RULE 402 **Fugitive Dust** - Adopted 11/29/93, Amended 3/07/94, 9/7/95, 11/3/04, 3/12/15, 1/13/22

I. Purpose

Fugitive dust contains varying sizes of respirable particulate matter including those with an aerodynamic diameter of 10 micrometers or less (PM_{10}). The purpose of this Rule is to prevent, reduce, and mitigate ambient concentrations of anthropogenic fugitive dust emissions to an amount sufficient to attain and maintain the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS).

District Rule 419, Nuisance shall still be used to prevent or correct specific public nuisances and health hazards.

II. Applicability

Provisions of this Rule are applicable to specified outdoor fugitive dust producing activities, which include: handling, storage, and transport of bulk storage piles, construction, demolition, excavation, extraction, and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, on-site travel including travel on access roads to and from the job site, and any other anthropogenic condition resulting in wind erosion.

III. Definitions

A. Active Project: Activity capable of generating fugitive dust, including any open storage pile, earth-moving activity, construction/demolition activity, disturbed surface area, and non-emergency movement of motor vehicles on unpaved roadways and any parking lot served by an unpaved road subject to this Rule.

B. Agricultural Operation: The growing and harvesting of crops or the raising of fowl or animals, for the primary purpose of earning a living, or of conducting agricultural research or instruction by an educational institution.

C. Anthropogenic: Caused, created, or produced by people or human activity.

D. APCO: Air Pollution Control Officer of the Eastern Kern Air Pollution Control District.

E. Blasting: Any excavation or demolition conducted with the use of explosives.

F. Bulk Material: Sand, gravel, soil, aggregate, and any other organic or inorganic solid matter capable of releasing dust.

G. Bulk Material Handling, Storage, and/or Transporting Project: Includes but is not limited to the use of equipment, haul trucks, and/or motor vehicles for the loading, unloading, conveying, transporting, piling, stacking, screening, grading, or moving of bulk materials at an industrial, institutional, commercial and/or governmental owned or operated site or facility.

H. Calendar Quarter: Consecutive three month period and each consecutive three-month period thereafter, beginning on the first day of the calendar month in which an activity qualifies as a large project.

I. Carryout/Trackout: Any and all materials that adheres to and agglomerates on vehicles, haul trucks, or equipment (including trailers, tires, etc.) and falls onto a paved public road or the paved shoulder of a paved public road.

J. Chemical/Organic Stabilization/Suppression: Method of controlling PM_{10} emissions from fugitive dust by applying any non-toxic chemical or organic dust suppressant, other than water, which meets any specifications, criteria, or tests required by any federal, state, or local water agency and is not prohibited for use by any applicable law, rule, or regulations.

K. Commercial Solar Facility: For-profit solar power generation facility 10-acres or larger.

L. Construction and Demolition Activity: Any on-site mechanical activity preparatory to or related to building, alteration, rehabilitation, demolition or improvement of property, including the following activities: grading, excavation, loading, crushing, cutting, planning, shaping or ground breaking.

M. Contractor: Any person or company, or licensed construction contractor having a contractual arrangement to conduct an active project subject to this Rule for another person.

N. Contingency Measure: Additional PM_{10} control requirements are triggered if EPA publishes a finding in the Federal Register that District's portion of the Indian Wells Valley Planning Area has failed to maintain NAAQS for PM_{10}.

O. Disturbed Surface Area: Portion of the earth's surface having been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural condition, thereby increasing the potential for emission of fugitive dust. Disturbed surface area does not include areas restored to a natural state with vegetative ground cover and soil characteristics similar to adjacent or nearby natural conditions.

P. Dust Suppressant: Water, hygroscopic materials, or chemical/organic stabilization/suppression materials used as treatment to reduce fugitive dust emissions. A suppressant shall not be used if prohibited by the Regional Water Quality Control Board, the California Air Resources Board, the Environmental Protection Agency, or any other applicable law, rule or regulation. All suppressants shall meet all specifications, criteria, or tests required by any federal, state, or local water agency. The use of dust suppressants shall be of sufficient concentration and application frequency to maintain a stabilized surface.

Q. Earthmoving: The use of any equipment for an activity that may generate fugitive dust emissions, including, but not limited to, grading, cutting, filling, leveling, excavating, trenching, loading or unloading of dirt or bulk material, demolishing, blasting, drilling, adding to or removing of material from open storage piles, backfilling, soil mulching, or weed abatement through disking.

R. Emergency: Any situation where immediate action on the part of a federal, state or local agency involved is needed and where the timing of such federal, state or local activities makes it impractical to meet the requirements of this Regulation, such as natural disasters, civil disturbances, or hazardous materials spills. Only an authorized official of a federal, state or local agency may declare an emergency when deemed necessary to protect the general public.

S. Excavation: Any digging, trenching, quarrying, extraction, or tunneling.

T. Extraction: Removal of minerals, aggregate, or fossil fuels from the earth by excavation; including mining, surface stripping, open pit excavation, or tunneling.

U. Fugitive Dust: Any particulate matter directly or indirectly becoming airborne, other than being emitted from an exhaust stack or duct designed to control flow, as a result of human activity.

V. Gravel Pad: A layer of washed gravel, rock, or crushed rock located at the point of intersection of a paved public roadway and an unpaved work site exit, and maintained to dislodge mud, dirt, and/or debris from the tires of motor vehicles and/or haul trucks, prior to exiting the work site.

W. Grizzly: A device (i.e., rails, pipes, or grates) used to dislodge mud, dirt, and/or debris from the tires and undercarriage of motor vehicles or haul truck prior to leaving the work site.

X. Haul Truck: Any fully or partially open-bodied, self-propelled vehicle including any non-motorized attachments used for transporting bulk materials, including, but not limited to, trailers or other conveyances which are connected to or propelled by the actual motorized portion of the vehicle.

Y. Inactive Disturbed Surface Area: Any disturbed surface area upon which an active project has not occurred for a period of at least ten consecutive days.

Z. Landfill Daily Cover: Soil excavated and stockpiled from a landfill borrow site that is used for daily operations to cover solid waste, trash, garbage, or other waste at a landfill disposal site.

AA. Landfill Disposal Site: A site where solid waste, trash, garbage, or other waste is disposed of by burying between layers of earth.

BB. Land Preparation: Any activity that disturbs the natural condition of land, including, but not limited to, brush or timber clearing, grubbing, scraping, ground excavation, land leveling, or grading.

CC. Large Project: Any construction activity on any site involving 10 or more contiguous acres of disturbed surface area, or any earthmoving activity exceeding a daily volume of 10,000 cubic yards, or relocating more than 2,500 cubic yards per day of bulk materials at least three days per year.

DD. Motor vehicle: Any engine-powered device used to convey people, or freight and registered for use on public highways.

EE. Non-Routine: Non-periodic active project occurring no more than three times per year, lasting less than 30 cumulative days per year, and scheduled less than 30 days in advance.

FF. Opacity: A measure of how much light is blocked by the visible emissions plume.

GG. Open-Pit Mine: An excavation for a mining operation which, excluding entrances and egresses, is encircled by a "high-wall" at least 10 feet high. A "high wall" is a berm or cut having a slope of at least 1:1.

HH. Open Storage Pile: Any accumulation of bulk material with 5 percent or greater silt content not fully enclosed, covered or chemically stabilized, attaining a height of 3 feet or more and a total surface area of 500 or more square feet. Silt content level shall be assumed to be 5 percent or greater unless a person shows, by sampling and analysis in accordance with ASTM Method C-136 or equivalent method approved in writing by the APCO, EPA, or CARB, that the silt content is less than 5 percent. Results of ASTM Method C-136 or equivalent method is valid for 60 days from the date the sample was taken.

II. Outdoor Handling, Storage, and Transport: Handling (including loading and unloading), storage, and transport, and any accumulation of bulk material, temporarily or permanently stored outside of an enclosed structure.

JJ. Owner/Operator: Includes, but is not limited to, any person who leases, supervises, or operates equipment, or owns/operates a fugitive dust source, in addition to the normal meaning of owner or operator.

KK. Particulate Matter (PM): A complex mixture of extremely small particles and liquid droplets made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Any solid material, existing in finely divided form.

LL. Paved Road/Area: Any road/area that is covered by concrete, asphaltic concrete, asphalt, or other materials which provides structural support for vehicles.

MM. PM_{10}: Particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by California Air Resources Board Test Method 501.

NN. Property Line: Boundaries of an area in which either a person causing fugitive dust emissions or a person allowing fugitive dust emissions has ownership or legal right to use the property.

OO. Reasonably Available Control Measure (RACM): Any technique or procedure used to prevent or reduce the emission and airborne transport of fugitive dust. RACM includes, but is not limited to, application of dust suppressants, use of coverings or enclosures, paving, enshrouding, planting, control of vehicle speed, and any other measure recognized by the APCO as providing equivalent dust control. Table 1 and EPA's reference document "Control of Open Fugitive Dust Sources", Midwest Research Institute, September 1988 shall be used for guidance.

PP. Site: Real property or land used or set aside for any specific use.

QQ. Soil Stabilization: The process used to control PM_{10} emissions from fugitive dust for an extended period of time by applying dust suppressants or planting vegetative cover.

RR. Stabilized Surface: Any disturbed surface area or open bulk material storage pile that is resistant to windblown fugitive dust emissions. A surface is considered to be stabilized if it meets at least one of the following conditions and as determined by the test methods specified in Attachment A of this Rule:

a. A visible crust;

b. A threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 centimeters per second or greater;

c. A flat vegetative cover of at least 50 percent that is attached or rooted vegetation; or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind;

d. A standing vegetative cover of at least 30 percent that is attached or rooted vegetation with a predominant vertical orientation;

e. A standing vegetative cover that is attached or rooted vegetation with a predominant vertical orientation that is at least 10 percent and where the TFV is at least 43 centimeters per second when corrected for nonerodible elements; or

f. A surface that is greater than or equal to 10 percent of non- erodible elements such as rocks, stones, or hard-packed clumps of soil.

SS. Trackout Control Device: A gravel pad, grizzly, wheel wash system, or a paved area located at the point of intersection of an unpaved area and a paved road that prevents or controls trackout.

TT. Unpaved Road: Any road that is not covered by one of the materials described in the paved road definition.

UU. Unpaved Access/Haul Road: Any road or path that is not covered by one of the materials described in the paved road definition that is associated with any construction, demolition, excavation, extraction, or other earthmoving activity and used by vehicles, equipment, haul trucks, or any conveyances to travel within a site, to move materials from one part of a site to another part within the same site, or to provide temporary access to a site.

VV. Unpaved Vehicle/Equipment Traffic Area: Any nonresidential area that is not covered by asphalt, recycled asphalt, asphaltic concrete, concrete, or concrete pavement that is used for fueling and servicing; shipping, receiving and transfer; or parking or storing equipment, haul trucks, vehicles, and any conveyances.

WW. Visible Dust Emissions (VDE): Dust emissions visible to an observer. Opacity observations to determine compliance with VDE standards shall be conducted in accordance with the test procedures for "Visual Determination of Opacity" as described in Attachment B of this Rule.

XX. Wind Barrier: A fence or structure constructed, or row of trees planted, to reduce the shearing effects caused by wind thereby reducing or eliminating the amount of entrained fugitive dust.

YY. Wind Generated Fugitive Dust: Visible emissions from any disturbed surface area that is generated by wind action alone.

ZZ. Wind Gust: Maximum instantaneous wind speed, as measured by an anemometer or as provided by the nearest local meteorological station.

IV. Exemptions

A. Provisions of this Rule shall not apply to:

1. Agricultural operations specifically subject to the requirements of District Rule 402.2, Agricultural Operations;

2. Actions that are in conflict with the Endangered Species Act, or the Surface Mining and Reclamation Act, as determined in writing by the State or federal agency responsible for making such determinations;

3. Any disturbed surface area less than three acres on residential property in the Indian Wells Valley and less than two acres in the remainder of the District;

4. Active projects conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions;

5. Unpaved roads that are not part of a large project and are outside the Indian Wells Valley and unpaved roads within the Indian Wells Valley provided such roads:

a. Are less than 75 feet long (50 feet, if contingency measure is triggered), or

b. Have a motor vehicle traffic volume less than 25 vehicle-trips per day (15, if contingency measure triggered), or

c. Have a motor vehicle traffic volume greater than 25 vehicle-trips per day not more than six times per year (15, if contingency measure triggered), or

d. Provide access to not more than 10 residences.

6. Restorative grading of unpaved shoulders of paved roads;

7. Non-routine or emergency maintenance of flood control channels and water spreading basins;

8. Weed and dried vegetation removal required by a fire prevention/control agency;

9. Active projects conducted during freezing weather if applicable RACM involves application of water;

10. County or properly permitted private sanitary landfill disposal sites provided such sites conform to California Code of Regulations Title 14: Sections 17659, 17660 and 17706 (County) or District dust control permit to operate conditions;

11. Blasting operations permitted by the California Division of Industrial Safety;

12. Motion picture, television, and video production activities when dust emissions are required for visual effects. This exemption shall be obtained from the APCO;

13. Officially designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and County regional parks;

14. Federal facilities (outside Indian Wells Valley) required by National Environmental Protection Act (NEPA) to implement fugitive dust RACM's for activities otherwise subject to this Rule, provided District receives an up-to-date description, including all RACM's employed.

B. Provisions of Section V.A. shall not apply when wind gusts exceed 25 miles per hour, provided:

1. Table 1 RACM is implemented for each applicable fugitive dust source type; or

2. An owner/operator has on file with the District an approved "High Wind Fugitive Dust Control Plan" indicating technical reasons why RACM cannot be implemented. Such plan shall provide alternative measures for fugitive dust control, if technically feasible, and shall be subject to the same approval conditions as specified in Section V.D.

C. Bulk Materials

1. Any outdoor storage, handling, or transport of bulk materials which would be damaged by wetting with water or by the application of chemical/organic dust suppressants, provided owners/operators demonstrate to the satisfaction of the APCO and EPA that none of the control measures specified in Table 2 Bulk Material Control Measures (BMCM) can be implemented to limit VDE to no more than 20% opacity or provide a stabilized surface.

2. Spreading of daily landfill cover.

3. Transport of a bulk material in an outdoor area for a distance of twelve feet or less with the use of a chute or conveyor device.

4. Outdoor storage of any bulk material at a single site where no material is actively being added or removed at the end of the workday or overnight and where the total material stored is less than 100 cubic yards.

5. This exemption only applies to requirements listed in Section V.C.

V. Requirements

A. A person shall not cause or allow fugitive dust emissions from:

1. Any active project, open storage pile, or disturbed surface area to remain visible in the atmosphere beyond the property line of the emission source.

2. Any applicable source such that the dust causes 20% opacity or greater during each observation and the total duration of such observations (not necessarily consecutive) is a cumulative three minutes or more in any one hour. Only opacity readings from a single source shall be included in the cumulative total used to determine compliance.

B. An owner/operator of any active project subject to this Rule shall implement one or more fugitive dust emission control strategy listed in Table 1, Reasonably Available Control Measure (RACM) or Table 2, Bulk Material Control Measures (BMCM) to limit visible dust emissions (VDE) to no more than 20% opacity and meet the conditions for a stabilized surface as defined in Section III.RR.

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TABLE 1
REASONABLY AVAILABLE CONTROL MEASURES (RACM)

Source Category	Control Measure
Unpaved Road:	Control Vehicular Speed (signage/enforcement)
	Improve Road Surface (leveling/grading)
	Use Water Trucks to Keep Soil Damp
	Apply Dust Suppressant (palliatives/gravel/ect.)
Construction, Demolition, and Earth-Moving:	Minimize/Limit Cut-Fill Grading
	Phase Work to Reduce Disturbed Surface Area
	Use Wind Breaks (screens/fencing/barriers/burms)
	Compact Disturbed Surfaces
	Limit Equipment/Vehicular Access
	Use Water Trucks to Keep Soil Damp
	Apply Dust Suppressant (palliative/gravel/ect.)
Open Storage Pile:	Use Enclosures Around Storage Piles
	Keep Pile Damp
	Apply Dust Suppressant (palliative/gravel/ect.)
	Cover with Hydro-mulch or Woodchips
Disturbed Surface Area Stabilization During Inactivity:	Compact Disturbed Surfaces
	Restrict Equipment/Vehicular Access
	Use Wind Breaks (screens/fencing/barriers/burms)
	Apply Dust Suppressant (palliative/gravel/ect.)
	Apply Hydro-mulch or Woodchips
	Re-vegetate

C. Bulk Materials

No person shall perform any outdoor handling, storage, and transport of bulk materials unless the appropriate control measures as listed in Table 2 are sufficiently implemented in order to limit VDE to no more than 20% opacity. Conditions of Stabilized Surface, as defined in Section III.RR of this Rule, must also be met.

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TABLE 2
BULK MATERIAL CONTROL MEASURES (BMCM)

Category	Control Measure
Handling	Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity or;
	Construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, also apply water or chemical/organic stabilizers/suppressants.
Storage	When storing bulk materials, comply with the conditions for a stabilized surface as defined in this Rule; or
	Cover bulk materials stored outdoors with tarps, plastic, or other suitable material and anchor in such a manner that prevents the cover from being removed by wind action; or
	Construct and maintain wind barriers sufficient to limit VDE to 20% opacity and with less than 50% porosity. If utilizing fences or wind barriers, apply water or chemical/organic stabilizers/suppressants to limit VDE to 20% opacity or;
	Utilize a 3-sided structure with a height at least equal to the height of the storage pile and with less than 50% porosity.
On-Site Transporting	Limit vehicular speed while traveling on the work site sufficient to limit VDE to 20% opacity; or
	Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported across any paved public access road sufficient to limit VDE to 20% opacity, or
	Apply water to the top of the load sufficient to limit VDE to 20% opacity, or
	Cover haul trucks with a tarp or other suitable cover.
Off-Site Transporting	Clean interior of the cargo compartment or cover cargo compartment before empty truck leaves the site; and
	Prevent spillage or loss of bulk material from holes or other openings in cargo compartment's floor, sides, and/or tailgate; and
	Load all haul trucks such that the freeboard is not less than six (6) inches when material is transported on any paved public access road, and apply water to top of load sufficient to limit VDE to 20% opacity; or cover haul trucks with a tarp or other suitable cover.
Outdoor Chute & Conveyor	Fully enclose the chute/conveyor; or
	Operate water spray equipment that sufficiently wets materials to limit VDE to 20% opacity; or
	Wash separated or screened materials to remove conveyed materials having an aerodynamic diameter of 10 microns or less sufficient to limit VDE to 20% opacity.

D. Fugitive Dust Emission Control Plan

1. An owner/operator shall submit a Fugitive Dust Emission Control Plan to the APCO prior to the start of any Large Project as defined in Section III.CC. Activity shall not commence until APCO has approved or conditionally approved a Fugitive Dust Emission Control Plan.

2. Any project subject to the requirements of this section must post visible signage of at least three (3) feet tall by three (3) feet wide made of a durable material such as metal, wood, or plastic that clearly displays:

    a. Message stating "If you see blowing dust please call";

    b. Contact phone number for person responsible for on-site dust control; and

    c. District primary contact phone number: (661) 862-5250.

3. A Fugitive Dust Emission Control Plan must include:

    a. Name(s), address(es), and phone number(s) of person(s) and owner(s)/operator(s) responsible for the preparation, submittal, and implementation of the plan and responsible for the dust generating project and the application of dust control measures;

    b. Description and location of project;

    c. Expected start and completion dates of dust generating and soil disturbance activities to be performed on the site;

    d. Listing of all fugitive dust emissions sources resulting from project;

    e. Total area of land surface to be disturbed, daily throughput volume of earthmoving in cubic yards, and total area in acres of the entire project site;

    f. Plot plan which shows the type and location of each project;

    g. Actual and potential sources of fugitive dust emissions on the site and the location of bulk material handling and storage areas, paved and unpaved roads; entrances and exits where carryout/trackout may occur; and traffic areas;

    h. All RACM or BMCM to be implemented before, during, and after any dust generating activity. Such description must be sufficiently detailed to demonstrate RACM or BMCM will be utilized and/or installed during all stages of the project;

i. Any special technical, (e.g., non-economic), circumstances preventing use of RACM or BMCM for any source, of fugitive dust shall provide a justification that explains the reason(s) why RACM or BMCM cannot be implemented. The source must receive APCO approval and comply with all other applicable provisions of this Rule.

4. APCO shall approve, conditionally approve, or disapprove a plan in writing within 30 calendar days of receipt. For a plan to be approved or conditionally approved the following three conditions shall be satisfied:

   a. All sources of fugitive dust emissions shall be identified, e.g., earth-moving, storage piles, vehicular traffic on unpaved roads, etc;

   b. At least one RACM or BMCM shall be implemented for each source identified; and

   c. List of standby/additional contingency control measures (e.g. increase watering, stop work, additional palliative, ect.) shall be specified for immediate implementation in the event visible dust emissions cross property line(s).

5. The applicant shall be notified in writing if a plan can be conditionally approved by adding actions not specified in the proposed plan. Such actions shall be incorporated into a revised plan and submitted to the APCO within 30 days of receipt or the plan will be disapproved.

6. An owner/operator must submit a Fugitive Dust Emission Control Plan for each large project if multiple sites are involved.

7. An owner/operator shall notify the APCO in writing 10 days prior to the commencement of any large project via email or fax.

8. An owner/operator shall retain a copy of the approved plan at the project site.

9. An approved plan is valid for a period of one year from date of approval or conditional approval. A plan shall be renewed annually, at least 60 days prior to expiration date, or the plan will become void as of the expiration date. If all fugitive dust sources and corresponding RACM, BMCM, or special circumstances remain identical to those identified in the previously approved plan, the renewal may contain a simple statement of "No-Change". Otherwise the renewal shall contain all items specified in Section V.D.3.

10. Failure to comply with any provisions of the approved or conditionally approved plan shall result in a notice of violation (NOV).

E. Commercial Solar Facility

Activities related to the construction and operation of a commercial solar facility produce anthropogenic fugitive dust emissions. Therefore, each stage of the facility must comply with the following conditions:

1. Construction:

    a. An owner/operator of a commercial solar facility must submit a fugitive dust emission control plan pursuant to Section V.D. prior to commencement of any earthmoving activity; and

    b. An owner/operator shall employ dust mitigation strategies such as phased or limited grading and mowing natural vegetation when applicable, rather than removing the entire root system, in order to promote faster re-growth.

2. Operations:

    a. An owner/operator of a commercial solar facility must submit a fugitive dust emission control plan pursuant to Section V.D. prior to scheduling a start-up inspection and becoming operational;

    b. An owner/operator of a commercial solar facility must maintain the operational dust plan for the life of the facility and renew it annually; and

    c. An owner/operator of a commercial solar facility must conduct air monitoring for the life of the facility pursuant to Section VI.

F. Earthmoving Activities

No person shall perform or authorize any earthmoving activity subject to requirements of this Rule unless the appropriate fugitive dust emission control measure(s) as described herein are implemented to limit VDE to no more than 20% opacity.

Earthmoving activities include but not limited to, construction, demolition, excavation, extraction, land clearing, grubbing, scraping, on-site travel, and travel on access roads to and from site. This section also applies to the construction of new landfill disposal sites or modification to existing landfill disposal sites prior to commencement of normal landfill operations.

1. Any Large Project earthmoving activity as defined in Section III.CC. shall comply with the requirements of Section V.D.

2. Implement one or more strategy from Table 1.

3. Speed Limitations and Posting of Speed Limit Signs on Uncontrolled Unpaved Access/Haul Roads on Construction Sites.

a. An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.

b. An owner/operator shall post speed limit signs that meet State and Federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.

4. Wind Generated Fugitive Dust Requirements.

a. Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20% opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.

b. Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.

G. Carryout and Trackout

An owner/operator shall sufficiently prevent or cleanup carryout/trackout as follows:

1. Owners/operators shall remove all visible carryout/trackout at the end of each workday.

2. Cleanup of carryout/trackout shall be accomplished by:

a. Manually sweeping and picking-up; or

b. Operating a rotary brush or broom accompanied or preceded by sufficient wetting to limit VDE to at least 20% opacity; or

c. Operating a PM_{10}-efficient street sweeper that has a pick-up efficiency of at least 80 percent.

d. Flushing with water, if curbs or gutters are not present and where the use of water will not result as a source of trackout material or result in adverse impacts on storm water drainage systems or violate any National Pollutant Discharge Elimination System permit program.

3. Urban areas: An owner/operator shall prevent or immediately remove carryout/trackout when it extends 50 feet or more from the nearest unpaved surface exit point of a site.

4. Rural areas: An owner/operator shall prevent or immediately remove carryout/trackout on construction projects 10 acres or more in size, when it extends 50 feet or more from the nearest unpaved surface exit point of a site.

5. Carryout/trackout shall be prevented and mitigated as follows:

    a. Installing and maintaining a trackout control device meeting the specifications contained in Section V.G.6. at all access points to paved public roads; or

    b. Utilizing a carryout and trackout prevention procedure which has been demonstrated to the satisfaction of the APCO and EPA as achieving an equivalent or greater level of control than specified in Section V.G.5.a.

    c. In the event that measures specified in Sections V.G.5.a. and V.G.5.b. are insufficient to prevent carryout/trackout, removal of any carryout/trackout must be accomplished within one-half hour of the generation of such carryout/trackout.

6. Specifications for Section V.G.5 shall meet the following conditions or combination of conditions:

    a. For use of grizzlies or other similar devices designed to remove dirt/mud from tires, the devices shall extend from the intersection with the public paved road surface for a distance of at least 25 feet, and cover the full width of the unpaved exit surface for at least 25 feet.

    b. For use of gravel pads, coverage with gravel shall be at least one inch or larger in diameter and at least 3 inches deep, shall extend from the intersection with the public paved road surface for a distance of at least 50 feet, and cover the full width of the unpaved exit surface for at least 50 feet. Any gravel deposited onto a public paved road travel lane or shoulder must be removed at the end of the workday or immediately following the last vehicle using the gravel pad, or at least once every 24 hours, whichever occurs first.

    c. For use of paving, paved surfaces shall extend from the intersection with the public paved road surface for a distance of at least 100 feet, and cover the full width of the unpaved access road for that distance to allow mud and dirt to drop off of vehicles before exiting the site. Mud and dirt deposits accumulating on paved interior roads shall be removed with sufficient frequency, but not less frequently than once per workday, to prevent carryout and trackout onto paved public roads.

7. An owner/operator of any site with 150 or more vehicle trips per day or 20 or more vehicle trips per day by vehicles with three or more axles shall take the actions for carryout/trackout as specified in Section V.G.5.

8. An owner/operator subject to the requirements of a Fugitive Dust Emission Control Plan as specified in Section V.D. shall take the actions for carryout/trackout as specified in Section V.G.5.

9. For sites with paved interior roads, an owner/operator shall prevent and mitigate carryout/trackout as specified in Section V.G.5.

H. Administrative Requirements

Any Person subject to the requirements of this Rule shall compile and retain records that provide evidence of control measure application and compliance with this Rule (i.e., receipts and/or purchase records). Such Person shall describe, in the records, the type of treatment or control measure, extent of coverage, and date applied. For control measures which require multiple daily applications, recording the frequency of application will fulfill the recordkeeping requirements of this Rule (i.e., water being applied three times a day and the date) Records shall be maintained and be readily accessible for two years after the date of each entry and shall be provided to the APCD upon request.

VI. PM_{10} Air Monitoring

District may require on-site PM_{10} air monitoring for any large project suspected to cause downwind PM_{10} ambient concentrations to increase more than 50 micrograms per cubic meter (50-$\mu g/m^3$) above upwind concentrations or any project that causes a public nuisance.

A. Any source required to conduct on-site PM_{10} monitoring shall:

1. Operate and maintain continuous direct-reading near-real time monitors capable of reading particulate matter less than 10 microns that are equipped with the following:

   a. Omni-directional heated sampler inlet;

   b. Sample pump with active flow control mechanism;

   c. Enclosure;

   d. Data logger capable of logging each data point with average concentration, time, date, and data point number; and

   e. Conductive tubing that minimizes particle loss for any external tubing used to carry sampled air prior to measurement.

2. Reasonably place monitors on adjacent corners of the project site, as close to property lines as feasible, and in such a way that other sources of fugitive dust between the sampler and the property line are minimized;

3. Notify APCO of intent to monitor PM_{10} at least seven days prior to initiating such monitoring. Notification shall contain, at a minimum, the contact person's name, address, telephone number, brief description and location of the project, and anticipated first date of sampling;

4. Collect samples during typical operations and in all weather and wind conditions. All other provisions of this Rule shall continue to be applicable;

5. Collect additional samples as requested by APCO based on receipt of public complaints, visible dust emissions, high wind events, or other determinations made by District staff indicating necessity;

6. Compile and submit records to the District on a quarterly basis, no later than 45 days after the end of each calendar quarter. Such records shall include:

    a. Brief description and location of the project;

    b. Hours of active operation on days when particulate sampling occurred;

    c. Location, vendor, model, and serial number of PM_{10} samplers used on each sampling day;

    d. Date, start and end times of all PM_{10} sampling;

    e. Laboratory results (measured ambient concentrations) of all PM_{10}samples;

    f. List of consultants, laboratories, and other groups of individuals responsible for collection, analysis, evaluation and validation of each PM_{10} sample;

    g. Documentation of any maintenance and calibration actions performed on each PM_{10} sampler conducted in accordance with 40 CFR, Part 50, Appendix J; and

    h. All monitoring records shall be maintained for at least two years and made available to the APCO upon request.

B. PM_{10} monitors shall meet the following minimum performance standards:

1. Range: 0 - 10,000 μg/m3;

2. Accuracy, determined through factory testing against an EPA Federal Reference Method or Federal Equivalent Method, for a minimum of 30 measurements each averaged over 24 hours, to show:

    a. ± 5% of reading ± precision; or

    b. Coefficient of determination (R2) of ≥ 0.95 through simple linear regression;

3. Resolution: 1.0 μg/m3;

4. Flow control accuracy of ± 5% of factory set point; and

5. Measurement Cycle: User selectable (30 minute and 2 hour).

C. Monitors that have a valid *Monitoring Certification Scheme* certification meeting the latest version of the *Monitoring Certification Scheme (MCERTS): Performance Standard for Indicative Ambient Particulate Monitors* may be exempt from meeting the performance requirements listed in Section VI.B, but shall meet all physical requirements of Section VI.A.

D. In order to ensure the validity of the PM_{10} measurements performed, the owner/operator is required to implement Quality Assurance/Quality Control (QA/QC) plans. The QA/QC plans shall include the following critical features: instrument calibration, instrument maintenance, operator training, and daily instrument performance checks.

VII. Prohibitions

A. Materials used for chemical/organic stabilization of soils, including petroleum resins, asphaltic emulsions, acrylics, and adhesives shall not violate State Water Quality Control Board standards for use as a soil stabilizer. Materials accepted by CARB and EPA, and which meet State water quality standards, shall be considered acceptable to the APCO.

B. Any material prohibited for use as dust suppressant by CARB, EPA, or other applicable law, rule, or regulation is also prohibited.

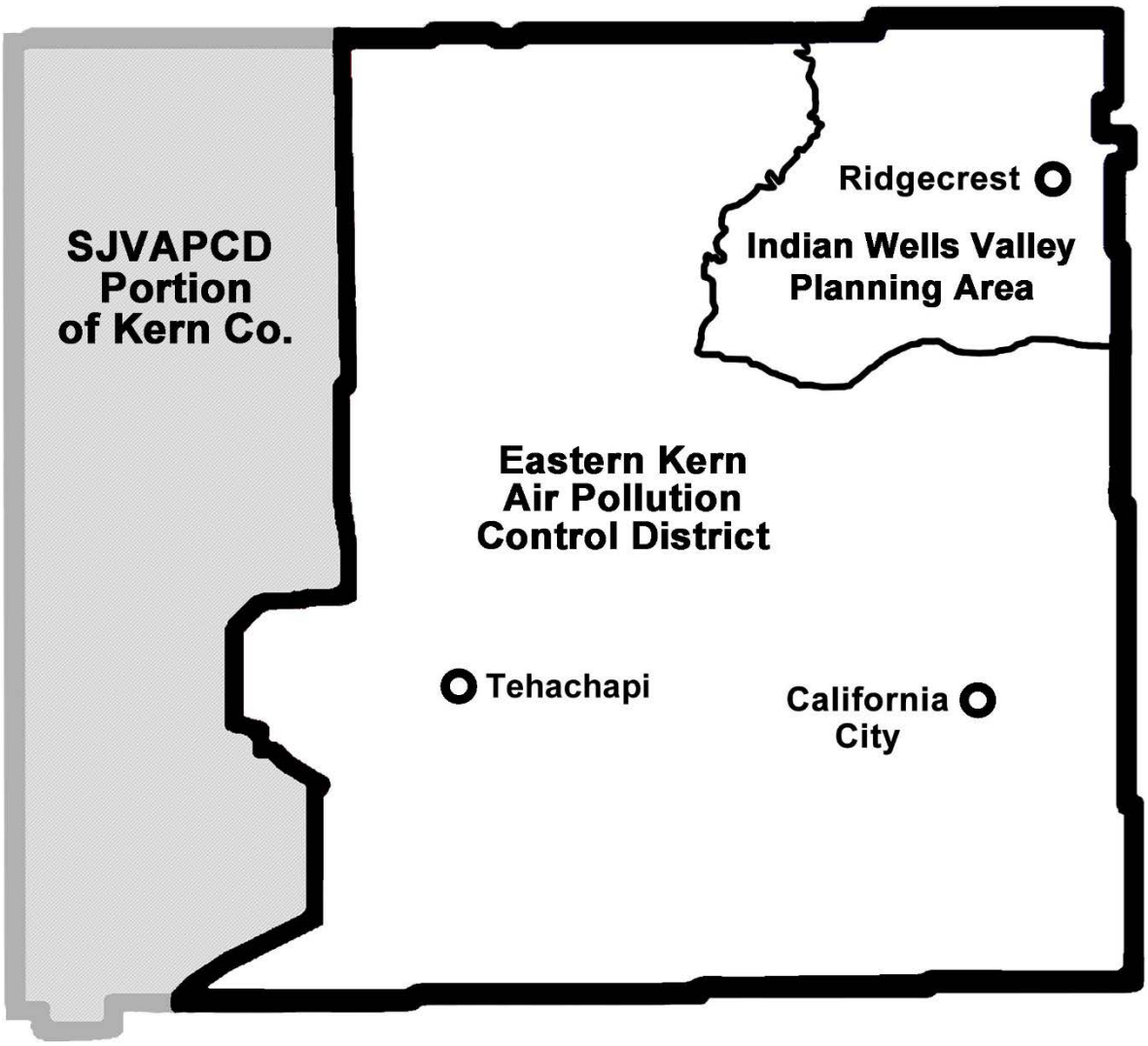
C. Use of hygroscopic materials may be prohibited by the APCO in areas lacking sufficient atmospheric moisture of soil for such materials to effectively reduce fugitive dust emissions. The atmospheric moisture of soil is considered to be sufficient if it meets the application specifications of the hygroscopic product manufacturer. Use of such materials may be approved in conjunction with sufficient wetting of the controlled area.

D. Any use of dust suppressants or gravel pads, and paving materials such as asphalt or concrete for paving, shall comply with all other applicable District Rules.

E. The use of blower devices or dry rotary brushes/brooms for removal of carryout and trackout on public roads is expressly prohibited. Removal of carryout and trackout from paved public roads does not exempt an owner/operator from obtaining state or local agency permits which may be required for the cleanup of mud and dirt on paved public roads.

Eastern Kern Air Pollution Control District

Portion of Searles Valley/Indian Wells Valley Planning Area (18090295)



ATTACHMENT A

Determination of Stabilization

I. Test Methods for Determining Stabilization.

The test methods described in Sections II through VI of this attachment shall be used to determine whether an area has a stabilized surface. Should a disturbed area contain more than one type of visibly distinguishable disturbance; soil, vegetation, or other characteristic, test each representative surface for stability separately. Test each surface in an area that represents a random portion of the overall disturbed conditions of the site according to the appropriate test method(s) in this attachment. Include or eliminate it from the total size assessment of disturbed surface area(s) depending upon test method results.

II. Visible Crust Determination.

A. Where a visible crust exists, drop a steel ball with a diameter of 15.9 millimeters (0.625 inches) and a mass ranging from 16-17 grams from a distance of 30 centimeters (one foot) directly above (at a 90° angle perpendicular to) the soil surface. If blowsand is present, clear the blowsand from the surfaces on which the visible crust test method is conducted. Blowsand is defined as thin deposits of loose uncombined grains covering less than 50% of a site which have not originated from the representative site surface being tested. If material covers a visible crust, which is not blowsand, apply the test method in Section 4 of this attachment to the loose material to determine whether the surface is stabilized.

B. A sufficient crust is defined under the following conditions: once a ball has been dropped according to section II.A of this attachment, 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 upon which it fell has not been pulverized, so that loose grains are visible.

C. Drop the ball three times within a survey area that measures 1 foot by 1 foot and that represents a random portion of the overall disturbed conditions of the site. The survey area shall be considered to have passed the Visible Crust Determination Test if at least two out of the three times that the ball was dropped, the results met the criteria in section II.B. Select at least two other survey areas that represent a random portion of the overall disturbed conditions of the site, and repeat this procedure. If the results meet the criteria of section II.B for all of the survey areas tested, then the site shall be considered to have passed the Visible Crust Determination Test and shall be considered sufficiently crusted.

D. At any given site, the existence of a sufficient crust covering one portion of the site may not represent the existence or protectiveness of a crust on another portion of the site. Repeat the visible crust test as often as necessary on each random portion of the overall conditions of the site for an accurate assessment.

III. Determination of Threshold Friction Velocity (TFV)

For disturbed surface areas that are not crusted or vegetated, determine threshold friction velocity (TFV) according to the following sieving field procedure (based on a 1952 laboratory procedure published by W. S. Chepil).

A. 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

Tyler Sieve No.	ASTM 11 Sieve No.	Opening (mm)	TFV (cm/s)
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

B. 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 episode, and inhibit soil loss by consuming Section of 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 V (Test Methods for Stabilization-Rock Test Method). 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:

Average Dimensions = (Average Length) x (Average Width) — Eq. 1

Overhead Area = (Average Dimensions) x (Number Of Elements) — Eq. 2

Total Overhead Area = Overhead Area Of Group 1 + Overhead Area Of Group 2 (etc.) — Eq. 3

Total Frontal Area = Total Overhead Area/2 — Eq. 4

Percent Cover Of Non-Erodible Elements = (Total Frontal Area/Survey Area) x 100 — 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

Percent Cover Of Non-Erodible Elements	Correction Factor
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

IV. Determination of Flat Vegetative Cover.

Flat vegetation includes attached (rooted) vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind. Flat vegetation, which is dead but firmly attached, shall be considered equally protective as live vegetation. Stones or other aggregate larger than 1 centimeter in diameter shall be considered protective cover in the course of conducting the line transect test method. Where flat vegetation exists, conduct the following line transect test method.

A. Line Transect Test Method. Stretch a 100 foot measuring tape across a survey area that represents a random portion of the overall conditions of the site. Firmly anchor both ends of the measuring tape into the surface using a tool such as a screwdriver, with the tape stretched taut and close to the soil surface. If vegetation exists in regular rows, place the tape diagonally (at approximately a 45° angle) away from a parallel or perpendicular position to the vegetated rows. Pinpoint an area the size of a 3/32 inch diameter brazing rod or wooden dowel centered above each 1 foot interval mark along one edge of the tape. Count the number of times that flat vegetation lies directly underneath the pinpointed area at 1 foot intervals. Consistently observe the underlying surface from a 90° angle directly above each pinpoint on one side of the tape. Do not count the underlying surface as vegetated if any portion of the pinpoint extends beyond the edge of the vegetation underneath in any direction. If clumps of vegetation or vegetative debris lie underneath the pinpointed area, count the surface as vegetated, unless bare soil is visible directly below the pinpointed area. When 100 observations have been made, add together the number of times a surface was counted as vegetated. This total represents the percent of flat vegetation cover (e.g., if 35 positive counts were made, then vegetation cover is 35%). If the survey area that represents a random portion of the overall conditions of the site is too small for 100 observations, make as many observations as possible. Then multiply the count of vegetated surface areas by the appropriate conversion factor to obtain percent cover. For example, if vegetation was counted 20 times within a total of 50 observations, divide 20 by 50 and multiply by 100 to obtain a flat vegetation cover of 40%.

B. Conduct the line transect test method, as described in section IV.A an additional two times on areas that represent a random portion of the overall conditions of the site and average results.

V. Determination of Standing Vegetative Cover

Standing vegetation includes vegetation that is attached (rooted) with a predominant vertical orientation. Standing vegetation, which is dead but firmly rooted, shall be considered equally protective as live vegetation. Conduct the following standing vegetation test method to determine if 30% cover or more exists. If the resulting percent cover is less than 30% but equal to or greater than 10%, then conduct the test in Section III (Determination of Threshold Friction Velocity (TFV)) in order to determine if the site is stabilized, such that the standing vegetation cover is equal to or greater than 10%, where threshold friction velocity, corrected for nonerodible elements, is equal to or greater than 43 cm/second.

A. For standing vegetation that consists of large, separate vegetative structures (e.g., shrubs and sagebrush), select a survey area that represents a random portion of the overall conditions of the site that is the shape of a square with sides equal to at least 10 times the average height of the vegetative structures. For smaller standing vegetation, select a survey area of three feet by three feet.

B. Count the number of standing vegetative structures within the survey area. Count vegetation, which grows in clumps as a single unit. Where different types of vegetation exist and/or vegetation of different height and width exists, separate the vegetative structures with similar dimensions into groups. Count the number of vegetative structures in each group within the survey area. Select an individual structure within each group that represents the average height and width of the vegetation in the group. If the structure is dense (e.g., when looking at it vertically from base to top there is little or zero open air space within its perimeter), calculate and record its frontal silhouette area, according to Equation 6 of this attachment. Also, use Equation 6 of this attachment to estimate the average height and width of the vegetation if the survey area is larger than nine square feet. Otherwise, use the procedure in section V.C to calculate the frontal silhouette area. Then calculate the percent cover of standing vegetation according to Equations 7, 8, and 9 of this attachment.

Frontal Silhouette Area = (Average Height) x (Average Width) — Eq. 6

Frontal Silhouette Area of Group = (Frontal Silhouette Area Of Individual Vegetative Structure) x (Number Of Vegetation Structures Per Group) — Eq. 7

Total Frontal Silhouette Area = Frontal Silhouette Area of Group 1 + Frontal Silhouette Area of Group 2 (etc.) — Eq. 8

Percent Cover Of Standing Vegetation = (Total Frontal Silhouette Area/Survey Area) x 100 — Eq. 9

Percent Open Space = [(Number Of Circled Gridlines Within The Outlined Area Counted That Are Not Covered By Vegetation/Total Number of Gridline Intersections Within The Outlined Area) x 100] — Eq. 10

Percent Vegetative Density = 100 - Percent Open Space — Eq. 11

Vegetative Density = Percent Vegetative Density/100 — Eq. 12

Frontal Silhouette Area = [Max. Height x Max. Width] x [Vegetative Density/0.4]0.5 — Eq. 13

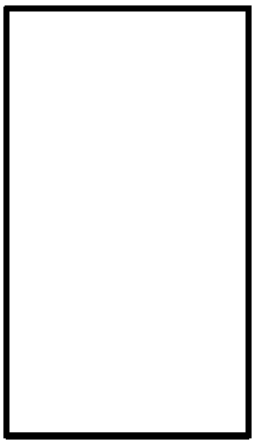
Note: Ensure consistent units of measurement (e.g., square meters or square inches when calculating percent cover).

C. Vegetative Density Factor. Cut a single, representative piece of vegetation (or consolidated vegetative structure) to within 1 cm of surface soil. Using a white paper grid or transparent grid over white paper, lay the vegetation flat on top of the grid (but do not apply pressure to flatten the structure). Grid boxes of 1 inch or 1/2 inch squares are sufficient for most vegetation when conducting this procedure. Using a marker or pencil, outline the shape of the vegetation along its outer perimeter, according to Figure B, C, or D of this attachment, as appropriate. (Note: Figure C differs from Figure D primarily in that the width of vegetation in Figure C is narrow at its base and gradually broadens to its tallest height. In Figure D, the width of the vegetation generally becomes narrower from its midpoint to its tallest height.) Remove the vegetation, count and record the total number of gridline intersections within the outlined area, but do not count gridline intersections that connect with the outlined shape.

There must be at least 10 gridline intersections within the outlined area and preferably more than 20, otherwise, use smaller grid boxes. Draw small circles (no greater than a 3/32 inch diameter) at each gridline intersection counted within the outlined area. Replace the vegetation on the grid within its outlined shape. From a distance of approximately 2 feet directly above the grid, observe each circled gridline intersection. Count and record the number of circled gridline intersections that are not covered by any piece of the vegetation. To calculate percent vegetative density, use Equations 10 and 11 of this attachment.

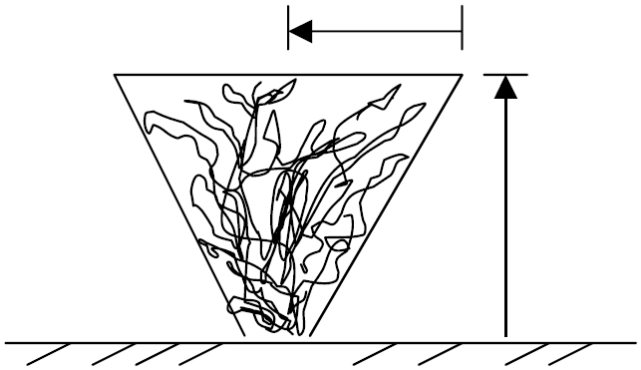
If percent vegetative density is equal to or greater than 30, use an equation (one of the equations-Equations 16, 17, or 18 of this attachment) that matches the outline used to trace the vegetation (Figure B, C, or D) to calculate its frontal silhouette area. If percent vegetative density is less than 30, use Equations 12 and 13 of this attachment to calculate the frontal silhouette area.

Figure B. Cylinder



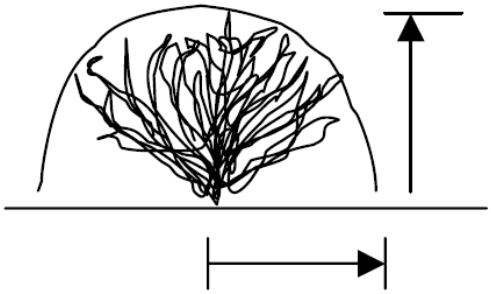
Frontal Silhouette Area = Maximum Height x Maximum Width Eq. 16

Figure C. Inverted Cone



Frontal Silhouette Area = Maximum Height x 1/2 Maximum Width Eq. 17

Figure D. Upper Sphere



Frontal Silhouette Area = (3.14 x Maximum Height x 1/2 Maximum Width)/2 Eq. 18

VI. Rock Test Method

The Rock Test Method, which is similar to Section III (Test Methods for Stabilization Determination of Threshold Friction Velocity (TFV)) of this attachment, examines the wind-resistance effects of rocks and other non-erodible elements on disturbed surfaces. Non-erodible elements are objects larger than 1 centimeter (cm) in diameter that remain firmly in place even on windy days. Typically, non-erodible elements include rocks, stones, glass fragments, and hardpacked clumps of soil lying on or embedded in the surface. Vegetation does not count as a non-erodible element in this method. The purpose of this test method is to estimate the percent cover of non-erodible elements on a given surface to see whether such elements take up enough space to offer protection against windblown dust. For simplification, the following test method refers to all nonerodible elements as “rocks”.

A. Select a 1 meter by 1 meter survey area that represents the general rock distribution on the surface. A 1 meter by 1 meter area is slightly greater than a 3 foot by 3 foot area. Mark-off the survey area by tracing a straight, visible line in the dirt along the edge of a measuring tape or by placing short ropes, yard sticks, or other straight objects in a square around the survey area.

B. Without moving any of the rocks or other elements, examine the survey area. Since rocks >3/8 inch (1 cm) in diameter are of interest, measure the diameter of some of the smaller rocks to a get a sense for which rocks need to be considered.

C. Mentally group the rocks >3/8 inch (1 cm) diameter lying in the survey area into small, medium, and large size categories. Or, if the rocks are all approximately the same size, simply select a rock of average size and typical shape. Without removing any of the rocks from the ground, count the number of rocks in the survey area in each group and write down the resulting number.

D. Without removing rocks, select one or two average-size rocks in each group and measure the length and width. Use either metric units or standard units. Using a calculator, multiply the length times the width of the rocks to get the average dimensions of the rocks in each group. Write down the results for each rock group.

E. For each rock group, multiply the average dimensions (length times width) by the number of rocks counted in the group. Add the results from each rock group to get the total rock area within the survey area.

E. Divide the total rock area, calculated in Section VI.E by two (to get frontal area). Divide the resulting number by the size of the survey area (make sure the units of measurement match), and multiply by 100 for percent rock cover. For example, the total rock area is 1,400 square centimeters, divide 1,400 by 2 to get 700. Divide 700 by 10,000 (the survey area is 1 meter by 1 meter, which is 100 centimeters by 100 centimeters or 10,000 centimeters) and multiply by 100. The result is 7% rock cover. If rock measurements are made in inches, convert the survey area from meters to inches (1 inch = 2.54 centimeters).

G. Select and mark-off two additional survey areas and repeat the procedures described in Section VI.A through Section VI.E. Make sure the additional survey areas also represent the general rock distribution on the site. Average the percent cover results from all three survey areas to estimate the average percent of rock cover.

H. If the average rock cover is greater than or equal to 10%, the surface is stable. If the average rock cover is less than 10%, follow the procedures in Section VI.I.

I. If the average rock cover is less than 10%, the surface may or may not be stable. Follow the procedures in Section III (Determination of Threshold Friction Velocity (TFV)) and use the results from the rock test method as a correction (i.e., multiplication) factor. If the rock cover is at least 1%, such rock cover helps to limit windblown dust. However, depending on the soil's ability to release fine dust particles into the air, the percent rock cover may or may not be sufficient enough to stabilize the surface. It is also possible that the soil itself has a high enough TFV to be stable without even accounting for rock cover.

J. After completing the procedures described in Section VI.I, use Table 2 to identify the appropriate correction factor to the TFV, depending on the percent rock cover.

ATTACHMENT B

Visual Determination of Opacity

Opacity observations to determine compliance with VDE standards shall be conducted in accordance with the test procedures for "Visual Determination of Opacity" as described in this Appendix. Opacity observations for sources other than unpaved traffic areas (e.g., roads, parking areas) shall be conducted per Section II, and shall require 12 readings at 15-second intervals.

I. Test Method for Unpaved Roads and Traffic Areas

Opacity Test Method. The purpose of this test method is to estimate the percent opacity of fugitive dust plumes caused by vehicle movement on unpaved roads and unpaved traffic areas. This method can only be conducted by an individual who has received certification as a qualified observer. Qualification and testing requirements can be found in Section III of this appendix.

A. Step 1: Stand at least 16.5 feet from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Following the above requirements, make opacity observations so that the line of vision is approximately perpendicular to the dust plume and wind direction. If multiple plumes are involved, do not include more than one plume in the line of sight at one time.

B. Step 2: Record the fugitive dust source location, source type, method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position to the fugitive dust source, and color of the plume and type of background on the visible emission observation form both when opacity readings are initiated and completed.

C. Step 3: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of vision. Make opacity observations approximately 1 meter above the surface from which the plume is generated. Note that the observation is to be made at only one visual point upon generation of a plume, as opposed to visually tracking the entire length of a dust plume as it is created along a surface. Make two observations per vehicle, beginning with the first reading at zero seconds and the second reading at five seconds. The zero-second observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume but, instead, observe the plume briefly at zero seconds and then again at five seconds.

D. Step 4: Record the opacity observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a 5-second period. While it is not required by the test method, EPA recommends that the observer estimate the size of vehicles which generate dust plumes for which readings are taken (e.g. mid-size passenger car or heavy-duty truck) and the approximate speeds the vehicles are traveling when readings are taken.

E. Step 5: Repeat Step 3 and Step 4 (Section I.C. and I.D. of this appendix) until you have recorded a total of 12 consecutive opacity readings. This will occur once six vehicles have driven on the source in your line of observation for which you are able to take proper readings. The 12 consecutive readings must be taken within the same period of observation but must not exceed 1 hour. Observations immediately preceding and following interrupted observations can be considered consecutive.

F. Step 6: Average the 12 opacity readings together. If the average opacity reading equals 20% or lower, the source is in compliance with the opacity standard described in this rule.

II. Test Method for Visible Determination for Time-Averaged Regulations

This method is applicable for the determination of the opacity of emissions from sources of visible emissions for time-averaged regulations. A time averaged regulation is any regulation that requires averaging visible emission data to determine the opacity of visible emissions over a specific time period.

A. Principle: The opacity of emissions from sources of visible emissions is determined visually by an observer qualified according to the procedures of Section III.

B. Procedures: An observer qualified, in accordance with Section III, shall use the following procedures for visually determining the opacity of emissions.

1. Position: Stand at a position at least 5 meters from the fugitive dust source in order to provide a clear view of the emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. The observer may follow the fugitive dust plume generated by mobile earthmoving equipment, as long as the sun remains oriented in the 140° sector to the back. As much as possible, if multiple plumes are involved, do not include more than one plume in the line of sight at one time.

2. Field Records: Record the name of the site, fugitive dust source type (i.e., pile, material handling (i.e., transfer, loading, sorting)), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the fugitive dust source, and color of the plume and type of background on the visible emission observation from when opacity readings are initiated and completed.

3. Observations: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. For storage piles, make opacity observations approximately 1 meter above the surface from which the plume is generated. For extraction operations and the loading of haul trucks in open-pit mines, make opacity observations approximately one meter above the rim

of the pit. The initial observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume, but instead observe the plume momentarily at 15-second intervals. For fugitive dust from earthmoving equipment, make opacity observations approximately 1 meter above the mechanical equipment generating the plume.

4. Recording Observations: Record the opacity observations to the nearest 5% every 15 seconds on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a 15-second period. If a multiple plume exists at the time of an observation, do not record an opacity reading. Mark an "x" for that reading. If the equipment generating the plume travels outside of the field of observation, resulting in the inability to maintain the orientation of the sun within the 140° sector or if the equipment ceases operating, mark an "x" for the 15- second interval reading. Readings identified as "x" shall be considered interrupted readings.

5. Data Reduction for Time-Averaged Regulations: For each set of 12 or 24 consecutive readings, calculate the appropriate average opacity. Sets must consist of consecutive observations, however, readings immediately preceding and following interrupted readings shall be deemed consecutive and in no case shall two sets overlap, resulting in multiple violations.

III. Qualification and Testing

A. Certification Requirements. To receive certification as a qualified observer, a candidate must be tested and demonstrate the ability to assign opacity readings in 5% increments to 25 different black plumes and 25 different white plumes, with an error not to exceed 15% opacity on any one reading and an average error not to exceed 7.5% opacity in each category. Candidates shall be tested according to the procedures described in Section III.B. Any smoke generator used pursuant to Section III.C shall be equipped with a smoke meter, which meets the requirements of Section III.A. Certification tests that do not meet the requirements of Sections III.B and III.C are not valid. The certification shall be valid for a period of 6 months, and after each 6-month period the qualification procedures must be repeated by an observer in order to retain certification.

B. Certification Procedure. The certification test consists of showing the candidate a complete run of 50 plumes, 25 black plumes and 25 white plumes, generated by a smoke generator. Plumes shall be presented in random order within each set of 25 black and 25 white plumes. The candidate assigns an opacity value to each plume and records the observation on a suitable form. At the completion of each run of 50 readings, the score of the candidate is determined. If a candidate fails to qualify, the complete run of 50 readings must be repeated in any retest. The smoke test may be administered as Section of a smoke school or training program, and may be preceded by training or familiarization runs of the smoke generator, during which candidates are shown black and white plumes of known opacity.

C. Smoke Generator Specifications. Any smoke generator used for the purpose of Section III.B shall be equipped with a smoke meter installed to measure opacity across the diameter of the smoke generator stack. The smoke meter output shall display in-stack

opacity, based upon a path length equal to the stack exit diameter on a full 0% to 100% chart recorder scale. The smoke meter optical design and performance shall meet the specifications shown in Table A. The smoke meter shall be calibrated as prescribed in Section III.C.1 of this attachment prior to conducting each smoke reading test. At the completion of each test, the zero and span drift shall be checked, and if the drift exceeds plus or minus 1% opacity, the condition shall be corrected prior to conducting any subsequent test runs.

The smoke meter shall be demonstrated, at the time of installation, to meet the specifications listed in Table A. This demonstration shall be repeated following any subsequent repair or replacement of the photocell or associated electronic circuitry, including the chart recorder or output meter, or every 6 months, whichever occurs first.

1. Calibration. The smoke meter is calibrated after allowing a minimum of 30 minutes warm-up by alternately producing simulated opacity of 0% and 100%. When stable response at 0% or 100% is noted, the smoke meter is adjusted to produce an output of 0% or 100%, as appropriate. This calibration shall be repeated until stable 0% and 100% readings are produced without adjustment. Simulated 0% and 100% opacity values may be produced by alternately switching the power to the light source on and off while the smoke generator is not producing smoke.

2. Smoke Meter Evaluation. The smoke meter design and performance are to be evaluated as follows:

    a. Light Source. Verify, from manufacturer's data and from voltage measurements made at the lamp, as installed, that the lamp is operated within plus or minus 5% of the nominal rated voltage.

    b. Spectral Response of Photocell. Verify from manufacturer's data that the photocell has a photopic response (i.e., the spectral sensitivity of the cell shall closely approximate the standard spectral-luminosity curve for photopic vision which is referenced in (b) of Table A).

    c. Angle of View. Check construction geometry to ensure that the total angle of view of the smoke plume, as seen by the photocell, does not exceed 15°. Calculate the total angle of view as follows:

Table A.
Smoke Meter Design and Performance Specifications
Parameter Specification

a. Light Source: Incandescent lamp operated at nominal rated voltage.
b. Spectral response of photocell: Photopic (daylight spectral response of the human eye).
c. Angle of view: 15° maximum total angle.
d. Angle of projection: 15° maximum total angle.
e. Calibration error: Plus or minus3% opacity, maximum.
f. Zero and span drift: Plus or minus 1% opacity, 30 minutes.
g. Response time: Less than or equal to 5 seconds.