



THE DUST DEVIL ACADEMY

Air Quality- It's Everybody's Business

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Executive Summary

Maricopa County does not meet the federal health standards for ambient air concentrations of particulate matter, which includes dust or PM-10. Since 1990, when the US Environmental Protection Agency first designated Maricopa County as a Moderate Non-attainment Area for PM-10, the County has repeatedly failed to meet National Ambient Air Quality Standards (NAAQS). Currently, there is a Federal Implementation Plan obligation in place that requires that Best Available Control Measures be implemented no later than June 10, 2000 and that compliance with NAAQS be achieved by December 31, 2001. This obligation resulted from the EPA's partial disapproval of the Arizona 24-hour Standard PM-10 State Implementation Plan (SIP) revision.

Five specific sources have been identified as major contributors to PM-10 non-compliance:

- Unpaved roads
- Unpaved shoulders
- Unpaved parking lots
- Vacant lots
- Agriculture

Modeling done by the Maricopa Association of Governments (MAG) indicated that the area could not attain the standard by December 31, 2001 as required by the Clean Air Act (CAA). An extension has been requested and MAG has developed a Serious Area Plan that includes three areas of effort:

- Improve compliance.
- Establish an education/outreach program.
- Allocate more funding.

These elements need to be in place no later than June 10, 2000 as specified in the CAA. This constitutes a serious requirement since the Phoenix area is currently under a sanction clock. 2 for 1 offset sanctions are effective on March 2, 2000 and will impact regional industries. Highway construction funding sanctions could follow in September.

In response to the requirements, this document is designed to improve compliance with Maricopa County Air Pollution Rules and Regulations, with particular emphasis on Rule 310, which deals with fugitive dust sources. Fugitive dust is a major source of PM-10 in Maricopa County. PM-10 refers to particles of 10 microns or less in size that are suspended in the air. These small particles constitute a threat to public health, because they are small enough to be inhaled into the deepest parts of the lung. Fugitive dust is particulate matter that does not come from a smokestack, tail pipe, or other well-defined opening. Fugitive dust emissions come from activities and conditions such as earthmoving activities that disturb the soil (for example: grading, construction and demolition, trenching and certain agricultural practices) and driving on unpaved areas.

Rule 310 requires any construction project that must obtain an Earthmoving Permit to also submit a Dust Control Plan. A Dust Control Plan involves the implementation of control measures before, during and after conducting any dust generating operation. These controls must be in place on non-work days and after working hours, not just while work is being done on the site. Control measures are techniques, practices or procedures used to prevent or minimize the generation, emission, entrainment and suspension of fugitive dust. To be approved by Maricopa County, the Dust Control Plan must include specific information about the project site, proposed work, and dust control measures to be implemented. The County also requires that a daily log be kept recording all measures taken to comply with Rule 310 and that a copy of the Dust Control Plan be retained on site at all times. There are serious consequences for non-compliance. Any person who violates any Maricopa County air pollution rule or any permit condition (including a Dust Control Plan incorporated into a permit) may be subject to an order of abatement, a civil action for injunctive relief or civil penalties, or may be found guilty of a Class 1 Misdemeanor. Maricopa County Rules consider the property owner, lessee, developer, or general/prime contractor to be the parties responsible for compliance.

This document also describes control measures and work strategies that will assist in ensuring compliance with Rule 310. Advance planning is key to meeting the requirements. Incorporating dust control planning into primary project planning will save time and money over the duration of the project.

Potential sources of fugitive dust include:

- Trackout.
- Bulk material handling and storage.
- Vehicular traffic both on and off the site.
- Storage piles.
- Bare areas on the site.
- Earthmoving activities.

Several simple control measures are easy to implement and, used in combination, they can effectively control dust on the majority of projects. These include:

- Watering – properly timed.
- Chemical stabilization of the soil.
- Use of wind barriers.
- Cleaning of vehicles at site exits.
- Prompt re-vegetation of bare areas.
- Disturbing limited areas at a time.

Also included in this document is a glossary of terms, a brief summary of applicable County air pollution regulations, and detailed information on the requirements for implementation of dust control practices. Since this is a very serious problem for Maricopa County, penalties for non-compliance are also presented in detail.



Background:

Maricopa County does not meet the federal health standards for ambient air concentrations of particulate matter, which includes dust or PM-10. Because of this, the U.S. Environmental Protection Agency (EPA) designated a portion of Maricopa County as a Moderate PM-10 Non-attainment Area under the 1990 Clean Air Act Amendments (CAAA). In 1991 and 1993, plans to ensure PM-10 compliance were submitted. However, since the Maricopa County non-attainment area failed to meet the National Ambient Air Quality Standards (NAAQS) by December 31, 1994, it was re-classified in 1996 as a Serious Area for PM-10. Consequently, a new Serious Area plan for PM-10 was due to EPA by December 10, 1997 and required that Best Available Control Measures (BACM) be implemented no later than June 10, 2000. In addition to the State Implementation Plan (SIP), the EPA also has a Federal Implementation Plan (FIP) obligation currently in place. This obligation resulted from the EPA's partial disapproval of the Arizona 24-hour Standard PM-10 SIP revision. EPA found a deficiency in the basic controls used to reduce emissions from several fugitive dust sources resulting from a failure to implement Reasonably Available Control Measures (RACM). Under a court ordered consent decree, EPA finalized a FIP in July 1998 for the Maricopa County PM-10 non-attainment area to address the following five sources:

- Unpaved roads
- Unpaved shoulders
- Unpaved parking lots
- Vacant lots
- Agriculture

Modeling done by the Maricopa Association of Governments (MAG) indicated that the area could not attain the standard by December 31, 2001 as required by the CAA. However, the CAA allows states to request an extension for up to five years, if it can be demonstrated that the plan includes the most stringent measures included in any state's plan or achieved in practice by any state, which can be feasibly implemented in the area. MAG's consultant has prepared a report analyzing the most stringent measures from around the country and has identified a list of measures feasible for Maricopa County. From this list of measures, the Maricopa County Board of Supervisors has approved three elements, which have been incorporated into the MAG Serious Area Plan. They are considered BACM. The elements are:

- Improve compliance.
- Establish an education/outreach program.
- Allocate more funding.

These elements need to be in place no later than June 10, 2000 as specified in the CAA. This constitutes a serious requirement since the Phoenix area is currently under a sanction clock. 2 for 1 offset sanctions are effective on March 2, 2000 and will impact regional industries. Highway construction funding sanctions could follow in September.

What is PM-10?:

Particulate matter pollution consists of very small liquid and solid particles suspended in the air. Of greatest concern to public health are particles small enough to be inhaled into the deepest parts of the lung. These particles are less than 10 microns in diameter - about one-seventh the thickness of a human hair - and are known as PM-10. Air monitoring data collected in Maricopa County indicates that levels of PM-10 at the edge of a construction site can be as much as three times higher than the allowable standard. Fugitive dust is a major source of PM-10 in Maricopa County. Fugitive dust is particulate matter that does not come from a smokestack, tail pipe, or other well-defined opening. Fugitive dust emissions come from activities and conditions such as earthmoving activities that disturb the soil (for example: grading, construction and demolition, trenching and certain agricultural practices) and driving on unpaved areas.

How Does PM-10 Affect Us?:

When small particles are inhaled, they can penetrate deep into the lungs. Long-term exposure to PM-10 may aggravate chronic respiratory diseases such as asthma, bronchitis

and emphysema. PM-10 particles also affect plants, trees, and crops by coating leaves, thus reducing photosynthesis and growth and making the plant more susceptible to weed and pest infestations. PM-10 is often responsible for part of the haze that we think of as smog. This is a problem not only in our cities, but also in rural areas and pristine areas such as national parks and forests.

What Can I Do To Prevent Fugitive Dust?:

A Dust Control Plan involves the implementation of control measures before, during and after conducting any dust generating operation. These controls must be in place on non-work days and after working hours, not just while work is being done on the site. Control measures are techniques, practices or procedures used to prevent or minimize the generation, emission, entrainment and suspension of fugitive dust. Examples of control measures are:

- Practicing site planning.
- Using wind barriers.
- Watering effectively.
- Utilizing work practices designed to reduce fugitive dust at the source.
- Using trackout controls such as gravel pads, cattle guards, or grizzlies.
- Covering the cargo beds of haul trucks to minimize wind-blown dust emissions and spillage.
- Applying chemical stabilizers.
- Keeping open-bodied haul trucks in good repair, so that spillage may not occur from beds, sidewalls, and tailgates.

What Am I Legally Required To Do?:

The property owner, lessee, developer, or general/prime contractor who engages in earthmoving operations that disturb a total surface area of 0.10 acre (4,356 square feet) is responsible for meeting all of the legal requirements outlined below.

Formulate a Dust Control Plan –

Obtain an Earthmoving Permit and have a Dust Control Plan approved by Maricopa County. Appendix 1 gives instructions for proper completion of permit applications. The Dust Control Plan must ensure compliance with Rule 310, which prohibits visible emissions from exceeding 20% opacity anywhere on site. This Dust Control Plan must contain, at a minimum, all of the following information:

- Name, address, and phone number of the person(s) responsible for the dust generating operation and for the submittal and implementation of the Dust Control Plan.
- A drawing, 8½” x 11” or larger, showing:
 - Site boundaries of the entire project.
 - Acres to be disturbed, including linear dimensions.

- Locations of the nearest public roads.
- Planned exit locations onto paved public roadways.
- Control measures to be applied to all actual and potential fugitive dust sources, before, during and after conducting any dust generating operation, including non-work hours and non-work days.
- Dust suppressants to be applied, including the following information:
 - Product specifications, including the Material Safety Data Sheet.
 - Label instructions including recommended method, frequency, and intensity of application.
 - Type, number, and capacity of application equipment.
 - Information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.
- Specific surface treatment(s) and/or control measures utilized to control material trackout and sedimentation where unpaved and/or access points join paved public roadways.
- A contingency plan consisting of at least one contingency measure for each activity occurring on the site in case the primary control measures prove inadequate.

A copy of the approved Dust Control Plan must be on-site at all times.

Implement the Dust Control Plan –

The control measures in a Dust Control Plan must be implemented during all phases of construction. They are not effective when used after a dust problem arises. If the plan is not implemented consistently, poor working conditions begin to escalate. Equally important is that prevention measures be in place when the site is temporarily inactive. Don't think, "dust is natural, it's so dry here, there's nothing I can do". Not all arid regions have poor air quality from particulate matter. In Maricopa County, excess particulate matter is generated from the disturbance of the desert soil and the lack of stabilization during and after construction. Good dust control measures prevent soil erosion and fugitive dust emissions. Proper planning and use of control measures before, during, and after construction, minimizes fugitive dust emissions and protects public health in the surrounding community. Once the permit is issued, the person responsible for implementing the Dust Control Plan and the person(s) responsible for the dust generating operations on a site must maintain dust control measures at all times. Each job site must have its own permit and plan. Be sure you and your sub-contractors understand all of the responsibilities in the Dust Control Plan. Have the permit and Dust Control Plan available at the job site. If you are a subcontractor, ask for a copy of the Dust Control Plan and Earthmoving Permit before you start work.

Keep a Log –

A daily log must be kept. This log is used to monitor the application, implementation, and effectiveness of control measures. A sample format for this daily log is included in this Manual, see Appendix 2. Keep notes on the effectiveness of dust control strategies used.

Whom Do I Call if I Have Questions?:

Maricopa County has a Dust Control Coordinator who can be reached at (602) 506-6700. The Dust Control Coordinator will review your permit application and help you develop a Dust Control Plan for your site. The County, through the Small Business Environmental Assistance Program, can provide consultation and on-site assistance to help you with compliance and can be reached at (602) 506-6750. The County can also provide you with further information about dust control and the availability of training programs. For more information and to download this document, please visit Maricopa County's Small Business Environmental Assistance Program Internet site at: www.maricopa.gov/sbeap.

Consequences of Non-Compliance:

Any person who violates any Maricopa County air pollution rule or any permit condition (including a Dust Control Plan incorporated into a permit) may be subject to an order of abatement, a civil action for injunctive relief or civil penalties, or may be found guilty of a Class 1 Misdemeanor. Maricopa County Rules consider the property owner, lessee, developer, or general/prime contractor to be the parties responsible for acquiring Earthmoving Permits and Dust Control Plans. Thus, if the general contractor fails to comply, the developer may also be held responsible for the violation.

The County's mission is to protect and improve the quality of life through responsive and effective environmental management. The County will achieve consistent enforcement of air quality laws and regulations by utilizing the following process:

- A Notice of Violation (NOV) will be issued, when the County discovers that a person, business, corporation, or enterprise fails to comply with provisions of Federal, State, or Maricopa County air quality laws and regulations.
- An Order of Abatement will be issued following the issuance of a Notice of Violation when compliance is not attained within a reasonable amount of time.

Additional enforcement action may be initiated when documented evidence reveals that any of the following conditions have occurred:

- The violation results in actual harm or a potential for harm to public health or the environment.
- The violation constitutes a knowing or willful violation of air quality control laws and regulations.
- The violation involves a major deviation from an air quality standard or requirement.
- Repeat violations occur after receiving a Notice of Violation.

The additional enforcement actions that may be taken include:

- Filing a Class I Misdemeanor Criminal Complaint (Citation) pursuant to Arizona Revised Statutes (A.R.S.) 49-502 in Justice Court.
- Filing a Civil Complaint in Superior Court.
- Filing an action for violations, which are classified as a Class I Misdemeanor, Class 2 Felony, Class 5 Felony, or Class 6 Felony.
- Filing an action for Injunctive Relief.

The County will utilize the “Maricopa County Air Pollution Control Penalty Policy” to determine appropriate penalties for resolving both Criminal and Civil Complaints. These penalties range from \$2,500 to \$10,000 per day per violation, depending on the severity and circumstance of the violation.

Common Violations Found During Inspections:

The following is a list of the most common problems found on work sites. Violations can be avoided by using this as a checklist to assess site compliance.

- Soil surface stabilization not maintained during non-working days and non-working hours.
- Failure to obtain required permits or failure to have permits on site.
- Failure to follow the Dust Control Plan.
- No gravel pad at construction entrances.
- Lack of pre-wetting of work areas and haul routes.
- Insufficient number of water trucks.
- Haul roads and travel ways not stabilized or watered.
- Failure to clean up track-out/deposit on public road.
- No tarps on haul trucks.
- Lack of required record keeping showing implementation of the Dust Control Plan.

GLOSSARY

2 For 1 Offsets Sanction: A compensation for the expansion or construction of a polluting stationary source. Before such expansion/construction begins, an offset permit is required to show that emissions will be reduced at another facility to offset new emissions increases.

Ambient Air – That portion of the atmosphere, external to buildings, to which the general public has access.

ARS – Arizona Revised Statutes.

BACM – Best Available Control Measures.

CAA – Clean Air Act.

CAAA – Clean Air Act Amendments of 1990.

Disturbed Surface Area – A portion of the earth's surface (or material placed thereupon), which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed native condition. This includes graded areas, storage piles, unpaved roads, and unpaved parking lots.

Dust Generating Operation - Any activity capable of generating fugitive dust, including but not limited to, land clearing, earthmoving, weed abatement by discing or blading, excavating, construction, demolition, material handling, storage and/or transporting operations, vehicle use and movement, the operation of any outdoor equipment, or unpaved parking lots. For the purpose of Rule 310, landscape maintenance and/or playing on a ballfield are not considered a dust generating operation. However, landscape maintenance does not include grading, trenching, or any other mechanized surface disturbing activities performed to establish initial landscapes or to redesign existing landscapes.

Earthmoving Operation - The use of any equipment for an activity which may generate fugitive dust, such as, but not limited to, cutting and filling, grading, leveling, excavating, trenching, loading or unloading of bulk materials, demolishing, blasting, drilling, adding to or removing bulk materials from open storage piles, back filling, soil mulching, landfill operations, or weed abatement by discing or blading.

EPA – United States Environmental Protection Agency.

FIP – Federal Implementation Plan. A FIP is a federally implemented plan to achieve attainment of air quality standards, when a State is unable to develop an adequate plan. Also see SIP.

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

Intermittent Source – A dust generating operation and/or activity lasting for less than 6 consecutive minutes.

MAG - Maricopa Association of Governments.

Millings - The recycled asphalt that is left over after the top layer of a roadway is milled.

NAAQS - National Ambient Air Quality Standards. The Clean Air Act required EPA to identify pollutants of specific importance. Scientific data on the relationships between various concentrations of air pollutants and their adverse effect on humans and the environment were collected. This information was used to develop a list of criteria pollutants and their acceptable ambient levels. These levels are known as the National Ambient Air Quality Standards (NAAQS). Criteria pollutants identified include carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, inhaleable particulate matter (also known as PM-10), and lead. The NAAQS are established to protect public health, property and environment.

Non-attainment Area - An area so designated by the Administrator of EPA, acting under Section 107 of the Clean Air Act, as exceeding national primary or secondary ambient air standards for a particular pollutant or pollutants.

Opacity – A condition of the ambient air, or any part thereof, in which an air contaminant partially or wholly obscures the view of an observer.

Palliative – Also referred to as “surfactant”. A substance usually sprayed or spread on the ground surface, that will reduce or moderate the intensity of fugitive dust caused by vehicle travel, earthmoving operations, and construction or wind erosion.

Percent Opacity - The degree to which an effluent plume or any other emission of air contaminants obscures the transmission of light expressed as a percentage.

PM-10 - Also written “PM10 “ or “PM₁₀”. PM-10 is particulate matter that is ten microns (0.00039 inch) and less in size. PM-10 is much smaller than the diameter of a human hair and can become lodged deep in the lungs. PM-10 includes a portion of wind-blown dust and emission from vehicles, gasoline and diesel equipment, and smoke.

Porosity – “Install wind fences or barriers (<50% porosity)”. As used in this statement, <50% porosity means that the fabric or materials of the fence/barrier will be greater than 50% of the entire surface area. The “holes” in the fence/barrier will be less than 50% of the entire surface area.

RACM – Reasonably Available Control Measures. A broadly defined term referring to technological and other measures for pollution control.

Sanction Clock - Under the Clean Air Act automatic sanctions apply to areas that have failed to correct certain deficiencies in their State Implementation Plans. EPA issues findings letters that start “sanction clocks” which give areas a grace period lasting no longer than 18 months to correct the deficiencies, before EPA must apply the first sanction.

SIP – State Implementation Plan. The SIP is the plan adopted by the state of Arizona, which provides for implementation, maintenance, and enforcement of the primary and secondary ambient air quality standards under the Clean Air Act. See also FIP.

Stabilized – A condition where the soil surface is wet, crusted, covered, or otherwise secured, so that dust particles do not become airborne even in high wind.

Unpaved Road – Any road, equipment path, or driveway that is not covered by asphalt, concrete, or other similar material (asphaltic concrete, concrete pavement, chip seal, or rubberized asphalt).

Maricopa County Air Pollution Control Rules and Regulations

Below is a brief description of the County regulations that may apply to your dust generating operation. Before beginning a construction project in Maricopa County, you should be aware of these regulations. Rules 100, 110 and 200 are general sections dealing with definitions, how violations are determined and dealt with, and permit requirements. Rule 310 specifically addresses the regulation of fugitive dust sources.

RULE 100 – General Provisions and Definitions:

The intent of the Maricopa County Air Pollution Control Rules and Regulations are to prevent, reduce, control, correct or remove air pollution within the boundary limits of Maricopa County. Rule 100 sets forth the legal authority for enforcement of the Air Pollution Rules and Regulations and includes over 90 definitions of terms used in all Maricopa County Air Pollution Control Rules and Regulations. Rule 100 also establishes the authority of the Control Officer.

The Control Officer has the right to inspect any premises during reasonable hours and may enter every building, premises, or other place, except the interior of structures used as private residences for the purpose of enforcing and administering these rules and regulations.

In addition, when the Control Officer has reasonable cause to believe that any person has violated or is in violation of the Maricopa County Air Pollution Control Rules and Regulations, the Control Officer may request, in writing, that such person produce all existing books, records, and other documents evidencing tests, inspections, or studies which may reasonably relate to compliance or noncompliance with the rules and regulations.

RULE 110 – Violations:

The purpose of Rule 110 is to specify the classification of violations.

When the Control Officer has reasonable cause to believe that any person has violated any provisions of the Maricopa County Air Pollution Control Rules and Regulations or any requirements of an issued permit, the Control Officer may serve upon such person, by certified mail or in person, an order of abatement or may file a complaint in Superior Court alleging a violation.

The alleged violator is entitled to a hearing if a written request is received within 30 days after issuance of the order. However, in some instances, the order may be conditional and may require a person to refrain from particular acts unless certain conditions are met.

Any person who violates any of these rules or any permit or permit condition issued by the Control Officer may be subject to civil and criminal penalties.

RULE 200 – Permit Requirements:

Rule 200 explains that Maricopa County issues the following types of air pollution control permits (air quality permits):

- Title V Permit
- Non-Title V Permit
- General Permit
- Earthmoving Permit
- Permit To Burn

Rule 200 requires that, before the property owner, lessee, developer, or general/prime contractor begins any earthmoving operation that disturbs a total surface area of 0.10 acre (4,356 square feet) or more, a permit must be obtained from Maricopa County.

RULE 310 – Fugitive Dust Sources:

Rule 310 limits particulate matter (i.e. dust or PM-10) emissions into the ambient air from any property, operation, or activity that may serve as a fugitive dust source. The important aspects of Rule 310 are summarized below:

- Rule 310 requires all earthmoving operations that disturb a total surface area of 0.10 acre or more to obtain an Earthmoving Permit and submit a Dust Control Plan.
- A copy of the Dust Control Plan must remain on the site at all times.
- All control measures must be utilized 24 hours a day, 7 days per week.
- Fugitive dust emissions may not exceed 20% opacity at any time. However, exceeding the opacity standard is permitted if it is a result of one of the following activities:
 - Emergency maintenance of flood control channels and water retention basins. (You must still implement control measures.)
 - Vehicle test and development facilities and operations. (Only if dust is required to test and validate design integrity, product quality, and/or commercial acceptance and if such testing is not feasible within enclosed facilities.)
- Exceeding the 20% opacity standard due to a wind event (i.e., when the 60-minute average wind speed is greater than 25 miles per hour), shall constitute a violation of the opacity standard. However, it shall be an affirmative defense in an enforcement action, if the owner and/or operator can demonstrate all of the following conditions:
 - All control measures required were followed.
 - Better application, implementation, operation, or maintenance of control measures could not have prevented exceeding the 20% opacity standard.
 - The owner and/or operator compiled and retained records.
 - Records document the occurrence of a wind event on the day(s) in question. The occurrence of a wind event must be determined by the nearest Maricopa County Environmental Services Department Air Quality Division monitoring station,

from any other certified meteorological station, or by a wind instrument that is calibrated according to manufacturer's standard and located at the site in question.

- Work sites that are 5 acres or larger must have a project information sign posted at the main entrance and visible to the public. The sign must be a minimum of 4 feet long by 4 feet wide, have a white background, have black block lettering at least 4 inches in height, and must contain the following information, as shown below:
 - Project name.
 - Name and phone number of person(s) responsible for conducting the project.
 - Text stating: "Complaints? Call Maricopa County Environmental Services Department (insert the current/accurate phone number for the complaint phone line)."



- Compliance with approved work practices is required when engaged in any of the following activities:
 - Bulk material hauling off-site onto paved public roadways.
 - Bulk material hauling on-site within the boundaries of the work site.
 - Transporting of materials that could result in spillage, carryout, erosion, and/or trackout.
 - Traversing unpaved hauling and access roads.
 - Earthmoving operations on disturbed surface areas 1 acre or larger.
 - Weed abatement by discing or blading.
 - Stabilization procedures are required for all stationary sources of fugitive dust, including, but not limited to:
 - Unpaved parking lots.
 - Unpaved hauling or access roads.
 - Open areas and vacant lots.
 - Disturbed surface areas.
 - Easements, rights-of-way, and access roads for utilities (electricity, natural gas, oil, water, and gas transmission).
 - Open storage piles.
- A daily log recording all dust control measures used must be kept. The log must be retained for at least 1 year from the date the log was initiated and for at least 6 months after completion of the project.

Compliance Strategies:

This section describes control measures and work strategies that will assist in ensuring compliance with Rule 310.

Site Planning –

Advance planning for dust control should be the first step on any project. A pro-active approach will save the project time and money and should include creation of the Dust Control Plan. Suggestions to consider are:

- Phasing the project such that soil disturbance is minimized.
- Limit the amount of area graded at any one time. The less acreage of disturbed surface area on-site, the less you have to control and the less water or chemical dust suppressant you need.
- Install wind fences or barriers (<50% porosity). Place barriers around storage piles, parking, and equipment staging areas.
- Develop semi-permanent staging areas to cut down on the amount of disturbed area.
- Restrict access on unpaved areas to vehicles and equipment that are necessary that day. Limit unnecessary travel on unpaved surface areas.
- Restabilize disturbed surfaces by paving permanent roads and restoring vegetation as soon as possible.
- Plan sufficient time to allow for pre-wetting of the site prior to initial earthmoving.
- Lastly, make sure everyone working at the job site understands the basic dust control strategies and knows who is responsible for successful dust control.

Trackout –

Trackout, including carryout and spillage, refers to bulk materials that adhere to the exterior surfaces of or are spilled from motor vehicles and/or equipment and subsequently fall onto a paved public roadway. The two pictures below illustrate trackout.



Control of trackout is required for all work sites with a disturbed surface area of five acres or more and from all work sites from which 100 cubic yards of bulk materials are hauled per day. Control of trackout can be accomplished using any of the control devices described and shown below:

- Gravel Pads -A gravel pad is a stabilized construction entrance, designed to remove the mud and dirt from the tires of vehicles leaving a construction site. Use between one and three-inch diameter washed, well-graded gravel or crushed rock. The gravel pad should be at least 30 feet wide by 50 feet long, and a minimum of 6 inches deep. When installing the gravel pad, ensure that it is properly graded.



- Grizzly -A device (rails, pipes, or grates) used to dislodge mud, dirt, and debris from the tires and undercarriage of motor vehicles prior to leaving the work site.



- Paving -The paved surface must extend from the point of intersection with a paved public roadway at least 100 feet back onto the site, with a width of at least 20 feet.

Additionally, clean up of trackout, carryout and spillage is required immediately, if it extends a cumulative distance of 50 feet or more. If the extent is less than 50 feet, clean up at the end of the workday is permissible.



Effective Watering –

Watering is a very effective dust suppressant. When applied regularly, water provides temporary stabilization of disturbed surface areas.

Watering should be sufficient to:

- Make roads and disturbed surfaces appear moist with minimal silt.
- Create a crusted surface on the soil so that it is not easily crumbled between your fingers.
- Provide soil moisture content that is optimal for compaction.
- Prevent visible emissions from exceeding 20% opacity.

Effective watering strategies include:

- Wet the area to depth of cuts or equipment penetration 15 to 30 minutes prior to the start of work.
- Apply water at the end of the day to soak the next day's work area overnight.
- During grading, apply water in sufficient quantity to maintain a moist surface using a water truck.



- During trenching, water using a fine spray or mist.



- During screening, mist material after it drops from the screen.
- After clearing an area, apply water with sufficient frequency to prevent visible emissions (at least every 2 hours). Automatic sprinkler or spray bar systems are optimal in these areas.



For Unpaved Haul Roads / Access Roads / Equipment Paths:

- Apply water in sufficient quantity to maintain a moist surface on unpaved haul roads, access roads and equipment paths.
- Do not apply excessive water since muddy conditions increase track-out.
- If the area is inaccessible to water trucks due to slope conditions or other safety factors, watering should be conducted with hoses or sprinkler systems.
- Surfactants or palliatives added to water increase penetration.

Chemical Stabilizers –

Chemical stabilizers are products that are applied to soil surfaces in order to limit dust generation. An example is shown below.



While there are a variety of products to choose from, finding one that fits your project's activities can reduce the need for watering, which can result in long term cost savings. Dilution, application rates, and application frequencies vary by product. Typically, chemical stabilizers last between one and twelve months, but vendors should be contacted to obtain information. Some chemical stabilizers are not adequate in areas subject to daily disturbances, high traffic volume, or heavy equipment traffic - check with the product vendor if these conditions occur at your site. Appendix 3 lists some chemical stabilizers and dust palliatives that are undergoing field-testing. Maricopa County recommends the use of non-toxic, non-corrosive products. All chemical stabilizers used must be in compliance with all applicable environmental laws.

Wind Barriers –

Wind barriers are used to reduce the amount of wind blown dust leaving the site from storage piles of bulk materials. Creating a wind barrier could involve installing wind fences, constructing berms, or parking construction equipment in a position to block the wind. Alone, these barriers are not always adequate for controlling dust. Wind barriers may need to be used in conjunction with watering or chemical stabilizers. Effective wind barriers are three sided structures and made of material with a porosity of 50% or less. The use of wind barriers will reduce the need for watering and use of chemical stabilizers, but not necessarily eliminate this need. Examples of effective wind barriers are shown below.



Bulk Material Handling, Storage and Transporting Operations –

Bulk material handling, storage and/or transporting operations are defined as the loading, unloading, conveying, transporting, piling, stacking, screening, grading, or the moving of bulk materials capable of producing fugitive dust. Advance planning and properly implemented control measures can control fugitive dust. The following practices should be used:

Bulk Material Hauling Off-Site Onto Paved Public Roadways:

- Load all haul trucks such that the freeboard is not less than three inches.
- Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgates.
- Cover all haul trucks with a tarp or other suitable closure.
- Before the empty haul truck leaves the site, either clean the interior of the cargo compartment or cover it.
- Control of trackout is required as stated earlier.

Bulk Material Hauling On-Site Within the Boundaries of the Work Site: When crossing a public roadway, which is open during construction:

- Load all haul trucks such that the freeboard is not less than three inches.
- Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgates.
- Control of trackout is required as stated earlier.

Bulk Material Hauling On-Site, Completely Within Site Boundaries:

- Limit vehicular speeds to 15 mph.
- Apply water to the top of the load to prevent fugitive dust emissions that exceed the 20% opacity limit.

Open Storage Piles:

An open storage pile is any accumulation of bulk material with a 5% or greater silt content that attains a height of three feet at any point and has a total surface area of 150 square feet or more. Appendix 4 gives methods for calculating the surface area of storage piles. The following guidelines apply:

During stacking, loading, and unloading operations, apply water as necessary to control fugitive dust.

When not conducting stacking, loading, and unloading operations, comply with one of the following work practices:

- Cover open storage piles with tarps, plastic, or other material securely enough to prevent wind from removing the coverings.
 - Apply water to maintain soil moisture content at a minimum of 12%.
 - Apply water to the soil surface until a crust is formed that will prevent wind erosion.
- Construct and maintain wind barriers, storage silos, or a three-sided enclosure with walls at a distance from the pile that is no more than twice the height of the pile. The length of the barrier must be no less than the length of the pile and the height must be equal to the

height of the pile, and the barrier must meet the standards outlined earlier for wind barriers.

Note: When using a barrier to control dust, water control must be used also, either to maintain 12% soil moisture or to form a crust on the surface of the material, as explained earlier.

The following pictures illustrate improper bulk material loading, a haul truck improperly loaded above the freeboard, and the proper tarping of loads.



Construction Operations –

To control fugitive dust at construction projects, control measures must be implemented 24 hours a day, 7 days a week.

Below is a list of typical construction activities with suggested control measures and required work practices.

Disturbed Surface Areas - Pre-Activity:

- Use advance planning to minimize the likelihood of generating excessive fugitive dust. When earthmoving activities commence, use the following control measures:
 - Pre-water the work site to the depth of cuts.
 - Proceed in stages to minimize the amount of disturbed surface area present at any given time.

Disturbed Surface Areas - During Construction:

During dust generating operations such as land clearing, earthmoving, weed abatement by discing or blading, excavating, grading, demolition, or other construction activity, these control measures should be observed:

- Apply water or another dust suppressant to the work area.
- Construct fences or 3 - 5 foot high wind barriers adjacent to roadways or urban areas.

Note: The use of fences or wind barriers does not substitute for the use of water or other dust suppressant.

The following picture shows proper dust control practices, effective watering, applied prior to work on a large site.



Earthmoving Operations on Disturbed Surface Areas 1 Acre or Larger:

When the area under construction is 1 acre or larger, water must be applied during earthmoving operations as well as prior to commencement of operations. The following picture illustrates one of the practices which, improperly managed, is a major contributor to fugitive dust emissions.



Unpaved Haul/Access Roads:

On a site, which has unpaved surfaces used for vehicular traffic, vehicle speed must not exceed 15mph and the number of trips using these surfaces must not exceed 20 per day unless one of the following work practices is used:

- Apply water so that the surface is visibly moist.
- Apply and maintain surface gravel.
- Apply and maintain a dust suppressant

Site Maintenance –

Inactive or seldom used portions of the project site must be maintained in such a way that dust entrainment is prevented. Some specific areas requiring attention are presented in this section.

Unpaved Parking Lots:

Unpaved parking lots are defined as any area larger than 5,000 square feet that is not paved and that is used for parking, maneuvering, or storing motor vehicles. These areas must be maintained using one of the options below:

- Apply and maintain surface gravel.
- Apply and maintain an effective dust suppressant.

Open Areas and Vacant Lots:

To control fugitive dust from open areas and vacant lots on which no activity is occurring, whether or not work is underway at other locations on the site, use one of the following methods:

- Apply water effectively to form a crusted surface.
- Prevent motor vehicle and/or off-road vehicle trespassing, parking, and/or access, by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective control measures.
- Uniformly apply and maintain surface gravel or soil stabilizers to all areas that have been disturbed by motor vehicles or off-road vehicles.
- Pave the area.
- Restore the area such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions.

Disturbed Surface Areas - Temporary Stabilization During Non-Work Days and After Work Hours:

- Dust generated from disturbed surface areas on which no activity is occurring, whether at a work site that is under construction or at a work site that is temporarily or permanently inactive, must be controlled by the following methods:
- Apply and maintain a dust suppressant.
- Prevent motor vehicle and/or off-road vehicle trespassing, parking, and/or access.

Disturbed Surface Areas - Permanent Stabilization (Required Within 8 Months after Cessation of Dust Generating Operations):

Disturbed surface areas, on which no activity has occurred for 8 months, must be permanently stabilized, whether or not the entire site is inactive. Employ one of the following control measures:

- Restore area such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions.
- Pave, apply surface gravel, or apply a dust suppressant.
- Establish vegetative ground cover in sufficient quantity.

Permits

Instructions for Filling Out an Earthmoving Permit Application -

The property owner, lessee, developer or general/prime contractor will be responsible for acquiring an Earthmoving Permit. A permit is required when the project disturbs 0.1 acre or more.

The applicant shall fill out the Earthmoving Permit application as truthfully, accurately and completely as possible.

In addition to basic applicant information, it is important to include the legal description of the site from the Phoenix Metropolitan Map Book: Township, Range and Section.

The size of the project area to be disturbed, including staging and stockpile areas, must be stated. Information on disturbed acreage is necessary for calculation of permit costs in accordance with the fee schedule indicated on the application.

A brief description of the project must be provided, along with an indication of the types of project activities anticipated. It is important to indicate whether the activities include demolition work.

A permit application must include a site drawing on paper no smaller than 8 ½ X 11 inches. This drawing must show the entire project site boundaries, acreage to be disturbed with linear dimensions, nearest public roads, a North arrow and planned exit locations onto paved public roadways.

The Earthmoving Permit application incorporates a Dust Control Plan. The Dust Control Plan lists various fugitive dust sources, earthmoving activities and dust control measures. The applicant is required to select at least one primary control measure and one contingency measure for each listed fugitive dust source or activity. If you are certain that a particular section does not apply, then indicate that it is not applicable.

Indicate the available water source and intended water application method, including the number of water trucks and their capacity.

If dust suppressants other than water are to be used, information regarding the method of application, type and capacity of equipment and frequency and intensity of application must be provided. Also include available information regarding environmental impacts and approvals or certifications related to appropriate and safe use for ground application. This information may be provided as an attachment to the application.

It is important to note that some control measures are mandatory. These include:

- Tarping of all haul trucks that carry bulk materials on paved public roadways.

- Trackout control devices on large sites (defined as sites over five acres where more than 100 cubic yards of bulk materials are hauled on or off site per day).
- Clean up of trackout from public roadways (immediately when the trackout extends 50 feet or more, and at the end of each day when it extends less than 50 feet).

A responsible official who is an officer or designated signer for the company named as the applicant must sign the Earthmoving Permit application. This individual is certifying the accuracy of the information presented in the application documents. This individual bears responsibility for the operation and for any inspection or enforcement actions taken in response to situations of non-compliance.

The Maricopa County Environmental Services Department (MCESD) requires that all applications be accompanied by payment prior to review and approval. Applications for sites less than ten acres are usually processed at the time of submittal. Application for sites larger than 10 acres will normally be processed within four days. However, MCESD is authorized to take up to 14 days to process an application.

Dust Control Permit Compliance -

THE PERMITTEE OR AUTHORIZED AGENT SHALL COMPLY WITH RULE 310, WHICH LIMITS PARTICULATE MATTER (PM-10) EMISSIONS INTO THE AMBIENT AIR FROM ANY PROPERTY OPERATION OR ACTIVITY THAT MAY SERVE AS A FUGITIVE DUST SOURCE.

- The Permittee shall be responsible for assuring that all contractors, sub contractors and any other person(s) associated with the project comply with the “Conditions of the Permit”.
- The Permittee shall educate each contractor and sub contractor about potential fugitive dust sources arising from construction activities, i.e.: earth moving, land clearing, loading, storage piles, landscaping, vehicular track-out and haul roads.
- The Permittee shall take measures to control fugitive dust emissions 24 hours a day, 7 days a week.
- The Permittee shall not allow fugitive dust to become airborne without taking reasonable precautions.
- The Permittee shall not conduct any open burning on the site.
- The Permittee shall not cause or permit the handling, transporting, or storage of any materials in a manner, which could allow controllable particulate matter to become airborne.
- The Permittee shall stabilize disturbed areas within the construction site making sure soil has a well-developed crust.
- The Permittee shall control fugitive dust from haul roads and trucks loaded with bulk material.
- The Permittee shall take reasonable precautions to keep dirt off paved streets and to remove all visible trackout daily.
- The Permittee shall set up a gravel pad at the site access areas (also known as “stabilized construction entrances”) prior to commencing construction.
- The Permittee shall assure that site personnel send a copy of all Notices of Violations (NOV’s) to their corporate office.

DUST CONTROL PLAN

Choose at least one measure as a primary RACM (Reasonably Available Control Measure) per category. Unless designated, any other control measure in the category will be considered a contingency or back-up control measure. Instead of using this form, you may prepare your own plan to submit by following the guidelines in Rule 310, Section 401.

This plan must be implemented throughout the life of the project - not just the earthmoving phase but until all roads and disturbed areas are stabilized.

1) EARTHMOVING

A) Grading / Demolition / Landscaping / Weed Control:

- Conduct watering as necessary to prevent or minimize visible emissions
 - Prewet site to depth of cuts
 - Increase watering frequency during high wind conditions until there is no evidence of wind blown dust (contingency only, not to be used as a primary RACM)
 - Cease operations (contingency only, not to be used as a primary RACM)
- #### B) Trenching / Screening / Backfilling:
- Mist dust cloud resulting from trenching
 - Mist material after it drops from screen
 - Water truck or large hose dedicated to trenching & backfilling equipment
 - Increase watering frequency during high wind conditions until there is no evidence of wind blown dust (contingency only, not to be used as a primary RACM)
 - Cease operations (contingency only, not to be used as a primary RACM)

2) SITE STABILIZATION / DISTURBED SURFACE AREA

- #### A) Temporary Stabilization: (Including Weekends & Holidays)
- Apply water to all areas at least twice a day until a crusted surface has formed
 - Apply chemical stabilizers
 - Install wind fences/barriers/form berms (in addition to the above)
- When active operations will not occur for more than fifteen days:**
- Apply dust suppressants to all disturbed areas to maintain stabilization
 - Apply water to all inactive disturbed areas at least twice a day until a crusted surface has formed
 - Install temporary coverings/enclosures (in addition to one of the above)

B) Final Stabilization:

Within 8 months after active operations have ceased:

- Pave the affected area
- Physical stabilization with gravel/recycled asphalt
- Physical stabilization with vegetation

C) Open Storage Piles:

- Apply chemical stabilizers
- Apply water to the surface area of all open storage piles on a daily basis
- Install temporary coverings/enclosures (in addition to one of the above)

Prior to and during any high wind event, control measures must continue to be implemented or increased as necessary to effectively minimize wind blown dust.

CERTIFICATION: I certify that I am familiar with the operations presented in this application and agree to conduct all operations related to the worksite in compliance with the above dust control plan, Rule 310, any permit conditions, and all applicable environmental regulations.

Signature of Responsible Official _____

Print Name and Title _____
(The responsible official is an officer or designated signer from the company named as applicant. If a designated signer is used, a written designation signed by an officer shall be submitted to this office.)

3) MATERIAL HANDLING / HAULING

A) Material Loading:

- Pre-wet material prior to handling or loading
- Water/mist while loading to prevent or minimize visible emissions

B) Hauling:

- All haul trucks carrying bulk materials must be effectively covered with a tarp or other suitable enclosure

4) ROADWAYS / ACCESS POINTS

A) Unpaved Haul / Access Roads / Equipment Paths :

- Stabilize with gravel/recycled asphalt
- Apply chemical dust suppressants to maintain surface stabilization
- Water all surfaces as needed to prevent or minimize visible emissions
- Restrict vehicle speed to 15 MPH (in addition to the above)

B) Access Points:

- Install a stabilized construction entrance/coarse gravel pad (See Box)
- Install a wheel washer
- Limit, restrict, reroute motor vehicle access
- Vacuum or wet broom daily all visible track-out

STABILIZED CONSTRUCTION ENTRANCES (GRAVEL PADS) are required on all sites larger than 5 acres OR if there will be ANY material hauling on or off site.

5) WATER SUPPLY

A) Availability:

- Water storage tank on site
- Metered hydrant on site
- Water not on site, hydrant is _____ feet away
- Water provided through irrigation
- Other (specify source) _____

B) Application:

- Apply using a water truck # trucks _____ # gallons/truck _____
- Apply using hoses
- Apply using sprinklers



PLEASE SUBMIT IN DUPLICATE

Application for Earth Moving Permit, Demolition & Dust Control Plan

Applicant Owner/Operator/Leasee General/Prime Contractor Developer
Legal Business Name: STANDARD PRIDE OF AZ.
Address: 600 N. SCOTTSDALE RD
City/State/Zip: SCOTTSDALE AZ 85253
Phone: 627-7500 Fax: 627-7040
Primary Contact Person: BRUCE SCHLICK

FOR OFFICE USE ONLY	
Dist #	<u>1</u>
NOV #	
Permit #	<u>991964</u>
Date Issued	<u>9/3/99</u>
Fee Paid	<u>\$1057.88 up</u>
Approved By	<u>R. Haddon 9-13-99</u>
PU	Mail
<u>R. Haddon</u>	<input checked="" type="checkbox"/>

Title: PROJECT MANAGER Pager # _____ Mobile # 693-7508 Onsite # _____
Property Owner/General Contractor: TOTAL BUILDERS OF AZ.
Phone: 627-7650 Contact Person: Bob Saddle Title: Proj. Mgr.
Project Location/Street Address: 10302 E. BASELINE Rd. City: MESA
Nearest Major Intersection: CRISMON + BASELINE

Legal Description (from Phoenix Metropolitan Map Book): Township 1N Range 7E Section 35
Size of Project In Acres (include staging and stockpile areas): 26.33 Project Start Date: 9-8-99

Fee Schedule:	Total Surface Area Disturbed:	Fee
	0.1 to less than one acre.....	\$ 75.00
	One or more acres.....	\$ 36.00 per acre PLUS \$110.00

Brief Description of the Project: Subdivision - Residential Homes

TYPE OF PROJECT (Mark all applicable activities):

- | | | | |
|---|--|---|---|
| <input checked="" type="checkbox"/> Residential | <input type="checkbox"/> Commercial/Industrial | <input checked="" type="checkbox"/> Road Work | <input type="checkbox"/> Temporary Storage/Yard |
| <input checked="" type="checkbox"/> Trenching | <input checked="" type="checkbox"/> Site Preparation/Land Dev. | <input type="checkbox"/> Weed Control | <input type="checkbox"/> Demolition |

For renovation or demolition activities the following information is required:

Is asbestos present? <u>N.A.</u> AHERA Determination made by _____ Date _____
Has 10 Day NESHAP Notification been submitted? _____ If Yes, Date: _____ Copy of 10 Day Notification Attached? Y N Start Date _____

In accordance with Rule 310, Section 401.2, a plot plan is required. Provide a plot plan sketch on 8 1/2 by 11 inch paper which includes the total area to be disturbed. Indicate sources of fugitive dust emissions on the plot plan, including delivery, transport, and storage areas. Be sure to include linear dimensions in feet on plot plan. Pursuant to Rule 310, Section 303, a dust control plan is required with any earthmoving application.

Additional measures and comments may be attached to this form. Pursuant to Rule 310, Section 503, records of actual implementation or application of these measures must be maintained daily and kept on site and made available upon request by the Control Officer of designee. The records must be retained for at least 3 years by the permittee. 3/11/97

CRISMON CREEK - PHASE I

MESA-AZ

US 60

SIGNAL BUTTE RD

CRISMON RD

1240

1080

640

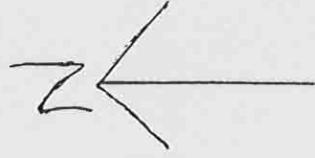
1360

BASELINE RD

ACCESS GRAVEL PAD

ACCESS GRAVEL

Hydrant



22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS

AVERAGES

$$1080 + 1360 \div 2 = 1220$$

$$1240 + 640 \div 2 = 940$$

$$940 \times 1220 = \frac{1,146,800 \text{ SF}}{43,560 \text{ S.F.}} = \underline{26.33 \text{ AC}}$$

50 SHEETS
100 SHEETS
200 SHEETS
22-141
22-142
22-144





PLEASE SUBMIT IN DUPLICATE

Application for Earth Moving Permit, Demolition & Dust Control Plan

Applicant Owner/Operator/Leasee General/Prime Contractor Developer

Legal Business Name: STANDARD PRIDE OF AZ.

Address: 600 N. SCOTTSDALE RD

City/State/Zip: SCOTTSDALE AZ 85253

Phone: 627-7500 Fax: 627-7040

Primary Contact Person: BRUCE SCHLICK

Title: PROJECT MANAGER Pager # _____ Mobile # 693-7508 Onsite # _____

Property Owner/General Contractor: TOTAL BUILDERS OF AZ.

Phone: 627-7550 Contact Person: BOB SADDIE Title: PROJ. MGR.

Project Location/Street Address: 10302 E. BASELINE RD. City: MESA

Nearest Major Intersection: CRISMON + BASELINE

Legal Description (from Phoenix Metropolitan Map Book): Township 1N Range 7E Section 35

Size of Project In Acres (include staging and stockpile areas): 26.33 Project Start Date: 9-8-99

Fee Schedule: Total Surface Area Disturbed: _____ Fee _____

0.1 to less than one acre.....\$ 75.00
One or more acres.....\$ 36.00 per acre PLUS \$110.00

Brief Description of the Project Subdivision - Residential Homes

TYPE OF PROJECT (Mark all applicable activities):

- Residential
- Commercial/Industrial
- Road Work
- Temporary Storage/Yard
- Trenching
- Site Preparation/Land Dev.
- Weed Control
- Demolition

For renovation or demolition activities the following information is required:

Is asbestos present? <u>N.A.</u> AHERA Determination made by _____ Date _____	
Has 10 Day NESHAP Notification been submitted? _____	If Yes, Date: _____
Copy of 10 Day Notification Attached? <u>Y</u>	Start Date _____

In accordance with Rule 310, Section 401.2, a plot plan is required. Provide a plot plan sketch on 8 1/2 by 11 inch paper which includes the total area to be disturbed. Indicate sources of fugitive dust emissions on the plot plan, including delivery, transport, and storage areas. Be sure to include linear dimensions in feet on plot plan. Pursuant to Rule 310, Section 303, a dust control plan is required with any earthmoving application.

Additional measures and comments may be attached to this form. Pursuant to Rule 310, Section 503, records of actual implementation or application of these measures must be maintained daily and kept on site and made available upon request by the Control Officer of designee. The records must be retained for at least 3 years by the permittee. 3/11/97

FOR OFFICE USE ONLY

Dist # 1

NOV # _____

Permit # 991964

Date Issued 9/3/99

Fee Paid \$1057.88 up

Approved By R. Haddon 9-13-99

PU _____ Mail _____

R. Haddon

This plan must be implemented throughout the life of the project - not just the earthmoving phase but until all roads and disturbed areas are stabilized.

1) EARTHMING

- A) Grading / Demolition / Landscaping / Weed Control:**
- Conduct watering as necessary to prevent or minimize visible emissions
 - Prewet site to depth of cuts
 - Increase watering frequency during high wind conditions until there is no evidence of wind blown dust (contingency only, not to be used as a primary RACM)
 - Cease operations (contingency only, not to be used as a primary RACM)
- B) Trenching / Screening / Backfilling:**
- Mist dust cloud resulting from trenching
 - Mist material after it drops from screen
 - Water truck or large hose dedicated to trenching & backfilling equipment
 - Increase watering frequency during high wind conditions until there is no evidence of wind blown dust (contingency only, not to be used as a primary RACM)
 - Cease operations (contingency only, not to be used as a primary RACM)

2) SITE STABILIZATION / DISTURBED SURFACE AREA

- A) Temporary Stabilization: (Including Weekends & Holidays)**
- Apply water to all areas at least twice a day until a crusted surface has formed
 - Apply chemical stabilizers
 - Install wind fences/barriers/form berms (in addition to the above)
- When active operations will not occur for more than fifteen days:*
- Apply dust suppressants to all disturbed areas to maintain stabilization
 - Apply water to all inactive disturbed areas at least twice a day until a crusted surface has formed
- B) Final Stabilization:**
- Install temporary coverings/enclosures (in addition to one of the above)
- Within 8 months after active operations have ceased:*
- Pave the affected area
 - Physical stabilization with gravel/recycled asphalt
 - Physical stabilization with vegetation
- C) Open Storage Piles:**
- Apply chemical stabilizers
 - Apply water to the surface area of all open storage piles on a daily basis
 - Install temporary coverings/enclosures (in addition to one of the above)

APPROPRIATE DUST CONTROL MEASURES TO BE IMPLEMENTED TO PREVENT OR MINIMIZE VISIBLE EMISSIONS:

3) MATERIAL HANDLING / HAULING

- A) Material Loading:**
- Pre-wet material prior to handling or loading
 - Water/mist while loading to prevent or minimize visible emissions
- B) Hauling:**
- All haul trucks carrying bulk materials must be effectively covered with a tarp or other suitable enclosure

4) ROADWAYS / ACCESS POINTS

- A) Unpaved Haul / Access Roads / Equipment Paths:**
- Stabilize with gravel/recycled asphalt
 - Apply chemical dust suppressants to maintain surface stabilization
 - Water all surfaces as needed to prevent or minimize visible emissions
 - Restrict vehicle speed to 15 MPH (in addition to the above)
- B) Access Points:**
- Install a stabilized construction entrance/coarse gravel pad (See Box)
 - Install a wheel washer
 - Limit, restrict, reroute motor vehicle access
 - Vacuum or wet broom daily all visible track-out

STABILIZED CONSTRUCTION ENTRANCES (GRAVEL PADS) ARE REQUIRED AT ALL ACCESS POINTS FOR IF THERE WILL BE ANY TRUCK OR EQUIPMENT TRAFFIC.

5) WATER SUPPLY

- A) Availability:**
- Water storage tank on site
 - Metered hydrant on site
 - Water not on site, hydrant is 500 feet away
 - Water provided through irrigation
 - Other (specify source)
- B) Application:**
- Apply using a water truck # trucks 1 # gallons/truck, 2500 +
 - Apply using hoses
 - Apply using sprinklers

CERTIFICATION: I certify that I am familiar with the operations presented in this application and agree to conduct all operations related to the worksite in compliance with the above dust control plan, Rule 310, any permit conditions, and all applicable environmental regulations.

Signature of Responsible Official: Gene Butterwing Print Name and Title: GENE BUTTERWING VP Operations

CRISMON CREEK - PHASE I

MESA - AZ

11560

SIGNAL BUTTE RD

CRISMON RD

1240

1080

640

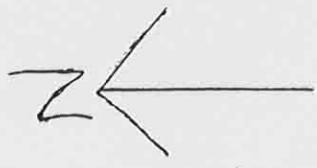
1360

ACCESS GRAVEL

BASELINE RD

ACCESS GRAVEL PAD

Hydrant



22-141 50 SHEETS
22-142 100 SHEETS
22-143 200 SHEETS

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50 SHEETS
100 SHEETS
200 SHEETS
22-141
22-142
22-144



COPY
PLEASE SUBMIT IN DUPLICATE

Application for Earth Moving Permit, Demolition & Dust Control Plan

Applicant: Owner Operator/Leasee General/Prime Contractor Developer
Legal Business Name: B. Bear CONSTRUCTION
Address: SOUTH DOBSON ROAD, SUITE 201
City/State/Zip: MESA, ARIZONA 85202
Phone: (602) 123-4567 Fax: (602) 123-8910
Primary Contact Person: J. The Bear

FOR OFFICE USE ONLY	
Dist. #	<u>1</u>
NOV #	
Permit #	<u>991380</u>
Date Issued	<u>7-20-99</u>
Fee Paid	<u>326.00</u>
Approved by	<u>[Signature]</u>
PU	Mail

Title VICE PRESIDENT Pager # 012-3456 Mobile # 56789 Onsite # _____

Property Owner/General Contractor ABE BUCK CONSTRUCTION

Phone (602) 423-4567 Contact Person Mr. BUCK Title VICE PRESIDENT

Project Location/Street Address SAN ANGELO & SAN PEDRO City GILBERT

Nearest Major Intersection: COOPER ROAD & GUADALUPE ROAD

Legal Description (from Phoenix Metropolitan Map Book): Township 1S Range 5E Section 2

Size of Project in Acres (including staging and stockpile areas): 6.0 ACRES Project Start Date: 7-20-99

Fee Schedule:

<u>Total Surface Area Disturbed</u>	<u>Fee</u>
0.1 to less than one acre.....	\$ 65.00
One to less than five acres.....	\$110.00
Five acres or more.....	\$ 8.00 per acre PLUS \$80.00

Brief description of the project: FIESTA RANCH LOTS 21, 22, & 32

TYPE OF PROJECT (Mark all applicable activities):

Residential	Commercial/Industrial	<input checked="" type="checkbox"/>	Road Work	<input checked="" type="checkbox"/>	Temporary Storage/Yard
Trenching	Site Preparation/Land Dev	<input checked="" type="checkbox"/>	Weed Control		Demolition

For renovation of demolition activities the following information is required:

Is asbestos present? <u>N.A.</u>	AHERA Determination made by _____	Date _____
Has 10 day NESHAP	If Yes, Copy of 10Day	
Notification been submitted? _____	date: _____	Notification attached? Yes No Start Date: _____

In accordance with Rule 310, Section 401.2, a plot plan is required. Provide a plot plan sketch on 8 1/2 by 11 inch paper which includes the total area to be disturbed. Indicate sources of fugitive dust emissions on the plot plan, including delivery, transport and storage areas. Be sure to include linear dimensions in feet on plot plan. Pursuant to Rule 310, Section 303, a dust control plan is required with any earthmoving application.

Additional measures and comments may be attached to this form. Pursuant to Rule 310, Section 503, records of actual implementation or application of these measures must be maintained daily and kept on site and made available upon request by the Control Officer of designee. The records must be retained for at least 3 years by the permittee. 3/11/97

Choose at least one measure as a primary RACM (Reasonably Available Control Measure) per category. Unless designated, any other control measure in the category will be considered a contingency or back-up control measure. Instead of using this form, you may prepare your own plan to submit by following the guidelines in Rule 310, Section 401. This plan must be implemented throughout the life of the project - not just the earthmoving phase but until all roads and disturbed areas are stabilized.

1) EARTHMOVING

A) Grading / Demolition / Landscaping / Weed Control:

- Conduct watering as necessary to prevent or minimize visible emissions
- Prewet site to depth of cuts
- Increase watering frequency during high wind conditions until there is no evidence of wind blown dust (contingency only, not to be used as a primary RACM)
- Cease operation (contingency only, not to be used as a primary RACM)

B) Trenching / Screening / Backfilling:

- Mist dust cloud resulting from trenching
- Mist material after it drops from screen
- Water truck or large hose dedicated to trenching & back filling equipment
- Increase watering frequency during high wind conditions until there is no evidence of wind blown dust (contingency only, not to be used as a primary RACM)
- Cease operations (contingency only, not to be used as a primary RACM)

2) SITE STABILIZATION / DISTURBED SURFACE AREA

A) Temporary Stabilization: (Including Weekends & Holidays)

- Apply water to all areas at least twice a day until a crusted surface has formed
- Apply chemical stabilizers
- Install wind fences/barriers/form berms (in addition to the above)

When active operations will not occur for more than fifteen days:

- Apply dust suppressants to all disturbed areas to maintain stabilization
- Apply water to all inactive disturbed areas at least twice a day until a crusted surface has formed
- Install temporary coverings/enclosures (in addition to one of the above)

B) Final Stabilization:

Within 8 months after active operations have ceased:

- Pave the affected area
- Physical stabilization with gravel/recycled asphalt
- Physical stabilization with vegetation

C) Open Storage Piles:

- Apply Chemical Stabilizers
- Apply water to the surface area of all open storage piles on a daily basis
- Install temporary coverings/enclosures (in addition to one of the above)

Prior to and during any high wind event, control measures must continue to be implemented or increased as necessary to effectively minimize wind blown dust.

3) MATERIAL HANDLING / HAULING

A) Material Loading:

- Pre-wet material prior to handling or loading
- Water/mist while loading to prevent or minimize visible emissions

B) Hauling:

- All haul trucks carrying bulk materials must be effectively covered with a tarp or other suitable enclosure

4) ROADWAYS / ACCESS POINTS

A) Unpaved Haul / Access Roads / Equipment Paths:

- Stabilize with gravel/recycled asphalt
- Apply chemical dust suppressants to maintain surface stabilization
- Water all surfaces as needed to prevent or minimize visible emissions
- restrict vehicle speed to 15 MPH (in addition to the above)

B) Access Points:

- Install a stabilized construction entrance/coarse gravel pad (See Box)
- Install a wheel Washer
- Limit, restrict, reroute motor vehicle access
- Vacuum or wet broom daily all visible track-out

STABILIZED CONSTRUCTION ENTRANCES (GRAVEL PADS) are required on all sites larger than 5 acres OR if there will be ANY material hauling on or off site.

5) WATER SUPPLY

A) Availability:

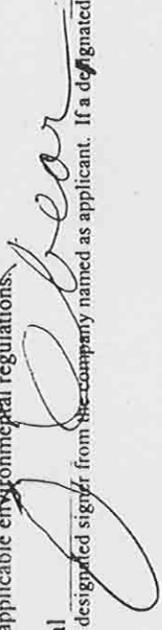
- Water storage tank onsite
- Metered hydrant on site
- Water not on site, hydrant is _____ feet away
- Water provided through irrigation
- Other (specify source) _____

B) Application:

- Apply using a water truck # trucks 1 + # gallons/truck 2,000
- Apply using hoses
- Apply using sprinklers

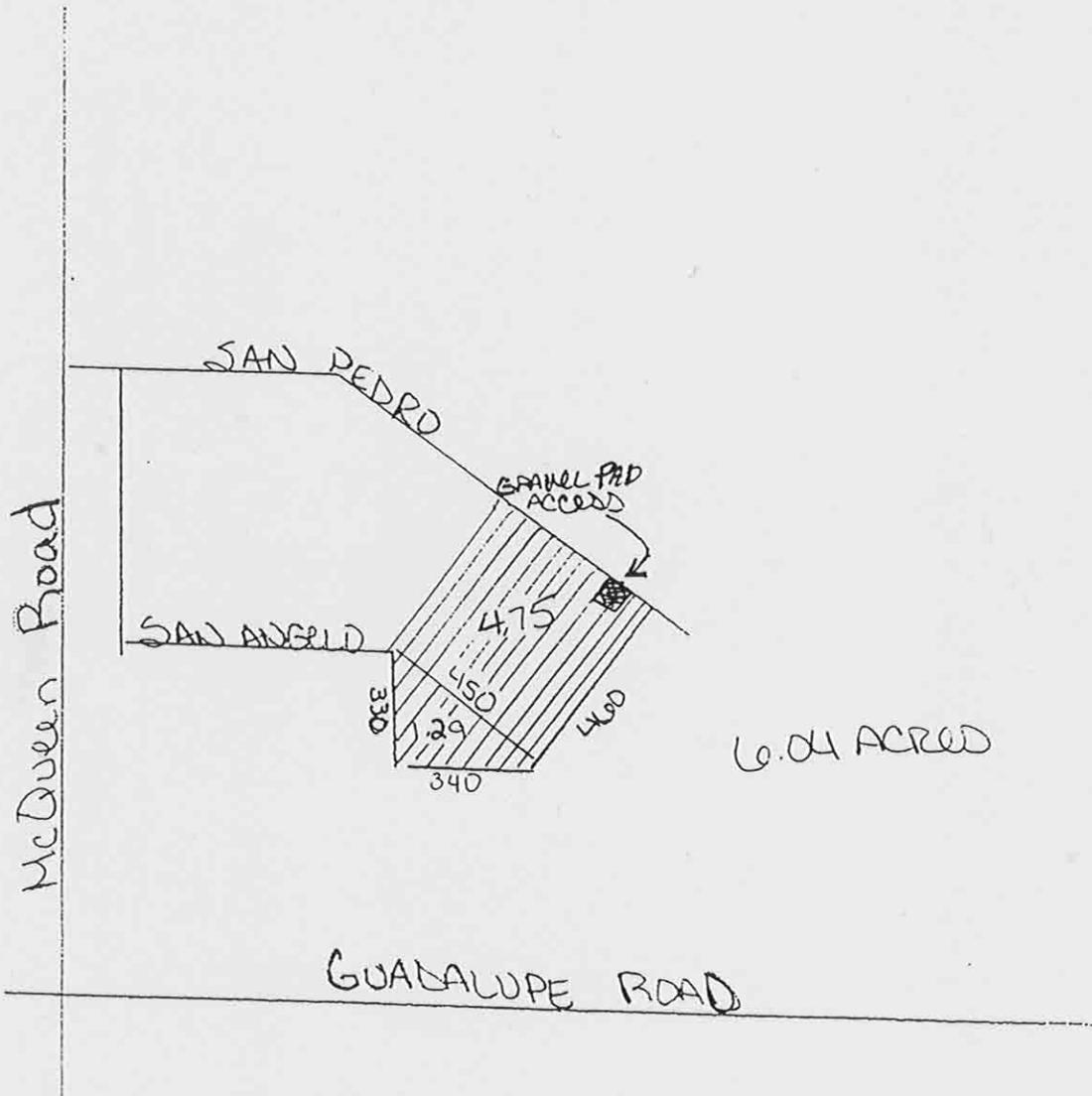
CERTIFICATION: I certify that I am familiar with the operation presented in this application and agree to conduct all operations related to the worksite in compliance with the above dust control plan, Rule 310, any permit conditions, and all applicable environmental regulations.

Signature of Responsible Official



Print Name and Title J. The Bear

(The responsible official is an officer or designated signer from the company named as applicant. If a designated signer is used a written designation signed by an officer shall be submitted to this office)



N.T.S.

-2-

COPY
PLEASE SUBMIT IN DUPLICATE

Application for Earth Moving Permit, Demolition & Dust Control Plan

Applicant: Owner Operator/Leasee General/Prime Contractor Developer
Legal Business Name: B. Bear CONSTRUCTION
Address: SOUTH DOBSON ROAD, SUITE 201
City/State/Zip: MESA, ARIZONA 85202
Phone: (602) 123-4567 Fax: (602) 123-8910
Primary Contact Person: J. The Bear

FOR OFFICE USE ONLY	
Dist. #	<u>1</u>
NOV #	
Permit #	<u>991380</u>
Date Issued	<u>7-20-99</u>
Fee Paid	<u>326.00</u>
Approved By	<u>[Signature]</u>
PU	Mail

Title VICE PRESIDENT Pager # 012-3456 Mobile # 56789 Onsite # _____

Property Owner/General Contractor ABE BUCK CONSTRUCTION

Phone (602) 423-4567 Contact Person Mr. BUCK Title VICE PRESIDENT

Project Location/Street Address SAN ANGELO & SAN PEDRO City GILBERT

Nearest Major Intersection: COOPER ROAD & GUADALUPE ROAD

Legal Description (from Phoenix Metropolitan Map Book): Township 1S Range 5E Section 2

Size of Project in Acres (including staging and stockpile areas): 6.0 ACRES Project Start Date: 7.20.99

Fee Schedule:

Total Surface Area Disturbed	Fee
0.1 to less than one acre.....	\$ 65.00
One to less than five acres.....	\$110.00
Five acres or more.....	\$ 8.00 per acre PLUS \$80.00

Brief description of the project: FIESTA RANCH LOTS 21, 22, & 32

TYPE OF PROJECT (Mark all applicable activities):

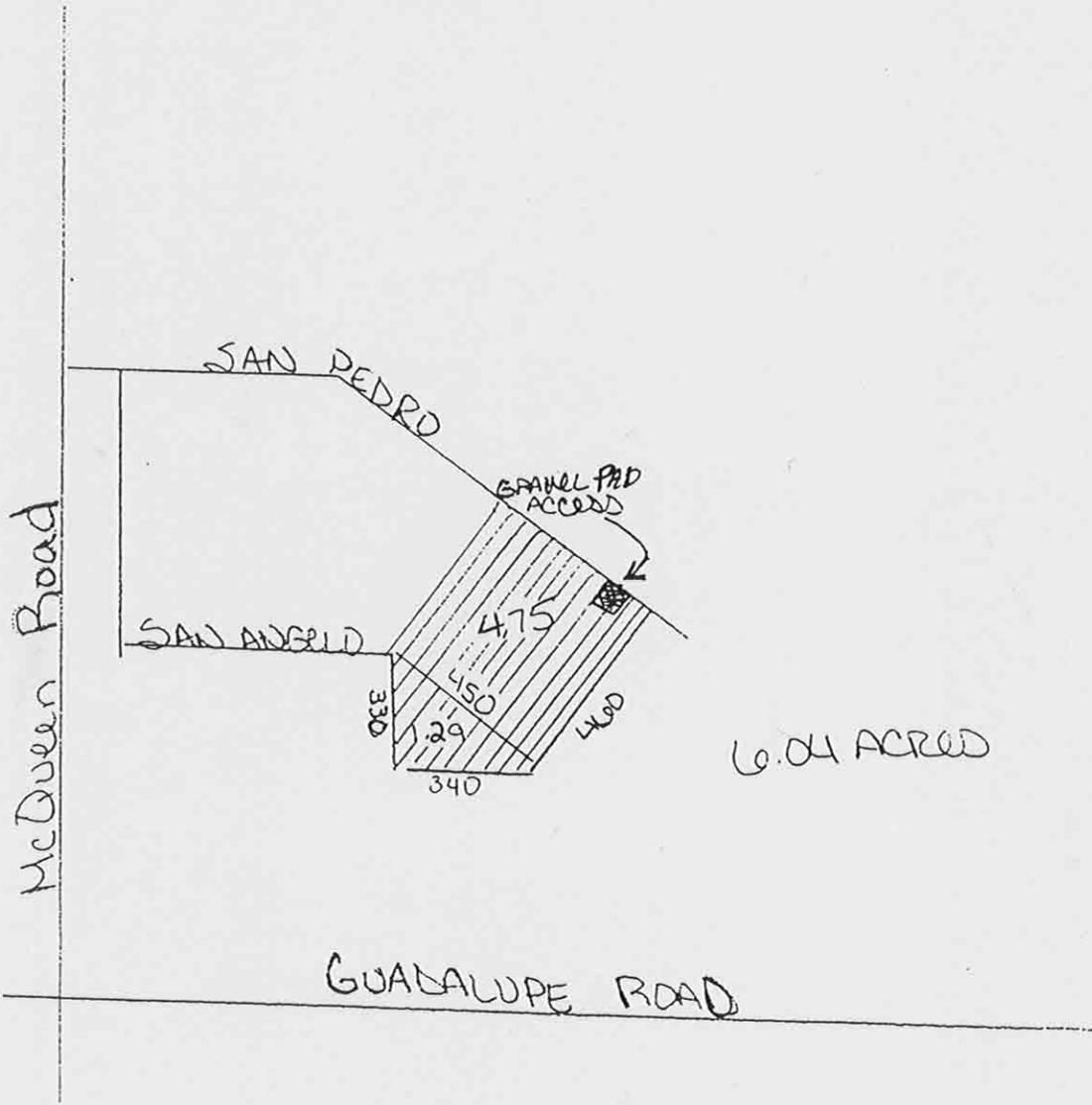
Residential	Commercial/Industrial	<input checked="" type="checkbox"/>	Road Work	<input checked="" type="checkbox"/>	Temporary Storage/Yard
Trenching	Site Preparation/Land Dev	<input checked="" type="checkbox"/>	Weed Control		Demolition

For renovation of demolition activities the following information is required:

Is asbestos present? <u>N.A.</u>	ASHERA Determination made by _____	Date _____
Has 10 day NESHAP Notification been submitted? _____	If Yes, date: _____	Copy of 10Day Notification attached? Yes No Start Date: _____

In accordance with Rule 310, Section 401.2, a plot plan is required. Provide a plot plan sketch on 8 1/2 by 11 inch paper which includes the total area to be disturbed. Indicate sources of fugitive dust emissions on the plot plan, including delivery, transport and storage areas. Be sure to include linear dimensions in feet on plot plan. Pursuant to Rule 310, Section 303, a dust control plan is required with any earthmoving application.

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McQueen Road

SAN PEDRO

SAN ANGELO

GRAVEL PAD ACCESS

6.04 ACRES

GUADALUPE ROAD

N.T.S.

-2-

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Signature of Responsible Official

Print Name and Title J. The Bear

(The responsible official is an officer or designated signer from the company named as applicant. If a designated signer is used a written designation signed by an officer shall be submitted to this office)

DUST CONTROL LOG

PROJECT: _____
 CONTRACTOR: _____
 WEEK BEGINNING DATE: _____

RATING
 AA ABOVE AVERAGE
 A AVERAGE
 O OUT OF COMPLIANCE
 N/A NOT APPLICABLE

	MON	TUES	WED	THU	FRI
ELIMINATION OF TRACK OUT ON TO EXISTING ROADS					
CONDITION OF GRAVEL PAD					
ELIMINATION OF DUST FROM TRENCHING					
FORMATION OF CRUST ON DISTURBED AREA					
FORMATION OF CRUST ON TRENCH SPOILS					
FORMATION OF CRUST ON STOCKPILE					
ELIMINATION OF DUST WHILE SCREENING MATERIAL					
ELIMINATION OF DUST WHILE BACKFILLING TRENCHES					
NUMBER OF OPERATING WATER TRUCK/PULLS					
OTHER MEANS OF DUST SUPPRESSION:					
OTHER MEANS OF DUST SUPPRESSION:					
ANY COMMUNICATION BY OWNER'S FIELD REPRESENTATIVES ON TRADE CONTRACTORS DUST CONTROL PERFORMANCE? EXPLAIN:					
WAS THE JOB SHUT DOWN BY TRADE CONTRACTOR FOR BEING OUT OF COMPLIANCE? (If yes, explain on back of form)					
WAS THE JOB SHUT DOWN BY OWNER FOR BEING OUT OF COMPLIANCE? (If yes, explain on back of form)					
• WERE THESE ISSUES RESOLVED PRIOR TO WORK START UP? (Explain on back of form)					
ANY NOTICE OF VIOLATION FROM MARICOPA COUNTY DEPT OF ENVIRONMENTAL SERVICES?					

Testing of Soil Stabilizers and Dust Palliatives

Various dust palliative products have soil stabilizing qualities. Some work by adhering soil and rock particles, while others chemically or physically alter materials with which they are mixed. In an effort to build stronger road bases and reduce maintenance costs, the Maricopa County Department of Transportation (MCDOT) has tested some of these stabilizing products using various techniques. The tests were conducted primarily on low volume roads with less than 100 vehicle trips per day. Performance under different traffic conditions will vary significantly. The products currently being tested are:

Soil Stabilizers –

Cohrex (Petroleum resin) – Cohrex was found to bond milled asphalt pavement together very well when mixed into the millings or surface applied to the millings. Appears promising as a method of extending the life of millings. Tested on 4-1/2 miles of road.

Reclamite (rejuvenator) – Reclamite bonded milled asphalt pavement together when mixed into the millings. Mediocre performance. Tested on 5-1/2 miles of road.

B.C.Stabilizer (lignin/ss-1h emulsion) – Effective in bonding native soil together when capped with a chip seal. Performed well as a base stabilizer on 1-1/2 miles of road. Tested without capping on 1/2 mile of road with breakdown occurring after seven months.

Dustac (lignosulfonate) – Used to bond milled asphalt pavement together on a steep inclined road and capped with a petroleum resin for waterproofing. Performed well in stabilizing a slope grade. Tested on 1-1/2 miles of road and one mile of shoulder.

ERA-25/75/Cyclogen (rejuvenators) – Bonded milled asphalt pavement together successfully when capped with a chip seal. Tested on one-mile of road.

Lime Slurry – Changed properties of native soil for improved strength. Tested on 1-1/2 miles of road.

EB001 (tall oil pitch) – Used to bond native soil together and capped with milled asphalt pavement. Preliminary results show promise. Currently being tested on one mile of road.

Road Oyl (tall oil pitch) – Bonded milled asphalt pavement together. Surface application shows promise. Being tested on one mile of road.

Total mileage tested with soil stabilizers = 21-1/2 miles.

Total mileage tested = 30-3/4 miles.

Dust Palliatives –

Maricopa County has also tested several dust inhibitors, or dust palliatives, for effectiveness. Most have been tested only by visual observation, while a few have been evaluated using a dust collector, which provides a more quantitative assessment of product effectiveness. Some of the products show promise; however, cost effectiveness will depend upon both product cost and required frequency of use.

Products tested with a dust collector include:

Soil~Sement (acrylic co-polymer) – A surface application has reduced dust 95% at six months. Appears promising as a dust palliative. Tested on 1-1/2 miles of road.

Road Master (calcium chloride) – A surface application reduced dust 50% for two weeks, but was not effective at six weeks. Tested on 1-1/2 miles of road.

Products tested by visual observation only:

Dusdown 28 (magnesium chloride) – A surface application reduced dust for approximately three months. Tested on 1-1/2 miles of road.

Cohrex(petroleum resin) – Reduced dust for two months in a shoulder application .Test section was two miles long (four miles of shoulder) with the product applied to the surface on three miles of shoulder and mixed into the soil for one mile. There was no apparent difference in performance between surface application and mixed application.

Enduraseal 200 (tall oil pitch) – Reduced dust for three months after being mixed into the soil. Tested on 1/2 mile of road.

Dustac (lignosulfonate) – Reduced dust for 11 months after being mixed into the soil. Tested on 1/4 mile of road.

Some products have been seen as ineffective while others show promise. Short-term products can be effective if the price is low enough in the same way that long-term products can be ineffective due to high costs. The six-month testing will give a manageable set of numbers for future life cycle analysis and will provide more information on product cost effectiveness.

Note: A “dust collector” is a simplified quantitative collection device for determining effectiveness of dust suppression when a single test vehicle is driven over the road.

Total mileage tested with dust palliatives = 9-1/4 miles.

Chemical Dust Suppressants

Types and Brand Names	Source	Functional Mechanism	Performance Advantages	Performance Limitations	Environmental considerations
Freshwater	From surface or ground water sources(need water right permit)	Moisture wets particles, increasing their mass and binding them together	Usually readily available ,low material cost, easy to apply	Frequent light applications may be necessary during hot dry weather; therefore, potentially labor intensive. Over application may result in loss of traction, erosion, or points of road failure	Minimal environmental hazard. If applied excessively, may result in erosion and sediment run off .Supply may be limited in some areas
Calcium chloride (Generically available as flakes or pellets)	By-product of ammonia-soda(solvary)process; also produced from natural salt brine	Deliquescent and hygroscopic; i.e. attracts and retains moisture at a relative humidity equal to or greater than 29% (77 F)	Reduces evaporation rate of surface moisture 3.4 times; lowers freezing point of water to-60 degrees F (30% solution) minimizing frost heave and reducing freeze-thaw cycles; increases compacted density of road material effectiveness retained after reblading.	Effectiveness in arid and semi-arid regions may be limited due to low relative humidity very corrosive to aluminum alloys; slightly corrosive to steel. Solubility results in leaching during heavy precipitation. Releases heat when mixed with water	Repeated applications and long term use may harm adjacent and nearby vegetation(See separate vendor listing for product specific information
Magnesium chloride Dustgard Dustoff	Produced from natural salt brine ;by-product of potash production; produced from the reaction of magnesium hydroxide (from sea water or dolomite)with hydrochloric acid	Deliquescent and hygroscopic ;i.e. attracts and retains moisture at a relative humidity equal to or greater than 32% (77 F)	Reduces evaporation rate of surface moisture 3.1 times ;lowers freezing point of water to-27 degrees F (22% solution)minimizing frost heave and reducing freeze-thaw cycles; increases compacted density of road material more so than CaCl2 effectiveness retained after reblading.	Effectiveness in arid and semi-arid regions may be limited due to low relative humidity very corrosive to aluminum alloys; slightly corrosive to steel. Solubility results in leaching during heavy precipitation.	Repeated applications and long term use may harm adjacent and nearby vegetation (See separate vendor listing for product specific information
Lignin derivatives Rustac (Lignosite) Road binder	Paper- making industry by-product containing lignin and carbohydrates in solution. Specific composition depends on chemicals and processes used to extract cellulose	Acts as adhesives, binding soil particles together	Greatly increases dry strength of soil ;not humidity –dependent imparts some plasticity to road surfaces. lowers freezing point of road surface and base; effectiveness retained after reblading	High solubility results in leaching during heavy precipitation; corrosive to aluminum alloys due to acidity (CaCO3 added ingredient, can neutralize acidity).Proper aggregate mix(4-8% fines)important to performance. Becomes slippery when wet, brittle when dry.	Lignin products have high BOD(biological oxygen demand) in aquatic systems. Spills or runoff into surface or groundwaters may create low dissolved oxygen conditions resulting in fish kills or increases in ground water concentrations of iron, sulfur compounds and other pollutants.(See separate vendor listing for product specific information
Tree Resin Emulsions Road oil Enduraseal 200 (ENTAC) Dustbinder DustControlE (RESTAC) Dustrol EX (J-30EX)	Emulsions produced from pine tree resins	Act as adhesives, binding soil particles together	Low solubility after curing minimizes leaching and provides degree of surface waterproofing Imparts some plasticity to road surfaces. High bonding strength non-corrosive	Require proper weather and time to cure No residual effectiveness after reblading. Equipment requires prompt cleanup to avoid curing of resin in hoses and pipes	(See separate vendor listing for product specific information
Synthetic Polymer Emulsions Soil sement,Soil seal Top seal(Dust seal) ECO-CF (Sand Glue) SoilMaster WR-RSB Aerospray 70A Marloc	Synthetic formulations composed of polyvinyl acetates, vinyl acrylic copolymer methacryl methacrylates, polybutadiene,et. Al.	Bind soil particles together by forming a polymerizing matrix, function similar to adhesives	Applicable to a range of emission sources function well in sandy soil conditions. Some types allow seeded vegetation to grow through the polymer matrix	Require proper weather and time to cure may be subject to UV (sunlight) degradation application equipment requires timely cleaning No residual effectiveness after reblading.	(See separate vendor listing for product specific information.)
Bitumens,Tars,and Resins: Residual Fuel Oil Technical White Oils Fuel oils #4,#5,#6 Cohorex Asphotac10,CSS-1,CMS-2S Acadia oil, PEP Pennzsuppress D	Petroleum,coal and plastics industry by-products	Asphalt and resinous products are adhesive binding soil particles together. Petroleum oil products coat soil particles, increasing their mass and binding them together	Water insoluble when dry; provide a degree of surface waterproofing. Good residual effectiveness.	Surface crusting ,fracturing and potholing may develop; longterm application may cause road to become too hard for reblading; won't lower freezing point; petroleum oil products lack adhesive characteristics	Use of used oils prohibited. See MTCA discussion on page 6. Some petroleum based products may contain carcinogenic polycyclic aromatic hydrocarbons (PAHs). (See separate vendor listing for product specific information.)
Geotextiles Trevia Spunbond Amoco	Manufactured polypropylene and polyethylene fabrics	Provide and maintain drainage; improve load supporting properties; prevent upward migration of subgrade fines; separate road materials	Flexible ,durable, water permeable, and resists soil chemicals ;reduces amount of aggregate required during initial construction lower maintenance costs	High material cost; material degrades in sunlight, if exposed	None

Storage Piles

Surface Area Calculations –

For quick reference, the following dimensions represent storage piles with surface areas of 150 square feet.

Conical Piles –

Height – Approximately 5 feet.

Radius – Approximately 10 feet.

Linear Piles –

Length of Sloped Side – Approximately 5 feet.

Length – Approximately 15 feet.

Exact formulas are presented below.

Surface Area of Conical Storage Piles –

$$A = \pi RL$$

Where:

R = Radius of the base of the pile

L = Length of sloped side of the pile

Surface Area of Linear Storage Piles –

$$A = 2(L \times D)$$

Where:

L = Length of the long side of the base of the pile

D = Length of the sloped side of the pile

AGGREGATE VEHICLE REQUIREMENTS

1. Scope:

Any vehicle transporting aggregate material.

2. Aggregate materials defined:

Aggregate materials mean rock fragments, pebbles, sand, gravel, cobbles, crushed base, asphalt, dirt, or similar material.

3. Enclosure of aggregate material (in any amount):



- A. Only to be transported in cargo area (not laying loose on frame rails, fenders, cabs, or decks of low beds or flat beds).
- B. Cargo area shall not contain any holes, cracks or openings through which materials may escape (regardless of the degree to which the vehicle is loaded).
- C. Enclosed on all vertical sides.



- D. Must have a tailgate or equivalent device.
- E. Seals are required on any opening used to empty load:
 - 1) Including bottom dump gates and tailgates.
 - 2) Seals may be any type of material or design, but must prevent material from escaping.



- F. Covers and/or tarps are required except:
 - 1) Loads composed solely of asphalt.
 - 2) Loads composed solely of petroleum coke, if loaded with a chemical surfactant (surface active agent) designed to prevent blowing, spilling or escaping.
 - 3) Aggregate materials loaded so that no portion of the load contacts the sides of the cargo area closer than six inches from the top of the sides and no portion of the load crowns or peaks above the sides of the cargo area.

4. Special Equipment:

- A. Shed boards designed to prevent material deposit on vehicle body during top loading (bottom dumps only).
- B. Splash flaps behind every tire or set of tires.
- C. Center flaps at rear of bottom-dump release gate (on vehicles equipped with bottom-dump gates) may be located directly behind release gate, or to the rear of the rear axle in line with the splash flaps.
 - 1) Center flap width: outside edge of flap shall not extend more than one-inch from sidewall of adjacent tire.
 - 2) Center flap height: 24 inches minimum and be within 5 inches of roadway surface.

5. Fenders:



- A. Fenders must covers tops and treads of tires beginning at the top of splash flap and extending at least six inches forward of top center of axle. No gap is permitted between fender and flap.
- B. Tandem axles may be covered by a single fender and flap.
Note: Some dumpbeds/body styles may meet fender requirements such as a square body style that overhangs the tires.

6. Full rigid body enclosures:

- A. Vehicles comprised of full rigid enclosures are exempt only from center flap, tarp and shed board requirements. The fender requirements still apply if these vehicles transport aggregate material.

REGULATION I - GENERAL PROVISIONS
RULE 100
GENERAL PROVISIONS AND DEFINITIONS

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION I - GENERAL PROVISIONS

**RULE 100
GENERAL PROVISIONS AND DEFINITIONS**

SECTION 100 - GENERAL

- 101 DECLARATION OF INTENT:** The intent of these rules is to prevent, reduce, control, correct or remove air pollution originating within the territorial limits of Maricopa County and to carry out the mandates of Title 49, Arizona Revised Statutes.
- 102 LEGAL AUTHORITY:** These rules are adopted pursuant to the authority granted by Section 49-479, Arizona Revised Statutes.
- 103 VALIDITY:** If any section, subsection, clause, phrase or provision of these rules is held to be invalid for any reason, such decision shall not affect the validity of the remaining portion.
- 104 CIRCUMVENTION:** A person shall not build, erect, install, or use any article, machine, equipment, condition, or any contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, conceals or dilutes an emission which would otherwise constitute a violation of these rules. No person shall circumvent these rules to dilute air contaminants by using more emission openings than is considered normal practice by the industry or activity in question.
- 105 RIGHT OF INSPECTION OF PREMISES:** The Control Officer during reasonable hours, for the purpose of enforcing and administering these rules, or any provision of the Arizona Revised Statutes relating to the emission or control prescribed pursuant thereto, may enter every building, premises, or other place, except the interior of structures used as private residences. In the event that consent to enter for inspection purposes has been refused or circumstances justify the failure to seek such consent, special inspection warrants may be issued by a magistrate. Every person is guilty of a petty offense pursuant to ARS §49-488 who in any way denies, obstructs, or hampers such entrance or inspection that is lawfully authorized by warrant.

- 106 RIGHT OF INSPECTION OF RECORDS:** When the Control Officer has reasonable cause to believe that any person has violated or is in violation of any provision of this rule, any rule adopted pursuant to this rule, or any requirement of a permit issued pursuant to this rule, the Control Officer may request, in writing, that such person produce all existing books, records, and other documents evidencing tests, inspections, or studies which may reasonably relate to compliance or noncompliance with rules adopted pursuant to this rule. No person shall fail nor refuse to produce all existing documents required in such written request by the Control Officer.
- 107 ADVISORY COUNCIL:** An Advisory Council appointed by the Board of Supervisors may advise and consult with the Board of Supervisors, the Division of Air Pollution Control and the Control Officer in effecting the mandates of ARS Title 49.
- 108 HEARING BOARD:** The Board of Supervisors shall appoint a five-member hearing board knowledgeable in the field of air pollution. At least three members shall not have a substantial interest, as defined in ARS §38-502(11), in any person required to obtain an air pollution permit. Each member shall serve a term of three years (ARS §49-478).
- 109 ANTI-DEGRADATION:** The standards in these rules shall not be construed as permitting the preventable degradation of air quality in any area of Maricopa County.
- 110 AVAILABILITY OF POLLUTION INFORMATION:** The public shall be informed on a daily basis of average daily concentration of three pollutants: particulates, carbon monoxide and ozone. This information shall be disseminated through the use of newspapers, radio and television. The levels of each pollutant shall be expressed through the use of the Pollution Standard Index (PSI) and a written copy of such information shall be made available at the office of the Maricopa County Environmental Services Department, 1001 North Central Avenue, #201, Phoenix, Arizona.
- 111 ANNUAL REASONABLE FURTHER PROGRESS (RFP) REPORT:** A report on the progress in implementation of nonattainment area plans shall be produced by the Division each year. The primary function of the report is to review the implementation schedules for control measures and emission reduction forecasts in the nonattainment area plans. The annual report will be made available to the public at the offices of Maricopa County Environmental Services Department, 1001 North Central Avenue, #201, Phoenix, Arizona.

SECTION 200 - DEFINITIONS: To aid in the understanding of these rules, the following general definitions are provided. Additional title-specific definitions can be found in each rule as necessary.

- 201 AAC -** Arizona Administrative Code.
- 202 ACID -** One of a large class of chemical substances whose water solutions have one or more of the following properties: sour taste, ability to make litmus dye turn red and to cause other indicator dyes to change to characteristic colors, ability to react with and dissolve certain metals to form salts, and ability to react with bases or alkalis to form salts.
- 203 ACT -** The Clean Air Act of 1963 (P.L.88-206; 42 United States Code sections 7401 through 7671) as amended by the Clean Air Act Amendments of 1990 (P.L.101-549).

- 204 ACTUAL EMISSIONS** - The actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with the following:
- 204.1** In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. The Control Officer may allow the use of a different time period upon a demonstration that it is more representative of normal source operation. Actual emissions shall be calculated using the emissions unit's actual operating hours, production rates, and types of materials processed, stored or combusted during the selected time period.
 - 204.2** If there is inadequate information to determine actual historic emissions, then the Control Officer may presume that source-specific allowable emissions for the emissions unit are equivalent to the actual emissions of the emissions unit.
 - 204.3** For any emissions unit at a Title V source which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the emissions unit on that date.
 - 204.4** For any emissions unit at a Non-Title V source which has not begun normal operations on the particular date, actual emissions shall be based on applicable control equipment requirements and projected conditions of operation.
- 205 ADMINISTRATOR** - The Administrator of the United States Environmental Protection Agency.
- 206 ADVISORY COUNCIL** - The Maricopa County Air Pollution Control Advisory Council appointed by the Maricopa County Board of Supervisors.
- 207 AFFECTED FACILITY** - With reference to a stationary source, any apparatus to which a standard is applicable.
- 208 AFFECTED SOURCE** - A source that includes one or more emissions units which are subject to emission reduction requirements or limitations pursuant to Title IV of the Act.
- 209 AFFECTED STATE** - Any state whose air quality may be affected and that is contiguous to Arizona or that is within 50 miles of the permitted source.
- 210 AIR CONTAMINANT** - Includes smoke, vapors, charred paper, dust, soot, grime, carbon, fumes, gases, sulfuric acid mist aerosols, aerosol droplets, odors, particulate matter, windborne matter, radioactive materials, noxious chemicals, or any other material in the outdoor atmosphere.
- 211 AIR POLLUTION** - The presence in the outdoor atmosphere of one or more air contaminants or combinations thereof in sufficient quantities, which either alone or in connection with other substances, by reason of their concentration and duration are or tend to be injurious to human, plant or animal life, or causes damage to property, or

unreasonably interferes with the comfortable enjoyment of life or property of a substantial part of a community, or obscures visibility, or which in any way degrades the quality of the ambient air below the standards established by the Board of Supervisors.

- 212 AIR POLLUTION CONTROL EQUIPMENT** - Equipment used to eliminate, reduce or control the emission of air contaminants into the ambient air.
- 213 ALKALINE SOLUTION** - Hydroxides of either sodium or calcium (i.e., calcium hydroxide and sodium hydroxide) exhibiting strong caustic (base pH > 7) properties.
- 214 ALLOWABLE EMISSIONS** - The emission rate of a stationary source calculated using both the maximum rated capacity of the source, unless the source is subject to federally enforceable limits which restrict the operating rate or hours of operation, and the most stringent of the following:
- 214.1** The applicable New Source Performance Standards as described in Rule 360 of these rules or the Federal Hazardous Air Pollutant Program as described in Rule 370 of these rules;
 - 214.2** The applicable existing source performance standard as approved for the SIP; or
 - 214.3** The emissions rate specified in any federally promulgated rule or federally enforceable permit condition.
- 215 AMBIENT AIR** - That portion of the atmosphere, external to buildings, to which the general public has access.
- 216 AP-42** - The EPA document "Compilation of Air Pollutant Emission Factors," September 1985, and all supplements thereto.
- 217 APPLICABLE IMPLEMENTATION PLAN** - Those provisions of the State Implementation Plan (SIP) approved by the Administrator, or a Federal Implementation Plan (FIP) promulgated in accordance with Title I of the Act.
- 218 APPLICABLE REQUIREMENT** - Applicable requirement means any of the following:
- 218.1** Any federal applicable requirement as defined in Section 249 of this rule.
 - 218.2** Any other requirement established pursuant to the Maricopa County Air Pollution Control Regulations or ARS Title 49, Chapter 3, Articles 1, 3, 7, and 8.
- 219 APPROVED** - Approved in writing by the Maricopa County Air Pollution Control Officer.
- 220 AREA SOURCE** - Any stationary source that is not a major source. For purposes of these rules, the term "area source" shall not include motor vehicles or nonroad vehicles subject to regulation pursuant to CAA Title II.
- 221 ARS** - The Arizona Revised Statutes. The titles of the most frequently used ARS references in these rules are listed below:

ARS §38-502(11)	Public Officers And Employees, Conduct Of Office, Conflict Of Interest Of Officers And Employees, Definitions, Substantial Interest
ARS Title 49	The Environment
ARS Title 49, Chapter 3	The Environment, Air Quality
ARS Title 49, Chapter 4	The Environment, Solid Waste Management
ARS §49-109	The Environment, General Provisions, Department Of Environmental Quality, Certificate Of Disclosure Of Violations; Definition; Remedies
ARS §49-401	The Environment, Air Quality, General Provisions, Declaration Of Policy
ARS §49-426	The Environment, Air Quality, State Air Pollution Control, Permits; Duties Of Director; Exceptions; Applications; Objections; Fees
ARS §49-426.04	The Environment, Air Quality, State Air Pollution Control, State List Of Hazardous Air Pollutants
ARS §49-426.05	The Environment, Air Quality, State Air Pollutions Control, Designation Of Sources Of Hazardous Air Pollutants
ARS §49-429	The Environment, Air Quality, State Air Pollution Control, Permit Transfers; Notice; Appeal
ARS §49-464	The Environment, Air Quality, State Air Pollution Control, Violation; Classification; Definitions
ARS §49-473	The Environment, Air Quality, County Air Pollution Control, Board Of Supervisors
ARS §49-476.01	The Environment, Air Quality, County Air Pollution Control, Monitoring
ARS §49-478	The Environment, Air Quality, County Air Pollution Control, Hearing Board
ARS §49-480	The Environment, Air Quality, County Air Pollution Control, Permits; Fees
ARS §49-480.03	The Environment, Air Quality, County Air Pollution Control, Federal Hazardous Air Pollutant Program; Date Specified By Administrator; Prohibition
ARS §49-480.04	The Environment, Air Quality, County Air Pollution Control, County Program For Control Of Hazardous Air Pollutants
ARS §49-482	The Environment, Air Quality, County Air Pollution Control, Appeals To Hearing Board
ARS §49-483	The Environment, Air Quality, County Air Pollution Control, Permit Transfers; Notice; Appeal
ARS §49-487	The Environment, Air Quality, County Air Pollution Control, Classification And Reporting; Confidentiality Of Records
ARS §49-488	The Environment, Air Quality, County Air Pollution Control, Special Inspection Warrant
ARS §49-490	The Environment, Air Quality, County Air Pollution Control, Hearings On Orders Of Abatement
ARS §49-498	The Environment, Air Quality, County Air Pollution Control, Notice Of Hearing; Publication; Service
ARS §49-501	The Environment, Air Quality, County Air Pollution Control, Unlawful Open Burning; Exceptions; Violation; Classification
ARS §49-511	The Environment, Air Quality, County Air Pollution Control, Violations, Order Of Abatement

- 222 ASME** - The American Society of Mechanical Engineers.
- 223 ASTM** - The American Society for Testing and Materials.
- 224 ATTAINMENT AREA** - An area so designated by the Administrator, acting pursuant to Section 107 of the Act, as having ambient air pollutant concentrations equal to or less than national primary or secondary ambient air quality standards for a particular pollutant or pollutants.
- 225 BEGIN ACTUAL CONSTRUCTION** - In general, initiation of physical on-site construction activities on an emissions unit which are of a permanent nature. Such activities include installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures. With respect to a change in method of operation, begin actual construction refers to those on-site activities, other than preparatory activities, which mark the initiation of the change.
- 226 BEST AVAILABLE CONTROL TECHNOLOGY (BACT)** - An emissions limitation, based on the maximum degree of reduction for each pollutant, subject to regulation pursuant to the Act, which would be emitted from any proposed stationary source or modification which the Control Officer, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques including fuel cleaning or treatment or innovative fuel combination techniques for control of such pollutant. Under no circumstances shall BACT be determined to be less stringent than the emission control required by an applicable provision of State or Federal Laws or these rules. If the Control Officer determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.
- 227 BRITISH THERMAL UNIT (BTU)** - The quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit (°F) at 39.1°F.
- 228 BUILDING, STRUCTURE, FACILITY OR INSTALLATION** - All the pollutant-emitting equipment and activities that belong to the same industrial grouping, that are located on one or more contiguous or adjacent properties, and that are under the control of the same person or persons under common control except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same "Major Group" as described in the "Standard Industrial Classification Manual, 1987".
- 229 BUREAU** - The Division of Air Pollution Control within the Maricopa County Environmental Quality and Community Services Agency. The "Bureau" no longer exists; consequently, all references to "Bureau" in these rules refer to "Department".

- 230 CFR** - The United States Code of Federal Regulations.
- 231 CIRCUMSTANCES OUTSIDE THE CONTROL OF THE SOURCE** - Shall include but not be limited to circumstances where a violation resulted from a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during a start up or shut down, or resulted from upset of operations.
- 232 COMMENCE** - As applied to construction of a major source or a major modification, that the owner or operator has all necessary preconstruction approvals or permits and has either:
- 232.1** Begun, or caused to begin, a continuous program of actual on-site construction of the source, to be completed within a reasonable time; or
- 232.2** Entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable time.
- 233 COMPLETE** - In reference to an application for a permit, that the application contains all the information necessary for processing the application. Designating an application complete for purposes of permit processing does not preclude the Control Officer from requesting nor from accepting any additional information.
- 234 CONSTRUCTION** - Any physical change or change in the method of operation, including fabrication, erection, or installation, demolition, or modification of an emissions unit, which would result in a change in actual emissions.
- 235 CONTROL OFFICER** - The executive head of the department authorized or designated to enforce air pollution regulations, the executive head of an air pollution control district established pursuant to ARS §49-473, or the designated agent.
- 236 DEPARTMENT** - The Maricopa County Environmental Services Department.
- 237 DIRECTOR** - The director of the Arizona Department of Environmental Quality (ADEQ).
- 238 DISCHARGE** - The release or escape of an effluent into the atmosphere from a source.
- 239 DIVISION** - The Division of Air Pollution Control within the Maricopa County Environmental Management and Transportation Agency. The "Division" no longer exists; consequently, all references in these rules to "Division" refer to "Department".
- 240 EARTH MOVING OPERATION** - The use of any equipment for an activity which may generate fugitive dust, such as, but not limited to, cutting and filling, grading, leveling, excavating, trenching, loading or unloading of bulk materials, demolishing, blasting, drilling, adding to or removing bulk materials from open storage piles, back filling, soil mulching or landfill operations.

- 241 EFFLUENT** - Any air contaminant which is emitted and subsequently escapes into the atmosphere.
- 242 EMISSION STANDARD** - Shall have the meaning set forth in ARS §49-514(T) and ARS §49-464(U).
- 243 EMISSIONS UNIT** - Any part of a stationary source which emits or would have the potential to emit any regulated air pollutant.
- 244 EPA** - The United States Environmental Protection Agency.
- 245 EQUIVALENT METHOD** - Any method of sampling and analyzing for an air pollutant which has been demonstrated to the EPA Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.
- 246 EXCESS EMISSIONS** - Emissions of an air pollutant in excess of an emission standard as measured by the compliance test method applicable to such emission standard.
- 247 EXISTING SOURCE** -
- 247.1** A source in operation prior to the effective date of this rule, or a source on which the construction or modification has commenced and for which the Control Officer has granted a permit prior to the effective date of this rule; or
 - 247.2** When used in conjunction with a source subject to new source performance standard (NSPS), any source which does not have an applicable NSPS pursuant to Rule 360 of these rules.
- 248 FACILITY** - See Section 207 of this rule (Affected Facility) and Section 228 of this rule (Building, Structure, Facility or Installation).
- 249 FEDERAL APPLICABLE REQUIREMENT** - Any of the following as they apply to emissions units covered by a Title V permit or a Non-Title V permit (including requirements that have been promulgated or approved by the United States Environmental Protection Agency (EPA) through rulemaking at the time of issuance but have future effective compliance dates):
- 249.1** Any standard or other requirement provided for in the applicable implementation plan approved or promulgated by EPA through rulemaking pursuant to Title I of the Act that implements the relevant requirements of the Act, including any revisions to that plan promulgated in 40 CFR 52;
 - 249.2** Any term or condition of any unitary permits issued pursuant to regulations approved or promulgated through rulemaking pursuant to Title I, including Parts C or D, of the Act;
 - 249.3** Any standard or other requirement pursuant to Section 111 of the Act, including Section 111(d);

- 249.4** Any standard or other requirement pursuant to Section 112 of the Act, including any requirement concerning accident prevention pursuant to Section 112(r)(7) of the Act;
- 249.5** Any standard or other requirement of the acid rain program pursuant to Title IV of the Act or the regulations promulgated thereunder and incorporated pursuant to Rule 371 of these rules;
- 249.6** Any requirements established pursuant to Section 504(b) or Section 114(a)(3) of the Act;
- 249.7** Any standard or other requirement governing solid waste incineration, pursuant to Section 129 of the Act;
- 249.8** Any standard or other requirement for consumer and commercial products, pursuant to Section 183(e) of the Act;
- 249.9** Any standard or other requirement for tank vessels pursuant to Section 183(f) of the Act;
- 249.10** Any standard or other requirement of the program to control air pollution from outer continental shelf sources, pursuant to Section 328 of the Act;
- 249.11** Any standard or other requirement of the regulations promulgated to protect stratospheric ozone pursuant to Title VI of the Act, unless the Administrator has determined that such requirements need not be contained in a Title V permit; and
- 249.12** Any national ambient air quality standard or increment or visibility requirement pursuant to Part C of Title I of the Act, but only as it would apply to temporary sources permitted pursuant to Section 504(e) of the Act.

250 FEDERALLY ENFORCEABLE -

- 250.1** All terms and conditions contained in a Title V permit except those terms and conditions which have been specifically designated as not federally enforceable; or
- 250.2** The requirements of operating permit programs and permits issued under such permit programs which have been approved by the Administrator, including the requirements of State and County operating permit programs approved pursuant to Title V of the Act or pursuant to any new source review permit program; or
- 250.3** All limitations and conditions which are enforceable by the Administrator, including the requirements of the New Source Performance Standards (NSPS) and the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) contained in these rules; or

- 250.4** The requirements of such other State or County rules or regulations approved by the Administrator for inclusion in the State Implementation Plan (SIP); or
- 250.5** The requirements of any federal regulation promulgated by the Administrator as part of the SIP.
- 250.6** The requirements of State and County operating permit programs, other than Title V programs, which have been approved by the Administrator and incorporated into the applicable SIP pursuant to the criteria for federally enforceable State operating permit programs set forth in 54, Federal Register 27274, dated June 28, 1989. Such requirements include permit terms and conditions which have been entered into voluntarily by a source pursuant to Rule 220 of these rules.
- 251 FINAL PERMIT** - The version of a permit issued by the Control Officer after completion of all review required by Maricopa County Air Pollution Control Regulations.
- 252 FUEL OIL** - Number 2 through Number 6 fuel oils as specified in ASTM D-396-96 (Specification For Fuel Oils), gas turbine fuel oils Numbers 2-GT through 4-GT as specified in ASTM D-2880-96 (Specification For Gas Turbine Fuel Oils), or diesel fuel oils Numbers 2-D and 4-D as specified in ASTM D-975-96 (Specification For Diesel Fuel Oils).
- 253 FUGITIVE EMISSION** - Any emission which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.
- 254 MAJOR MODIFICATION** - Any physical change or change in the method of operation of a major source that would result in a significant net emissions increase of any regulated air pollutant.
- 254.1** Any net emissions increase that is significant for volatile organic compounds shall be considered significant for ozone.
- 254.2** Any net emissions increase that is significant for oxides of nitrogen shall be considered significant for ozone for ozone nonattainment areas classified as marginal, moderate, serious, or severe.
- 254.3** For the purposes of this definition, the following shall not be considered a physical change or a change in the method of operation:
- a.** Maintenance, repair and replacement which the Control Officer determines to be routine.
 - b.** Use of an alternative fuel or raw material by reason of an order pursuant to Sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974, 15 U.S.C. § 792, or by reason of a natural gas curtailment plan pursuant to the Federal Power Act, 16 U.S.C. § 792 - 825r;
 - c.** Use of an alternative fuel by reason of an order or rule pursuant to Section 125 of the Act;

- d. Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste;
- e. Use of an alternative fuel or raw material by a stationary source which either:
 - (1) The source was capable of accommodating before December 12, 1976, unless such change would be prohibited pursuant to any federally enforceable permit condition which was established after December 12, 1976, pursuant to 40 CFR 52.21, or pursuant to Rules 200, 210, 240, 245, and 270 of these rules; or
 - (2) The source is approved to use under any permit issued pursuant to 40 CFR 52.21, or pursuant Rules 200, 210, 240, 245, and 270 of these rules.
- f. An increase in the hours of operation or in the production rate, unless such change would be prohibited pursuant to any federally enforceable permit condition which was established after December 12, 1976, pursuant to 40 CFR 52.21, or pursuant to Rules 200, 210, 240, 245, and 270 of these rules.
- g. Any change in ownership at a stationary source.

255 MAJOR SOURCE -

255.1 A major source as defined in Rule 240 of these rules;

255.2 A major source pursuant to Section 112 of the Act:

- a. For pollutants other than radionuclides, any stationary source that emits or has the potential to emit, in the aggregate, including fugitive emissions, ten tons per year (tpy) or more of any hazardous air pollutant which has been listed pursuant to Section 112(b) of the Act, 25 tpy or more of any combination of such hazardous air pollutants, , or such lesser quantity as described in Title 18, Chapter 2, Article 11 of the Arizona Administrative Code. Notwithstanding the preceding sentence, emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources; or
- b. For radionuclides, major source shall have the meaning specified by the Administrator by rule.

255.3 A major stationary source, as defined in Section 302 of the Act, that directly emits or has the potential to emit, 100 tpy or more of any air pollutant including any major source of fugitive emissions of any such pollutant. The fugitive emissions of a stationary source shall not be considered in determining whether it is a major

stationary source for the purpose of Section 302(j) of the Act, unless the source belongs to one of the following categories of stationary source:

Coal cleaning plants (with thermal dryers);
Kraft pulp mills;
Portland cement plants;
Primary zinc smelters;
Iron and steel mills;
Primary aluminum ore reduction plants;
Primary copper smelters;
Municipal incinerators capable of charging more than 50 tons of refuse per day;
Hydrofluoric, sulfuric, or nitric acid plants;
Petroleum refineries;
Lime plants;
Phosphate rock processing plants;
Coke oven batteries;
Sulfur recovery plants;
Carbon black plants (furnace process);
Primary lead smelters;
Fuel conversion plants;
Sintering plants;
Secondary metal production plants;
Chemical process plants;
Fossil-fuel boilers (or combination thereof) totaling more than 250 million BTU per hour heat input;
Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
Taconite ore processing plants;
Glass fiber processing plants;
Charcoal production plants;
Fossil fuel-fired steam electric plants of more than 250 million BTU per hour rated heat input; or
All other stationary source categories regulated by a standard promulgated as of August 7, 1980 pursuant to Section 111 or pursuant to Section 112 of the Act but only with respect to those air pollutants that have been regulated for that category.

256 MALFUNCTION - Any sudden and unavoidable failure of air pollution control equipment, process or process equipment to operate in a normal and usual manner. Failures that are caused by poor maintenance, careless operation or any other upset condition or equipment breakdown which could have been prevented by the exercise of reasonable care shall not be considered malfunctions.

257 MATERIAL PERMIT CONDITION -

257.1 For the purposes of ARS §49-464(G) and ARS §49-514(G), a material permit condition shall mean a condition which satisfies all of the following:

- a. The condition is in a permit or permit revision issued by the Control Officer or by the Director after the effective date of this rule.
- b. The condition is identified within the permit as a material permit condition.
- c. The condition is one of the following:
 - (1) An enforceable emission standard imposed to avoid classification as a major modification or major source or to avoid triggering any other applicable requirement.
 - (2) A requirement to install, operate or maintain a maximum achievable control technology or hazardous air pollutant reasonably available control technology required pursuant to the requirements of ARS §49-426.06.
 - (3) A requirement for the installation or certification of a monitoring device.
 - (4) A requirement for the installation of air pollution control equipment.
 - (5) A requirement for the operation of air pollution control equipment.
 - (6) An opacity standard required by Section 111 or Title I, Part C or D, of the Act.
- d. Violation of the condition is not covered by Subsections (A) through (F), or (H) through (J) of ARS §49-464 or Subsections (A) through (F), or (H) through (J) of ARS §49-514.

257.2 For the purposes of Section 257.1(c)(3), (4), and (5) of this rule, a permit condition shall not be material where the failure to comply resulted from circumstances which were outside the control of the source.

258 METHOD OF OPERATION - See Section 265 of this rule (Operation).

259 MODIFICATION - A physical change in or a change in the method of operation of a source which increases the actual emissions of any regulated air pollutant emitted by such source by more than any relevant de minimis amount or which results in the emission of any regulated air pollutant not previously emitted by more than such de minimis amount.

260 NET EMISSIONS INCREASE - The amount by which the sum of Section 260.1 and Section 260.2 below exceeds zero:

260.1 Any increase in actual emissions from a particular physical change or change in the method of operation at a stationary source; and

- 260.2** Any other increases and decreases in actual emissions at the source that are contemporaneous with the particular change and are otherwise creditable.
- 260.3** An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs between:
- a.** The date five years before construction on the particular change commences and
 - b.** The date that the increase from the particular change occurs.
- 260.4** An increase or decrease in actual emissions is creditable only if the Control Officer has not relied on it in issuing a permit, which is in effect when the increase in actual emissions from the particular change occurs. In addition, in nonattainment areas, a decrease in actual emissions shall be considered in determining net emissions increase due to modifications only if the state has not relied on it in demonstrating attainment or reasonable further progress.
- 260.5** An increase or decrease in actual emissions of sulfur dioxide, nitrogen oxides, or particulate matter which occurs before the applicable baseline date, as described in Rule 500 of these rules, is creditable only if it is required to be considered in calculating the amount of maximum allowable increases remaining available.
- 260.6** An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.
- 260.7** A decrease in actual emissions is creditable only to the extent that:
- a.** The old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions;
 - b.** The emissions unit was actually operated and emitted the specific pollutant.
 - c.** It is federally enforceable at and after the time that actual construction on the particular change begins; and
 - d.** It has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change.
- 260.8** An increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.

261 NEW SOURCE - Any source that is not an existing source.

262 NONATTAINMENT AREA - An area so designated by the Administrator acting pursuant to Section 107 of the Act as exceeding national primary or secondary ambient air standards for a particular pollutant or pollutants.

263 NON-PRECURSOR ORGANIC COMPOUND - Any of the following organic compounds which have been designated by the EPA as having negligible photo-chemical reactivity:

Acetone;
Methane;
Ethane;
Methylene chloride (dichloromethane);
1,1,1-trichloroethane;
Trichlorofluoromethane (CFC-11);
Dichlorodifluoromethane (CFC-12);
Chlorodifluoromethane (HCFC-22);
1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113);
1,2-dichlorotetrafluoroethane (CFC-114);
Chloropentafluoroethane (CFC-115);
Trifluoromethane (HFC-23);
2,2-dichloro-1,1,1-trifluoroethane (HCFC-123);
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);
1,1-dichloro-1-fluoroethane (HCFC-141b);
1-chloro-1,1-difluoroethane (HCFC-142b);
Pentafluoroethane (HFC-125);
1,1,2,2-tetrafluoroethane (HFC-134);
1,1,1,2-tetrafluoroethane (HFC-134a);
1,1,1-trifluoroethane (HFC-143a);
1,1-difluoroethane (HFC-152a);
Parachlorobenzotrifluoride (PCBTF);
Perchloroethylene (tetrachloroethylene);
3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca);
1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb);
1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee);
1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC-43-10mee);
Difluoromethane (HFC-32);
Ethylfluoride (HFC-161);
1,1,1,3,3,3-hexafluoropropane (HFC-236fa);
1,1,2,2,3-pentafluoropropane (HFC-245ca);
1,1,2,3,3-pentafluoropropane (HFC-245ea);
1,1,1,2,3-pentafluoropropane (HFC-245eb);
1,1,1,3,3-pentafluoropropane (HFC-245fa);
1,1,1,2,3,3-hexafluoropropane (HFC-236ea);
1,1,1,3,3-pentafluorobutane (HFC-365mfc);
Chlorofluoromethane (HCFC-31);
1-chloro-1-fluoroethane (HCFC-151a);
1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a);
1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane;
2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane;
1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane;
2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane;
Cyclic, branched or linear completely methylated siloxanes;

All completely fluorinated, completely saturated: alkanes, ethers and tertiary amines; and Sulfur-containing perfluorocarbons with no unsaturations, no hydrogen, and with sulfur bonds only to carbon and fluorine.

- 264 OPEN OUTDOOR FIRE** - Any combustion of material of any type outdoors, where the products of combustion are not directed through a flue.
- 265 OPERATION** - Any physical action resulting in a change in the location, form or physical properties of a material, or any chemical action resulting in a change in the chemical composition or properties of a material.
- 266 ORGANIC COMPOUND** - Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.
- 267 ORGANIC LIQUID** - Any organic compound which exists as a liquid under any actual conditions of use, transport or storage.
- 268 OWNER OR OPERATOR** - Any person who owns, leases, operates, controls, or supervises an affected facility or a stationary source of which an affected facility is a part.
- 269 PARTICULATE MATTER** - Any material, except uncombined water, which has a nominal aerodynamic diameter smaller than 100 microns (micrometers), and which exists in a finely divided form as a liquid or solid at actual conditions.
- 270 PERMITTING AUTHORITY** - The department or a County department or agency that is charged with enforcing a permit program adopted pursuant to ARS §49-480, Subsection A.
- 271 PERSON** - Any individual, public or private corporation, company, partnership, firm, association of society of persons, the Federal Government and any of its departments or agencies, or the State and any of its agencies, departments or political subdivisions.
- 272 PHYSICAL CHANGE** - Any replacement, addition or alteration of equipment that is not already allowed under the terms of the source's permit.
- 273 PM₁₀** - Particulate matter with an aerodynamic diameter smaller than or equal to 10 microns (micrometers) as measured by the applicable State and Federal Reference Test Methods.
- 274 PORTABLE SOURCE** - Any building, structure, facility or installation subject to regulation pursuant to ARS §49-426 which emits or may emit any air pollutant and is capable of being operated at more than one location.
- 275 POTENTIAL TO EMIT** -- The maximum capacity of a stationary source to emit pollutants, excluding secondary emissions, under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

- 276 PROPOSED PERMIT** - The version of a permit for which the Control Officer offers public participation pursuant to Rule 210 of these rules or offers affected state review pursuant to Rule 210 of these rules.
- 277 PROPOSED FINAL PERMIT** - The version of a Title V permit that the Control Officer proposes to issue and forwards to the Administrator for review in compliance with Rule 210 of these rules.
- 278 QUANTIFIABLE** - With respect to emissions or the emissions involved in equivalent emission limits and emission trades capable of being measured or otherwise determined in terms of quantity and assessed in terms of character. Quantification may be based on emission factors, stack tests, monitored values, operating rates and averaging times, materials used in a process or production, modeling, or other reasonable measurement practices.
- 279 REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT)** - For facilities subject to Regulation III of these rules, the emissions limitation of the existing source performance standard. For facilities not subject to Regulation III of these rules, the lowest emission limitation that a particular source is capable of achieving by the application of control technology that is reasonably available considering technological and economic feasibility. Such technology may previously have been applied to a similar, but not necessarily identical, source category. RACT for a particular facility, other than a facility subject to Regulation III of these rules, is determined on a case-by-case basis, considering the technological feasibility and cost-effectiveness of the application of the control technology to the source category.
- 280 REFERENCE METHOD** - Any of the methods of sampling and analyzing for an air pollutant as described in the Arizona Testing Manual for Air Pollutant Emissions; 40 CFR 50, Appendices A through K; 40 CFR 52, Appendices D and E; 40 CFR 60, Appendices A through F; and 40 CFR 61, Appendices B and C.
- 281 REGULATED AIR POLLUTANT** - Any of the following:
- 281.1** Any conventional air pollutant as defined in ARS §49-401.01.
 - 281.2** Nitrogen oxides and volatile organic compounds.
 - 281.3** Any air contaminant that is subject to a standard contained in Rule 360 of these rules or promulgated pursuant to Section 111 of the Act.
 - 281.4** Any hazardous air pollutant as defined in ARS §49-401.01 or listed in Section 112(b) of the Act.
 - 281.5** Any Class I or II substance listed in Section 602 of the Act.
- 282 REGULATORY REQUIREMENTS** - All applicable requirements, Division rules, and all State requirements pertaining to the regulation of air contaminants.

283 REPLICABLE - With respect to methods or procedures sufficiently unambiguous such that the same or equivalent results would be obtained by the application of the method or procedure by different users.

284 RESPONSIBLE OFFICIAL - One of the following:

284.1 For a corporation: A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either;

a. The sources employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or

b. The delegation of authority to such representatives is approved in advance by the permitting authority;

284.2 For a partnership or sole proprietorship: A general partner or the proprietor, respectively;

284.3 For a municipality, state, federal, or other public agency: Either a principal executive officer or ranking elected official. For the purposes of this rule, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of EPA); or

284.4 For affected sources:

a. The designated representative insofar as actions, standards, requirements, or prohibitions pursuant to Title IV of the Act or the regulations promulgated thereunder are concerned; and

b. The designated representative for any other purposes pursuant to 40 CFR, Part 70.

285 SIGNIFICANT -

285.1 In reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any one of the following rates:

<u>Pollutant</u>	<u>Emissions Rate (TPY)</u>
Carbon Monoxide	100
Nitrogen Oxides	40
Sulfur Dioxide	40
Particulate Matter	25

PM10	15
VOC	40
Lead	0.6
Fluorides	3
Sulfuric Acid Mist	7
Hydrogen Sulfide (H ₂ S)	10
Total Reduced Sulfur (including hydrogen sulfide)	10
Reduced Sulfur Compounds (including hydrogen sulfide)	10
Municipal waste combustor organics (measured as total tetra-through- octa-chlorinated: dibenzo-p-dioxins and dibenzofurans)	3.5 x 10 ⁻⁶
Municipal waste combustor metals (measured as particulate matter)	15
Municipal waste combustor acid gases (measured as sulfur dioxide and hydrogen chloride)	40
Municipal solid waste landfill emissions (measured as nonmethane organic compounds)	50

285.2 In ozone nonattainment areas classified as serious or severe, significant emissions of VOC shall be determined pursuant to Rule 240 of these rules.

285.3 In reference to a regulated air pollutant that is not listed in Section 285.1 of this rule, is not a Class I nor a Class II substance listed in Section 602 of the Act, and is not a hazardous air pollutant according to ARS §49-401.01(11), any emissions rate.

285.4 Notwithstanding the emission amount listed in Section 285.1 of this rule, any emissions rate or any net emissions increase associated with a major source or major modification, which would be constructed within ten kilometers (6.2 miles) of a Class I area and which would have an impact on the ambient air quality of such area equal to or greater than one microgram/cubic meter (mg/m³) (24-hour average).

286 SOLVENT-BORNE COATING MATERIAL - Any liquid coating-material in which the solvent is primarily or solely a volatile organic compound (VOC). For the purposes of this definition, "primarily" means of the total solvent mass that evaporates from the coating, the VOC portion weighs more than the non-VOC portion.

287 SOURCE - Any building, structure, or facility that may cause or contribute to air pollution or the use of which may eliminate, reduce or control the emission of air pollution.

288 SPECIAL INSPECTION WARRANT - An order, in writing, issued in the name of the State of Arizona, signed by a magistrate, directed to the Control Officer or his deputies authorizing him to enter into or upon public or private property for the purpose of making an inspection authorized by law.

- 289 STANDARD CONDITIONS** - A gas temperature of 60 degrees Fahrenheit and a gas pressure of 14.7 pounds per square inch absolute. When applicable, all analyses and tests shall be calculated and reported at standard gas temperatures and pressure values.
- 290 STATE IMPLEMENTATION PLAN (SIP)** - The plan adopted by the state of Arizona which provides for implementation, maintenance, and enforcement of such primary and secondary ambient air quality standards as are adopted by the Administrator, pursuant to the Act.
- 291 STATIONARY SOURCE** - Any source that operates at a fixed location and that emits or generates air contaminants.
- 292 SYNTHETIC MINOR** - A source which voluntarily proposes in its application and accepts in its permit, including emissions limitations, controls, or other requirements which are permanent, quantifiable, and enforceable, which, if part of a federally enforceable permit program, will enable such source to avoid classification as a source that requires a Title V permit.
- 293 TITLE V** - Title V of the federal Clean Air Act as amended in 1990 and the 40 CFR Part 70 EPA regulations adopted to implement the Act.
- 294 TRADE SECRETS** - Information to which all of the following apply:
- 294.1** A person has taken reasonable measure to protect from disclosure and the person intends to continue to take such measures.
 - 294.2** The information is not, and has not been, reasonably obtainable without the person's consent by other persons, other than governmental bodies, by use of legitimate means, other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding.
 - 294.3** No statute, including ARS §49-487, specifically requires disclosure of the information to the public.
 - 294.4** The person has satisfactorily shown that disclosure of the information is likely to cause substantial harm to the business's competitive position.
- 295 UNCLASSIFIED AREA** - An area which the Administrator, because of lack of adequate data, is unable to classify as an attainment or nonattainment area for a specific pollutant. For purposes of these rules, unclassified areas are to be treated as attainment areas.
- 296 VOLATILE ORGANIC COMPOUND (VOC)** - Any organic compound, which participates in atmospheric photochemical reactions, except the non-precursor organic compounds.

SECTION 300 - STANDARDS

- 301 AIR POLLUTION PROHIBITED:** No person shall discharge from any source whatever into the atmosphere regulated air pollutants which exceed in quantity or concentration that specified and allowed in these rules, the Arizona Administrative Code or the Arizona Revised Statutes, or which cause damage to property or unreasonably interfere with the comfortable enjoyment of life or property of a substantial part of a community, or obscure visibility, or which in any way degrade the quality of the ambient air below the standards established by the Board of Supervisors or the Director.
- 302 APPLICABILITY OF MULTIPLE EMISSION LIMITS:** Whenever more than one rule of these rules applies to any source, the rule or combination of rules resulting in the lowest rate or lowest concentration of air contaminants released to the atmosphere shall apply unless otherwise specifically exempted or designated.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

- 401 CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS:** Any application form or report submitted pursuant to these rules shall contain certification by a responsible official of truth, accuracy, and completeness of the application form or report as of the time of submittal. This certification and any other certification required pursuant to these rules shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- 402 CONFIDENTIALITY OF INFORMATION:**
- 402.1** The Control Officer shall make all permits, including all elements required to be in the permit pursuant to Rule 210 and Rule 220 of these rules, available to the public.
- 402.2** Any records, reports or information obtained from any person under these rules shall be available to the public, unless the Control Officer has notified the person in writing as specified in Subsection 402.3 of this rule and unless a person:
- a.** Precisely identifies the information in the permit(s), records, or reports which is considered confidential.
 - b.** Provides sufficient supporting information to allow the Control Officer to evaluate whether such information satisfies the requirements related to trade secrets as defined in Section 294 of this rule.
- 402.3** Within 30 days of receipt of a notice of confidentiality that complies with Subsection 402.2 of this rule, the Control Officer shall make a determination as to whether the information satisfies the requirements for trade secrets as described in Section 294 of this rule and so notify the applicant in writing. If the Control Officer agrees with the applicant that the information covered by the notice of confidentiality satisfies the statutory requirements, the Control Officer shall include a notice in the administrative record of the permit application that certain information has been considered confidential.

402.4 A claim of confidentiality shall not excuse a person from providing any and all information required or requested by the Control Officer.

402.5 A claim of confidentiality shall not be a defense for failure to provide such information.

403 EFFECTIVE DATE OF THIS RULE: The revisions to Rule 100, Sections 249.2, 255.2(a), 257.1(a), 285.1, and 403 adopted by the Board Of Supervisors on May 20, 1998, shall be effective July 1, 1998.

SECTION 500 - MONITORING AND RECORDS

501 EMERGENCY PROVISION:

501.1 An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

501.2 An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Subsection 501.3 of this rule are met.

501.3 The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

- a.** An emergency occurred and that the permittee can identify the cause(s) of the emergency;
- b.** The permitted source was at the time being properly operated;
- c.** During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
- d.** The permittee as soon as possible telephoned the Control Officer giving notice of the emergency and submitted notice of the emergency to the Control Officer by certified mail or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice fulfills the requirement of Rule 210 of these rules. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.
- e.** In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

- f. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

502 EXCESS EMISSIONS:

- 502.1** Emissions in excess of an applicable emission limitation contained in these rules or in the terms of a permit shall constitute a violation. For all situations that constitute an emergency as described in Section 501 of this rule, the affirmative defense and reporting requirements contained in Section 501 of this rule shall apply. In all other circumstances, it shall be an affirmative defense if the owner or operator of the source has complied with the reporting requirements of Subsection 502.3 of this rule in a timely manner and has demonstrated all of the following:
- a. The excess emissions resulted from a sudden and unavoidable breakdown of the process or the control equipment, resulted from unavoidable conditions during startup or shutdown, resulted from unavoidable conditions during an upset of operations, or that greater or more extended excess emissions would result unless scheduled maintenance is performed;
 - b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
 - c. Where repairs were required, such repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded and off-shift labor and overtime were utilized where practical to insure that such repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the owner or operator satisfactorily demonstrated that such measures were impractical;
 - d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
 - e. All feasible steps were taken to minimize the impact of the excess emissions on potential violations of ambient air quality standards;
 - f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and
 - g. During the period of excess emissions, there were no measured violations of the ambient air quality standards established in Rule 510 of these rules which could be attributed to the emitting source.
- 502.2** It shall be the burden of the owner or operator of the source to demonstrate, through submission of the data and information required by this section of this

rule that all reasonable and practicable measures within the owner or operator's control were implemented to prevent the occurrence of excess emissions.

502.3 Excess emissions shall be reported as follows:

- a.** The owner or operator of any source issued a permit shall report to the Control Officer any emissions in excess of the limits established by this section of this rule or the applicable permit. Such report shall be in two parts as specified below:
 - (1)** Notification by telephone or facsimile within 24 hours of the time when the owner or operator first learned of the occurrence of excess emissions including all available information from Subsection 502.3(b) of this rule.
 - (2)** Detailed written notification within 72 hours of the notification pursuant to Subsection 502.3(a) of this rule.
- b.** The excess emissions report shall contain the following information:
 - (1)** The identity of each stack or other emission point where the excess emissions occurred.
 - (2)** The magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions.
 - (3)** The time and duration or expected duration of the excess emissions.
 - (4)** The identity of the equipment from which the excess emissions emanated.
 - (5)** The nature and cause of such emissions.
 - (6)** If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunction.
 - (7)** The steps that were or are being taken to limit the excess emissions. If the source's permit contains procedures governing source operation during periods of startup or malfunction and the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.

502.4 In the case of continuous or recurring excess emissions, the notification requirements of this section of this rule shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period or changes in the

nature of the emissions as originally reported shall require additional notification pursuant to Subsection 502.3(a)(2) of this rule.

502.5 Information required to be submitted by this section of this rule shall be summarized and reported to the Control Officer in accordance with provisions contained in the applicable permit issued pursuant to the requirements of these rules.

503 RECORDS REQUIRED: The owner or operator of any air pollution source shall maintain records of all emissions testing and monitoring, records detailing all malfunctions which may cause any applicable emission limitation to be exceeded, records detailing the implementation of approved control plans and compliance schedules, records required as a condition of any permit, records of materials used or produced and any other records relating to the emission of air contaminants which may be requested by the Control Officer.

504 DATA REPORTING: When requested by the Control Officer, a person shall furnish to the Division information to locate and classify air contaminant sources according to type, level, duration, frequency and other characteristics of emissions and such other information as may be necessary. This information shall be sufficient to evaluate the effect on air quality and compliance with these rules. The owner or operator of a source requested to submit information pursuant to Section 503 of this rule may subsequently be required to submit annually, or at such intervals specified by the Control Officer, reports detailing any changes in the nature of the source since the previous report and the total annual quantities of materials used or air contaminants emitted.

505 EMISSION STATEMENTS REQUIRED AS STATED IN THE ACT: Upon request of the Control Officer and as directed by the Control Officer, the owner or operator of any source which emits or may emit oxides of nitrogen (NO_x) or volatile organic compounds (VOC) shall provide the Control Officer with an emission statement, in such form as the Control Officer prescribes, showing measured actual emissions or estimated actual emissions of NO_x and VOC from that source. At a minimum the emission statement shall contain all information contained in the "Guidance on Emission Statements" document as described in the AIRS Fixed Format Report (AFP 644). The statement shall contain emissions for the time period specified by the Control Officer. The statement shall also contain a certification by a responsible official of the company that the information contained in the statement is accurate to the best knowledge of the individual certifying the statement. The first statement will cover 1992 emissions and shall be submitted to the Division by April 30, 1993. Statements shall be submitted annually thereafter. The Control Officer may waive this requirement for the owner or operator of any source which emits less than 25 tons per year of oxides of nitrogen or volatile organic compounds with an approved emission inventory for sources based on AP-42 or other methodologies approved by the Administrator.

506 RETENTION OF RECORDS: Information and records required by the Control Officer and copies of summarizing reports recorded by the owner or operator and submitted to the Control Officer shall be retained by the owner or operator for five years after the date on which the pertinent report is submitted.

507 ANNUAL EMISSIONS INVENTORY REPORT:

- 507.1** Upon request of the Control Officer and as directed by the Control Officer, the owner and/or operator of a business shall complete and shall submit to the Control Officer an annual emissions inventory report. The report is due by April 30 or 90 days after the Control Officer makes the inventory form(s) available, whichever occurs later. These requirements apply whether or not a permit has been issued and whether or not a permit application has been filed.
- 507.2** The annual emissions inventory report shall be in the format provided by the Control Officer.
- 507.3** The Control Officer may require submittal of supplemental emissions inventory information forms for air contaminants pursuant to ARS §49-476.01, ARS §49-480.03 and ARS §49-480.04.

REGULATION I - GENERAL PROVISIONS

**RULE 110
VIOLATIONS**

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION I - GENERAL PROVISIONS

**RULE 110
VIOLATIONS**

SECTION 100 - GENERAL

- 101 PURPOSE:** To specify the classification of violations of the provisions of these rules.

SECTION 300 - STANDARDS

- 301 VIOLATIONS AND ORDER OF ABATEMENT:** When the Control Officer has reasonable cause to believe that any person has violated or is in violation of any provision of these rules or any requirement of a permit issued pursuant to these rules, he may serve upon such person by certified mail or in person an order of abatement or may file a complaint in Superior Court alleging a violation pursuant to ARS§49-513. The order shall state with particularity the act constituting the violation, shall state in its entirety the certain requirement, provision or rule violated, shall state the duration of the order and shall state that the alleged violator is entitled to a hearing, if such hearing is requested in writing within 30 days after the date of issuance of the order. The order may be conditional and may require a person to refrain from particular acts unless certain conditions are met. An order issued under this rule shall require the persons to whom it is issued to comply with the requirement, provision or rule as expeditiously as practicable. In the case of a source required to obtain a permit pursuant to this rule and Title V of the Clean Air Act, the order shall require compliance no later than one year after the date the order was issued, and shall be nonrenewable.
- 302 CIVIL PENALTIES:** Any person who violates any of these rules or any permit or permit condition issued by the Control Officer or any fee or filing requirement required by these rules may be subject to civil penalties pursuant to ARS§49-513.
- 303 CRIMINAL PENALTIES:** Any person who violates any of these rules or any permit or permit condition issued by the Control Officer may be guilty of a Class I

misdemeanor for each day the violation continues pursuant to ARS§49-502 and may be subject to criminal penalties pursuant to ARS§49-514.

REGULATION II - PERMITS AND FEES

RULE 200 PERMIT REQUIREMENTS

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Revised 07/13/88
Repealed and Adopted 11/15/93
Revised 02/15/95
Revised 06/19/96
Revised 05/20/98

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION II - PERMITS AND FEES

**RULE 200
PERMIT REQUIREMENTS**

SECTION 100 - GENERAL

- 101 PURPOSE:** To provide an orderly procedure for the review of new sources of air pollution and for the modification and operation of existing sources through the issuance of permits.
- 102 EFFECTIVE DATE OF THIS RULE:** The revisions to Rule 200, Sections 102, 312.2, 407.1, 407.2, and 407.2(a) adopted by the Board Of Supervisors on May 20, 1998, shall be effective July 1, 1998.

SECTION 300 - STANDARDS

- 301 PERMITS REQUIRED:** Except as otherwise provided in these rules, no person shall commence construction of, operate, or make a modification to any source subject to regulation under this rule, without first obtaining a permit or permit revision from the Control Officer.
- 302 TITLE V PERMIT:** A Title V permit or, in the case of an existing permitted source, a permit revision shall be required for a person to commence construction of, to operate, or to modify any of the following:
- 302.1** Any major source as defined in Rule 100 of these rules.
 - 302.2** Any solid waste incineration unit required to obtain a permit pursuant to Section 129(e) of the Act.
 - 302.3** Any affected source as defined in Rule 100 of these rules.
 - 302.4** Any source in a source category designated by the Administrator pursuant to 40 CFR 70.3 and adopted by the Board of Supervisors by rule.
- 303 NON-TITLE V PERMIT:** Unless a Title V permit or a permit revision is required, a Non-Title V permit or permit revision shall be required for:
- 303.1** A person to make a modification to a source which would cause it to emit or to have the potential to emit quantities of regulated air pollutants greater than those specified in Sections 303.2 and 303.3c of this rule.
 - 303.2** A person to commence construction of or to modify either of the following after rules adopted pursuant to ARS 49-480.04 are effective:

- a. A source that emits or has the potential to emit with controls ten tons per year or more of a hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants designated by the Director pursuant to ARS 49-426.04.A.1 and not listed in Section 112(b) of the Act.
- b. A source that is within a category designated by the Director pursuant to ARS 49-426.05 and that emits or has the potential to emit with controls at least one ton, but less than ten tons per year of a hazardous air pollutant or at least 2.5 tons, but less than 25 tons per year of any combination of hazardous air pollutants.

303.3 A person to commence construction of, to operate, or to modify any of the following:

- a. Any source other than a major source, including an area source, subject to a standard, limitation, or other requirement under Section 111 of the Act.
- b. Any source other than a major source, including an area source, subject to a standard or other requirement pursuant to Section 112 of the Act. However, a source is not required to obtain a permit solely because it is subject to regulation or requirements pursuant to Section 112(r) of the Act.
- c. Any source that emits or has the potential to emit, without control, regulated air pollutants, except the following sources to the extent which the described limits are not exceeded. However, any source that is exempt from obtaining a Non-Title V permit according to this section shall still comply with all other applicable requirements of these rules.

(1) General Combustion Equipment:

- (a) Any source with an aggregated input capacity of less than 2,000,000 BTU per hour calculated by adding only those pieces of equipment over 300,000 BTU per hour with respect to fuel burning equipment fired with natural gas or liquified petroleum gas.
- (b) Any oil fueled heating equipment with a maximum rated input capacity or an aggregated input capacity of less than 500,000 BTU (527,200 kilojoules) per hour.

(2) Liquid Storage Tanks:

- (a) Stationary storage tanks with a capacity of 250 gallons (946 liters) or less used for storing organic liquids.
- (b) Stationary storage tanks used for storing organic liquids with a true vapor pressure of 1.5 psia (77.5 mm Hg) or less.
- (c) Pressure tanks and pressurized vessels used exclusively for the storage of liquified gases.

(3) Surface Coating and Printing Equipment:

- (a) The aggregate of all surface coating operations of a source in which no coated product is heat cured and a combined total of one gallon per day or less of all coating materials and solvents are used.
 - (b) Application equipment for architectural surface coatings are used for commercial and residential applications.
 - (c) Any coating operation which employs only hand-held aerosol cans, where VOC emissions do not exceed three pounds on any single day.
 - (d) Any printing operation which employs a combination of printing presses with a maximum of 500 square inches (3226 cm²) of impression area and a maximum of two units per printing press. For the purposes of this rule, "units" means the number of printing surfaces.
- (4) Solvent Cleaning Equipment:** Unheated, non-conveyorized, cleaning or coating equipment that does not include control enclosures:
- (a) With an open surface area of one square meter (10.8 square feet) or less and an internal volume of 350 liters (92.5 gallons) or less, having an organic solvent loss of three gallons per day or less, or
 - (b) Using only organic solvents with an initial boiling point of 302°F (150°C) or greater and having an organic solvent loss of three gallons per day or less, or
 - (c) Using materials with a VOC content of two percent or less by volume (20 cubic centimeters per liter).
- (5) Internal Combustion Equipment:**
- (a) Internal combustion engines with a manufacturer's maximum continuous rating of 50 horsepower or less or a maximum accumulative rating of 250 horsepower or less for engines used in the same process at one source.
 - (b) Internal combustion engines used solely as a source of unlimited standby power or emergency purposes and operated at or below 500 hours per year for routine testing and emergency standby operation for each internal combustion engine and provided such source demonstrates that the potential emissions at 500 hours of operation each of all internal combustion engines do not exceed 4,000 pounds of nitrogen oxides or carbon monoxide per year as evidenced by an installed hour meter or written usage records maintained by the operator; and
 - (i) Are only used for power when normal power line service fails; or
 - (ii) Are only used for the emergency pumping of water.

- (iii) This exemption does not apply to internal combustion engines used as standby power due to a voluntary reduction in power by the power company.
- (c) Engines used to propel motorized vehicles.
- (d) Gas turbines with a maximum heat input at ISO Standard Day Conditions of less than 3,000,000 BTU (3,162,000 kilojoules) per hour fired exclusively with natural gas and/or liquified petroleum gas.
- (e) Portable internal combustion engines used on a temporary basis of no more than 30 days per calendar year at any one facility.

(6) Food Equipment:

- (a) Equipment, excluding boilers, used in eating establishments or other retail establishments for the purpose of preparing food for human consumption.
- (b) Bakeries:
 - (i) Mixers and blenders used in bakeries where the products are edible and intended for human consumption.
 - (ii) Ovens at bakeries whose total production is less than 10,000 pounds (4,535 kg) per operating day.

(7) Miscellaneous:

- (a) Diesel contaminated soil remediation projects, where no heat is applied.
- (b) Self-contained, enclosed blast and shot peen equipment where the total internal volume of the blast section is 50 cubic feet or less and where any venting is done via pollution control equipment.
- (c) Those laboratory acids which have both a pH above 1.5 and an aggregate daily emission to ambient air of vapor/mists from all such acids not exceeding three pounds on any single day.
- (d) Brazing or welding equipment.
- (e) Hand soldering equipment.
- (f) A source whose aggregate of all wood working equipment totals 50 horsepower or less.
- (g) Equipment used for buffing, carving, cutting, drilling, surface grinding, machining, planing, routing, sanding, sawing, shredding, or turning of ceramic artwork, precision parts, leather, metals, plastics, rubber, fiberboard, masonry, carbon, graphite or glass.
- (h) Refrigerant recovery equipment.

- (i) Normal landscaping, building maintenance or janitorial activities.
- (j) A source whose aggregate of all miscellaneous equipment, processes or production lines not otherwise identified in this section has total uncontrolled emissions of less than three pounds (1.4 kg) VOC or PM-10 during any day and less than 5.5 pounds (2.5 kg) of any other regulated air pollutant during any day.

304 GENERAL PERMIT: A general permit shall be required for a person to commence construction of, to operate, or to modify a source that is a member of a facility class for which a general permit has been developed pursuant to Rule 230 of these rules. The provisions of Rule 230 of these rules shall apply to general permits, except as otherwise provided in Rule 230 of these rules.

305 EARTH MOVING PERMIT: No person shall cause, commence, suffer, allow, or engage in any earth moving operation that disturbs a total surface area of 0.10 acre or more without first obtaining a permit from the Control Officer. This requirement for a permit shall apply to all such activities conducted for commercial, industrial, or institutional purposes or conducted by any governmental entity. The property owner, lessee, developer, or general/prime contractor will be responsible for acquiring the permit. Permits shall not be required for earth moving operations for emergency repair of utilities, paved roads, unpaved roads, shoulders, and/or alleys.

305.1 Application: The applicant shall file an application, which includes an 8½" x 11" site map showing all linear dimensions, and shall submit a control plan as described in Rule 310 of these rules.

305.2 Annual Block Permit: Any person responsible for more than one earth moving operation consisting of routine operation, maintenance, and expansion or extension of utilities, paved roads, unpaved roads, road shoulders and/or alleys, and public right of ways at non-contiguous sites may submit one permit application covering multiple sites at which construction will commence within 12 months of permit issuance provided that:

- a. The control plan as described in Rule 310 of these rules applies to all sites; and
- b. The applicant submits a list of all sites, including the location and size of each site, with the application; and
- c. For any project not listed in the application, the applicant notifies the Control Officer in writing at least three working days prior to commencing the earth moving operation. The notice shall include the site location, size, type of activity, and start date.

305.3 Action on Permit Application: The Control Officer shall take final action on an earth moving permit application within 14 calendar days of the filing of the completed application. The Control Officer shall notify the applicant in writing of his approval or denial.

305.4 Permit Term: Earth Moving permits issued pursuant to this rule shall be issued for a period of one year from the date of issuance.

- 305.5 Permit Renewal:** Earth Moving permits shall be renewed annually should the project last longer than one year from the date the permit was issued. Applications for permit renewal shall be submitted to the Control Officer at least 14 calendar days prior to the expiration date of the original permit.
- 306 PERMIT TO BURN:** A permit is required for any open outdoor fire authorized under the exceptions in ARS 49-501 or Rule 314 of these rules.
- 307 EXEMPTIONS:** Notwithstanding Sections 301, 302, and 303 of this rule, the following sources shall not require a permit, unless the source is a major source, or unless operation without a permit would result in a violation of the Act:
- 307.1** Sources subject to 40 CFR 60, Subpart AAA, Standards of Performance for New Residential Wood Heaters.
- 307.2** Sources and source categories that would be required to obtain a permit solely because they are subject to 40 CFR 61.145.
- 307.3** Agricultural equipment used in normal farm operations. Agricultural equipment used in normal farm operations, for the purposes of this rule, does not include equipment that would be classified as a source that would require a permit under Title V of the Act, or would be subject to a standard under 40 CFR parts 60 or 61.
- 308 STANDARDS FOR APPLICATIONS:** All permit applications shall be filed in the manner and form prescribed by the Control Officer. The application shall contain all the information necessary to enable the Control Officer to make the determination to grant or to deny a permit or permit revision which shall contain such terms and conditions as the Control Officer deems necessary to assure a source's compliance with the requirements of these rules. The issuance of any permit or permit revision shall not relieve the owner or operator from compliance with any Federal laws, Arizona laws, or these rules, nor does any other law, regulation or permit relieve the owner or operator from obtaining a permit or permit revision required under these rules.
- 309 PERMIT CONDITIONS:** The Control Officer may impose any permit conditions that are necessary to ensure compliance with Federal laws, Arizona laws, or these rules.
- 309.1** The Control Officer may require, as specified in Section 309.2 and Section 309.3 of this rule, any source of regulated air pollutants to monitor, sample, or perform other studies to quantify emissions of regulated air pollutants or levels of air pollution that may reasonably be attributable to that source, if the Control Officer:
- a. Determines that monitoring, sampling, or other studies are necessary to determine the effects of the source on levels of air pollution; or
 - b. Has reasonable cause to believe a violation of this rule, rules adopted pursuant to this rule, or a permit issued pursuant to this rule has been committed; or
 - c. Determines that those studies or data are necessary to accomplish the purposes of this rule and that the monitoring, sampling, or other studies by the source are necessary in order to assess the impact of the source on the emission of regulated air contaminants.

309.2 The Control Officer may require a source of air contaminants, by permit or order, to perform monitoring, sampling, or other quantification of its emissions or air pollution that may reasonably be attributed to such a source. Before requiring such monitoring, sampling, or other quantification by permit or order, the Control Officer shall consider the relative cost and accuracy of any alternatives which may be reasonable under the circumstances such as emission factors, modeling, mass balance analyses, or emissions projections. The Control Officer may require such monitoring, sampling, or other quantification by permit or order if the Control Officer determines in writing that all of the following conditions are met:

- a. The actual or potential emissions of air pollution may adversely affect public health or the environment.
- b. An adequate scientific basis for the monitoring, sampling, or quantification method exists.
- c. The monitoring, sampling, or quantification method is technically feasible for the subject contaminant and the source.
- d. The monitoring, sampling, or quantification method is reasonably accurate.
- e. The cost of the method is reasonable in light of the use to be made of the data.

309.3 Orders issued or permit conditions imposed pursuant to this rule shall be appealable to the hearing board in the same manner as that prescribed for orders of abatement in ARS §49-489 and ARS §49-490 and for permit conditions in ARS §49-482.

310 PROHIBITION - PERMIT MODIFICATION: A person shall not willfully deface, alter, forge, counterfeit, or falsify any permit issued under the provisions of these rules.

311 PERMIT POSTING REQUIRED: Any person who has been granted a permit shall keep a complete permit clearly visible and accessible on the site where the equipment is installed. All equipment covered by the permit shall be listed in the permit by a serial number or other equipment identification symbol and shall be identified on a plant diagram.

312 TRANSITION FROM INSTALLATION AND OPERATING PERMIT PROGRAM TO UNITARY PERMIT PROGRAM:

312.1 Sources With a Valid Installation, Operating, or Conditional Permit: A valid installation permit or operating permit issued by the Control Officer or a valid conditional permit issued by the hearing board before September 1, 1993, and the authority to operate as provided in Laws 1992, Chapter 299, Section 65, continue in effect until any of the following occurs:

- a. The Control Officer revokes an installation permit.
- b. The Control Officer issues or denies a Title V permit or a Non-Title V permit to the source.
- c. The hearing board revokes or modifies a conditional permit or the conditional permit expires. A source operating under a valid conditional permit may continue to operate in accordance with the terms and conditions of such

permit after the expiration of the conditional permit if, at least 30 days prior to the expiration of the conditional permit, the source submits an application to the Control Officer for a Title V permit as described in Section 312.2 of this rule or for a Non-Title V permit as described in Section 312.3 of this rule.

312.2 Title V Sources With an Installation, Operating, or Conditional Permit: Following November 29, 1996, the effective date of the Environmental Protection Agency's (EPA's) final interim approval of Maricopa County's Title V permit program, a source becomes subject to the requirements of the Title V permit program, when the source meets the applicability requirements as provided in this rule. Sources which hold a valid installation, operating, or conditional permit and require a Title V permit, shall comply with the following provisions:

- a. The owner or operator of the source shall submit a permit application within 180 days of receipt of written notice from the Control Officer that an application is required or 12 months after the source becomes subject to the requirements of Title V of the Act and the permit requirements of these rules, whichever is earlier.
- b. Any source, which has not yet submitted a Title V permit application, that wishes to make any source change not requiring a permit, an administrative permit revision, a minor permit revision, or a significant permit revision shall comply with the applicable provisions of Rule 210 of these rules.

312.3 Non-Title V Sources With an Installation, Operating, or Conditional Permit: Sources requiring a Non-Title V permit in existence on the date these rules become effective which hold a valid installation, operating, or conditional permit shall comply with the following provisions:

- a. All sources shall submit a permit application to the Control Officer within 90 days of receipt of written notice from the Control Officer that an application is required.
- b. Any source that wishes to make any source change not requiring a permit, an administrative permit revision, a minor permit revision, or a non-minor permit revision shall comply with the applicable provisions of Rule 220 of these rules.

312.4 Written Notice: For purposes of this subsection, written notice shall include, but not be limited to, a written warning, notice of violation, or order issued by the Control Officer for constructing or operating an emission source without a permit. Such a source shall be considered to be in violation of these rules on each day of operation or each day during which construction continues, until a permit is granted.

312.5 Sources Not Under Permit:

- a. All sources not in existence prior to the effective date of these rules shall first submit to the Control Officer an air quality permit application for the entire source before commencing construction of such source.
- b. All sources in existence on the date these rules become effective not holding a valid installation permit and/or a valid operating permit issued by the Control Officer which have not applied for a Non-Title V permit pursuant to

these rules shall submit to the Control Officer a permit application for the entire source.

312.6 Sources Which Currently Have an Installation or Operating Permit:

- a. For sources in existence on the date these rules become effective holding a valid installation permit and/or a valid operating permit issued by the Control Officer, the Control Officer may establish a phased schedule for acting on permit applications received within the first full year after the source becomes subject to obtaining a Title V or a Non-Title V permit under these rules. The schedule shall assure that at least one-third of such applications will be acted on annually over a period not to exceed three years after such effective date. Based on this schedule, the Control Officer shall review a completed application in accordance with the provisions of these rules and shall issue or deny the applicable permit within 18 months after the receipt of the completed application.
- b. Any application for an installation permit or an operating permit that is determined to be complete prior to the effective date of these rules but for which no permit has been issued shall be considered complete for the purposes of this section. In issuing a permit pursuant to such an application, the Control Officer shall include in the permit all elements addressed in the application and a schedule of compliance for submitting an application for a permit revision to address the elements required to be in the permit that were not included in the operating permit application or in the installation permit application. No later than six months after the effective date of these rules, the Control Officer shall take final action on an operating permit application or on an installation permit application determined to be complete prior to the effective date of these rules.

313 ACCELERATED PERMITTING:

- 313.1** Notwithstanding any other provisions of these rules, the following qualify a source for a request-submittal for accelerated processing: an application for a Title V permit or for a Non-Title V permit; any permit revision; and any coverage under a general permit. Such a request-submittal shall be submitted in writing to the Control Officer at least 30 days in advance of filing the application and shall be accompanied by fees as described in Rule 280 of these rules.
- 313.2** When an applicant has requested accelerated permit processing, the Control Officer may, to the extent practicable, undertake to process the permit or permit revision in accordance with the following schedule:
 - a. For applications for initial Title V and Non-Title V permits under Rules 210 and 220 of these rules, for significant permit revisions under Rule 210 of these rules, or for non-minor permit revisions under Rule 220 of these rules, final action on the permit or on the permit revision shall be taken within 90 days or after the Control Officer determines that the application is complete for a Non-Title V source and within 120 days after the Control Officer determines that the application is complete for a Title V source. Except for a new major source or a major modification subject to the requirements of Rule 240 of these rules, an application for a new permit, a significant permit revision, or a permit renewal shall be deemed to be complete unless the

Control Officer notifies the applicant by certified mail within 30 days of receipt of the application that the application is not complete.

- b. For applications for coverage under a general permit under Rule 230 of these rules, final action shall be taken within 30 days after receipt of the application.
- c. For minor permit revisions governed by Rule 210 of these rules and Rule 220 of these rules, the permit revision shall be issued within 60 days after receipt of the application.

313.3 Before issuing a permit or permit revision pursuant to this section, the applicant shall pay to the Control Officer all fees due as described in Rule 280 of these rules. Nothing in this section shall affect the public participation requirements of Rules 210 or 220 of these rules, or EPA and affected state review as required under Rule 210 of these rules.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 APPROVAL OR DENIAL OF PERMIT OR PERMIT REVISION:

- 401.1** The Control Officer shall deny a permit or revision if the applicant does not demonstrate that every such source for which a permit or permit revision is sought is so designed, controlled, or equipped with such air pollution control equipment that the source may be expected to operate without emitting or without causing to be emitted air contaminants in violation of the provisions of these rules.
- 401.2** Prior to acting on an application for a permit, the Control Officer may require the applicant to provide and to maintain such devices and procedures as are necessary for sampling and for testing purposes in order to secure information that will disclose the nature, extent, quantity, or degree of air contaminants discharged into the atmosphere from the source described in the application. In the event of such a requirement, the Control Officer shall notify the applicant in writing of the type and characteristics of such devices and procedures.
- 401.3** In acting upon an application for a permit renewal, if the Control Officer finds that such source has not been constructed in accordance with any prior permit or revision issued pursuant to ARS 49-480.01, the Control Officer shall require the permittee to obtain a permit revision or shall deny the permit renewal. The Control Officer shall not accept any further application for a permit for such source so constructed until the Control Officer finds that such source has been reconstructed in accordance with a prior permit or a revision, or until a revision to the permit has been obtained. The Control Officer may issue a permit with a compliance schedule for a source that is not in compliance with all applicable requirements at the time of permit issuance.
- 401.4** After a decision on a permit or on a permit revision, the Control Officer shall notify the applicant and any person who filed a comment on the permit pursuant to ARS 49-480 or on the permit revision pursuant to ARS 49-480.01 in writing of the decision, and if the permit is denied, the reasons for such denial. Service of this notification may be made in person or by first class mail. The Control Officer shall not accept a further application unless the applicant has corrected the

circumstances giving rise to the objections as specified by the Control Officer as reasons for such denial.

402 PERMIT REOPENINGS; REVOCATION AND REISSUANCE; TERMINATION:

402.1 Reopening for Cause:

- a. Each issued permit shall include provisions specifying the conditions under which the permit will be reopened prior to the expiration of the permit. A permit shall be reopened and revised under any of the following circumstances:
 - (1) Additional applicable requirements under the Act become applicable to a major source with a remaining permit term of three or more years. Such a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to Section 403.2 of this rule. Any permit revision required pursuant to this rule shall comply with Section 403 of this rule for a permit renewal and shall reset the five year permit term.
 - (2) Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Title V permit.
 - (3) The Control Officer or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 - (4) The Control Officer or the Administrator determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
- b. Proceedings to reopen and issue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Section 402.1a(1) of this rule, affect only those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as is practicable.
- c. Action to reopen a permit under this section shall not be initiated before a notice of such intent is provided to the source by the Control Officer at least 30 days in advance of the date that the permit is to be reopened, except that the Control Officer may provide a shorter time period in the case of an emergency.
- d. When a permit is reopened and revised pursuant to this rule, the Control Officer may make appropriate revisions to the permit shield established pursuant to Rule 210 of these rules.

402.2 Reopening for Cause by the Administrator:

- a. If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit pursuant to Section 402.1 of this rule, the Administrator may notify the Control Officer and the permittee of such finding in writing. Within ten days of receipt of notice from the Administrator that cause exists to reopen a Title V permit, the Control Officer shall notify the source.
- b. Within 90 days of receipt of notice from the Administrator that cause exists to reopen a permit, the Control Officer shall forward to the Administrator a proposed determination of termination, modification, or revocation and reissuance of the permit. The Control Officer may request a 90 day extension of this limit if it is necessary to request a new or revised permit application or additional information from the applicant for, or holder of, a Title V permit.
- c. The Control Officer shall have 90 days from receipt of an objection by the Administrator to attempt to resolve the objection.

403 PERMIT RENEWAL AND EXPIRATION:

- 403.1 Prior to renewing a permit issued under these rules, the Control Officer shall provide notice in the same manner and form as provided in Rule 210 of these rules.
- 403.2 The Control Officer shall not renew a permit issued under these rules unless the permittee applies for a permit renewal prior to the expiration of a permit in the manner required by Rule 210 of these rules. If a timely and complete application for a permit renewal is submitted, but the Control Officer has failed to issue or deny the renewal permit before the end of the term of the previous permit, then the permit shall not expire until the renewal permit has been issued or denied. Any testing that is required for a renewal shall be completed before the proposed permit renewal is issued by the Control Officer.
- 403.3 The Control Officer shall publish notice of a permit renewal decision in the same manner as that provided in Rule 210 of these rules for a Title V permit and as that provided in Rule 220 of these rules for a Non-Title V permit.

404 PERMIT TRANSFERS:

- 404.1 Except as provided in ARS §49-429 and Section 404.2 of this rule, a Title V permit or a Non-Title V permit may be transferred to another person if the person who holds the permit gives notice to the Control Officer in writing at least 30 days before the proposed transfer and complies with administrative permit amendment procedures pursuant to Rule 210 and/or Rule 220 of these rules. Permit transfer notice shall contain the following:
 - a. The permit number and expiration date.
 - b. The name, address and telephone number of the current permit holder.
 - c. The name, address and telephone number of the person to receive the permit.

- d. The name and title of the individual within the organization who is accepting responsibility for the permit along with a signed statement by that person indicating such acceptance.
- e. A description of the equipment to be transferred.
- f. A written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee.
- g. Provisions for the payment of any fees pursuant to Rule 280 of these rules that will be due and payable before the effective date of transfer.
- h. Sufficient information about the source's technical and financial capabilities of operating the source to allow the Control Officer to make the decision in Section 404.2 of this rule including:
 - (1) The qualifications of each person principally responsible for the operation of the source.
 - (2) A statement by the chief financial officer of the new permittee that it is financially capable of operating the source in compliance with the law, and the information that provides the basis for that statement.
 - (3) A brief description of any action for the enforcement of any federal or state law, rule or regulation, or any county, city or local government ordinance relating to the protection of the environment, instituted against any person employed by the new permittee and principally responsible for operating the source during the five years preceding the date of application. In lieu of this description, the new permittee may submit a copy of the certificate of disclosure or 10-K form required under ARS §49-109, or a statement that this information has been filed in compliance with ARS §49-109.

404.2 The Control Officer shall deny the transfer if the Control Officer determines that the organization receiving the permit is not capable of operating the source in compliance with Article 3, Chapter 3, Title 49, Arizona Revised Statutes, the provisions of these rules, or the provisions of the permit. Notice of the denial stating the reason for the denial shall be sent to the original permit holder by certified mail stating the reason for the denial within ten working days of the Control Officer's receipt of the application. If the transfer is not denied within ten working days after receipt of the notice, the Control Officer shall approve such permit transfer.

404.3 To appeal the transfer denial:

- a. Both the transferor and transferee shall petition the hearing board in writing for a public hearing; and
- b. The appeal process for a permit shall be followed.

405 PERMITS CONTAINING THE TERMS AND CONDITIONS OF FEDERAL DELAYED COMPLIANCE ORDERS (DCO) OR CONSENT DECREES:

- 405.1** The terms and conditions of either a DCO or consent decree shall be incorporated into a permit through a permit revision. In the event the permit expires prior to the expiration of the DCO or consent decree, the DCO or consent decree shall be incorporated into any permit renewal.
- 405.2** The owner or operator of a source subject to a DCO or consent decree shall submit to the Control Officer a quarterly report of the status of the source and construction progress and copies of any reports to the Administrator required under the order or decree. The Control Officer may require additional reporting requirements and conditions in permits issued under this rule.
- 405.3** For the purpose of this rule, sources subject to a consent decree issued by a federal court shall meet the same requirements as those subject to a DCO.
- 406 APPEAL:** Denial or revocation of a permit shall be stayed by the permittee's written petition for a hearing, filed in accordance with Rule 400 of these rules.
- 407 AIR QUALITY IMPACT MODELS:**
- 407.1** Where the Control Officer requires a person to perform air quality impact modeling, the modeling shall be performed in a manner consistent with the "Guideline on Air Quality Models (Revised)" (EPA-450/2-78-027R, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, N.C. 27711, July 1986) and "Supplement B to the Guideline on Air Quality Models" (U.S. Environmental Protection Agency, September 1990). Both documents shall be referred to hereinafter as "Guideline", and are adopted by reference.
- 407.2 Model Substitution:** Where the person can demonstrate that an air quality impact model specified in the guideline is inappropriate, the model may be modified or another model substituted. However, before such modification or substitution can occur, the Control Officer must make a written finding that:
- a. No model in the guideline is appropriate; or
 - b. The data base required for the appropriate model in the guideline is not available; and
 - c. A model proposed as a substitute or modification is likely to produce results equal or superior to those obtained by models in the guideline.
- 408 TESTING PROCEDURES:** Except as otherwise specified, the applicable testing procedures contained in the Arizona Testing Manual for Air Pollutant Emissions shall be used to determine compliance with standards or permit conditions established pursuant to these rules.
- 409 PERMIT FEES:** A fee shall be charged for each facility. No permit is valid until the applicable permit fee has been received and until the permit is issued by the Control Officer.
- 410 PORTABLE SOURCES:**
- 410.1** An owner or operator of a portable source which will operate for the duration of its permit solely in Maricopa County shall obtain a permit from the Control Officer for

Maricopa County and is subject to Sections 410.2, 410.3, and 410.4 of this rule. A portable source with a current State of Arizona permit need not obtain a Maricopa County permit but is subject to Sections 410.3, 410.4, and 410.5 of this rule. Any permit for a portable source shall contain conditions that will assure compliance with all applicable requirements at all authorized locations.

- 410.2** An owner or operator of a portable source which has a Maricopa County permit but proposes to operate outside of Maricopa County shall obtain a permit from the Director. Upon issuance of a permit by the Director, the Control Officer shall terminate the Maricopa County permit for that source. If the owner or operator relocates the portable source in Maricopa County, the owner or operator shall notify the Control Officer as required by Section 410.4 of this rule of the relocation of the portable source. Whenever the owner or operator of a portable source operates a portable source in Maricopa County, such owner or operator shall comply with all regulatory requirements in these rules.
- 410.3** An owner of a portable source which requires a permit under this rule shall obtain the permit prior to renting or leasing said portable source. This permit shall be provided by the owner to the renter or lessee, and the renter or lessee shall be bound by the permit provisions. In the event a copy of the permit is not provided to the renter or lessee, both the owner and the renter or lessee shall be responsible for the operation of the portable source in compliance with the permit conditions and any violations thereof.
- 410.4** A portable source may be transported from one location to another within or across Maricopa County boundaries provided the owner or operator of such portable source notifies the Director and any Control Officer who has jurisdiction over the geographic area that includes the new location of the portable source by certified mail at least ten working days before the portable source is transported to the new location. The notification required under this rule shall include:
- a. A description of the portable source to be transported including the Maricopa County permit number or the State of Arizona permit number for such portable source;
 - b. A description of the present location;
 - c. A description of the location to which the portable source is to be transported, including the availability of all utilities, such as water and electricity, necessary for the proper operation of all control equipment;
 - d. The date on which the portable source is to be moved;
 - e. The date on which operation of the portable source will begin at the new location; and
 - f. The duration of operation at the new location.
- 410.5** An owner or operator of a portable source with a current State of Arizona permit that moves such portable source into Maricopa County shall notify the Control Officer that such portable source is being transported to a new location and shall include in such notification a copy of the State of Arizona permit and a copy of any conditions imposed by the State of Arizona permit. The source shall be subject to all regulatory requirements of these rules.

411 PUBLIC RECORDS; CONFIDENTIALITY:

- 411.1** The Control Officer shall make all permits, including all elements required to be in the permit pursuant to Rule 210 of these rules and Rule 220 of these rules available to the public.
- 411.2** A notice of confidentiality pursuant to ARS §49-487(c) shall:
- a.** Precisely identify the information in the application documents which is considered confidential.
 - b.** Contain sufficient supporting information to allow the Control Officer to evaluate whether such information satisfies the requirements related to trade secrets or, if applicable, how the information, if disclosed, could cause substantial harm to the person's competitive position.
- 411.3** Within 30 days of receipt of a notice of confidentiality that complies with Section 411.2 of this rule, the Control Officer shall make a determination as to whether the information satisfies the requirements for trade secret or competitive position pursuant to ARS §49-487(C)(1) and so notify the applicant in writing. If the Control Officer agrees with the applicant that the information covered by the notice of confidentiality satisfies the statutory requirements, the Control Officer shall include a notice in the administrative record of the permit application that certain information has been considered confidential.

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS**

**RULE 310
FUGITIVE DUST SOURCES**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit particulate matter emissions into the ambient air from any property, operation or activity that may serve as a fugitive dust source. The effect of this rule shall be to minimize the amount of PM₁₀ entrained into the ambient air as a result of the impact of human activities by requiring measures to prevent, reduce, or mitigate particulate matter emissions.
- 102 APPLICABILITY:** The provisions of this rule shall apply to all dust generating operations except: normal farm cultural practices under Arizona Revised Statutes (ARS) §49-457 and ARS §49-504.4 and open areas, vacant lots, unpaved parking lots, and unpaved roadways which are not located at sources that require any permit under these rules.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply. See Rule 100 (General Provisions And Definitions) of these rules for definitions of terms that are used but not specifically defined in this rule.

- 201 BULK MATERIAL** - Any material, including but not limited to, earth, rock, silt, sediment, sand, gravel, soil, fill, aggregate less than 2 inches in length or diameter (i.e., aggregate base course (ABC)), dirt, mud, demolition debris, cotton, trash, cinders, pumice, saw dust, feeds, grains, fertilizers, and dry concrete, which are capable of producing fugitive dust at an industrial, institutional, commercial, governmental, construction, and/or demolition site.
- 202 BULK MATERIAL HANDLING, STORAGE, AND/OR TRANSPORTING OPERATION** - The use of equipment, haul trucks, and/or motor vehicles, such as but not limited to, the loading, unloading, conveying, transporting, piling, stacking, screening, grading, or moving of bulk materials, which are capable of producing fugitive dust at an industrial, institutional, commercial, governmental, construction, and/or demolition site.
- 203 CARRY-OUT/TRACKOUT** - Any and all bulk materials that adhere to and agglomerate on the exterior surfaces of motor vehicles, haul trucks, and/or equipment (including tires) and that have fallen onto a paved public roadway.

- 204 CONTROL MEASURE** - A technique, practice, or procedure used to prevent or minimize the generation, emission, entrainment, suspension, and/or airborne transport of fugitive dust. Control measures include but are not limited to:
- 204.1** Curbing.
 - 204.2** Paving.
 - 204.3** Pre-wetting.
 - 204.4** Applying dust suppressants.
 - 204.5** Physically stabilizing with vegetation, gravel, recrushed/recycled asphalt or other forms of physical stabilization.
 - 204.6** Limiting, restricting, phasing and/or rerouting motor vehicle access.
 - 204.7** Reducing vehicle speeds and/or number of vehicle trips.
 - 204.8** Limiting use of off-road vehicles on open areas and vacant lots.
 - 204.9** Utilizing work practices and/or structural provisions to prevent wind and water erosion onto paved public roadways.
 - 204.10** Appropriately using dust control implements.
 - 204.11** Installing one or more grizzlies, gravel pads, and/or wash down pads adjacent to the entrance of a paved public roadway to control carry-out and trackout.
 - 204.12** Keeping open-bodied haul trucks in good repair, so that spillage may not occur from beds, sidewalls, and tailgates.
 - 204.13** Covering the cargo beds of haul trucks to minimize wind-blown dust emissions and spillage.
- 205 DISTURBED SURFACE AREA** - A portion of the earth's surface (or material placed thereupon) which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed native condition, thereby increasing the potential for the emission of fugitive dust. For the purpose of this rule, an area is considered to be a disturbed surface area until the activity that caused the disturbance has been completed and the disturbed surface area meets the standards described in Section 301 and Section 302 of this rule.
- 206 DUST CONTROL IMPLEMENT** - A tool, machine, equipment, accessory, structure, enclosure, cover, material or supply, including an adequate readily available supply of water and its associated distribution/delivery system, used to control fugitive dust emissions.

- 207 DUST CONTROL PLAN** - A written plan describing all control measures.
- 208 DUST GENERATING OPERATION** - Any activity capable of generating fugitive dust, including but not limited to, land clearing, earthmoving, weed abatement by discing or blading, excavating, construction, demolition, material handling, storage and/or transporting operations, vehicle use and movement, the operation of any outdoor equipment, or unpaved parking lots. For the purpose of this rule, landscape maintenance and/or playing on a ballfield shall not be considered a dust generating operation. However, landscape maintenance shall not include grading, trenching, nor any other mechanized surface disturbing activities performed to establish initial landscapes or to redesign existing landscapes.
- 209 DUST SUPPRESSANT** - Water, hygroscopic material, solution of water and chemical surfactant, foam, non-toxic chemical stabilizer or any other dust palliative, which is not prohibited for ground surface application by the U.S. Environmental Protection Agency (EPA) or the Arizona Department of Environmental Quality (ADEQ) or any applicable law, rule, or regulation, as a treatment material for reducing fugitive dust emissions.
- 210 EARTHMOVING OPERATION** - The use of any equipment for an activity which may generate fugitive dust, such as but not limited to, cutting and filling, grading, leveling, excavating, trenching, loading or unloading of bulk materials, demolishing, blasting, drilling, adding to or removing bulk materials from open storage piles, back filling, soil mulching, landfill operations, or weed abatement by discing or blading.
- 211 FREEBOARD** - The vertical distance between the top edge of a cargo container area and the highest point at which the bulk material contacts the sides, front, and back of a cargo container area.
- 212 FUGITIVE DUST** - The particulate matter, which is not collected by a capture system, which is entrained in the ambient air, and which is caused from human and/or natural activities, such as but not limited to, movement of soil, vehicles, equipment, blasting, and wind. For the purpose of this rule, fugitive dust does not include particulate matter emitted directly from the exhaust of motor vehicles and other internal combustion engines, from portable brazing, soldering, or welding equipment, and from piledrivers, and does not include emissions from process and combustion sources that are subject to other rules in Regulation III (Control Of Air Contaminants) of these rules.
- 213 GRAVEL PAD** - A layer of washed gravel, rock, or crushed rock which is at least one inch or larger in diameter, maintained at the point of intersection of a paved public roadway and a work site entrance to dislodge mud, dirt, and/or debris from the tires of motor vehicles and/or haul trucks, prior to leaving the work site.
- 214 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 and/or haul trucks prior to leaving the work site.

- 215 HAUL TRUCK** - Any fully or partially open-bodied self-propelled vehicle including any non-motorized attachments, such as but not limited to, trailers or other conveyances which are connected to or propelled by the actual motorized portion of the vehicle used for transporting bulk materials.
- 216 INTERMITTENT SOURCE** - A fugitive dust generating operation and/or activity that lasts for a duration of less than six consecutive minutes.
- 217 MOTOR VEHICLE** - A self-propelled vehicle for use on the public roads and highways of the State of Arizona and required to be registered under the Arizona State Uniform Motor Vehicle Act, including any non-motorized attachments, such as but not limited to, trailers or other conveyances which are connected to or propelled by the actual motorized portion of the vehicle.
- 218 NORMAL FARM CULTURAL PRACTICE** - All activities by the owner, lessee, agent, independent contractor, and/or supplier conducted on any facility for the production of crops and/or nursery plants. Disturbances of the field surface caused by turning under stalks, tilling, leveling, planting, fertilizing, or harvesting are included in this definition.
- 219 OFF-ROAD VEHICLE** - Any self-propelled conveyance specifically designed for off-road use, including but not limited to, off-road or all-terrain equipment, trucks, cars, motorcycles, motorbikes, or motorbuggies.
- 220 OPEN AREAS AND VACANT LOTS** - Any of the following described in subsection 220.1 through subsection 220.4 of this rule. For the purpose of this rule, vacant portions of residential or commercial lots that are immediately adjacent and owned and/or operated by the same individual or entity are considered one vacant open area or vacant lot.
- 220.1** An unsubdivided or undeveloped tract of land adjoining a developed or a partially developed residential, industrial, institutional, governmental, or commercial area.
- 220.2** A subdivided residential, industrial, institutional, governmental, or commercial lot, which contains no approved or permitted buildings or structures of a temporary or permanent nature.
- 220.3** A partially developed residential, industrial, institutional, governmental, or commercial lot.
- 220.4** A tract of land, in the nonattainment area, adjoining agricultural property.
- 221 OWNER AND/OR OPERATOR** - Any person who owns, leases, operates, controls, or supervises a dust generating operation subject to the requirements of this rule.

- 222 PAVE** - To apply and maintain asphalt, concrete, or other similar material to a roadway surface (i.e., asphaltic concrete, concrete pavement, chip seal, or rubberized asphalt).
- 223 PUBLIC ROADWAYS** - Any roadways that are open to public travel.
- 224 ROUTINE** - Any dust generating operation which occurs more than 4 times per year or lasts 30 cumulative days or more per year.
- 225 SILT** - Any aggregate material with a particle size less than 75 micrometers in diameter, which passes through a No. 200 Sieve.
- 226 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 roadway, that controls or prevents vehicular trackout.
- 227 UNPAVED HAUL/ACCESS ROAD** - Any on-site unpaved road used by commercial, industrial, institutional, and/or governmental traffic.
- 228 UNPAVED PARKING LOT** - Any area larger than 5,000 square feet that is not paved and that is used for parking, maneuvering, or storing motor vehicles.
- 229 UNPAVED ROAD** - Any road or equipment path that is not paved. For the purpose of this rule, an unpaved road is not a horse trail, hiking path, bicycle path, or other similar path used exclusively for purposes other than travel by motor vehicles.
- 230 URBAN OR SUBURBAN OPEN AREA** - The definition of urban or suburban open area is included in Section 220 (Definition Of Open Areas And Vacant Lots) of this rule.
- 231 VACANT LOT** - The definition of vacant lot is included in Section 220 (Definition Of Open Areas And Vacant Lots) of this rule.
- 232 VACANT PARCEL** - The definition of vacant parcel is included in Section 220 (Definition Of Open Areas And Vacant Lots) of this rule.
- 233 WIND-BLOWN DUST** - Visible emissions from any disturbed surface area, which are generated by wind action alone.
- 234 WIND EVENT** – When the 60-minute average wind speed is greater than 25 miles per hour.
- 235 WORK SITE** - Any property upon which any dust generating operations and/or earthmoving operations occur.

SECTION 300 - STANDARDS

301 OPACITY LIMITATION FOR FUGITIVE DUST SOURCES: The owner and/or operator of a source engaging in dust generating operations shall not allow visible fugitive dust emissions to exceed 20% opacity.

301.1 Wind Event: Exceedances of the opacity limit that occur due to a wind event shall constitute a violation of the opacity limit. However, it shall be an affirmative defense in an enforcement action if the owner and/or operator demonstrates all of the following conditions:

- a. All control measures required were followed and 1 or more of the control measures in Table 2 were applied and maintained;
- b. The 20% opacity exceedance could not have been prevented by better application, implementation, operation, or maintenance of control measures;
- c. The owner and/or operator compiled and retained records, in accordance with Section 502 (Recordkeeping) of this rule; and
- d. The occurrence of a wind event on the day(s) in question is documented by records. The occurrence of a wind event must be determined by the nearest Maricopa County Environmental Services Department Air Quality Division monitoring station, from any other certified meteorological station, or by a wind instrument that is calibrated according to manufacturer's standards and that is located at the site being checked.

301.2 Emergency Maintenance Of Flood Control Channels and Water Retention Basins: No opacity limitation shall apply to emergency maintenance of flood control channels and water retention basins, provided that control measures are implemented.

301.3 Vehicle Test And Development Facilities And Operations: No opacity limitation shall apply to vehicle test and development facilities and operations when dust is required to test and validate design integrity, product quality, and/or commercial acceptance, if such testing is not feasible within enclosed facilities.

302 STABILIZATION REQUIREMENTS FOR FUGITIVE DUST SOURCES:

302.1 Unpaved Parking Lot: The owner and/or operator of any unpaved parking lot shall not allow visible fugitive dust emissions to exceed 20% opacity, and either:

- a. Shall not allow silt loading equal to or greater than 0.33 oz/ft²; or
- b. Shall not allow the silt content to exceed 8%.

302.2 Unpaved Haul/Access Road: The owner and/or operator of any unpaved haul/access road (whether at a work site that is under construction or at a work site that is temporarily or permanently inactive):

- a. Shall not allow visible fugitive dust emissions to exceed 20% opacity, and either:
 - (1) Shall not allow silt loading equal to or greater than 0.33 oz/ft²; or
 - (2) Shall not allow the silt content to exceed 6%.
- b. Shall, as an alternative to meeting the stabilization requirements for an unpaved haul/access road, limit vehicle trips to no more than 20 per day and limit vehicle speeds to no more than 15 miles per hour. If complying with subsection 302.2(b) of this rule, must include, in a Dust Control Plan, the number of vehicles traveled on the unpaved haul/access roads (i.e., number of employee vehicles, earthmoving equipment, haul trucks, and water trucks).

302.3 Open Area And Vacant Lot Or Disturbed Surface Area: The owner and/or operator of an open area and vacant lot or any disturbed surface area on which no activity is occurring (whether at a work site that is under construction, at a work site that is temporarily or permanently inactive) shall meet at least 1 of the standards described in subsection 302.3(a) through subsection 302.3(g) below, as applicable. The owner and/or operator of such inactive disturbed surface area shall be considered in violation of this rule if such inactive disturbed surface area is not maintained in a manner that meets at least 1 of the standards described in subsection 302.3(a) through subsection 302.3(g) below, as applicable.

- a. Maintain a visible crust; or
- b. Maintain a threshold friction velocity (TFV) for disturbed surface areas corrected for non-erodible elements of 100 cm/second or higher; or
- c. Maintain a flat vegetative cover (i.e., attached (rooted) vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%; or
- d. Maintain a standing vegetative cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 30%; or
- e. Maintain a standing vegetative cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction

velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements; or

- f. Maintain a percent cover that is equal to or greater than 10% for non-erodible elements; or
- g. Comply with a standard of an alternative test method, upon obtaining the written approval from the Control Officer and the Administrator of the Environmental Protection Agency (EPA).

302.4 Vehicle Test And Development Facilities And Operations: No stabilization requirement shall apply to vehicle test and development facilities and operations when dust is required to test and validate design integrity, product quality, and/or commercial acceptance, if such testing is not feasible within enclosed facilities.

303 DUST CONTROL PLAN REQUIRED: The owner and/or operator of a source shall submit to the Control Officer a Dust Control Plan with any permit applications that involve earthmoving operations which would equal or exceed 0.10 acre. Compliance with this section does not effect a source's responsibility to comply with the other standards of this rule. The Dust Control Plan shall describe all control measures to be implemented before, after, and while conducting any dust generating operation, including during weekends, after work hours, and on holidays.

303.1 A Dust Control Plan shall, at a minimum, contain all the information described in Section 304 of this rule. The Control Officer shall approve, disapprove, or conditionally approve the Dust Control Plan, in accordance with the criteria used to approve, disapprove or conditionally approve a permit. Failure to comply with the provisions of an approved Dust Control Plan is deemed to be a violation of this rule. Regardless of whether an approved Dust Control Plan is in place or not, the owner and/or operator of a source is still subject to all requirements of this rule at all times. In addition, the owner and/or operator of a source with an approved Dust Control Plan is still subject to all of the requirements of this rule, even if such owner and/or operator is complying with the approved Dust Control Plan.

303.2 At least one primary control measure and one contingency control measure must be identified in the Dust Control Plan for all fugitive dust sources. Should any primary control measure(s) prove ineffective, the owner and/or operator shall immediately implement the contingency control measure(s), which may obviate the requirement of submitting a revised Dust Control Plan.

303.3 The following subsections, subsection 303.3(a) and subsection 303.3(b) of this rule, describe the permit applications with which a Dust Control Plan must be submitted.

- a. If a person is required to obtain an Earthmoving Permit under Regulation II (Permits And Fees) of these rules, then such person must first submit a Dust Control Plan and obtain the Control Officer's approval of the Dust Control Plan before commencing any dust generating operation.
- b. If a person is required to obtain or has obtained a Title V Permit, a Non-Title V, or a General Permit under Regulation II (Permits And Fees) of these rules, then such person must first submit a Dust Control Plan and obtain the Control Officer's approval of the Dust Control Plan before commencing any routine dust generating operation.

303.4 A Dust Control Plan shall not be required:

- a. To play on a ballfield and/or for landscape maintenance. For the purpose of this rule, landscape maintenance does not include grading, trenching, nor any other mechanized surface disturbing activities.
- b. To establish initial landscapes or to redesign existing landscapes of legally-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, city parks, and county regional parks, hiking paths, horse trails, bicycle paths, ballfields, playgrounds at camp sites, and camp sites, which are used exclusively for purposes other than travel by motor vehicles. For the purpose of this rule, establishing initial landscapes or redesigning existing landscapes does not include grading, trenching, nor any other mechanized surface disturbing activities.

304 ELEMENTS OF A DUST CONTROL PLAN: A Dust Control Plan shall contain, at a minimum, all of the following information:

304.1 Names, address(es), and phone numbers of person(s) responsible for the submittal and implementation of the Dust Control Plan and responsible for the dust generating operation.

304.2 A drawing, on at least 8½ x 11" paper, which shows:

- a. Entire project site boundaries;
- b. Acres to be disturbed with linear dimensions;
- c. Nearest public roads;
- d. North arrow; and
- e. Planned exit locations onto paved public roadways.

304.3 Control measures or combination thereof to be applied to all actual and potential fugitive dust sources, before, after, and while conducting any dust generating operation, including during weekends, after work hours, and on holidays.

- a.** At least one primary control measure and one contingency control measure must be identified, from Table 1 of this rule, for all fugitive dust sources. Should any primary control measure(s) prove ineffective, the owner and/or operator shall immediately implement the contingency control measure(s), which may obviate the requirement of submitting a revised Dust Control Plan.
- b.** Alternatively, a control measure(s) that is not in Table 1 of this rule may be chosen, provided that such control measure(s) is implemented to comply with the standard(s) described in Section 301 and Section 302 of this rule, as determined by the corresponding test method(s), as applicable, and must meet other applicable standard(s) set forth in this rule.
- c.** If complying with subsection 302.2(b) (Stabilization Requirements For Fugitive Dust Sources-Unpaved Haul/Access Roads) of this rule, must include the number of vehicles traveled on the unpaved haul/access roads (i.e., number of employee vehicles, earthmoving equipment, haul trucks, and water trucks).

304.4 Dust suppressants to be applied, including product specifications or label instructions for approved usage:

- a.** Method, frequency, and intensity of application.
- b.** Type, number, and capacity of application equipment.
- c.** Information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application.

304.5 Specific surface treatment(s) and/or control measures utilized to control material trackout and sedimentation where unpaved and/or access points join paved public roadways.

305 DUST CONTROL PLAN REVISIONS: If the Control Officer determines that an approved Dust Control Plan has been followed, yet fugitive dust emissions from any given fugitive dust source still exceed Section 301 and Section 302 of this rule, then the Control Officer shall issue a written notice to the owner and/or operator of such source explaining such determination. The owner and/or operator of such source shall make written revisions to the Dust Control Plan and shall submit such revised Dust Control Plan to the Control Officer within three working days of receipt of the Control Officer's written notice, unless such time period is extended by the Control Officer, upon request, for good cause. During the time that such owner and/or operator is preparing revisions to the approved

Dust Control Plan, such owner and/or operator must still comply with all requirements of this rule.

306 CONTROL MEASURES: The owner and/or operator of a source shall implement control measures before, after, and while conducting any dust generating operation, including during weekends, after work hours, and on holidays. See subsection 304.3, Table 1, and Table 2 of this rule. For the purpose of this rule, any control measure that is implemented must meet the applicable standard(s) described in Section 301 and in Section 302 of this rule, as determined by the corresponding test method(s), as applicable, and must meet other applicable standard(s) set forth in this rule. Failure to comply with the provisions of Section 308 (Work Practices) of this rule, as applicable, and/or of an approved Dust Control Plan, is deemed a violation of this rule. Regardless of whether an approved Dust Control Plan is in place or not, the owner and/or operator of a dust generating operation is still subject to all requirements of this rule at all times. In addition, the owner and/or operator of a dust generating operation with an approved Dust Control Plan is still subject to all of the requirements of this rule, even if such owner and/or operator of a dust generating operation is complying with the approved Dust Control Plan.

307 PROJECT INFORMATION SIGN: The owner and/or operator of a source shall erect a project information sign at the main entrance, that is visible to the public, of all sites with an Earthmoving Permit that are five acres or larger. Such sign shall be a minimum of four feet long by four feet wide, have a white background, have black block lettering which is at least four inches high, and shall contain the following information:

307.1 Project name; and

307.2 Name and phone number of person(s) responsible for conducting the project; and

307.3 Text stating: "Complaints? Call Maricopa County Environmental Services Department (insert the current/accurate phone number for the complaint phone line)."

308 WORK PRACTICES: When engaged in the following specific activities, the owner and/or operator of a source shall comply with the following work practices in addition to implementing, as applicable, the control measures described in Table 1 of this rule. Such work practices shall be implemented to meet the standards described in Section 301 and Section 302 of this rule.

308.1 Bulk Material Hauling Off-Site Onto Paved Public Roadways:

a. Load all haul trucks such that the freeboard is not less than three inches; and

b. Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); and

- c. Cover all haul trucks with a tarp or other suitable closure; and
- d. Before the empty haul truck leaves the site, clean the interior of the cargo compartment or cover the cargo compartment.

308.2 Bulk Material Hauling On-Site Within The Boundaries Of The Work

Site: When crossing a public roadway upon which the public is allowed to travel while construction is underway:

- a. Load all haul trucks such that the freeboard is not less than three inches; and
- b. Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); and
- c. Install a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of haul trucks and/or motor vehicles that traverse such work site. Examples of trackout control devices are described in Table 1 (Trackout-1J, 2J, 3J) of this rule.

308.3 Spillage, Carry-Out, Erosion, And/Or Trackout:

- a. Install a suitable trackout control device (Examples of trackout control devices are described in Table 1 (Trackout-1J, 2J, 3J) of this rule) that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of haul trucks and/or motor vehicles that traverse such work site at all exits onto a paved public roadway:
 - (1) From all work sites with a disturbed surface area of five acres or larger.
 - (2) From all work sites where 100 cubic yards of bulk materials are hauled on-site and/or off-site per day.
- b. Cleanup spillage, carry-out, erosion, and/or trackout on the following time-schedule:
 - (1) Immediately, when spillage, carry-out, and/or trackout extends a cumulative distance of 50 linear feet or more; or
 - (2) At the end of the work day, when spillage, carry-out, erosion, and/or trackout are other than the spillage, carry-out, erosion, and/or trackout described above, in subsection 308.3(b)(1) of this rule.

308.4 Unpaved Haul/Access Roads: Implement 1 or more control measure(s) described in Table 1 (Unpaved Haul/Access Roads-1C through 5C) of this rule, before engaging in the use of or in the maintenance of unpaved haul/access roads.

308.5 Easements, Rights-Of-Way, And Access Roads For Utilities (Electricity, Natural Gas, Oil, Water, And Gas Transmission) Associated With Sources That Have A Non-Title V Permit, A Title V Permit, And/Or A General Permit Under These Rules:

- a. Inside the PM₁₀ nonattainment area, restrict vehicular speeds to 15 miles per hour and vehicular trips to no more than 20 per day; or
- b. Outside the PM₁₀ nonattainment area, restrict vehicular trips to no more than 20 per day; or
- c. Implement control measures, as described in Table 1 (Unpaved Haul/Access Roads-1C through 5C) of this rule.

308.6 Open Storage Piles: For the purpose of this rule, an open storage pile is any accumulation of bulk material with a 5% or greater silt content which in any one point attains a height of three feet and covers a total surface area of 150 square feet or more. Silt content shall be assumed to be 5% or greater unless a person can show, by testing in accordance with ASTM Method C136-96A or other equivalent method approved in writing by the Control Officer and the Administrator of EPA, that the silt content is less than 5%.

- a. During stacking, loading, and unloading operations, apply water, as necessary, to maintain compliance with Section 301 of this rule; and
- b. When not conducting stacking, loading, and unloading operations, comply with one of the following work practices:
 - (1) Cover open storage piles with tarps, plastic, or other material to prevent wind from removing the coverings; or
 - (2) Apply water to maintain a soil moisture content at a minimum of 12%, as determined by ASTM Method D2216-98, or other equivalent as approved by the Control Officer and the Administrator of EPA. For areas which have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-91(1998) or other equivalent approved by the Control Officer and the Administrator of EPA, maintain at least 70% of the optimum soil moisture content; or

- (3) Meet one of the stabilization requirements described in subsection 302.3 of this rule; or
- (4) Construct and maintain wind barriers, storage silos, or a three-sided enclosure with walls, whose length is no less than equal to the length of the pile, whose distance from the pile is no more than twice the height of the pile, whose height is equal to the pile height, and whose porosity is no more than 50%. If implementing this subsection, subsection 308.6(b)(4), must also implement either subsection 308.6(b)(2) or subsection 308.6(b)(3) above.

308.7 Earthmoving Operations On Disturbed Surface Areas 1 Acre Or Larger: If water is the chosen control measure, operate water application system (e.g., water truck) while conducting earthmoving operations on disturbed surface areas 1 acre or larger.

308.8 Weed Abatement By Discing Or Blading:

- a. Apply water before weed abatement by discing or blading occurs; and
- b. Apply water while weed abatement by discing or blading is occurring; and
- c. Pave, apply gravel, apply water, or apply a suitable dust suppressant, in compliance with subsection 302.3 of this rule, after weed abatement by discing or blading occurs; or
- d. Establish vegetative ground cover in sufficient quantity, in compliance with subsection 302.3 of this rule, after weed abatement by discing or blading occurs.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 DUST CONTROL PLAN POSTING: The owner and/or operator of a source shall post a copy of the approved Dust Control Plan in a conspicuous location at the work site, within on-site equipment, or in an on-site vehicle, or shall otherwise keep a copy of the approved Dust Control Plan available on-site at all times. The owner and/or operator of a source that has been issued a Block Permit shall not be required to keep a copy of the plot plan, an element of a Dust Control Plan, on-site.

402 COMPLIANCE SCHEDULE: The requirements of this rule supercede any conflicting requirements that may be found in existing Dust Control Plans.

402.1 For Earthmoving Permits: If any changes to a Dust Control Plan, associated with an Earthmoving Permit, are necessary as a result of the

most recent revisions of this rule, such changes shall not be required until the Earthmoving Permit is required to be renewed.

402.2 For Non-Title V Permits And For Title V Permits: If any changes to a Dust Control Plan, associated with a Non-Title V Permit or with a Title V Permit, are necessary as a result of the most recent revisions of this rule, then the owner and/or operator shall submit a revised Dust Control Plan to the Control Officer, according to the minor permit revision procedures described in Rule 220 and Rule 210 of these rules respectively, no later than 6 months after the effective date of the most recent revisions to this rule.

SECTION 500 - MONITORING AND RECORDS

501 COMPLIANCE DETERMINATION: To determine compliance with this rule, the following test methods shall be conducted:

501.1 Opacity Observations:

- a. Dust Generating Operations:** Opacity observations of a source engaging in dust generating operations shall be conducted in accordance with Appendix C, Section 3 (Visual Determination Of Opacity Of Emissions From Sources For Time-Averaged Regulations) of these rules, except opacity observations for intermittent sources shall require 12 rather than 24 consecutive readings at 15-second intervals for the averaging time.
- b. Unpaved Parking Lot:** Opacity observations of any unpaved parking lot shall be conducted in accordance with Appendix C, Section 2.1 (Test Methods For Stabilization-For Unpaved Roads And Unpaved Parking Lots) of these rules.
- c. Unpaved Haul/Access Road:** Opacity observations of any unpaved haul/access road (whether at a work site that is under construction or at a work site that is temporarily or permanently inactive) shall be conducted in accordance with Appendix C, Section 2.1 (Test Methods For Stabilization-For Unpaved Roads And Unpaved Parking Lots) of these rules.

501.2 Stabilization Observations:

- a. Unpaved Parking Lot:** Stabilization observations for unpaved parking lots shall be conducted in accordance with Appendix C, Section 2.1 (Test Methods For Stabilization-For Unpaved Roads And Unpaved Parking Lots) of these rules. When more than 1 test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule.

- b. Unpaved Haul/Access Road:** Stabilization observations for unpaved haul/access roads (whether at a work site that is under construction or at a work site that is temporarily or permanently inactive) shall be conducted in accordance with Appendix C, Section 2.1 (Test Methods For Stabilization-For Unpaved Roads And Unpaved Parking Lots) of these rule. When more than 1 test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule.
- c. Open Area And Vacant Lot Or Disturbed Surface Area:** Stabilization observations for an open area and vacant lot or any disturbed surface area on which no activity is occurring (whether at a work site that is under construction, at a work site that is temporarily or permanently inactive) shall be conducted in accordance with at least one of the techniques described in subsection 501.2(c)(1) through subsection 501.2(c)(7) below, as applicable. The owner and/or operator of such inactive disturbed surface area shall be considered in violation of this rule if such inactive disturbed surface area is not maintained in a manner that meets at least 1 of the standards described in subsection 302.3 of this rule, as applicable.
- (1)** Appendix C, Section 2.3 (Test Methods For Stabilization-Visible Crust Determination) (The Drop Ball/Steel Ball Test) of these rules for a visible crust; or
 - (2)** Appendix C, Section 2.4 (Test Methods For Stabilization-Determination Of Threshold Friction Velocity (TFV)) (Sieving Field Procedure) of these rules for threshold friction velocity (TFV) corrected for non-erodible elements of 100 cm/second or higher; or
 - (3)** Appendix C, Section 2.5 (Test Methods For Stabilization-Determination Of Flat Vegetative Cover) of these rules for flat vegetation cover (i.e., attached (rooted) vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%; or
 - (4)** Appendix C, Section 2.6 (Test Methods For Stabilization-Determination Of Standing Vegetative Cover) of these rules for standing vegetation cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation) that is equal to or greater than 30%; or
 - (5)** Appendix C, Section 2.6 (Test Methods For Stabilization-Determination Of Standing Vegetative Cover) of these rules for standing vegetation cover (i.e., vegetation that is attached (rooted) with a predominant vertical orientation)

that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements; or

- (6) Appendix C, Section 2.7 (Test Methods For Stabilization-Rock Test Method) of these rules for a percent cover that is equal to or greater than 10%, for non-erodible elements; or
- (7) An alternative test method approved in writing by the Control Officer and the Administrator of the EPA.

502 RECORDKEEPING: Any person who conducts dust generating operations that require a Dust Control Plan shall keep a daily written log recording the actual application or implementation of the control measures delineated in the approved Dust Control Plan. Any person who conducts dust generating operations which do not require a Dust Control Plan shall compile and retain records that provide evidence of control measure application, by indicating the type of treatment or control measure, extent of coverage, and date applied. Upon verbal or written request by the Control Officer, the log or the records and supporting documentation shall be provided within 48 hours, excluding weekends. If the Control Officer is at the site where requested records are kept, records shall be provided without delay.

503 RECORDS RETENTION: Copies of approved Dust Control Plans, control measures implementation records, and all supporting documentation shall be retained for at least six months following the termination of the dust generating operation. Copies of approved Dust Control Plans, control measures implementation records, and all supporting documentation shall be retained for at least 1 year from the date such records were initiated. If a person has obtained a Title V Permit and is subject to the requirements of this rule, then such person shall retain records required by this rule for at least 5 years from the date such records are established.

504 TEST METHODS ADOPTED BY REFERENCE: The test methods listed in this section are adopted by reference. These adoptions by reference include no future editions or amendments. Copies of the test methods listed in this section are available for review at the Maricopa County Environmental Services Department, 1001 North Central Avenue, Phoenix, AZ, 85004-1942.

504.1 ASTM Method C136-96A (“Standard Test Method For Sieve Analysis Of Fine And Coarse Aggregates”), 1996 edition.

504.2 ASTM Method D2216-98 (“Standard Test Method For Laboratory Determination Of Water (Moisture) Content Of Soil And Rock By Mass”), 1998 edition.

504.3 ASTM Method 1557-91(1998) (“Test Method For Laboratory Compaction Characteristics Of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))”, 1998 edition.

TABLE 1

SOURCE TYPE AND CONTROL MEASURES	
Vehicle Use In Open Areas And Vacant Lots:	
1A	Restrict trespass by installing signs.
2A	Install physical barriers such as curbs, fences, gates, posts, signs, shrubs, and/or trees to prevent access to the area.
Unpaved Parking Lots:	
1B	Pave.
2B	Apply and maintain gravel, recycled asphalt, or other suitable material, in compliance with subsection 302.1 of this rule.
3B	Apply a suitable dust suppressant, in compliance with subsection 302.1 of this rule.
Unpaved Haul/Access Roads: (The control measures listed below (1C-5C) are required work practices, per subsection 308.4 of this rule.)	
1C	Limit vehicle speed to 15 miles per hour or less and limit vehicular trips to no more than 20 per day.
2C	Apply water, so that the surface is visibly moist and subsection 302.2 of this rule is met.
3C	Pave.
4C	Apply and maintain gravel, recycled asphalt, or other suitable material, in compliance with subsection 302.2 of this rule.
5C	Apply a suitable dust suppressant, in compliance with subsection 302.2 of this rule.
Disturbed Surface Areas:	
Pre-Activity:	
1D	Pre-water site to the depth of cuts.
2D	Phase work to reduce the amount of disturbed surface areas at any one time.
During Dust Generating Operations:	
3D	Apply water or other suitable dust suppressant, in compliance with Section 301 of this rule.
4D	Apply water as necessary to maintain a soil moisture content at a minimum of 12%, as determined by ASTM Method D2216-98 or other equivalent as approved by the Control Officer and the Administrator of EPA. For areas which have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-91(1998) or other equivalent approved by the Control Officer and the Administrator of EPA, maintain at least 70% of the optimum soil moisture content.
5D	Construct fences or 3 foot - 5 foot high wind barriers with 50% or less porosity adjacent to roadways or urban areas that reduce the amount of wind blown material leaving a site. If constructing fences or wind barriers, must also implement 3D or 4D above.
Temporary Stabilization During Weekends, After Work Hours, And On Holidays:	
6D	Apply a suitable dust suppressant, in compliance with subsection 302.3 of this rule.
7D	Establish vegetative ground cover in sufficient quantity, in compliance with subsection 302.3 of this rule.
8D	Restrict vehicular access to the area, in addition to either of the control measures described in 6D and 7D above.

Permanent Stabilization (Required Within 8 Months Of Ceasing Dust Generating Operations):

- 9D Restore area such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions, in compliance with subsection 302.3 of this rule.
- 10D Pave, apply gravel, or apply a suitable dust suppressant, in compliance with subsection 302.3 of this rule.
- 11D Establish vegetative ground cover in sufficient quantity, in compliance with subsection 302.3 of this rule.

Open Areas And Vacant Lots:

- 1E Restore area such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions.
- 2E Pave, apply gravel, or apply a suitable dust suppressant, in compliance with subsection 302.3 of this rule.
- 3E Establish vegetative ground cover in sufficient quantity, in compliance with subsection 302.3 of this rule.

Control measures 1F – 1M below are required work practices and/or methods designed to meet the work practices, per Section 308 (Work Practices) of this rule.

Bulk Material Handling Operations And Open Storage Piles:

During Stacking, Loading, And Unloading Operations:

- 1F Apply water as necessary, to maintain compliance with Section 301 of this rule; and

When Not Conducting Stacking, Loading, And Unloading Operations:

- 2F Cover open storage piles with tarps, plastic, or other material to prevent wind from removing the coverings; or
- 3F Apply water to maintain a soil moisture content at a minimum of 12%, as determined by ASTM Method D2216-98, or other equivalent as approved by the Control Officer and the Administrator of EPA. For areas which have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-91(1998) or other equivalent approved by the Control Officer and the Administrator of EPA, maintain at least 70% of the optimum soil moisture content; or
- 4F Meet the stabilization requirements described in subsection 302.3 of this rule; or
- 5F Construct and maintain wind barriers, storage silos, or a three-sided enclosure with walls, whose length is no less than equal to the length of the pile, whose distance from the pile is no more than twice the height of the pile, whose height is equal to the pile height, and whose porosity is no more than 50%. If implementing 5F, must also implement 3F or 4F above.

Bulk Material Hauling/Transporting:

When On-Site Hauling/Transporting Within The Boundaries Of The Work Site When Crossing A Public Roadway Upon Which The Public Is Allowed To Travel While Construction Is Underway:

- 1G Load all haul trucks such that the freeboard is not less than 3 inches when crossing a public roadway upon which the public is allowed to travel while construction is underway; and

- 2G Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); and
- 3G Install a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of haul trucks and/or motor vehicles that traverse such work site. Examples of trackout control devices are described in Table 1 (Trackout 1J, 2J, 3J) of this rule; and

When On-Site Hauling/Transporting Within The Boundaries Of The Work Site But Not Crossing A Public Roadway Upon Which The Public Is Allowed To Travel While Construction Is Underway:

- 4G Limit vehicular speeds to 15 miles per hour or less while traveling on the work site; or
- 5G Apply water to the top of the load such that the 20% opacity standard, as described in Section 301 of this rule, is not exceeded, or cover haul trucks with a tarp or other suitable closure.

Off-Site Hauling/Transporting Onto Paved Public Roadways:

- 6G Cover haul trucks with a tarp or other suitable closure; and
- 7G Load all haul trucks such that the freeboard is not less than 3 inches; and
- 8G Prevent spillage or loss of bulk material from holes or other openings in the cargo compartment's floor, sides, and/or tailgate(s); and
- 9G Before the empty haul truck leaves the site, clean the interior of the cargo compartment or cover the cargo compartment.

Cleanup Of Spillage, Carry Out, Erosion, And/Or Trackout:

- 1H Operate a street sweeper or wet broom with sufficient water, if applicable, at the speed recommended by the manufacturer and at the frequency(ies) described in subsection 308.3 of this rule; or
- 2H Manually sweep-up deposits.

Trackout:

- 1J Install a grizzly or wheel wash system at all access points.
- 2J At all access points, install a gravel pad at least 30 feet wide, 50 feet long, and 6 inches deep.
- 3J Pave starting from the point of intersection with a paved public roadway and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.

Weed Abatement By Discing Or Blading:

- 1K Pre-water site and implement 3K or 4K below.
- 2K Apply water while weed abatement by discing or blading is occurring and implement 3K or 4K below.
- 3K Pave, apply gravel, apply water, or apply a suitable dust suppressant, in compliance with subsection 302.3 of this rule, after weed abatement by discing or blading occurs; or
- 4K Establish vegetative ground cover in sufficient quantity, in compliance with subsection 302.3 of this rule, after weed abatement by discing or blading occurs.

Easements, Rights-Of-Way, And Access Roads For Utilities (Electricity, Natural Gas, Oil, Water, And Gas Transmission) Associated With Sources That Have A Non-Title V Permit, A Title V Permit, And/Or A General Permit Under These Rules:

- | | |
|----|---|
| 1L | Inside the PM ₁₀ nonattainment area, restrict vehicular speeds to 15 miles per hour and vehicular trips to no more than 20 per day; or |
| 2L | Outside the PM ₁₀ nonattainment area, restrict vehicular trips to no more than 20 per day; or |
| 3L | Implement control measures, as described in Table 1 (Unpaved Haul/Access Roads-1C through 5C) of this rule. |

Earthmoving Operations On Disturbed Surface Areas 1 Acre Or Larger:

- | | |
|----|--|
| 1M | If water is the chosen control measure, operate water application system (e.g., water truck), while conducting earthmoving operations on disturbed surface areas 1 acre or larger. |
|----|--|

TABLE 2

Note: Control measures in [brackets] are to be applied only to sources outside the nonattainment area.

SOURCE TYPE AND WIND EVENT CONTROL MEASURES	
Dust Generating Operations:	
1A	Cease dust generating operations for the duration of the condition/situation/event when the 60-minute average wind speed is greater than 25 miles per hour. If dust generating operations are ceased for the remainder of the work day, stabilization measures must be implemented; or
2A	Apply water or other suitable dust suppressant twice [once] per hour, in compliance with Section 301 of this rule; or
3A	Apply water as necessary to maintain a soil moisture content at a minimum of 12%, as determined by ASTM Method D2216-98 or other equivalent as approved by the Control Officer and the Administrator of EPA. For areas which have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-91(1998) or other equivalent approved by the Control Officer and the Administrator of EPA, maintain at least 70% of the optimum soil moisture content; or
4A	Construct fences or 3 foot - 5 foot high wind barriers with 50% or less porosity adjacent to roadways or urban areas that reduce the amount of wind-blown material leaving a site. If implementing 4A, must also implement 2A or 3A above.
Temporary Disturbed Surface Areas (After Work Hours, Weekends, Holidays):	
1B	Uniformly apply and maintain surface gravel or dust suppressants, in compliance with subsection 302.3 of this rule; or
2B	Apply water to all disturbed surface areas three times per day. If there is any evidence of wind-blown dust, increase watering frequency to a minimum of four times per day; or
3B	Apply water on open storage piles twice [once] per hour, in compliance with subsection 302.3 of this rule; or
4B	Cover open storage piles with tarps, plastic, or other material to prevent wind from removing the coverings; or
5B	Utilize any combination of the control measures described in 1B, 2B, 3B, and 4B above, such that, in total, these control measures apply to all disturbed surface areas.

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APPENDIX C

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SECTION 1 - RESERVED

SECTION 2 - TEST METHODS FOR STABILIZATION

SECTION 3 - VISUAL DETERMINATION OF OPACITY OF EMISSIONS FROM SOURCES FOR TIME-AVERAGED REGULATIONS

1. RESERVED

2. TEST METHODS FOR STABILIZATION

2.1 For Unpaved Roads And Unpaved Parking Lots.

2.1.1 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 parking lots. 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 3.4 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 (Subsection 2.1.1(c) of this appendix) and Step 4 (Subsection 2.1.1(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 Rule 310 of these rules.

2.1.2 Silt Content Test Method. The purpose of this test method is to estimate the silt content of the trafficked parts of unpaved roads and unpaved parking lots. The higher the silt content, the more fine dust particles that are released when cars and trucks drive on unpaved roads and unpaved parking lots.

- a.** Equipment:

 - (1)** A set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm and 0.25 mm (or a set of standard/commonly available sieves), a lid, and collector pan.

- (2) A small whisk broom or paintbrush with stiff bristles and dustpan 1 ft. in width (The broom/brush should preferably have one, thin row of bristles no longer than 1.5 inches in length).
- (3) A spatula without holes.
- (4) A small scale with half-ounce increments (e.g. postal/package scale).
- (5) A shallow, lightweight container (e.g. plastic storage container).
- (6) A sturdy cardboard box or other rigid object with a level surface.
- (7) A basic calculator.
- (8) Cloth gloves (optional for handling metal sieves on hot, sunny days).
- (9) Sealable plastic bags (if sending samples to a laboratory).
- (10) A pencil/pen and paper.

- b.** Step 1: Look for a routinely traveled surface, as evidenced by tire tracks. [Only collect samples from surfaces that are not damp due to precipitation or dew. This statement is not meant to be a standard in itself for dampness where watering is being used as a control measure. It is only intended to ensure that surface testing is done in a representative manner.] Use caution when taking samples to ensure personal safety with respect to passing vehicles. Gently press the edge of a dustpan (1 foot in width) into the surface four times to mark an area that is 1 square foot. Collect a sample of loose surface material using a whiskbroom or brush and slowly sweep the material into the dustpan, minimizing escape of dust particles. Use a spatula to lift heavier elements such as gravel. Only collect dirt/gravel to an approximate depth of 3/8 inch or 1 cm in the 1 square foot area. If you reach a hard, underlying subsurface that is < 3/8 inch in depth, do not continue collecting the sample by digging into the hard surface. In other words, you are only collecting a surface sample of loose material down to 1 cm. In order to confirm that samples are collected to 1 cm in depth, a wooden dowel or other similar narrow object at least one foot in length can be laid horizontally across the survey area while a metric ruler is held perpendicular to the dowel.
- At this point, you can choose to place the sample collected into a plastic bag or container and take it to an independent laboratory for silt content analysis. A reference to the procedure the laboratory is required to follow is at the end of this section.
- c.** Step 2: Place a scale on a level surface. Place a lightweight container on the scale. Zero the scale with the weight of the empty container on it. Transfer the entire sample collected in the dustpan to the container, minimizing escape of dust particles. Weigh the sample and record its weight.

- d. Step 3: Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.
- e. Step 4: Carefully pour the sample into the sieve stack, minimizing escape of dust particles by slowly brushing material into the stack with a whiskbroom or brush. (On windy days, use the trunk or door of a car as a wind barricade.) Cover the stack with a lid. Lift up the sieve stack and shake it vigorously up, down and sideways for at least 1 minute.
- f. Step 5: Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass (e.g., material in each sieve (besides the top sieve that captures a range of larger elements) should look the same size). If this is not the case, re-stack the sieves and collector pan, cover the stack with the lid, and shake it again for at least 1 minute. (You only need to reassemble the sieve(s) that contain material, which requires further sifting.)
- g. Step 6: After disassembling the sieves and collector pan, slowly sweep the material from the collector pan into the empty container originally used to collect and weigh the entire sample. Take care to minimize escape of dust particles. You do not need to do anything with material captured in the sieves -- only the collector pan. Weigh the container with the material from the collector pan and record its weight.
- h. Step 7: If the source is an unpaved road, multiply the resulting weight by 0.38. If the source is an unpaved parking lot, multiply the resulting weight by 0.55. The resulting number is the estimated silt loading. Then, divide by the total weight of the sample you recorded earlier in Step 2 (Subsection 2.1.2(c) of this appendix) and multiply by 100 to estimate the percent silt content.
- i. Step 8: Select another two routinely traveled portions of the unpaved road or unpaved parking lot and repeat this test method. Once you have calculated the silt loading and percent silt content of the 3 samples collected, average your results together.
- j. Step 9: Examine Results. If the average silt loading is less than 0.33 oz/ft², the surface is STABLE. If the average silt loading is greater than or equal to 0.33 oz/ft², then proceed to examine the average percent silt content. If the source is an unpaved road and the average percent silt content is 6% or less, the surface is STABLE. If the source is an unpaved parking lot and the average percent silt content is 8% or less, the surface is STABLE. If your

field test results are within 2% of the standard (for example, 4%-8% silt content on an unpaved road), it is recommended that you collect 3 additional samples from the source according to Step 1 (Subsection 2.1.2(b) of this appendix) and take them to an independent laboratory for silt content analysis.

- k. Independent Laboratory Analysis: You may choose to collect 3 samples from the source, according to Step 1 (Subsection 2.1.2(b) of this appendix), and send them to an independent laboratory for silt content analysis rather than conduct the sieve field procedure. If so, the test method the laboratory is required to use is:

"Procedures For Laboratory Analysis Of Surface/Bulk Dust Loading Samples", (Fifth Edition, Volume I, Appendix C.2.3 "Silt Analysis", 1995), AP-42, Office of Air Quality Planning & Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina.

2.2 Stabilization Limitations For Open Areas And Vacant Lots. The test methods described in Section 2.3 through Section 2.7 of this appendix shall be used to determine whether an open area or a vacant lot has a stabilized surface. Should a disturbed open area or vacant lot contain more than one type of disturbance, soil, vegetation, or other characteristics, which are visibly distinguishable, test each representative surface separately for stability, in an area that represents a random portion of the overall disturbed conditions of the site, according to the appropriate test methods in Section 2.3 through Section 2.7 of this appendix, and include or eliminate it from the total size assessment of disturbed surface area(s) depending upon test method results.

2.3 Visible Crust Determination.

2.3.1 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 vacant lot which have not originated from the representative vacant lot surface being tested. If material covers a visible crust, which is not blowsand, apply the test method in Section 2.4 of this appendix to the loose material to determine whether the surface is stabilized.

2.3.2 A sufficient crust is defined under the following conditions: once a ball has been dropped according to subsection 2.3.1. of this appendix, 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.

2.3.3 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 subsection 2.3.2 of this appendix. 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 subsection 2.3.2 of this appendix 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.

2.3.4 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.

2.4 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).

2.4.1 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 appendix, 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

2.4.2 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 part 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 2.7 (Test Methods For Stabilization-Rock Test Method) of this appendix. 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 Length) x (Average Width) = Average Dimensions. Eq. 1

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

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

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

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

2.5 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.

2.5.1 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%.

2.5.2 Conduct the line transect test method, as described in subsection 2.5.1 of this appendix, an additional two times on areas that represent a random portion of the overall conditions of the site and average results.

2.6 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 2.4 (Determination Of Threshold Friction Velocity (TFV)) of this appendix 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 non-erodible elements, is equal to or greater than 43 cm/second.

2.6.1 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.

2.6.2 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 appendix. Also, use Equation 6 of this appendix 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 subsection 2.6.3 of this appendix to calculate the frontal silhouette area. Then calculate the percent cover of standing vegetation according to Equations 7, 8, and 9 of this appendix.

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

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

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

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

[(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] = Percent Open Space. Eq. 10

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

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

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

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

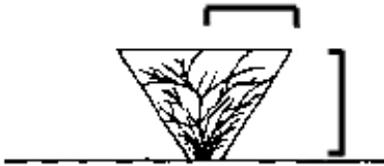
2.6.3 Vegetative Density Factor. Cut a single, representative piece of vegetation (or consolidated vegetative structure) to within 1 cm of surface soil. Using a white paper grid or transparent grid over white paper, lay the vegetation flat on top of the grid (but do not apply pressure to flatten the 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 appendix, 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 appendix. 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 appendix) 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 appendix to calculate the frontal silhouette area.

Figure B. Cylinder



$$\text{Frontal Silhouette Area} = \text{Maximum Height} \times \text{Maximum Width} \quad \text{Eq. 16}$$

Figure C. Inverted Cone



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

Figure D. Upper Sphere



$$\text{Frontal Silhouette Area} = (3.14 \times \text{Maximum Height} \times 1/2 \text{ Maximum Width})/2 \quad \text{Eq. 18}$$

2.7 Rock Test Method. The Rock Test Method, which is similar to Section 2.4 (Test Methods For Stabilization-Determination Of Threshold Friction Velocity (TFV)) of this appendix, 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 non-erodible elements as “rocks”.

2.7.1 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.

2.7.2 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 get a sense for which rocks need to be considered.

2.7.3 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.

2.7.4 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.

2.7.5 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.

2.7.6 Divide the total rock area, calculated in subsection 2.7.5 of this appendix, 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).

- 2.7.7** Select and mark-off two additional survey areas and repeat the procedures described in subsection 2.7.1 through subsection 2.7.6 of this appendix. 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.
- 2.7.8** 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 subsection 2.7.9 of this appendix.
- 2.7.9** If the average rock cover is less than 10%, the surface may or may not be stable. Follow the procedures in Section 2.4 (Determination Of Threshold Friction Velocity (TFV)) of this rule 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.
- 2.7.10** After completing the procedures described in subsection 2.7.9 of this appendix, use Table 2 of this appendix to identify the appropriate correction factor to the TFV, depending on the percent rock cover. Multiply the correction factor by the TFV value for a final TFV estimate that is corrected for non-erodible elements.

3. VISUAL DETERMINATION OF OPACITY OF EMISSIONS FROM SOURCES FOR TIME-AVERAGED REGULATIONS

- 3.1 Applicability.** 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.
- 3.2 Principle.** The opacity of emissions from sources of visible emissions is determined visually by an observer qualified according to the procedures of Section 3.4 of this appendix.
- 3.3 Procedures.** An observer qualified, in accordance with Section 3.4 of this appendix, shall use the following procedures for visually determining the opacity of emissions.
 - 3.3.1** Procedures For Emissions From Stationary Sources. These procedures are not applicable to this section.

3.3.2 Procedures For Fugitive Dust Emissions. These procedures are applicable for the determination of the opacity of fugitive dust emissions by a qualified observer. The qualified observer should do the following:

- a.** 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.
- b.** 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.
- c.** 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. 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.
- d.** 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.

- e. **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.

3.4 Qualification and Testing.

- 3.4.1 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 subsection 3.4.2 of this appendix. Any smoke generator used pursuant to subsection 3.4.2 of this appendix shall be equipped with a smoke meter, which meets the requirements of subsection 3.4.3 of this appendix. Certification tests that do not meet the requirements of subsections 3.4.2 and 3.4.3 of this appendix 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.
- 3.4.2 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 part 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.
- 3.4.3 Smoke Generator Specifications.** Any smoke generator used for the purpose of subsection 3.4.2 of this appendix 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 of this appendix. The smoke meter shall be calibrated as prescribed in subsection 3.4.3(a) of this appendix 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 of this appendix. 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.

a. 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.

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

(1) 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.

(2) 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 of this appendix).

(3) 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:

$$\text{Total Angle Of View} = 2\text{tan}^{-1} d/2L$$

Where:

d = The photocell diameter + the diameter of the limiting aperture; and

L = The distance from the photocell to the limiting aperture.

The limiting aperture is the point in the path between the photocell and the smoke plume where the angle of view is most restricted. In smoke generator smoke meters, this is normally an orifice plate.

(4) Angle Of Projection. Check construction geometry to ensure that the total angle of projection of the lamp on the smoke plume does not exceed 15°. Calculate the total angle of projection as follows:

$$\text{Total Angle Of Projection} = 2\text{tan}^{-1} d/2L$$

Where:

d= The sum of the length of the lamp filament + the diameter of the limiting aperture; and

L = The distance from the lamp to the limiting aperture.

- (5) Calibration Error. Using neutral-density filters of known opacity, check the error between the actual response and the theoretical linear response of the smoke meter. This check is accomplished by first calibrating the smoke meter, according to subsection 3.4.3(a) of this appendix, and then inserting a series of three neutral-density filters of nominal opacity of 20%, 50%, and 75% in the smoke meter path length. Use filters calibrated within plus or minus 2%. Care should be taken when inserting the filters to prevent stray light from affecting the meter. Make a total of five nonconsecutive readings for each filter. The maximum opacity error on any one reading shall be plus or minus 3%.
- (6) Zero And Span Drift. Determine the zero and span drift by calibrating and operating the smoke generator in a normal manner over a 1-hour period. The drift is measured by checking the zero and span at the end of this period.
- (7) Response Time. Determine the response time by producing the series of five simulated 0% and 100% opacity values and observing the time required to reach stable response. Opacity values of 0% and 100% may be simulated by alternately switching the power to the light source off and on while the smoke generator is not operating.

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 minus 3% opacity, maximum.
f. Zero and span drift	Plus or minus 1% opacity, 30 minutes.
g. Response time	Less than or equal to 5 seconds

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