations and the property, including after facility closure.

(b) Applicability

This rule applies to all operations, materials handling, and transport at a cement manufacturing facility, including, but not limited to, kiln and clinker cooler, material storage, crushing, drying, screening, milling, conveying, bulk loading and unloading systems, internal roadways, material transport, and track-out. After facility closure, this rule also applies to the owner/operator of the property on which a cement manufacturing facility has operated on or after November 4, 2005.

(c) Definitions

- (1) **BAG LEAK DETECTION SYSTEM (BLDS)** means a system that meets the minimum requirements specified under U.S. EPA 40 CFR Part 63, Subpart LLL, Section 1350 (m) to continuously monitor bag leakage and failure.
- (2) **CEMENT MANUFACTURING FACILITY** means any facility that engages in the operation of producing portland cement or associated products, as defined in the Standard Industrial Classification Manual as Industry No. 3241, Portland Cement Manufacturing.
- (3) **CHEMICAL DUST SUPPRESSANT** means any non-toxic chemical stabilizer which is used as a treatment material to reduce fugitive dust emissions and its use is not prohibited by any other applicable law and meets all applicable specifications required by any federal, state, or local water agency.
- (4) **CLINKER** means a product from the kiln which is used as a feedstock to make cement.
- (5) **CLINKER COOLER** means equipment into which clinker product leaving the kiln is placed to be cooled by air supplied by a forced draft or natural draft supply system.

- (6) CONVEYING SYSTEM means a device for transporting materials from one piece of equipment or location to another piece of equipment or location within a facility. Conveying systems include, but are not limited to, the following: feeders, belt conveyors, bucket elevators and pneumatic systems.
- (7) CONTINUOUS OPACITY MONITORING SYSTEM (COMS) means a system that meets minimum requirements specified under U.S. EPA 40 CFR Part 60, Appendix B, to continuously monitor opacity.
- (8) CONVEYING SYSTEM TRANSFER POINT means a point where any material including, but not limited to, feed material, fuel, clinker or product, is transferred to or from a conveying system, or between separate parts of a conveying system.
- (9) COVERED CONVEYOR is a conveyor where the top and side portion of the conveyor are covered by a removable cover to allow routine inspection and maintenance.
- (10) DUST SUPPRESSANTS are water, hygroscopic materials, or chemical stabilizers used as a treatment material to reduce fugitive dust emissions.
- (11) ENCLOSED CONVEYOR is any conveyor where the top, side and bottom portion of the conveyor system is enclosed except for points of loading and discharge and except for a removable cover to allow routine inspection and maintenance.
- (12) ENCLOSED SCREENING EQUIPMENT means screening equipment where the top portion of the equipment is enclosed, except for the area where the materials are loaded to the screening equipment.
- (13) ENCLOSED STORAGE PILE means any storage pile that is completely enclosed in a building or structure consisting of a solid roof and walls.
- (14) END OF WORK DAY means the end of a working period that may include one or more work shifts, but no later than 8 p.m.
- (15) EXISTING EQUIPMENT means any equipment, process or operation having an existing valid SCAQMD permit that was issued prior to November 4, 2005.
- (16) FACILITY means any source or group of sources or other air contaminant-emitting activities which are subject to this rule and are located on one or more contiguous properties within the SCAQMD, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility. Sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such

crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same facility which is under the same ownership or use entitlement as the crude oil and gas production facility on-shore.

- (17) FACILITY CLOSURE occurs when all cement manufacturing operations at the facility have completely ceased and all permits associated with on-site cement manufacturing operations, such as blending silos, kilns, clinker cooler, and clinker grinding/milling, are surrendered or have expired and are no longer reinstatable.
- (18) FINISH MILL means a roll crusher, ball and tube mill or other size reduction equipment used to grind clinker to a fine powder. Gypsum and other materials may be added to and blended with clinker in a finish mill. The finish mill also includes the air separator associated with the finish mill.
- (19) HAUL TRUCK means a diesel heavy-duty truck that has a loading capacity equal to or greater than 50 tons.
- (20) INACTIVE CLINKER PILE is a pile of clinker material that has not been disturbed, removed, and/or added to as a result of loading, unloading, and/or transferring activities for 30 (thirty) consecutive days.
- (21) KILN means a device, including any associated preheater or precalciner devices that produce clinker by heating limestone and other materials for subsequent production of portland cement.
- (22) OPEN STORAGE PILE is any accumulation of materials which attains a height of three (3) feet or more or a total surface area of one hundred fifty (150) square feet or more. The open pile is defined as inactive when loading and unloading has not occurred in the previous 30 consecutive days.
- (23) OWNER/OPERATOR means the owner and/or operator of the cement manufacturing facility or, upon facility closure, the owner and/or operator of the property where a cement manufacturing facility operated on or after November 4, 2005.
- (24) PAVED ROAD means a road improved by covering with concrete, asphaltic concrete, recycled asphalt, or asphalt.
- (25) PRIMARY CAUSE means the most significant contributor to a hexavalent chromium exceedance at a monitor.
- (26) RAW MILL means a ball, tube, or vertical roller mill or other size reduction equipment used to grind materials to the appropriate size. Moisture may be added or removed from the materials during the grinding operation. A raw mill may also include a raw material dryer and/or air separator.
- (27) ROAD means any route with evidence of repeated prior travel by vehicles.

- (28) **STABILIZED SURFACE** means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting, is resistant to being the source of wind-driven fugitive dust, and is demonstrated to be stabilized by the applicable test methods contained in the Rule 403 Implementation Handbook.
  - (29) **STREET SWEEPER** is a PM<sub>10</sub> efficient street sweeper approved pursuant to Rule 1186 – PM<sub>10</sub> Emissions from Paved and Unpaved Roads & Livestock Operations.
  - (30) **TOP PROCESS PARTICULATE EMITTERS** means:
    - (A) process equipment, including but not limited to the kiln, clinker cooler, raw mill, and finish mill, vented to air pollution control equipment, except open-top baghouses, that account for 60% of the total process particulate emissions at the facility, for the requirement of using BLDS or COMS under paragraph (e)(2); or
    - (B) process equipment, including but not limited to the kiln, clinker cooler, raw mill, and finish mill, vented to air pollution control equipment, that account for 80% of the total process particulate emissions at the facility for the monitoring, source testing and recordkeeping requirements under paragraph (e)(3), (e)(8) and subparagraph (f)(2)(D).
  - (31) **TRACK-OUT** means any material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that has been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.
  - (32) **VERIFIED FILTRATION PRODUCT** means filtration products that are verified under the U.S. EPA Environmental Technology Verification program (ETV).
  - (33) **WET SUPPRESSION SYSTEM** means a system that supplies ultra-fine droplets of water or chemical dust suppressant by atomization through means of using compressed air or applying high pressure as specified by manufacturers to minimize dust.
  - (34) **WIND-DRIVEN FUGITIVE DUST** means particulate matter emissions from any disturbed surface area which is generated by wind action alone.
  - (35) **WIND FENCE** means a system consisting of a stand alone structure supporting a wind fence fabric. The wind fence fabric shall have maximum porosity of 20%.
- (d) **Requirements**
- The owner/operator of a cement manufacturing facility shall comply with the following requirements unless otherwise stated.

- (1) Visible Emissions
  - (A) The owner/operator of a facility shall not cause or allow the discharge into the atmosphere of visible emissions exceeding 10 percent opacity based on an average of 12 consecutive readings from any operation at the facility, except open piles, roadways and unpaved areas, using EPA Opacity Test Method 9.
  - (B) For open piles, roadways and other unpaved areas, the owner/operator of a facility shall not cause or allow the discharge into the atmosphere of visible emissions exceeding 20 percent opacity based on an average of 12 consecutive readings; or 50 percent opacity based on 5 individual consecutive readings using SCAQMD Opacity Test Method 9B.
  - (C) The owner/operator of a facility shall not cause or allow any visible dust plume from exceeding 100 feet in any direction from any operations at the facility.
- (2) Loading, Unloading, and Transferring
  - (A) The owner/operator shall conduct material loading and unloading to and from trucks, railcars, or other modes of material transportation through an enclosed system that is vented to SCAQMD permitted air pollution control equipment that meets the requirements in paragraph (d)(6) and subparagraph (d)(1)(A) and is operated during loading and unloading activities. In the event the system consists of a building, the enclosed building shall have openings with overlapping flaps, sliding doors or other equally effective devices, as approved by the Executive Officer to meet the requirement in subparagraph (d)(1)(A), which shall remain closed, except to allow trucks and railcars to enter and leave.
  - (B) The owner/operator shall cover or enclose all conveying systems and enclose all transfer points. During all conveying activities, the enclosed transfer points and enclosed conveying systems shall be vented to a permitted air pollution control device that meets the requirements in subparagraph (d)(1)(A) and paragraph (d)(6) and is operated during all conveying activities. The enclosure shall have access doors to allow routine inspection and maintenance.
  - (C) The owner/operator shall apply dust suppressants as necessary during material loading, unloading, and transferring activities, and at conveying system transfer points to dampen and stabilize the materials transported and

- prevent visible dust emissions generated to meet the requirement in subparagraph (d)(1)(A).
- (D) The owner/operator shall install and maintain as necessary dust curtains, shrouds, belt scrapers, and gaskets along the belt conveying system to contain dust, prevent spillage and carryback in order to minimize visible emissions.
  - (E) The owner/operator shall use appropriate equipment including, but not limited to, stackers or chutes, as necessary, to minimize the height from which materials fall into storage bins, silos, hoppers or open stock piles and reduce the amount of dust generated to meet the requirements in paragraphs (d)(1) and (d)(6).
- (3) Crushing, Screening, Milling, Grinding, Blending, Drying, Heating, Mixing, Sacking, Palletizing, Packaging, and Other Related Operations
- (A) The owner/operator shall enclose crushing, screening, milling, grinding, blending, drying, heating, mixing, sacking, palletizing, packaging and other related operations. The enclosed system shall be vented to permitted control equipment that meets the requirements in paragraph (d)(6) and subparagraph (d)(1)(A). The control equipment shall be operated during these operations.
  - (B) In lieu of the configuration described in subparagraph (d)(3)(A), the owner/operator of a primary crusher installed and operated prior to November 4, 2005 may use wind fences on at least two sides of the primary crusher with one side facing the prevailing winds. The structure shall be equipped and operated with a wet suppression system. To implement this, the owner/operator shall submit a permit modification application by May 4, 2006 for a primary crusher to enable the Executive Officer to develop permit conditions to ensure that this air pollution control system is designed and operated to minimize particulate emissions.
  - (C) The owner/operator shall apply dust suppressants, as necessary, during all operations to dampen and stabilize the materials processed and prevent visible emissions generated to meet the requirements in subparagraph (d)(1)(A).
- (4) Kilns and Clinker Coolers
- The owner/operator shall not operate the kilns and clinker coolers unless the kilns and clinker coolers are vented to air pollution control equipment that meets the requirements in paragraph (d)(6) and subparagraph (d)(1)(A).

- (5) Material Storage
- (A) An owner/operator that stores raw materials and products in a silo, bin or hopper shall vent the silo, bin or hopper to an air pollution control device that meets the requirements in subparagraph (d)(1)(A) and paragraph (d)(6).
  - (B) No later than September 8, 2009, the owner/operator shall conduct all clinker material storage and handling in an enclosed storage area that meets the requirements in subparagraph (d)(1)(A) and paragraph (d)(6). The enclosed storage area shall have opening(s) covered with overlapping flaps, and sliding door(s) or other equivalent device(s) approved by the Executive Officer, which shall remain closed at all times, except to allow vehicles to enter or exit. Prior to the completion and operation of the enclosure, all clinker materials shall be stored and handled in the same manner as non-clinker materials as set forth in subparagraph (d)(5)(D).
  - (C) If clinker material storage and handling activities occur more than 1,000 feet from, and inside, the facility property-line, the owner/operator may comply with all of the following in lieu of the requirements of subparagraph (d)(5)(B) no later than September 8, 2009:
    - (i) Utilize a three-sided barrier with roof, provided the open side is covered with a wind fence material of a maximum 20% porosity, allowing a removable opening for vehicle access. The removable wind fence for vehicle access may be removed only during minor or routine maintenance activities, the creation or reclamation of outside storage piles, the importation of clinker from outside the facility, and reclamation of plant clean-up materials. The removable opening shall be less than 50% of the total surface area of the wind fence and the amount of time shall be minimized to the extent feasible;
    - (ii) Storage and handling of material that is immediately adjacent to the three-sided barrier due to space limitations inside the structure shall be contained within an area next to the structure with a wind fence on at least two sides, with at least a 5 foot freeboard above the top of the storage pile to provide wind sheltering, and shall be completely covered with an impervious tarp, revealing only the active disturbed portion during material loading and unloading activities;
    - (iii) Storage and handling of other active clinker material shall be conducted within an area surrounded on three sides by a barrier or

- wind fences with one side of the wind fence facing the prevailing wind and at least a 5-foot freeboard above the top of the storage pile to provide wind sheltering. The clinker shall remain completely covered at all times with an impervious tarp, revealing only the active disturbed portion during material loading and unloading activities. The barrier or wind fence shall extend at least 20 feet beyond the active portion of the material at all times; and
- (iv) Inactive clinker material may be alternatively stored using a continuous and impervious tarp, covered at all times, provided records are kept demonstrating the inactive status of such stored material.
- (D) For active open non-clinker material storage and handling, the owner/operator shall comply with one of the following to meet the requirements of subparagraphs (d)(1)(B) and (d)(1)(C):
- (i) Apply chemical dust suppressants to stabilize the entire surface area of the pile, except for areas of the pile that are actively disturbed during loading and unloading activities; or
  - (ii) Install and maintain a three-sided barrier or wind fences with one side facing the prevailing winds and with at least two feet of visible freeboard from the top of the storage pile to provide wind sheltering, maintain surface stabilization of the entire pile in a manner that meets the performance standards of subparagraphs (d)(1)(B) and (d)(1)(C), and store the materials completely inside the three-sided structure at all times; or
  - (iii) Install and maintain a three-sided barrier with roof, or wind fences with roof, to provide wind sheltering; maintain the open-side of the storage pile stabilized in a manner that meets the performance standards of subparagraphs (d)(1)(B) and (d)(1)(C), and store the materials completely inside the three-sided structure at all times; or
  - (iv) Install and maintain a tarp over the entire surface area of the storage pile, in a manner that meets the performance standards of subparagraphs (d)(1)(B) and (d)(1)(C), except for areas of the pile that are actively disturbed during loading and unloading activities. The tarp shall remain in place and provide cover at all times.
- (E) All inactive non-clinker piles shall be stored and handled in the same manner as non-clinker materials, as set forth in subparagraph (d)(5)(D). The

owner/operator shall keep records demonstrating the inactive status of the non-clinker piles.

- (F) For open storage piles subject to subparagraph (d)(5)(D), the owner/operator shall apply chemical dust suppressants or dust suppressants during any material loading and unloading to/from the open piles; and re-apply chemical dust suppressants or dust suppressants to stabilize the disturbed surface areas of the open piles at the end of each work day in which loading and unloading activities were performed to meet the performance standards of subparagraphs (d)(1)(B) and (d)(1)(C) .

(6) Air Pollution Control Device

- (A) The owner/operator shall install and maintain an air pollution control system referred to in paragraphs (d)(2), (d)(3), (d)(4) and (d)(5) to meet the following performance standards measured with the approved source test in subdivision (g):
- (i) an outlet concentration of 0.01 grain PM per dry standard cubic feet for equipment installed prior to November 4, 2005; and
  - (ii) a BACT outlet concentration not to exceed 0.005 grain PM per dry standard cubic feet for equipment installed on and after November 4, 2005.
- (B) The owner/operator shall install and maintain a baghouse ventilation and hood system that meets a minimum capture velocity requirement specified in the applicable standards of the U.S. Industrial Ventilation Handbook, American Conference of Governmental Industrial Hygienists, at the time of installation. If modification to the baghouse ventilation and hood system is required to meet the applicable standard, the owner/operator shall be granted additional time up to December 31, 2006 to complete this process.
- (C) The owner/operator shall meet the requirements in paragraph (d)(6) by December 31, 2006 for pulse-jet baghouses, and by December 31, 2010 for non-pulse-jet baghouses.
- (D) To show incremental progress towards the December 31, 2010 compliance date for non-pulse-jet baghouses, the owner/operator shall submit to the Executive Officer a list of baghouse candidates for future modification or replacement by December 31, 2006. In addition, the owner/operator shall submit a notification letter by December 31 of each year thereafter, starting in 2006, to demonstrate that the owner/operator has completed at least 20%

of the modification or replacement by 2006; 40% by 2007; 60% by 2008, 80% by 2009; and 100% by 2010.

- (7) Internal Roadways and Areas
  - (A) Unpaved Roadways and Areas
    - (i) For haul roads used by haul trucks to carry materials from the quarry to different locations within the facility, the owner/operator shall apply chemical dust suppressants in sufficient quantity and at least twice a year to stabilize the entire unpaved haul road surface; post signs at the two ends stating that haul trucks shall use these roads unless traveling to the maintenance areas; and enforce the speed limit of 35 miles per hour or less to comply with the opacity limits in paragraph (d)(1).
    - (ii) For other unpaved roadways and areas, the owner/operator shall apply chemical dust suppressants in sufficient quantity and at least twice a year to stabilize the surface, or apply gravel pad containing 1-inch or larger washed gravel to a depth of six inches; and enforce a speed limit of 15 miles per hour or less to comply with the opacity limits in paragraph (d)(1).
  - (B) Paved Roads

The owner/operator shall sweep all internal paved roads at least once each regular work day or more frequently if necessary to comply with the opacity limits in paragraph (d)(1). Sweeping frequency may be reduced on weekends, holidays, or days of measurable precipitation provided that the owner/operator complies with the opacity limits in paragraph (d)(1) at all times. Sweepers purchased or leased after November 4, 2005 shall be Rule 1186-certified sweepers.
- (8) Track-Out
  - (A) The owner/operator shall pave the closest 0.25 miles of internal roads leading to the public roadways and ensure that all trucks use these roads exclusively when leaving the facility to prevent track-out of dust to the public roadways and to comply with the opacity limits in paragraph (d)(1).
  - (B) If necessary to comply with the opacity limits in paragraph (d)(1), the owner/operator shall install a rumble grate, truck washer, or wheel washer; and ensure that all trucks go through the rumble grate, truck washer or wheel washer such that the entire circumference of each wheel or truck is cleaned before leaving the facility.

- (C) To prevent material spillage from trucks to public roadways and fugitive dust emissions during transport, a truck driver on the facility shall ensure that the cement truck hatches are closed and there is no track-out, and the owner/operator shall provide truck cleaning facilities on-site.
  - (D) The owner/operator shall provide, at least once each calendar year, the “Fugitive Dust Advisory” flyers prepared by the District to any company doing business with the facility and which is subject to the requirements in subparagraph (d)(8)(C).
- (9) **No Backsliding**  
To prevent any backsliding from the current level of control, the owner/operator shall operate and maintain all existing equipment according to permit conditions stated in the permits approved by the Executive Officer prior to November 4, 2005 at all times.
- (10) **Compliance Monitoring Plan**
- (A) No later than June 8, 2009, the owner/operator shall submit to the Executive Officer a complete Compliance Monitoring Plan for wind monitoring and the monitoring, sampling, and analysis of hexavalent chromium, and pay a plan evaluation fee pursuant to Rule 306 – Plan Fees. The submitted plan will be disapproved by the Executive Officer if it does not meet the provisions of subparagraph (d)(10)(B). The owner/operator shall resubmit an approvable plan within 30 days from date of disapproval; otherwise, the owner/operator shall be deemed in violation of this provision.
  - (B) The Compliance Monitoring Plan submitted shall contain, at a minimum, the following:
    - (i) Siting and monitoring protocols that comply with EPA’s and CARB’s guidance and/or protocols for measurement of hexavalent chromium, wind direction, and wind speed. A minimum of three fence-line monitoring stations for the entire property are required for hexavalent chromium: one upwind and one downwind of the facility under the common prevailing wind directions, and one subject to approval by the Executive Officer to ensure maximum effectiveness of the monitoring to the most potentially affected receptor, such as nearest residential or business receptors relative to clinker storage areas or potential hexavalent chromium emitting sources.

- (ii) Breakdown provisions which include: (1) a statement that the owner/operator will notify the Executive Officer in writing of the breakdown within 24 hours of its occurrence. If the breakdown occurs on a Friday, over a weekend, or on a national or state holiday observed by the facility, the facility shall report such breakdown on the following work day; (2) a repair schedule; and (3) an action plan with detailed measures to be taken by the owner/operator to ensure that there will be at least 70% data capture at each site by each monitoring system;
    - (iii) Consent from the owner/operator that allows the Executive Officer to conduct any co-located or audit sampling at any time;
    - (iv) Sampling analysis protocols that comply with EPA and CARB's appropriate guidance and/or protocols for hexavalent chromium. All samples shall be analyzed at a District-approved laboratory, which can be audited at any time; and
    - (v) Any other relevant data and information required by the Executive Officer.
  - (C) The Executive Officer shall approve or disapprove the complete plan within 60 days from the submittal date.
  - (D) The owner/operator may submit a Compliance Monitoring Plan amendment to the Executive Officer relative to monitor siting or other elements of the plan as more site-specific data becomes available. The Executive Officer shall approve or disapprove the amended plan within 60 calendar days from receipt. The Executive Officer's decision is appealable to the Hearing Board under Rule 216 – Appeals and Rule 221 – Plans.
- (11) Hexavalent Chromium Monitoring and Other Requirements
- (A) No later than six months from Compliance Monitoring Plan approval or March 1, 2010, whichever occurs first, the owner/operator of a cement manufacturing facility shall conduct hexavalent chromium ambient air monitoring as follows:
    - (i) The owner/operator shall conduct ambient air monitoring for hexavalent chromium in accordance with the approved monitoring plan set forth in subparagraph (d)(10)(B) or (d)(10)(D), as applicable. The hexavalent chromium concentration from a 30-day rolling average at each monitoring station shall not exceed the applicable limit in Table 1, except as provided in subparagraph

(d)(11)(C) and subparagraph (d)(11)(D). 24-hour sampling shall be conducted once every third day according to the EPA 1-in-3-day sampling calendar. For monitoring sample retrieval in which collection occurs on a weekend or facility observed national or state holiday, the sample may be collected the following business day.

Table 1  
Ambient Hexavalent Chromium Concentration Threshold Limit

Threshold Limit (ng/m <sup>3</sup> ) Excluding Background	Effective Date
0.70	March 1, 2010
0.20	September 5, 2016*

\* Pursuant to subparagraph (d)(11)(D), an exceedance of the 0.2 ng/m<sup>3</sup> threshold limit shall not be considered a violation of this rule until on or after September 5, 2018.

- (ii) The owner/operator may conduct 24-hour sampling once every six days for hexavalent chromium if there is no single exceedance of the applicable limit in Table 1 during 12 continuous months of monitoring. On this sampling schedule, the hexavalent chromium concentration from a 90-day rolling average at each monitoring station shall not exceed the applicable limit in Table 1. If there is an exceedance while on this sampling schedule, sampling shall revert back to once every three days. For monitoring sample retrieval in which collection occurs on a weekend or facility observed national or state holiday, the sample may be collected the following business day. Reverting back to the more frequent sampling schedule stated in clause (d)(11)(A)(i) due to an exceedance of the threshold must occur within 14 calendar days following receipt of written notification from the Executive Officer that an exceedance has occurred.
- (iii) Upon 12 consecutive months of compliance with the most stringent hexavalent chromium concentration limit in Table 1, the owner/operator may submit for approval an amended Compliance Monitoring Plan to operate a minimum of one monitoring station for the entire property at a location in the predominantly downwind

direction from the emission source(s). While operating a reduced number of monitoring stations following approval of the submitted amended Compliance Monitoring Plan, if any applicable limit in Table 1 is exceeded at any time, the owner/operator shall revert back to a 1 in 3 day ambient monitoring sampling schedule in accordance with clause (d)(11)(A)(i) within 14 calendar days, except as provided by subparagraph (d)(11)(C). If, while operating a reduced number of monitoring stations, any applicable limit in Table 1 is exceeded three or more times during any consecutive 12 calendar months, the owner/operator shall submit for approval an amended Compliance Monitoring Plan to operate a minimum of three monitoring stations consistent with paragraph (d)(10) within 30 calendar days of being notified by the Executive Officer.

- (B) In the event of any exceedance of any applicable limit in Table 1, the owner/operator may provide information to the Executive Officer to substantiate its position that the primary cause of such exceedance is not attributed to its cement manufacturing facility. In demonstrating that the primary cause of such exceedance is not attributed to its facility, the owner/operator shall submit the following information to the Executive Officer within 14 calendar days of when the owner/operator knew or should have known of such exceedance:
- (i) Date and time of the exceedance;
  - (ii) Location of the monitor where exceedance was measured;
  - (iii) Monitored hexavalent chromium ambient air concentrations at all of the facility's monitors for the prior 90 days, including the dates of the measurements;
  - (iv) Wind direction(s) during the timeframe of the exceedance;
  - (v) Description of the alleged primary cause(s) and source(s) of the exceedance, including time frame and location; and
  - (vi) Other evidence demonstrating that the primary cause(s) of the exceedance is not attributed to the facility's operations or premises, such as other monitoring data, photographs, or video.
- (C) The Executive Officer shall consider the information submitted under subparagraph (d)(11)(B) and notify the owner/operator of the determination in writing within 30 calendar days of receipt. If the Executive Officer determines that the primary cause(s) of the exceedance is not attributed to the cement manufacturing facility, the subject measurement would not be

considered to be a violation or subject the facility to reverting back to 1 in 3 sampling in accordance to (d)(11)(A) or to the Compliance Plan requirements of (d)(11)(D).

- (D) Within 60 days upon any exceedance of the applicable limit in Table 1 that occurs after September 5, 2016, except as provided by subparagraph (d)(11)(C), the owner/operator shall submit a Compliance Plan pursuant to subparagraph (d)(11)(E) for review and approval, and applicable fees must be paid pursuant to Rule 306 – Plan Fees. An exceedance of the applicable limit in Table 1, excluding background, after September 5, 2016 but before September 5, 2018 is not a violation of the rule. However, failure to obtain an approved Compliance Plan as a result of exceeding the applicable limit in Table 1 after September 5, 2016 is a violation of this rule. An exceedance of the applicable limit in Table 1 that occurs on or after September 5, 2018 will be considered to be a violation of this rule.
- (E) The Compliance Plan shall include, but not be limited to, the following information:
- (i) The name(s), address(es), and phone number(s) of the person(s) responsible for the preparation, submittal, and implementation of the plan;
  - (ii) A description of the activities, including a map depicting the location of the site, noting any defining landmarks or demarcations;
  - (iii) A listing of all potential sources of fugitive dust emissions within the property lines;
  - (iv) The owner/operator shall describe the implementation, including the application schedule/frequency of all applicable dust control measures listed in Rule 403 – Fugitive Dust;
  - (v) A list of additional control and/or stabilization measures to be implemented that includes a description of the measures, the equipment, process, or areas that will be affected, the anticipated reductions, and the dates the measures will be implemented. The description must include the application frequency of the measures and must be sufficiently detailed to demonstrate that all feasible measures will be utilized.
- (F) The Compliance Plan requirements of subparagraphs (d)(11)(D) and (d)(11)(E) will not apply to an owner/operator who has been required to submit a Health Risk Assessment under Rule 1402 – Control of Toxic Air

Contaminants from Existing Sources, subdivision (d), on or after January 1, 2015.

- (G) For facilities that elect to comply with (d)(5)(C), any exceedance of the applicable limit in Table 1 will require enclosure of all clinker materials storage and handling if the Executive Officer confirms, through wind event monitoring data, that the cement manufacturing facility is the source of violation. The facility operator may select one of the following enclosure schedule: 25% of the facility's five-year annual average clinker material stored and handled, by weight, no later than 12 months from the date of the exceedance; and an incremental 25% per subsequent year until completion; or complete the total enclosure within 24 months from the date of exceedance.

(12) Particulate Matter (PM10) Monitoring and Other Requirements

The owner/operator of the cement manufacturing facility who accrues three or more approved notices of violation for an exceedance of the upwind/downwind level specified in Rule 403 within a 36-month period shall conduct PM10 ambient air monitoring. An amendment to the compliance monitoring plan to include PM10 monitoring protocols and procedures shall be filed within 90 days of the date of the third approved notice of violation. The monitoring equipment shall be installed and operated within 6 months from the date of modified plan approval and no later than one year from the date of the third approved notice of violation.

- (A) The owner/operator shall conduct continuous and real-time ambient air monitoring for PM10, using a continuous monitoring system, in accordance with a Compliance Monitoring Plan approved by the Executive Officer in a manner as set forth in subparagraphs (d)(10)(B) or (d)(10)(D), as applicable. The differences of PM10 concentrations from any two monitoring sites which represent upwind and downwind concentrations shall not exceed the amount and averaging time period specified in Rule 403.

- (B) The owner/operator shall apply dust suppressants on all openly stored non-clinker materials, unpaved roads, and unpaved areas within the facility, as well as take steps to decrease clinker dust, if the PM10 difference(s) set forth in Rule 403 are exceeded at any time.

(13) Wind Monitoring

- (A) No later than September 8, 2009, the owner/operator shall install and operate wind monitoring equipment to conduct hourly wind monitoring according to a protocol approved by the Executive Officer.

- (B) On and after the date of operation of the wind monitoring equipment pursuant to subparagraph (d)(13)(A), the owner/operator shall cease all open handling of clinker material for a two-hour period in the event that instantaneous wind speeds exceed 25 miles per hour (mph), and if such wind speeds subsequently exceed 25 mph, a new two-hour period shall begin. During the aforementioned two-hour period, the facility would be exempt from the requirement of subparagraph (d)(1)(C) if the open handling of clinker material is ceased, provided that dust controls as required by District rules are applied; and unpaved roads are stabilized upon register of the high wind event via the wind monitoring equipment.
- (e) **Monitoring and Source Testing at a Cement Manufacturing Facility**
- (1) For the kilns and clinker coolers, the owner/operator shall continuously monitor and record operating parameters including, but not limited to, flue gas flow rates and pressure drops across the baghouses to monitor baghouse performance and ensure compliance with the opacity limit in subparagraph (d)(1)(A).
  - (2) For all new baghouses greater than or equal to 10,000 actual cubic feet per minute, and for all existing baghouses of the top process particulate emitters as defined under subparagraph (c)(30)(A), the owner/operator shall install, operate, calibrate and maintain a COMS or BLDS to monitor baghouse performance and ensure compliance with the opacity limit in subparagraph (d)(1)(A).
  - (3) The owner/operator shall conduct visible emission observations with EPA Method 22 for process equipment equipped with air pollution control equipment at the following frequency:
    - (i) Weekly for top process particulate emitters defined under subparagraph (c)(30)(B) that are not equipped with BLDS or COMS;
    - (ii) Monthly for top process particulate emitters defined under subparagraph (c)(30)(B) that are equipped with BLDS or COMS; and
    - (iii) Monthly for other process equipment.
  - (4) The owner/operator shall monitor and record pertinent operating parameters, such as pressure drops, according to the Operation and Maintenance Procedure in paragraph (e)(12) to monitor the performance of air pollution control equipment and ensure compliance with the opacity limit in subparagraph (d)(1)(A).
  - (5) If the owner/operator receives an alarm from the BLDS, or COMS, the owner/operator shall immediately conduct an EPA Method 22 test and implement all necessary corrective actions to minimize emissions.

- (6) If the owner/operator observes visible emissions during any EPA Method 22 test, the owner/operator shall immediately implement all necessary corrective actions to minimize emissions, and conduct EPA Method 9 test within one hour of any observation of visible emissions.
- (7) For the kilns and clinker coolers, the owner/operator shall conduct an annual compliance source test in accordance with the test methods in subdivision (g) to demonstrate compliance with the emission limit(s) in subdivision (d). The first annual compliance source test in accordance with an approved source test protocol shall be conducted within ninety (90) calendar days after the compliance date specified in subdivision (d). The owner/operator shall submit a source test protocol to the Executive Officer no later than sixty (60) calendar days prior to the proposed test date for the Executive Officer's approval for the first compliance source test. The testing frequency may be reduced to once every 24 calendar months if the two most recent consecutive annual source tests demonstrate compliance with the limits. Upon notification by the Executive Officer, the testing frequency shall be reverted back to annual testing if any subsequent source test fails to demonstrate compliance with the limits. In lieu of annual testing, any owner/operator who elects to use all verified filtration products in its baghouses shall conduct a compliance test every five years.
- (8) By February 4, 2006, the owner/operator shall provide the Executive Officer a list of the top process particulate emitters as defined under subparagraph (c)(30)(B), and the proposed testing schedule for these equipment. The owner/operator shall conduct compliance source tests on representative baghouses within each process system and submit test results for these processes every 5 years, with at least two source tests conducted in any calendar year. If there are any changes to the list of equipment to be tested or the testing schedule, the owner/operator shall notify the Executive Officer 60 calendar days before the test date.
- (9) The owner/operator shall not be required to test non-operational equipment, which is not in operation for at least 6 consecutive months prior to scheduled testing, as indicated in paragraph (e)(8) provided that the owner/operator shall conduct such test within one month after resuming operation.
- (10) During any compliance source test, the owner/operator shall monitor and record, at a minimum, all operating data for the selected operating parameters of the control equipment and the process equipment and submit this data with the test report.

- (11) The owner/operator shall submit a complete test report for any compliance source test to the Executive Officer no later than sixty (60) calendar days of completion of the source test.
- (12) Operation and Maintenance Procedures
  - (A) The owner/operator shall develop and implement an Operation and Maintenance Procedure to ensure that the performance of the air pollution control equipment is continuously maintained and operated. The Operation and Maintenance Procedure shall include, at a minimum, information on monitoring and recordkeeping procedures, routine maintenance procedures, corrective and preventive actions for the air pollution control equipment, and training related to EPA Method 22, EPA Opacity Test Method 9 and SCAQMD Opacity Test Method 9B, and other applicable information to demonstrate compliance with this rule.
  - (B) The owner/operator shall develop and implement an Operation and Maintenance Procedure that would require sufficient maintenance of internal roadways and areas, prompt cleanup of any pile of material spillage or carry-back, and application of chemical dust suppressant or other dust control methods to maintain surface stabilization of the open piles, spillage and carry-back to ensure compliance with the opacity standards in paragraph (d)(1) at all times.
  - (C) The owner/operator shall develop and maintain the Operation and Maintenance Procedures described under subparagraphs (e)(12)(A) and (e)(12)(B) within 6 months after November 4, 2005, and shall make the Operation and Maintenance Procedures available to the Executive Officer upon request.
- (f) Reporting and Recordkeeping at a Cement Manufacturing Facility
  - (1) The owner/operator shall maintain all records and information required to demonstrate compliance with the provisions of this rule in a manner approved by the Executive Officer for a period of at least five years which shall be made available to the Executive Officer upon request.
  - (2) The owner/operator of a facility shall keep, at a minimum, the following records to demonstrate compliance:
    - (A) Daily records of applying chemical dust suppressants, watering, sweeping and cleaning activities;

- (B) Appropriate records, on at least a monthly basis, for primary crushers, kilns, raw mills, and finish mills, production records of clinkers and cements and records of raw materials delivered to the facility in order to determine emissions;
  - (C) Test reports to demonstrate compliance with the emission standards in subdivision (d) including, but not limited to, PM emission rates, and opacity readings;
  - (D) Records of equipment malfunction and repair for the air pollution control equipment of the top process particulate emitters specified under subparagraph (c)(30)(B);
  - (E) Daily records of all material handling, including loading and unloading, and storage pursuant to paragraphs (d)(2) and (d)(5);
  - (F) Monitoring data pursuant to subparagraphs (d)(11), and (d)(12) as applicable, and supporting documentation, including, but not limited to chains of custody and laboratory results;
  - (G) Hourly records of wind speed and direction pursuant to subparagraph (d)(13);
  - (H) Records of all maintenance activities pursuant to clause (d)(5)(C)(i) and paragraph (i)(7), including any equipment testing after the repairs and duration of wind fence removal;
  - (I) Records of clinker pile reclamation, importation, and transport pursuant to clause (d)(5)(C)(i), including duration of wind fence removal; and
  - (J) Records of all vehicle traffic and monthly average road trips pursuant to paragraph (i)(4).
- (3) Monitoring data shall be reported monthly to, and in an electronic format specified by, the Executive Officer. In the event the facility owner/operator finds that an exceedance of the levels specified in subparagraphs (d)(11)(A), (d)(11)(B), or (d)(12)(A) as applicable has occurred, the owner/operator shall report in writing such finding to the Executive Officer, and follow up with a phone call the next business day after such finding.
- (g) Test Methods and Calculation for a Cement Manufacturing Facility
- (1) The owner/operator shall use the following source test methods, as applicable, to determine the PM emission rates. All source test methods referenced below shall be the most recent version issued by the respective organization. All test results in units of grains/dscf shall be determined as before the addition of any dilution or air,

if present, that was not a part of the stream(s) processed by the device that was tested.

- (A) SCAQMD Source Test Method 1.1 or 1.2 – Velocity and Sample Traverse Points;
  - (B) SCAQMD Source Test Method 2.1 or 2.3 – Stack Gas Flow Rate;
  - (C) SCAQMD Source Test Method 3.1 – Stack Gas Density;
  - (D) SCAQMD Source Test Method 4.1 – Stack Gas Moisture;
  - (E) SCAQMD Source Test Method 5.2 or 5.3 – Determination of Particulate Matter Emissions in which reagent grade acetone shall be used to recover samples from the components of the sampling train located before the particulate filter;
  - (F) EPA Source Test Method 5 with the impinger analysis may be used in lieu of SCAQMD Source Test Method 5.2 or 5.3.
  - (G) EPA Source Test Method 5D with the impinger analysis may be used to measure PM emissions from positive pressure fabric filters.
- (2) Measurement of particulate matter emissions from the cement kiln shall provide for a correction of sulfur dioxide emissions collected in the particulate matter samples. Any measured gaseous sulfur dioxide emissions shall be excluded from the measurement of particulate matter emissions by subtracting from the mass of material collected in any impingers a mass equivalent to the amount of measured sulfur dioxide emissions based upon sulfuric acid dihydrate as specified in SCAQMD Source Test Methods 5.2 or 5.3.
- (3) Source tests for PM shall be taken and the average of the samples shall be used to determine the applicable emission rate in accordance with the following requirements:
- (A) Simultaneous duplicate samples shall be obtained unless the owner/operator demonstrates to the satisfaction of the Executive Officer that it is not physically feasible to do so, in which case the owner/operator shall take sequential triplicate samples;
  - (B) All samples must have minimum sampling volume of 120 cubic feet or a minimum PM catch of 6 milligrams per sample shall be collected;
  - (C) For duplicate samples, the source test shall be deemed valid if:
    - (i) both samples are below 0.002 grain/dscf; or
    - (ii) the difference between the two samples is less than 35% of the average of the two samples in the applicable units specified in subdivision (d) and if the difference between the sample catches

normalized to the average sampling volume is less than 3.5 milligrams. If the source test is deemed invalid, the test shall be repeated; and

- (D) For triplicate samples, upon approval of the Executive Officer or designee, if the owner/operator can demonstrate that the process conditions including, but not limited to, the throughput, quantity, type, and quality of all feedstock to the equipment process, and the emission control equipment conditions have not changed throughout the sequential test period, then the owner/operator may apply the Dixon outlier test at the 95% significance level to check for and discard one outlier, and shall use the average of the two remaining samples to determine PM emissions.
  - (4) The owner/operator may use alternative or equivalent source test methods, as defined in U.S. EPA 40 CFR 60.2, if they are approved in writing by the Executive Officer, the California Air Resources Board, and the U.S. Environmental Protection Agency.
  - (5) The owner/operator shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for the source test methods cited in this subdivision if such approved lab exists. If there is no approved laboratory, then approval of the testing procedures used by the laboratory shall be granted by the Executive Officer on a case-by-case basis based on appropriate SCAQMD protocols and procedures.
  - (6) The owner/operator shall use the methods specified in the SCAQMD Rule 403 Implementation Handbook to determine threshold friction velocity and stabilized surface; and EPA Opacity Test Method 9 and Method 22, or SCAQMD Opacity Test Method 9B to determine opacity.
  - (7) When more than one source test method or set of source test methods are specified for any testing, the application of these source test methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation established by any one of the specified source test methods or set of source test methods shall constitute a violation of the rule.
- (h) Requirements After Facility Closure
- (1) The requirements of this subdivision (h) shall apply after facility closure to the owner/operator of the property on which a cement manufacturing facility operated on or after November 4, 2005, and these requirements shall cease to apply in accordance with paragraph (h)(6).

- (2) The owner/operator shall continue the applicable hexavalent chromium ambient monitoring pursuant to the current approved Compliance Monitoring Plan and shall continue complying with the Compliance Plan pursuant to subparagraphs (d)(11)(D) and (d)(11)(E), as applicable.
- (3) In the event of the need to relocate an ambient hexavalent chromium monitor, the owner/operator shall submit an amendment to the Compliance Monitoring Plan in accordance with subparagraph (d)(10)(D) prior to such relocation. The Executive Officer shall approve or disapprove the request within 14 calendar days of receipt. The monitor(s) shall be moved back to the original location(s) or other approved locations(s) within the timeframe specified by the Executive Officer. The Executive Officer's decision is appealable to the Hearing Board under Rule 216 – Appeals and Rule 221 – Plans.
- (4) The owner/operator shall provide the SCAQMD with monitoring calibration and maintenance data upon request of the Executive Officer.
- (5) The owner/operator shall do all of the following:
  - (A) Unless the facility has a reclamation plan pursuant to the Surface Mining and Reclamation Act of 1975 (SMARA, Public Resources Code, Sections 2710-2796) approved by the lead agency, within 90 calendar days of cement manufacturing facility closure, the owner/operator shall submit a Compliance Plan for Post Closure Activities to the Executive Officer for review and pay the plan fees as specified in Rule 306. The Executive Officer shall approve or disapprove the request within 60 calendar days of receipt. The Executive Officer will approve or disapprove the plan based on data, studies and/or good engineering and scientific judgment. If disapproved, the owner/operator shall resubmit the plan within 60 days of notice of disapproval addressing any deficiencies identified by the Executive Officer. The Executive Officer shall not unreasonably withhold approval of the plan if it complies with the requirements of this subparagraph. The Executive Officer's decision is appealable to the Hearing Board under Rule 216 – Appeals and Rule 221 – Plans. The Compliance Plan for Post Closure Activities shall, at a minimum, include the following:
    - (i) Detailed descriptions of control measures from SCAQMD Rule 403 – Fugitive Dust and other SCAQMD rules, and permanent stabilization of the property, including paving and/or revegetation;

- (ii) A site-specific assessment using soil sampling, historic activities, or other means, identifying areas determined not to be potentially contaminated by hexavalent chromium contamination. If approved by the Executive Officer, those areas determined not to be potentially contaminated may be excluded from the provisions of clause (h)(6)(A)(ii);
  - (iii) A description of measures to be implemented to ensure the ambient air concentration of hexavalent chromium as specified in Table 1 will not be exceeded following facility closure, including measures to address dismantling or demolition of cement manufacturing or related equipment, the removal of cementitious dust or other material build-up, or any remediation-related activity;
  - (iv) Additional measures that can be implemented in the event there is an exceedance of the hexavalent chromium concentrations specified in Table 1 following facility closure; and,
  - (v) Provisions for transferring responsibility for continued hexavalent chromium monitoring pursuant to subparagraph (d)(11)(A) to any new owner(s) until the conditions of paragraph (h)(6) are achieved.
- (B) If the ambient air concentrations of hexavalent chromium exceed the applicable limits in Table 1, the owner/operator shall temporarily suspend facility activities until measures in the approved Compliance Plan for Post Closure Activities are implemented. If a previously unidentified activity which the measures do not address contributes to the exceedances, then a revised Compliance Plan for Post Closure Activities will be required to be submitted and approved by the Executive Officer before facility activities can resume. The Executive Officer shall approve or disapprove the submitted revised Compliance Plan within 60 calendar days of receipt. The Executive Officer's decision is appealable to the Hearing Board under Rule 216 – Appeals and Rule 221 – Plans.
- (6) The requirements of paragraphs (h)(1) through (h)(5) shall cease to apply when both subparagraphs (A) and (B) below are achieved:
- (A) One of the following occurs:
    - (i) Reclamation is completed according to a plan approved by the lead agency consistent with the Surface Mining and Reclamation Act of 1975 (SMARA, Public Resources Code, Sections 2710-2796); or

- (ii) Completion of clean-up/rehabilitation of the property to minimize fugitive dust that may contain hexavalent chromium, in accordance with the approved Compliance Plan for Post Closure Activities.
  - (B) The owner/operator demonstrates compliance with the applicable hexavalent chromium threshold limit in Table 1 for a subsequent three (3) month period after completion of reclamation or clean-up/rehabilitation in subparagraph (h)(6)(A).
- (i) Exemptions
- (1) The owner/operator is exempt from installing a three-sided barrier or enclosure, or using the test methods in the SCAQMD Rule 403 Implementation Handbook for the demonstration of surface stabilization for open storage piles if 90% of the pile's mass consists of materials that are larger than ½ inch. Applicability of this exemption shall be determined through the measurement of any composite sample of at least 10 pounds taken from a minimum depth of 12 inches below the pile surface, and from various locations in the pile, but not from within 12 inches from the base of the pile. This exemption is limited to open storage piles that contain only materials other than clinker, providing that such piles meet the performance standards in subparagraphs (d)(1)(B) and (d)(1)(C).
  - (2) The owner/operator is exempt from the use of chemical dust suppressants for internal unpaved roads if the use of applicable chemical dust suppressants on that specific unpaved road violates the rules and/or regulations of the local Water Quality Control Board or other government agency provided the owner/operator uses water in sufficient quantity and frequency to stabilize the road surface and the owner/operator notifies the Executive Officer in writing 30 days prior to the use of water.
  - (3) Haul trucks are not required to use designated roads for haul trucks if they travel on unpaved roads complying with the requirements in clause (d)(7)(A)(ii).
  - (4) The owner/operator is exempt from the use of chemical dust suppressants in clause (d)(7)(A)(ii) where a road is used less than a monthly average of twice a day by a designated vehicle at a speed limit less than 15 miles per hour.
  - (5) The owner/operator is exempt from the use of chemical dust suppressants on unpaved areas specified in clause (d)(7)(A)(ii) during a period for demolition activities of no longer than six (6) calendar months provided that the owner/operator uses water in sufficient quantity and frequency to stabilize the

unpaved areas, meets the opacity requirements in subparagraphs (d)(1)(B) and (C) at all times, and keeps sufficient records to demonstrate compliance.

- (6) With the exception of primary crushing, open material storage piles, and covers and existing enclosures for conveying systems, the provisions of this rule shall not apply to equipment or operations that are subject to Rule 1157 or Rule 1158 located at the cement manufacturing facilities, provided that there is no backsliding from the current level of control as stated in the permits approved by the Executive Officer prior to November 4, 2005 or as required under Rule 1157 and Rule 1158, whichever is more stringent.
- (7) The owner/operator is exempt from the requirements in clause (d)(5)(C)(i) in the event the wind fence material needs to be removed to perform periodic maintenance of the clinker crane or building. During the time the wind fence material is removed, the clinker crane shall not actively transport clinker material in the building, except for post maintenance equipment testing.
- (8) During day(s) in which the instantaneous wind speeds exceed 25 mph using the on-site wind monitoring equipment pursuant to (d)(13)(A), the owner/operator is exempt from the hexavalent chromium and PM10 averaging provisions of subparagraphs (d)(11)(A) and (d)(12)(A) as applicable, provided all open handling of clinker material is ceased and dust controls are applied pursuant to subparagraph (d)(13)(B). If the Executive Officer determines a significant potential of re-entrained hexavalent chromium containing dust from the facility exists during such high wind events, the owner/operator shall implement an approved Mitigation Monitoring Plan to minimize exposure to the surrounding area and to ensure implementation of all applicable dust control measures to meet the requirements of subparagraphs (d)(11)(A) and (d)(12)(A), as applicable. The Mitigation Monitoring Plan is due 90 days, inclusive of appropriate plan fees pursuant to Rule 306, after notification by the Executive Officer.