Protecting the air we share

Air Quality

NATURAL EVENTS ACTION PLAN FOR HIGH-WIND EVENTS CLARK COUNTY, NEVADA

(Las Vegas Valley – Hydrographic Area 212
and the Apex Valley – Hydrographic Areas 216/217)

Clark County
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List of Acronyms

Acronym	Definition
ADT	Average Daily Trips
AIRS	Aerometric Information Retrieval System
AQI	Air Quality Index
AQRs	Air Quality Regulations (Clark County Department of Air Quality and Environmental Management)
BACM	Best Available Control Measures
BCC	Clark County Board of County Commissioners
BLM	Bureau of Land Management (U.S. Department of the Interior)
BMP	Best Management Practice
CAAA	Clean Air Act Amendments of 1990
CCCD	Clark County Conservation District
CFR	Code of Federal Regulations
CMB	Chemical Mass Balance
CAO	Corrective Action Order
DAQEM	Clark County Department of Air Quality & Environmental Management
FR	Federal Register
GIS	Geographic Information System
MAC	Medical Advisory Committee
MET	Meteorology Data (Weather, Winds, Precipitation, etc.)
mph	miles per hour
MSM	Most Stringent Measures
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NOAA	National Oceanic Atmospheric Administration - Climatic Data Center
NOV	Notice of Violation
NWS	National Weather Service
PEP	Particulate Emission Potential
PM	Particulate Matter
PM_{10}	Particulate Matter 10 microns or less in aerodynamic diameter
$PM_{2.5}$	Particulate Matter 2.5 microns or less in aerodynamic diameter
PSA	Public Service Announcement
QA/QC	Quality Assurance / Quality Control
RFP	Reasonable Further Progress Report
RTC	Regional Transportation Commission of Clark County
SIP	Clark County, Las Vegas Valley, PM_{10} State Implementation Plan
SLAMS	State and Local Air Monitoring Station
UNLV	University of Nevada, Las Vegas
U.S. EPA	United States Environmental Protection Agency
$\mu g/m^3$	Micrograms per cubic meter

Executive Summary

The U.S. EPA in accordance with the Clean Air Act (CAA) has classified Clark County as a "serious" nonattainment area for PM_{10}, (particulate matter having an aerodynamic diameter of 10 microns or less). Ten microns is approximately one-seventh the diameter of a human hair. Violations of the National Ambient Air Quality Standards (NAAQS) for PM_{10} are largely due to windblown dust from a variety of sources. High-wind events (sustained winds of 25 mph or greater and/or wind gusts at 40 mph or greater[1]), because they can overwhelm even the most stringent control measures, present a public health concern for both residents and visitors to Clark County. This Natural Events Action Plan (NEAP), prepared in compliance with the U.S. EPA Natural Events Policy (1996), is designed to accomplish three primary objectives:

- Provide a high-wind notification system for the public and the regulated community to warn of an impending event; notify the public of an ongoing event; and to alert the public of unhealthful concentrations of PM_{10} in the air. The notification system provides the public with useful information concerning the health effects of PM_{10} and suggests ways the public and at risk populations can limit their exposure;

- Provide education and outreach programs to the public, businesses, and industrial communities. The programs and informational materials inform the public; businesses and industrial communities how they may reduce their exposure to elevated PM_{10} concentrations during high-wind events; and actions they can take to help reduce PM_{10} emissions; and

- Ensure that PM_{10} control measures are implemented during high-wind events to reduce elevated PM_{10} concentrations and the frequency of violations of the NAAQS.

This NEAP applies to the Las Vegas Valley (Hydrographic Area 212) and the Apex Valley (Hydrographic Areas 216 and 217). Both of these areas have experienced violations of the 24-hour NAAQS for PM_{10}. Clark County and participating stakeholders utilized the guiding principles of the U.S. EPA Natural Events Policy in the development of this NEAP. Protection of the public health is the foundation upon which this document is based. The NEAP and corresponding appendices present detailed information on the actions and programs already implemented in Clark County.

These actions and programs include the high-wind event notification system; education and outreach programs; enforcement actions designed to reduce PM_{10} emissions during

[1] June 2001 PM_{10} State Implementation Plan for Clark County, Appendix B - Emission Inventories, Methodology, Emission Factors, and Emission Estimates, Page B-37 Native Desert Fugitive Dust, and Appendix C – Section II, Estimation of Valley-Wide PM_{10} emissions using UNLV 1995 wind tunnel-derived emission factors, 1998-1999 emission factors, revised vacant land classifications, and GIS-based mapping of vacant lands, – Draft Final Report, David James, et al., Civil and Environmental Engineering Department, University of Nevada Las Vegas, dated September 12, 2000.

high-wind events; and required documentation submitted to the U.S. EPA for documentation of high-wind events that have resulted in violations of the PM_{10} NAAQS. The appendices include detailed information on Best Available Control Measures (BACM) for PM_{10}, documentation on the public review process, public comments, and documentation of approval by the Clark County Board of Commissioners of the NEAP.

Section 1: INTRODUCTION

On May 30, 1996, the U.S. EPA issued the Natural Events Policy (NEP) in a memorandum from Mary D. Nichols, Assistant Administrator for Air and Radiation. In this memorandum, the U.S. EPA announced its new policy for protecting public health when the PM_{10} National Ambient Air Quality Standards (NAAQS) are exceeded due to natural events. Under this policy three categories of natural events are identified as exceeding the PM_{10} NAAQS:

- Volcanic and seismic activity;
- Wildland fires; and
- High-wind events.

Only high-wind events are addressed in this NEAP, because of the natural events defined in the NEP, only high winds have caused exceedances in Clark County. During 2002, four high-wind events occurred resulting in exceedances of the PM_{10} NAAQS. During 2003, two high-wind events occurred resulting in exceedances of the PM_{10} NAAQS. Lastly, two high-wind events occurred during 2004 that resulted in exceedances of the PM_{10} NAAQS. Therefore, this NEAP is limited to addressing high-wind events.

The U.S. EPA's natural events policy defines high winds as uncontrollable natural events under the following conditions:

- The dust originated from non-*anthropogenic* (non-human-induced) sources; or
- The dust originated from *anthropogenic* (human-induced) sources controlled using best available control measures (BACM).

Conditions that create high-wind events vary from area to area and are based on soil type, precipitation, and the speed of the wind.

U.S. EPA Natural Events Policy

The U.S. EPA Natural Events Policy sets forth EPA's policy for protecting the public health in areas where violations of PM_{10} national health standards may be due to uncontrollable natural events (e.g., high winds) (See Appendix A, for a copy of the NEP). The guiding principles used by the U.S. EPA in the development of this policy are:

- Protection of public health is the highest priority of Federal, State, and local air pollution control agencies;

- The public must be informed whenever the air quality in the area is unhealthy;

- All valid ambient air quality data should be submitted to the U.S. EPA;

- State and local agencies must take appropriate reasonable measures to safeguard the public health regardless of the source of PM_{10} emissions; and

- Emission controls should be applied to sources that contribute to exceedances of the PM_{10} NAAQS when those controls will result in fewer exceedances of the standards.

In order for exceedances of the NAAQS to be considered as a high-wind event, a Natural Events Action Plan must be developed to address future events. The following is a summary of the specific U.S. EPA guidance regarding the development of a NEAP.

1. Analysis and documentation of the event should show a clear causal relationship between the measured exceedance and the natural event. The type and amount of documentation provided should be sufficient to demonstrate that the natural event occurred, and that it impacted a particular monitoring site(s) in such a way to cause the PM_{10} concentrations measured.

   A public education program shall be established. Such programs may be designed to educate the public about the short-term and long-term harmful effects that high concentrations of PM_{10} could have on their health and inform them that:

   a. Certain types of natural events affect the air quality of the area periodically,
   b. A high-wind event is imminent, and
   c. Specific actions are being taken to minimize the health impacts of events.

2. A public notification and health advisory program to minimize public exposure to high concentrations of PM_{10} shall be in place. Programs to minimize public exposure should:

   a. Identify the people most at risk;
   b. Notify the at-risk population that a high-wind event is imminent and/or currently taking place;
   c. Suggests actions to be taken by the public to minimize their exposure to high concentrations of PM_{10}; and
   d. Suggests precautions to take if exposure cannot be avoided.

3. The agency implementing the plan shall abate or minimize appropriate contributing controllable sources of PM_{10}. Programs to minimize PM_{10} emissions from high winds may include the application of BACM to any sources of soil disturbed by anthropogenic activities. The BACM application criteria require analysis of the technological and economic feasibility of individual control measures on a case-by-case basis. The NEAP should include analysis of BACM for contributing sources. If BACM are not defined for the anthropogenic sources in question, then the next step listed below is required.

4. The agency implementing the plan must identify, study, and implement practical mitigating measures as necessary. The NEAP may include commitments to conduct pilot tests of new emission reduction techniques. For example, it may be

desirable to test the feasibility and effectiveness of new strategies for minimizing sources of windblown dust through pilot programs. The plan must include a timely schedule for conducting such studies and implementing measures that are technologically and economically feasible.

5. The agency should reevaluate the NEAP for an area every 5 years at a minimum and make appropriate changes to the plan. The periodic reevaluation shall include:

    a. The conditions causing violations of a PM_{10} NAAQS in the area;
    b. The status of implementation of the NEAP; and
    c. The adequacy of the actions being implemented.

6. The NEAP should be developed by the agency in conjunction with the stakeholders affected by the plan.

7. The NEAP should be made available for public review and comment and may, but are not required, to be adopted as a revision to the State Implementation Plan (PM_{10} SIP) if current SIP rules are not revised.

8. The NEAP should be submitted to the U.S. EPA for review and comment.

The following sections and text describe the Clark County NEAP and its conformance with the above-described U.S. EPA guidance for natural events.

Purposes and Objectives of the NEAP

The purpose of the NEAP is to ensure that the citizens of Clark County are informed about the health hazards associated with wind blown PM_{10}; advised of activities that are known to result in increased windblown PM_{10} levels; advised of methods to avoid exposure to elevated levels of PM_{10}; assure that exceedances of the NAAQS are not resulting from anthropogenic activity and that disturbed soil surfaces remain stable. It is DAQEM's primary objective to minimize the public's exposure to elevated levels of PM_{10} when elevated levels cannot be humanly prevented.

The advisory and education program is the major element of the NEAP that enables DAQEM to justify an exceedance, which overwhelmed BACM. The program notifies stationary sources of the potential, or the occurrence of a high-wind event. As required by Clark County Air Quality Regulations (AQRs), the stationary sources can cease/reduce any activity that raises dust levels during high-wind events.

Scope of the Natural Events Action Plan (NEAP)

Clark County and participating stakeholders utilized the guiding principles of the U.S. EPA Natural Events policy in the development of the NEAP. Protection of the public health is the highest priority and the foundation of this document.

This NEAP contains detailed information about the actions implemented in Clark County to minimize public exposure to potentially high levels of PM_{10} caused by winds. The primary components of the NEAP are:

- The high-wind event notification system;
- Education and outreach programs;
- Enforcement program to reduce emissions; and
- The required documentation and justification system of high-wind events to be provided to the U.S. EPA.

Area of Applicability of this NEAP

This NEAP is applicable to the Las Vegas Valley and to the Apex Valley. The Las Vegas Valley is one of the fastest growing metropolitan areas in the nation. The population expanded from about 400,000 in 1980 to 1.4 million in 2000 (U.S. Census Bureau, Census 2000). The cities of Las Vegas, North Las Vegas and Henderson are located in the Las Vegas Valley within Clark County, in the southern tip of Nevada. Situated in the Las Vegas Valley, the Las Vegas metropolitan area serves as one of the fastest growing cities, and busiest entertainment centers for the United States.

The Apex Valley area is located to the northeast of the Las Vegas Valley and is comprised of Hydrographic Areas 216 and 217. No residences are located in the Apex Valley, but a number of people are employed at the industrial facilities located in the valley. A regional landfill, power plants, mining operations, and mineral processing facilities are located in the southern part of the Apex Valley. All stationary sources within the Apex Valley have installed Best Available Control Technology for PM_{10}.

Emphasis is placed on dust control and the requirements of the AQRs due to possible influences from the Las Vegas Valley through regional transport. Wind flow patterns into the Apex Valley and the predominant wind flow patterns of the Apex Valley make dust control extremely important. The main purpose of this dust control is to protect the health of the workers within that area and to ensure that the Apex Valley does not contribute to regional haze transport to the Grand Canyon. The Grand Canyon is only 100 kilometers (62.14 miles) from that area. The other areas in Clark County that could be influenced by the Las Vegas Valley and Apex Valley transport issues are the cities of Logandale, Mesquite, Overton, Moapa, and outlying areas near these cities.

For further information about the geography, climatology and land uses in these two areas, see Appendix B. The following map (Figure 1) shows the locations of the two areas that are specifically covered by this NEAP.

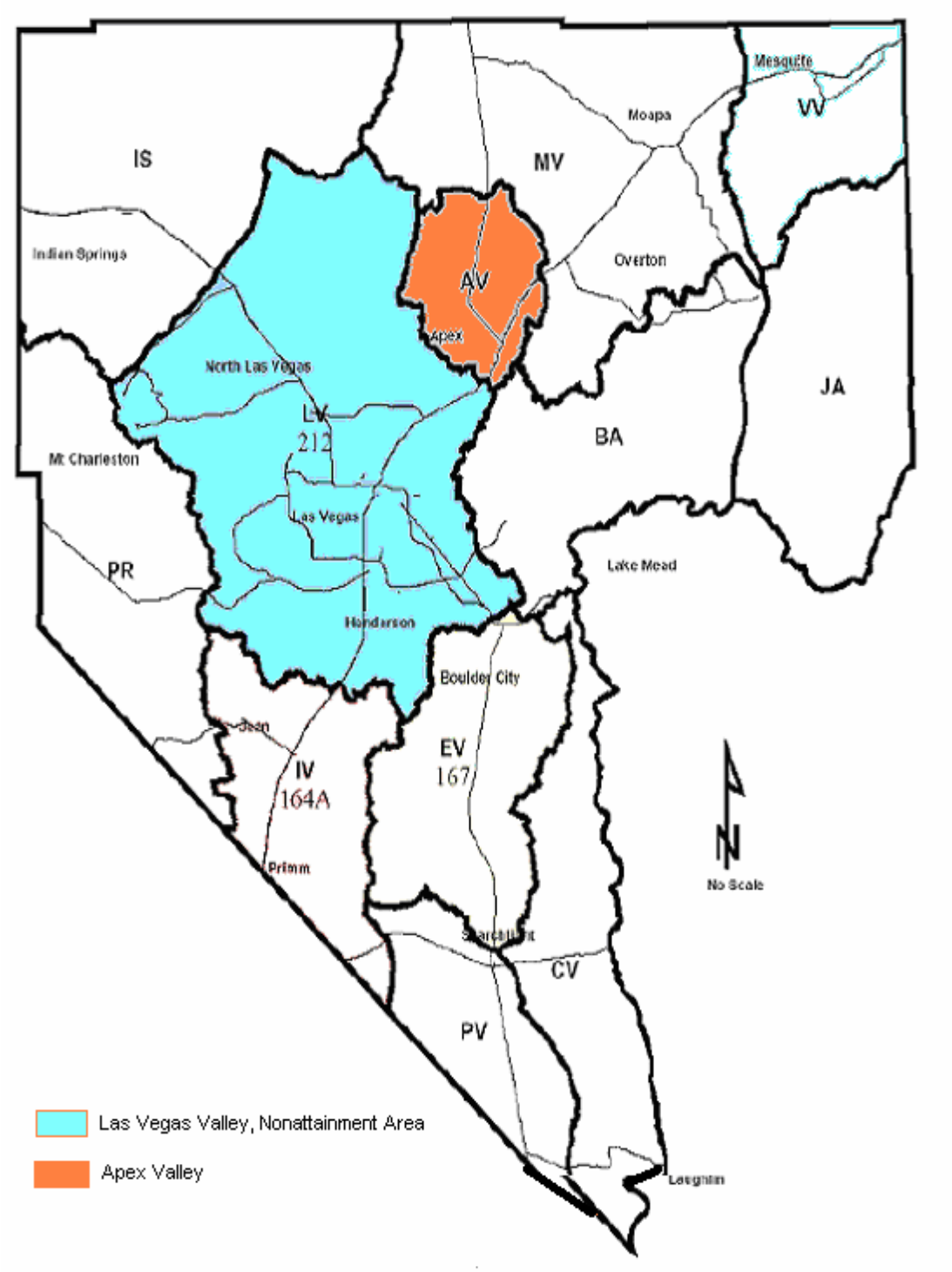


Figure 1 – Clark County NEAP (LV Valley & Apex Valley) Coverage Area

Section 2: PUBLIC EDUCATION AND OUTREACH PROGRAM

Public education and outreach is essential for Clark County citizens to understand what the Natural Events Action Plan (NEAP) means to them, and actions they can take to reduce exposure. The purpose of public outreach program is to inform and educate the public about high-wind events, the associated high PM_{10} levels, and the presence of potential health effects. The elements of the program include:

- Informing the public when air quality in the area is unhealthy;
- Explaining what the public can expect when high-wind events occur;
- Actions the public can take to minimize their exposure; and
- Informing the public of the steps taken to control dust emissions during high wind conditions.

Particulate matter consists of complex mixture of particles suspended in the air we breathe. Particles are present everywhere, but high concentrations present a serious danger to human health. Of greatest concern to public health, are the particles small enough to be inhaled into the deepest parts of the lung. These small coarse particles are known as PM_{10} (particulate matter, less than 10 microns in aerodynamic diameter), and the even smaller particles (fine particles) are known as $PM_{2.5}$ (particulate matter, less than 2.5 microns in aerodynamic diameter). For comparison, a human hair is about 75 microns in diameter. These particles can accumulate in the respiratory system and are associated with numerous health effects. Exposure to coarse particles is primarily associated with the aggravation of respiratory conditions. Fine particles are associated with health effects such as heart and lung disease; increased respiratory symptoms and disease; decreased lung function; and even premature death.

Studies have indicated that the elderly, children and individuals with existing respiratory diseases are at risk of more serious symptoms, including coughing, phlegm, wheezing, shortness of breath, bronchitis, increased asthma attacks, and aggravation of lung or heart disease. Although these sensitive populations are more susceptible to health impacts, it is recommended that everyone take precautions to avoid exposure to poor air quality conditions.

Actions that can be taken to reduce exposure to high concentrations of PM_{10} are listed below. These actions are included in the public outreach materials developed as a part of the NEAP.

For the general public the following actions are recommended.

- If PM_{10} levels are high outdoors, keep windows and doors closed. If needed for comfort, use air conditioners or heating systems on recycle/recirculation mode.
- During extreme dust episodes, limit your time spent outdoors.
- If symptoms of heart or lung disease occur, (including shortness of breath, chest tightness, chest pain, palpitations or unusual fatigue) contact your health care provider.

- Individuals with heart or lung disease should follow their health management plan from their health care provider. Asthmatic individuals should follow a prescribed asthma management plan.
- Individuals should avoid strenuous exercise outdoors during time periods when PM_{10} levels are elevated.

Businesses and the industrial communities are advised to contact an Industrial Hygienist to evaluate their specific needs. In addition, the Medical Advisory Committee (MAC) can assist in providing information to risk management staff concerning health effects and health precautions during high-wind and dust events.

Public Outreach and Education

To minimize public exposure to air pollution, the Clark County Department of Air Quality & Environmental Management developed and implemented an education program to protect the public from the adverse health problems associated with elevated levels of PM_{10}. The first goal is to educate the public about the harmful effects of high concentrations of PM_{10} and actions they can take to reduce their exposure. The second goal is to inform the public when:

- Certain types of natural events may affect the air quality in the area;
- A high-wind event is imminent; and
- Specific actions need to be taken to minimize the health impacts of high-wind events.

To meet these goals, the Department of Air Quality & Environmental Management (DAQEM) implemented a comprehensive program including scheduled local outreach events to provide information to the public specifically during the high-wind season, February through August. The public notifications and education programs include but are not limited to the items listed below.

- **Community Outreach**

As of March 2003, air quality alerts are being issued by DAQEM during the high wind season (see Appendix C for details). Other activities include: 1) expanding the public education effort to include air quality reporting training for local weather news media; and 2) meetings with city, county, and local environmental and health professionals to devise improved ways to educate/reach the community regarding blowing dust and its impacts.

Media press releases for print, local radio and television will be issued in the community as needed. Activities include: 1) newspaper articles highlighting the significant impacts of blowing dust in the Las Vegas Valley (e.g. “Residents Warned of Dangers of Dust,” Las Vegas Sun, March 19, 2003. This referenced article also highlighted actions to reduce dust related impacts, and; 2) press releases on the NEAP development and control strategies. Additional newspaper articles and press releases are located in Appendix C.

DAQEM provides particulate matter and NEAP information to the public by providing a Speakers Bureau, web-site information and Public Service Announcements. DAQEM will also continue to build partnerships with local businesses.

- *School and Youth Outreach*

DAQEM established a school and youth outreach program during 2004 that includes classroom and youth group presentations; teacher trainings; and air quality informational packets. The informational packets include a section on high-wind events and steps to be taken to avoid exposure to fugitive dust.

- *Annual Community Events*

DAQEM actively participates in community events (e.g. Clark County Fair, Henderson Parade, and Clark County Health and Wellness Fair) to raise public awareness of the ongoing efforts to reduce blowing dust and its impacts. At these events, DAQEM sets up a booth display that includes the NEAP brochure and the booth is staffed by air quality professionals to answer any questions the public may have.

- *Industrial Education and Outreach*

DAQEM provides dust classes to local contractors and other PM_{10} major sources to familiarize these organizations with DAQEM air quality regulations, the most effective way to reduce PM_{10} emissions, and air pollution health effects. Upon completion of the course, each participant is issued a dust card and Certificate of Completion.

Public Education Efforts Accomplished to Date

Actions taken to date to develop the education program include:

- An informational and health-related brochure has been and will continue to be distributed by DAQEM to sensitive populations as well as to the general public. Distribution of *"Dust Storms and Your Health: What Everyone Should Know"* brochure began in April 2003. It has been used as an educational handout at DAQEM's public outreach and community events. The brochure is available in both English and Spanish versions;

- Distribution of the *"Protecting the Air We Share"* brochure began in March 2003. This brochure provides information on the six criteria pollutants, defines particulate matter, and discusses air quality tips. It has been used as an educational handout at the DAQEM's public outreach and community events;

- An informational and health-related postcard *"Dust Storms and Your Health: What Everyone Should Know"* is used as a mass mailer. The postcard reminds the public of the health effects of high levels of particulate matter, and provides

recommended actions that can be taken to reduce exposure to PM and to reduce air pollution. Mass mailing of these postcards take place in the early spring months to residents and business located in the North and West areas of Clark County. Summer mailers target the Southern and East area residents of Clark County. This postcard mailer is available in both English and Spanish versions;

- DAQEM developed a NEAP Briefing Document entitled *"Particulate Matter Air Pollution from Natural Events"* (See Appendix C). This document outlines PM_{10} problems in Clark County, and is available in both English and Spanish versions. It discusses why PM_{10} is a public health issue and defines the NEAP. It is used as an educational handout at stakeholder meetings and presentations. It was added to the Department's web site under the section concerning the NEAP;

- DAQEM issues High-Wind Air Pollution Notifications in conjunction with the Las Vegas station of the National Weather Service (NWS). These notices are issued when forecasted wind events will reach sustained winds of 25 miles per hour or more and/or frequent gusts of 40 miles per hour or more, twelve to twenty-four hours prior to the event. The notifications are issued in two stages: Advisory and Alert. These stages will begin according to the increasing levels of the severity of the dust (Section 3: Public Notification and Air Quality Advisory Program explains the process in detail); and

- Clark County applied for and received a $200,000 public outreach grant from the State of Nevada. These funds will be used in large part for a public campaign in the Las Vegas and Apex Valleys. The focus of the campaign will be on everyday choices that people can make for a positive air quality impact (i.e. not disturbing the desert) and on ways to avoid exposure to particulate matter during wind events.

- Presentations about the Clark County NEAP were given in the following settings:

    - Working group meetings;
    - A public workshop; and
    - A County Commissioner Board Meeting.

These presentations included information answering these questions: Why PM_{10} is a health concern?; Who is most at risk?; What options are available when the PM_{10} standards are violated?; What dust emission controls are available?; and How the public can help in the NEAP development process. The presentations were tailored for each audience, as appropriate, an example is provided in Appendix C.

Section 3: PUBLIC NOTIFICATION AND AIR QUALITY ADVISORY PROGRAM

The Natural Events Policy (NEP) states that advisories should inform the public that a dust event is imminent, currently taking place, or has reached hazardous levels (PM_{10} concentrations have exceeded the National Ambient Air Quality Standards). The Department of Air Quality & Environmental Management (DAQEM) has developed a program that places equal value on educating the public, forecasting air quality pollution events, and air quality notifications as the best approach to meet the goal of minimizing exposure from high concentrations of PM_{10}.

The Air Quality Notification Program was designed to heighten awareness of health hazards caused by high dust levels, informing susceptible populations, and their caregivers about precautions they should take when PM_{10} levels are high. The Air Quality Notification Program consists of the following elements:

- Episodes of unhealthful PM_{10} levels are likely to occur in Clark County during late winter and early spring;
- Individuals should take precautionary measures when they observe a dust storm in progress;
- Notifying the general public to minimize exposure to high PM_{10} levels, including precautionary measures, such as staying indoors with windows closed and avoiding outdoor exercise, and activities during a dust storm; and
- Individuals who wish to become more acquainted with unhealthful levels of PM_{10} may consult the DAQEM monitoring website at www.ccairquality.org to review current near-real time data and Air Quality Index (AQI) values for PM_{10} concentrations, or the County web page at www.accessclarkcounty.com for PM_{10} information.

The Medical Advisory Committee (MAC)

The Medical Advisory Committee (MAC) comprised of physicians from the Clark County medical community works closely with the Department of Air Quality and Environmental Management (DAQEM) and the Clark County Health District (CCHD) to provide health-related information to the public before, during, and after high-wind events.

The MAC membership may change from time to time; however, MAC membership includes physicians from the fields of pediatrics, pulmonology, family and general medicine, geriatrics, and industrial health. Members of the MAC review and provide input on publications from the DAQEM and CCHD that contain health-related information. MAC members provide medical advice to the DAQEM during high-wind events; provide responses to media inquiries, and presentations to community groups.

When a high-wind event is predicted, the DAQEM and/or County Public Information Office (PIO) alert the MAC. Notifications request the availability of MAC members to

respond to inquiries from the public, media, and any other appropriate inquiry. The MAC serves in an advisory role and will not provide specific diagnosis or advice to individuals.

The MAC will provide public health information for the use of Clark County residents and public and governmental entities.

For detailed information about the MAC, please see Appendix C.

The Public Notification Process

The public notification program employs various actions depending on the concentration of PM_{10}. These actions are intended to mitigate adverse health effects. Each High-Wind Air Quality Notification contains the following elements:

- Forecasted weather information;
- The start and the expected expiration date and time of the high-wind event (DAQEM will terminate the notification when the concentration of pollutants falls below, and is expected to remain below the PM_{10} standard);
- A description of health effects associated with high concentrations of PM_{10};
- Recommendations for actions for sensitive and healthy populations to take to avoid exposure to PM_{10};
- An encouragement to residents to call DAQEM's dust complaint hotline to report excessive amounts of blowing dust;
- An encouragement to residents to visit DAQEM's web site to view near "real-time" monitoring data; and
- Construction site operators and Stationary Sources are directed via Fax and email to inspect their sites and employ the Best Available Control Measures (BACM) to stabilize all disturbed soils on their site to reduce blowing dust.

A forecast of sustained winds of 25 miles per hour or more and/or frequent wind gusts of at least 40 miles per hour or more from the Las Vegas Office of the National Weather Service (NWS), initiates the process to evaluate whether or not to issue a High-Wind Air Quality Notification by DAQEM staff, twelve to twenty-four hours prior to the event. Based on reported weather conditions and monitoring data, Clark County issues notices in two stages: Advisory and Alert. The definitions of the stages are:

- **ADVISORY** – The Las Vegas Office of the National Weather Service (NWS) confirms forecasted wind events of sustained winds of 25 miles per hour or more and or frequent wind gusts of 40 miles per hour or more.

- **ALERT** – Meteorological and ambient monitoring data confirm that the high wind event is happening and PM_{10} levels are elevated.

DAQEM issues notifications with forecasting assistance provided by the Las Vegas Office of the National Weather Service. The forecasting methodology, the public

education brochure, a chart summarizing the public notification responsibilities, and a copy of the forecast and air pollution notice are provided in Appendix C of the NEAP document.

DAQEM uses the following methods to minimize public exposure to PM_{10} in Clark County:

- Identify the people most at risk to exposure of high concentrations of PM_{10};
- Suggest actions to be taken by the public and industry to minimize their exposure and reduce outdoor activity;
- Suggest precautions to take if the exposure cannot be avoided. If outdoor activity cannot be avoided, reduce the level of exertion and duration of exposure; and
- Notify at-risk populations that a high-wind event is imminent or currently taking place.

DAQEM developed a notification system to contact at-risk populations, including:

- Clark County School District;
- Clark County Health District;
- Clark County Parks and Recreation;
- Local Municipalities (cities of Henderson, Las Vegas, North Las Vegas, and Boulder City); and
- Local media (radio and television stations).

Section 4: BEST AVAILABLE CONTROL MEASURES (BACM) FOR REDUCING WINDBLOWN DUST FROM MANMADE SOURCES AND COMPLIANCE ACTIVITY IN CLARK COUNTY

Best Available Control Measure (BAQM) Discussion

Sources of Windblown Dust in the Las Vegas and Apex Valleys

Windblown dust in the NEAP planning area occurs both from natural and man-made sources. While dust is common in undisturbed areas throughout the west, it becomes much more prevalent where natural soils have been disturbed by human activities. This is because natural soils have a tendency to form a mineral and organic crust (Desert Pavement) that is resistant to erosion by wind. Human activities can remove or break this crust, allowing dust to become airborne. Even sparse desert vegetation acts somewhat like a windbreak providing some protection to the soil surface. When human activities remove vegetation, the soil is susceptible to erosion, and as a result, airborne dust is produced. While we can do little to decrease windblown dust from the open desert during periods of high wind, there are varieties of things that can be done to decrease dust caused by human activities. Airborne dust from human activity tends to be concentrated close to populated areas because that is where the most disturbed native areas are located. The majority of the dust inhaled by the community members is generated locally rather than from the surrounding desert.

When the NEAP planning area experiences high concentrations of dust during high winds, most of the dust in the air comes from exposed areas of loose soil. Several sources of PM_{10} are commonly encountered in urban and rural areas in the western United States and Clark County. The following is a list of major sources, but not necessarily in the order of significance:

- Disturbed vacant land areas during high winds;
- Soil disturbance during construction activities;
- Disturbed areas at construction sites during high winds;
- Unpaved roads;
- Unpaved parking lots;
- Material handling and storage yards;
- Vehicle equipment storage yards;
- Trackout of mud and dirt onto paved roads;
- Unpaved shoulders of paved roads; and
- Undisturbed desert areas overwhelmed by high winds.

Certain other "point" sources such as sand and gravel operations and asphalt concrete manufacturing may contribute relatively small amounts of airborne dust in the NEAP planning area.

Under the federal Clean Air Act, the primary responsibility for air pollution control lies with state and local governments. One of the actions required to protect public health is application of Best Available Control Measures (BACM). BACM for dust control are designed to reduce windblown dust from human activities. The PM_{10} State Implementation Plan (SIP) for the Las Vegas Valley, submitted to the U.S. EPA in 2001, identified BACM for a variety of human activities that generate dust. A full description of what constitutes BACM is addressed in the PM_{10} SIP and Clark County's Air Quality Regulations (AQRs). Clark County's AQRs are presented in Appendix D of this document.

BACM Definition

BACM are methods that can be used to reduce or eliminate windblown dust in areas where natural soils have been disturbed and are more prone to erosion by the wind. BACM is defined as the *"Maximum Degree of Emission Reduction Feasible for a Significant Source Category"(59 FR 42010, August 16, 1994).* BACM is determined on a case-by-case basis, taking into account technical feasibility; energy, environmental, and economic impacts; and other costs. The process of determining BACM takes into account what the most common sources of manmade dust within a community are, when they occur, what measures can be used to reduce dust, and the relative cost of such measures to their effectiveness in controlling dust.

Most BACM are physical methods of controlling dust from developed or undeveloped areas within communities. Many methods attempt to return native soils to a more protected state by replacing natural crusts with artificial covers. However, they also include controlling and/or reducing airborne dust by practices that minimize the area of disturbed soil. In addition, the length of time the soil remains exposed to hazards of wind and the timing of the disturbance have a bearing on the need for a particular BACM. Considering all these factors, it is possible to develop best management practices for specific land uses.

Selecting and Implementing BACM

Part of the BACM requirement set forth in the PM_{10} State Implementation Plan (SIP) is the need to control a variety of sources of windblown dust. It is not the intent of the NEAP to develop or apply new types of BACM. This NEAP discusses adopted BACM and their implementation during high-wind events. This section of the plan describes the most common sources of anthropogenic dust within communities and the BACM that is employed to reduce and minimize dust during windy conditions. Clark County BACM are applicable to regulated sources seven days a week, 24-hours a day. Some of the physical measures required as part of BACM are set forth below.

Chemical Dust Suppressants and Soil Stabilizers

Chemical dust suppressants and soil stabilizers can be useful in reducing the tendency of fine-grained and loose soils to produce large amounts of windblown dust. They bind fine soil particles into larger particles that are less easily blown into the air; they retain moisture so that soils become more coherent; and they can form crusts that mimic and exceed the wind resistance of natural soil crusts.

Water has long been used for the control of dust in arid regions. For construction activities during active soil disturbance, water is the primary means of dust control. Under current drought conditions, water is an increasingly scarce and precious commodity. However, water required for dust control is only a portion of the water required for construction activities. Water use restrictions imposed by the 2002 Southern Nevada Water Authority (SNWA) *Drought Plan* and the Las Vegas Valley Water District Service Rules (August 2003) do not apply to construction activities and dust suppression (Section 12 Conservation and Drought, Subsection 12.2 Drought Conditions and 14.4 Water Waste Prohibited Section B. Exemptions – Public Health and Welfare – any activity where the use of water is the most appropriate and practical method to abate a health and safety hazard…Las Vegas Valley Water District Service Rules 8-03). Common sense approaches will be employed as part of the NEAP process to inform and educate the public, the construction industry, and other water users in the community on the smart use of water resources.

Water-soluble surfactants may be added to water to decrease the amount of water needed for dust control by reducing the initial resistance of dry soils to absorbing water. Surfactants are relatively inexpensive.

Chemical dust suppressants are often added to water, which acts to disperse the chemicals, after which the water evaporates. The chemicals coat the particle surfaces and bind the soil particles together to form a durable crust. Most products are designed for moderately traveled unpaved roads; and may also be used to stabilize shoulders of paved roads, disturbed vacant lands, and temporarily stabilize construction sites.

When used to stabilize heavily trafficked areas, these products typically require ground preparation prior to application, as well as reapplication one to four times a year to remain effective. The crusting or binding of soil particles does not need to be nearly as strong for areas that will not be trafficked by vehicles, because the binding needs only to withstand the force of the wind. Therefore, stabilization of untrafficked areas requires much less of the chemical, less ground preparation, and less frequent reapplication.

For greatest effectiveness and lowest cost, it's important to follow the manufacturer's instructions for mixing and applying these chemicals, which will likely depend on the intended use of the area. Some of these chemicals tend to suppress plant establishment and growth, and some may affect water quality if treated soils are allowed to wash into drainages.

Examples of BACM for specific land uses

Airborne dust is generated through a variety of activities that constitute the daily operations of businesses. The following list shows alternative measures for dust control for specific land uses. This list of BACM is by no means all-inclusive, and represents only some of the options available to the community. For the most comprehensive list of BACM, refer to the SIP and AQRs – Section 90 Series regulations.

BACM for Paved Roads

While paving roads is an excellent way to reduce dust, road shoulders and dirt that is tracked, washed, or blown onto paved surfaces can continue to be re-entrained into the air by passing vehicles. Some of the methods to control this dust source include:

- Road shoulder stabilization by paving, covering with gravel, or using chemical dust suppressants applied in amounts and rates recommended by the manufacturer and maintained as recommended by the manufacturer;
- Reduction of dirt tracked from unpaved side roads, industrial sites and construction sites, using paved or gravel entry aprons and/or devices such as steel grates/wheel shakers, that are capable of knocking mud and bulk dirt off vehicle tires;
- Use of PM_{10} efficient sweepers to clean paved roads;
- Use of vacuum crack seal equipment;
- Prevention of deposition of material onto paved roads by requiring truck covers, and a maximum of freeboard between the top of the truck bed and the material being transported;
- Prevention of the deposition of material onto roads by providing adequate storm water drainage;
- Cleanup of material spills and erosion-caused deposits; and
- Routine sweeping and cleaning of paved roads.

BACM for Unpaved Roads

Depending on the soil properties, heavily used unpaved roads can develop a loose, powdery surface that generates significant amounts of windblown dust even during periods of moderate wind speed. Methods to control dust from unpaved roads include:

- Prohibition of new unpaved roads in public thoroughfares;
- Traffic reduction and speed control for unpaved roads;
- Road stabilization for unpaved roads and alleys using chemical dust suppressants applied and maintained in amounts and rates recommended by the manufacturer;
- Prioritization of the paving of unpaved roads based on the criteria that includes the amount of traffic, production of dust, and vicinity of people, schools, etc. {Roads with 150 Average Daily Trips (ADT), will have the priority for paving}; and

- Adequate storm water drainage to reduce soil from unpaved roads from being washed or tracked onto paved roads.

Soil Particulate Emission Potential (PEP)

The suitability of control measures available to adequately stabilize disturbed vacant land and construction areas highly depends on the types of soil the control measure will be applied to. For construction site operators and compliance officers to make decisions with respect to control measures to be applied prior to wind events or during wind events it is imperative that it is understood what types of soils they are dealing with and what characteristics the soil has. The following paragraphs and figures give a general description and guide to the Clark County soils, to allow for informed decisions to be made by construction site operators and compliance officers.

Soil types are classified into five categories (high, moderately high, moderately low, low, and slight) based on their particulate emission potential (PEP) during active soil disturbing activities such as grading and trenching. The fifth category, "slight", is created solely to identify areas of bedrock outcrops. PEP is determined by soil silt content (measured by the soil percentage that will pass through a 200-mesh sieve) and optimum moisture content (measured by the percent of moisture necessary to compact soils).

A graph, which plots measured optimum moisture content vs. silt content for Las Vegas Valley soils, is used to classify PEP and is included in Figure 2. If the optimum moisture content or silt content is not known for a specific project location, reference maps of Clark County and the Las Vegas Valley, delineating the five soil type categories are provided in Figures 3 and 4, respectively. Soil type category maps are to be used as a guideline. The actual measured silt content and moisture content for maximum compaction shall take precedence over any mapped soil type categories.

Additional information may be found in the Construction Activities Dust Control Handbook in Appendix D of this NEAP. For projects of 50 acres or larger, applicants for construction activity dust control permits are required to provide site specific soils tests as part of the permit application. The PEP is used to determine which Best Management Practice (BMP) is applicable for each construction activity conducted at the site.

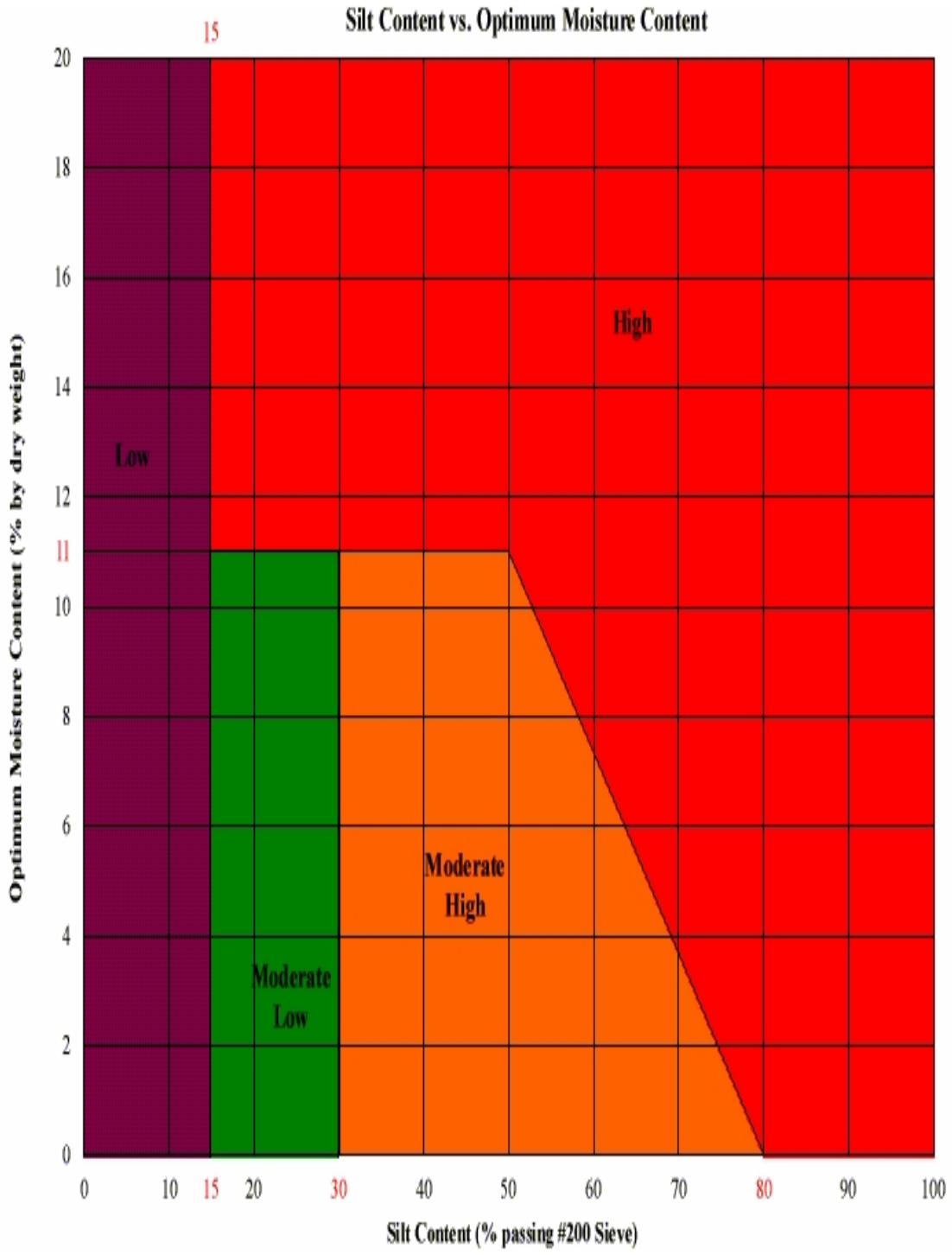


Figure 2: Silt Content vs. Optimum Moisture Content Graph

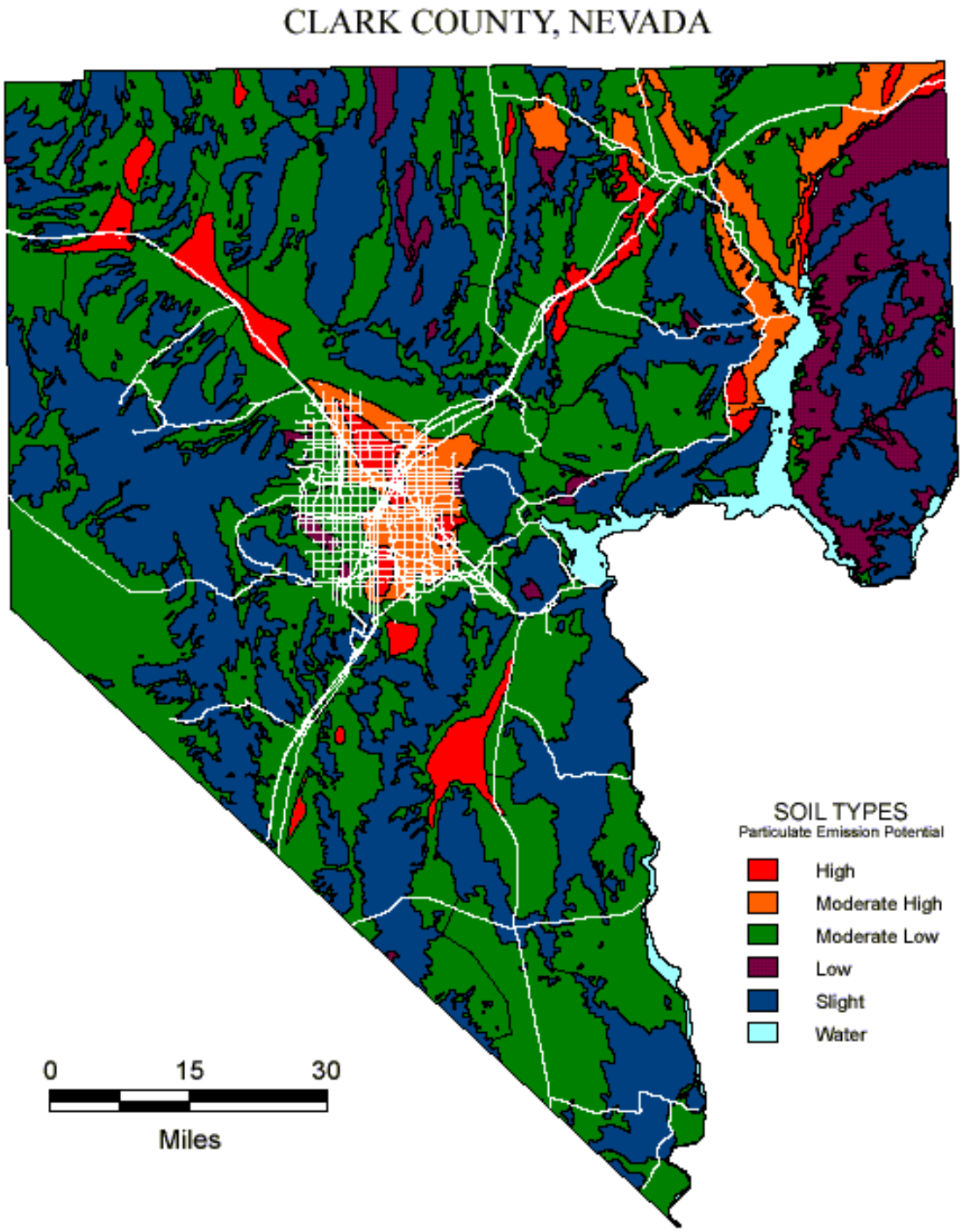


Figure 3: County Soil Types Map

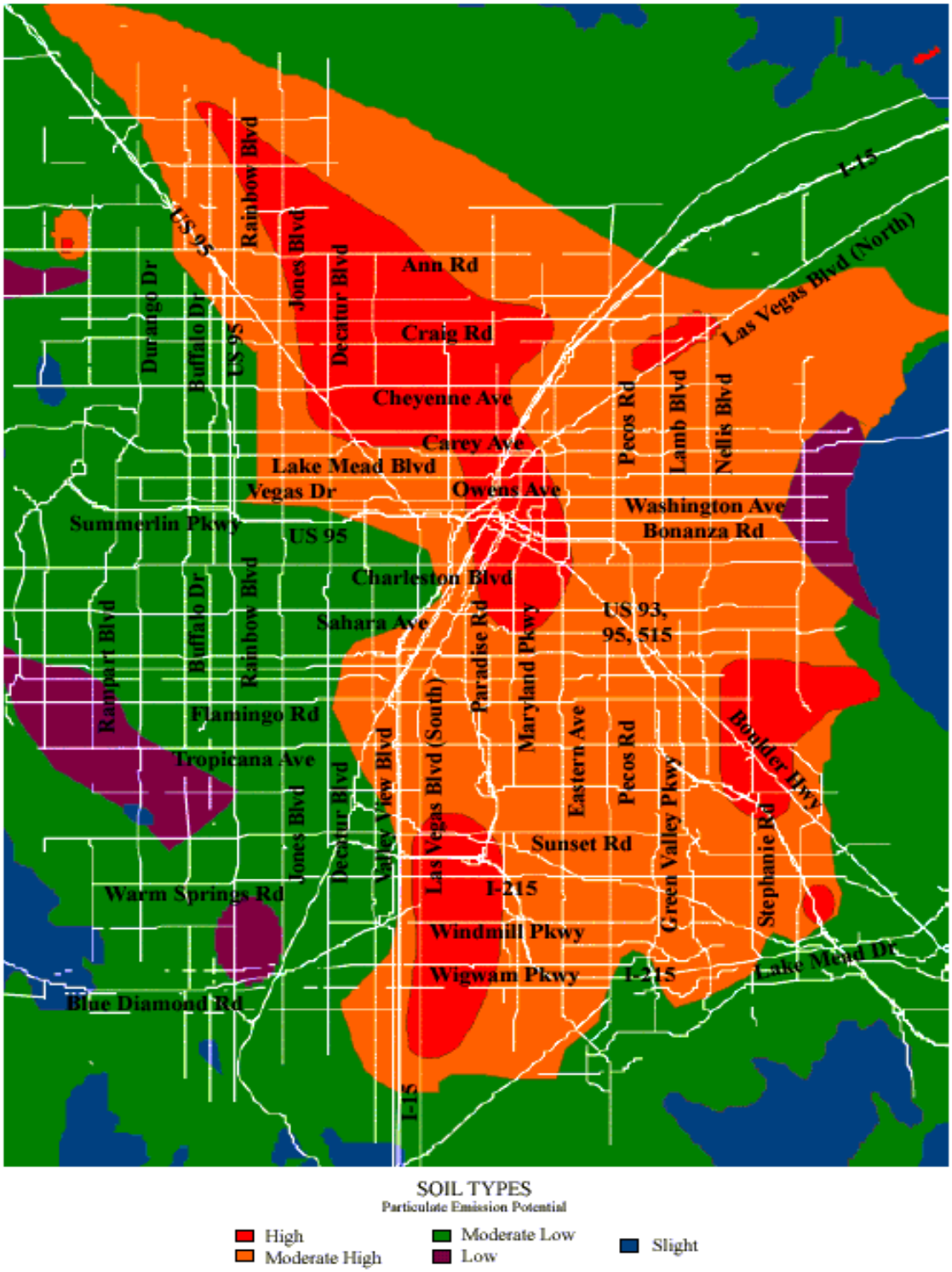


Figure 4: Valley Soils Type Map – Las Vegas Valley

BACM for Construction Activities

Construction sites, both active and inactive, can be sources for significant amounts of windblown dust. This is due to the presence of large areas of bladed ground, stockpiles, trucks hauling bulk materials, and heavy equipment traffic. Best Management Practices (BMPs) for construction sites include:

- Strengthen requirements of existing fugitive dust control rules;
- Provide for better enforcement of fugitive dust control rules;
- Mitigation bond requirement to insure implementation of dust control plan;
- Dust control plans for construction/land clearing and demolition;
- Dust control monitor required for construction sites having more than 50 acres of actively disturbed area;
- Track out control;
- Stabilization of staging areas, equipment storage, and material storage areas;
- Use of surfactants or tackifiers;
- High-wind operating restrictions;
- Phasing land development;
- Stabilized disturbed inactive surfaces;
- Dust controls for blasting of soil and rock;
- Dust controls for abrasive blasting;
- Dust controls for crushing;
- Dust controls for landscaping;
- Dust controls for paving/sub grade preparation;
- Dust controls for screening;
- Dust controls for construction traffic;
- Dust controls for trenching;
- Dust controls for truck loading;
- Dust controls for stockpiles;
- Require visible emission limits not to exceed 20 percent opacity;
- Limit visible emissions to 100 feet;
- Prevent visible emissions from crossing property line;
- Prevent tracking of dirt from construction sites by installing curbs, or stabilizing road shoulders;
- Use devices designed to clean mud and bulk dirt from tires such as steel grates, wheel shakers, or on-site wheel washes;
- Schedule regular vacuum street cleaning to remove accumulated dirt on roadways;
- For trucks hauling bulk materials to or from the site, fully cover and secure cargo loads and prevent leakage from truck beds, sideboards, tailgates, or bottom dump gates;
- Dust suppression using water, particularly when high winds are forecast or are occurring;
- Dust suppression using chemical dust suppressants applied and maintained in amounts and rates recommended by the manufacturer;

- Install permanent perimeter or interior fencing prior to other construction activities; (as with temporary windbreaks, this control measure is most effective on smaller sites);
- Contain all stockpiled bulk materials in three sided bunkers that are at least two feet higher than the stockpiled materials, or cover stockpiled materials;
- Water stockpiled materials that are susceptible to blowing, particularly when high winds are forecast or are occurring;
- Store stockpiled materials, if susceptible to blowing, away from downwind site boundaries;
- Reduce on-site traffic speeds; and
- Prevent storm water drainage from leaving the site.

BACM for Vacant Land, Disturbed Areas, and Parking Areas around Business, School, Residential, and Other Sites

Land that has been bladed for construction but left vacant is often highly susceptible to the generation of windblown dust. Additionally, business parks and residential areas that are newly constructed often have tracts of land that have been disturbed, removing native soils and vegetation. Methods for dust control at these sites include:

- Limit off-road use of recreational vehicles on open land;
- Vacant land stabilization;
- Construct windbreaks;
- Control weed abatement methods;
- Prohibit new unpaved parking lots;
- Stabilize surface of unpaved parking lots;
- Dust abatement and management plans for large tracts of governmentally owned lands;
- Pave parking areas or treat with a dust suppression chemical applied and maintained in amounts and rates recommended by the manufacturer. Otherwise, restrict parking in unpaved areas;
- Use grasses that require infrequent watering for school playgrounds; and
- Treat storage yards with a dust suppression chemical applied and maintained in amounts and rates recommended by the manufacturer, or with gravel.

Compliance Activity

Introduction

Reducing dust emissions from controllable sources is a requirement of the NEAP policy. The Department of Air Quality & Environmental Management (DAQEM) employs a four-part approach to achieving measurable reductions in emissions. The four parts of this approach are:

1. Education of site supervisors, dust monitors and water truck operators.
2. Issuance of advisories to the regulated community.

3. Concentrated enforcement and compliance activities.
4. Abatement of violating sites.

Education of site supervisors, dust monitors and water truck operators

The Clark County Air Quality Regulations (AQRs) require sites fifty (50) acres or more of disturbed soil to hire an on site person to monitor the emissions of dust from the site, commonly known as a "dust monitor". Dust monitors are required to take a "Dust Monitor Class" given by the DAQEM. The class teaches the dust monitors "Best Management Practices" also referred to as BMPs. BMPs are methods to reduce dust emissions from construction sites. The class also teaches the dust monitors about the AQRs, methods, and technologies to reduce dust emissions. Site supervisors are required to take a "Dust Class" also given by the DAQEM, which teaches site personnel and water truck operators about BMPs and the applicable AQRs.

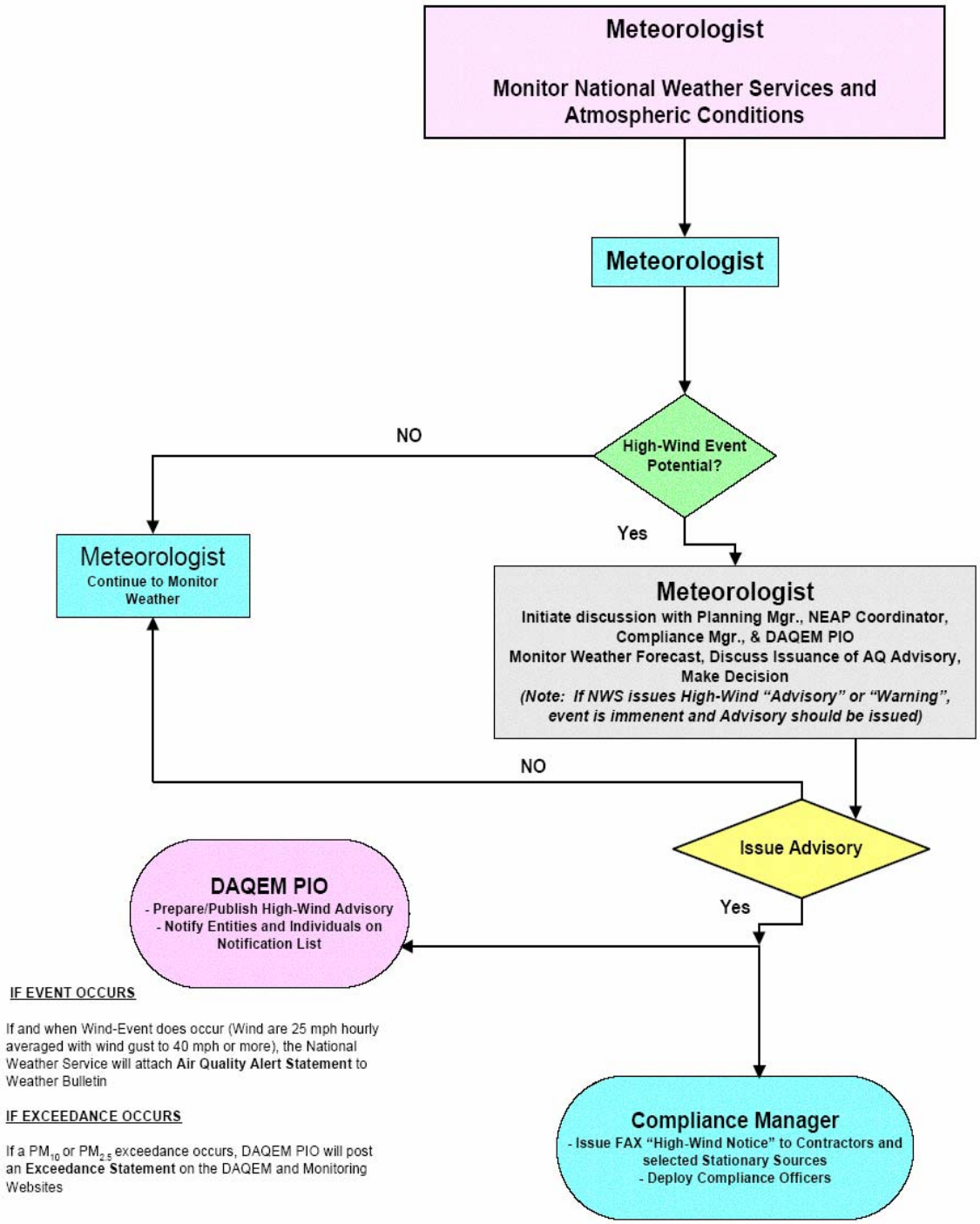
Issuance of advisories to the regulated community

Assigned staff monitor the National Weather Service (NWS) forecasts for predicted wind speeds (see Figure 5). If predicted wind speeds reach the threshold of sustained winds of 25 miles per hour or more, and/or wind gusts of 40 miles per hour or more, the process of issuing an advisory to the regulated community begins. The forecast is verified with the NWS to ascertain the likelihood of such an event occurring, the last day of measurable rainfall is verified, and a decision is made by assigned staff whether or not to issue an advisory to the regulated community. This process is concurrent with the process for issuing an air quality advisory to the public. If all the criteria are met, an advisory is issued to the regulated community via fax, telephone and email. Depending upon the certainty of the NWS forecast, advisories are issued 12 to 24 hours in advance of the high wind event, allowing the regulated community time to take the appropriate actions.

The advisory contains:

- The weather forecast;
- Expiration time of the advisory that is concurrent with NWS forecast (to the extent possible);
- Notice to the regulated community that compliance officers are out in the field to focus on potential sources of wind-blown PM_{10};
- Advice to the regulated community to employ BMPs to mitigate the emission of fugitive dust; and
- Notice to the regulated community of the penalties possible for a violation.

Figure 5 - NEAP HIGH-WIND AIR QUALITY NOTICE AND RESPONSE



Concentrated enforcement and compliance activities

During the event, compliance officers are dispatched to the field to survey for violating sites. The areas of concentration of enforcement activities are determined from historical patterns, monitoring data, and complaints. Violators, at the discretion of the officer, are given a Corrective Action Order (CAO) which may lead to a Notice of Violation (NOV), and are ordered to employ BMPs to correct the violation. If the violation is especially egregious, the officer can recommend to their supervisor to issue an NOV instead of a CAO. The violator will receive the NOV through the DAQEM violations process procedure. In either case, the violators are ordered to employ BMPs to correct the violation.

Abatement of violating sites

The AQRs permit Clark County to require the abatement of violating sites with the use of a contracted water truck service (See Appendix E). This abatement may be used on sites when they are vacant or the owner/operator either cannot or refuses to abate the violation. The compliance officer obtains permission from their supervisor to initiate the abatement and the owner/operator is billed for the abatement. For more information, see Appendix E.

Section 5: CONTENTS OF JUSTIFICATION PACKAGES FOR EXEMPTION

Clark County projected attainment of the PM_{10} NAAQS in the June 2001 PM_{10} State Implementation Plan by the end of 2006. PM_{10} exceedances caused by high-wind events count against meeting attainment, unless those events qualify under the U.S. EPA Natural Events Policy (NEP). Clark County must justify discounting those PM_{10} exceedances by documenting that the exceedances occur due to overwhelmed BACM and contributions from native desert disturbed by high winds. It is the responsibility of the agency to demonstrate a clear causal relationship between the PM_{10} exceedances and the high-wind event. Qualifying supporting documentation includes:

- Monitoring data;
- Filter analysis;
- Meteorological data (Wind speed, wind direction, precipitation);
- Modeling and receptor analysis;
- Videos and/or photographs of the event;
- Maps of the areas affected by the event;
- News accounts of the event; and
- Documentation of BACM being in effect for sources (anthropogenic) in the event area (compliance actions).

Background on Requirement of Justification

Figure 6, is the map of air quality monitoring sites located within the Las Vegas Valley. Clark County DAQEM operates a total of twenty-two (22) Air Quality Monitoring Sites within the Air Quality Monitoring Network. The Monitor Sites outside the Las Vegas Valley are:

1. The Apex site, located in Apex, Nevada in the Apex Valley, Hydrographic Area 216/217;
2. The Mesquite site, located in Mesquite, Nevada, in the Virgin River Valley, Hydrographic Area 222;
3. The Boulder City site, located in Boulder City, Nevada, in the El Dorado Valley, Hydrographic Area 167;
4. The Jean site, located in Jean, Nevada, in the Ivanpah Valley, Hydrographic Area 164A; and
5. The Searchlight site, located in Searchlight, Nevada, in the Paiute Valley, Hydrographic Area 214.

The remaining seventeen (17) sites are within the Las Vegas Valley, Hydrographic Area 212. The data from these monitoring sites is used to document a high-wind event. During the analysis segment of the justification submittal, the monitoring data for the day before, the day of, and the day after the event, including site meteorology (which includes the concurrence of McCarran International Airport meteorology data) is evaluated to compare and contrast how increased wind conditions have affected the monitoring

values. This analysis is conducted for each monitoring site that has exceeded the 24-hour National Ambient Air Quality Standard (NAAQS) for PM_{10} during the time frame of the high-wind event. In addition, these data are compared with the National Weather Service (NWS) meteorology data for quality assurance, quality control purposes.

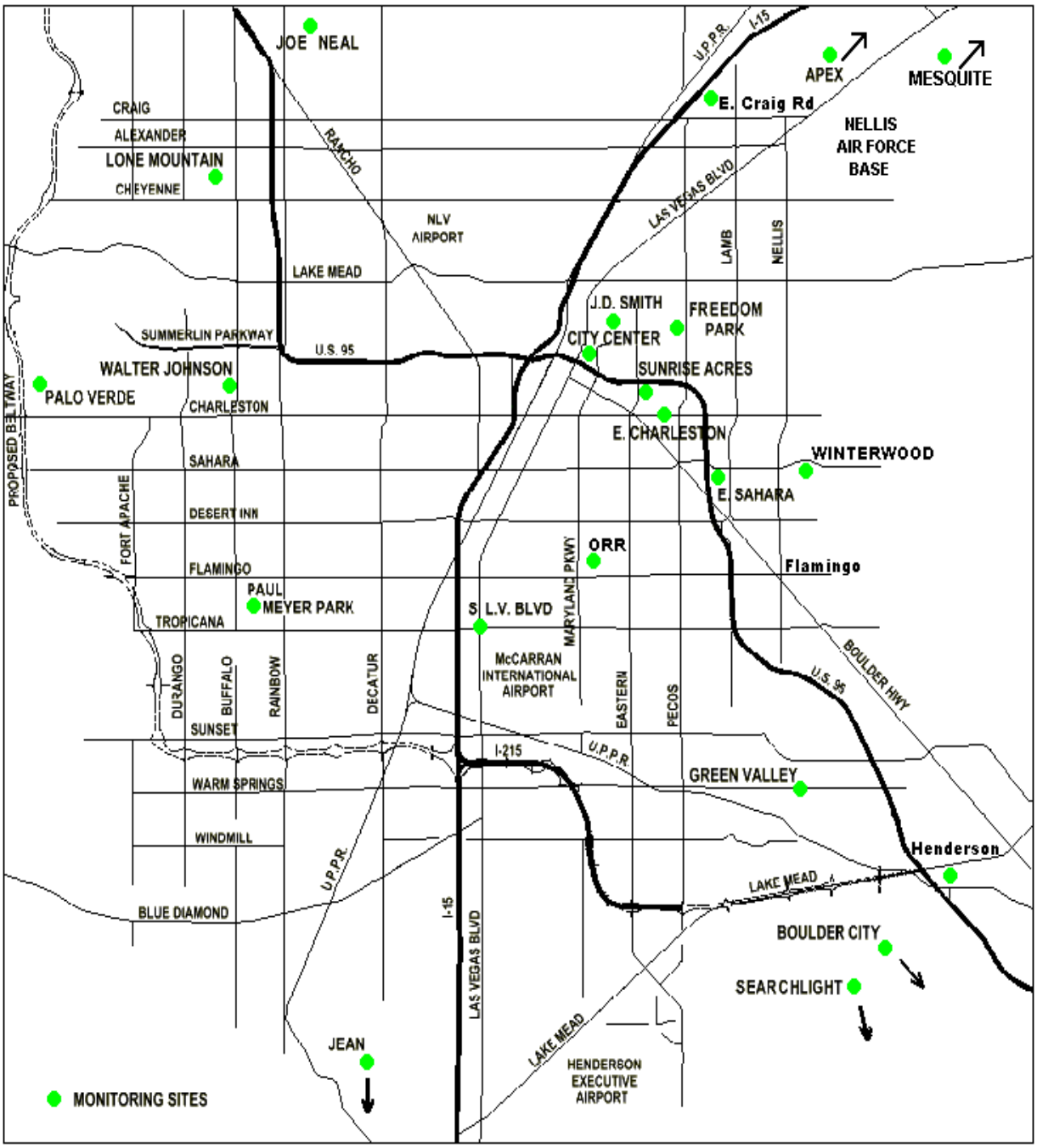


Figure 6: Clark County Air Quality Monitoring Sites

Compliance activity during the event is documented in the justification packages with the input of the compliance officers that were dispatched to the field to survey for violating sites. The areas of concentration of enforcement activities are determined from historical patterns, monitoring data, and complaints. Violators, at the discretion of the officer, are given a Corrective Action Order (CAO) which may lead to a Notice of Violation (NOV), and are ordered to employ BMPs to correct the violation. This process is part of the justification analysis to determine if BACM is being enforced. The Compliance Officers assist the Planning and Projects Staff in the documentation of unusual events that may occur during the high-wind event with digital photography (both still photography and video). These photos are included with the justification submittal to show visible proof of the high-wind event as it was occurring, the aftermath depicting property damage, or any other unusual situation photo (trees leaning at sharp degree, etc.). Each photo or video shall have a description of the situation that was occurring and show evidence of BAQM in place, or the lack thereof.

The news media plays a large role in the documentation of the event as it is occurring. News releases that warn of a high-wind event that is forecasted or occurring are coordinated between the County Public Information staff and the news networks and television stations. Newspaper articles and other news accounts of the event are included with the justification submittal.

Justification Packages Prepared to Date

On March 1, March 13, April 15, April 17, 2002, October 29, 2003, October 30, 2003, April 28, 2004 and May 11, 2004 the PM_{10} monitors throughout the county recorded exceedances of the primary, 24-hour NAAQS for PM_{10}. The PM_{10} exceedance concentrations ranged from just above the standard to 535 $\mu g/m^3$. Unusually high wind speeds and peak gust of 59 mph were recorded on these days with little or no precipitation. The circumstances surrounding the Clark County exceedances has provided adequate reason for the DAQEM to believe the high-wind events and blowing dust have caused exceedances of the NAAQS that otherwise would not have occurred.

As required by the U.S. EPA Natural Events Policy (NEP), each of the exceedances have been flagged by the Department of Air Quality & Environmental Management's (DAQEM) Air Quality Monitoring Section in the Aerometric Information Retrieval System (AIRS). The flags appear after the recorded values in AIRS with the descriptor code "A" for high winds. According to U.S. EPA guidance, the type and amount of documentation provided for each event should be sufficient to demonstrate that the high-wind event occurred, and that it impacted a particular monitoring site in such a way as to cause the PM_{10} concentrations measured.

An example of the documentation (*October 29, 2003 – High-Wind Event Justification Package*) forwarded to the U.S. EPA Region IX for an exceedance day can be found in Appendix F of the NEAP.

Effective March 16, 2005, DAQEM will post High-Wind Justification Submittal Packages (Packages) on the department website for thirty-days (30) and make printed

copies available for public review at the department. DAQEM will send out public notice to stakeholder groups solicting comments on the packages prior to submittal of the packages to U.S. EPA. DAQEM will accept written public comments on the packages during the public comment period and will forward all public comments with any applicable DAQEM responses to the U.S. EPA, Region IX for review, and determination.

Section 6: STAKEHOLDER AGREEMENTS

Stakeholder Involvement

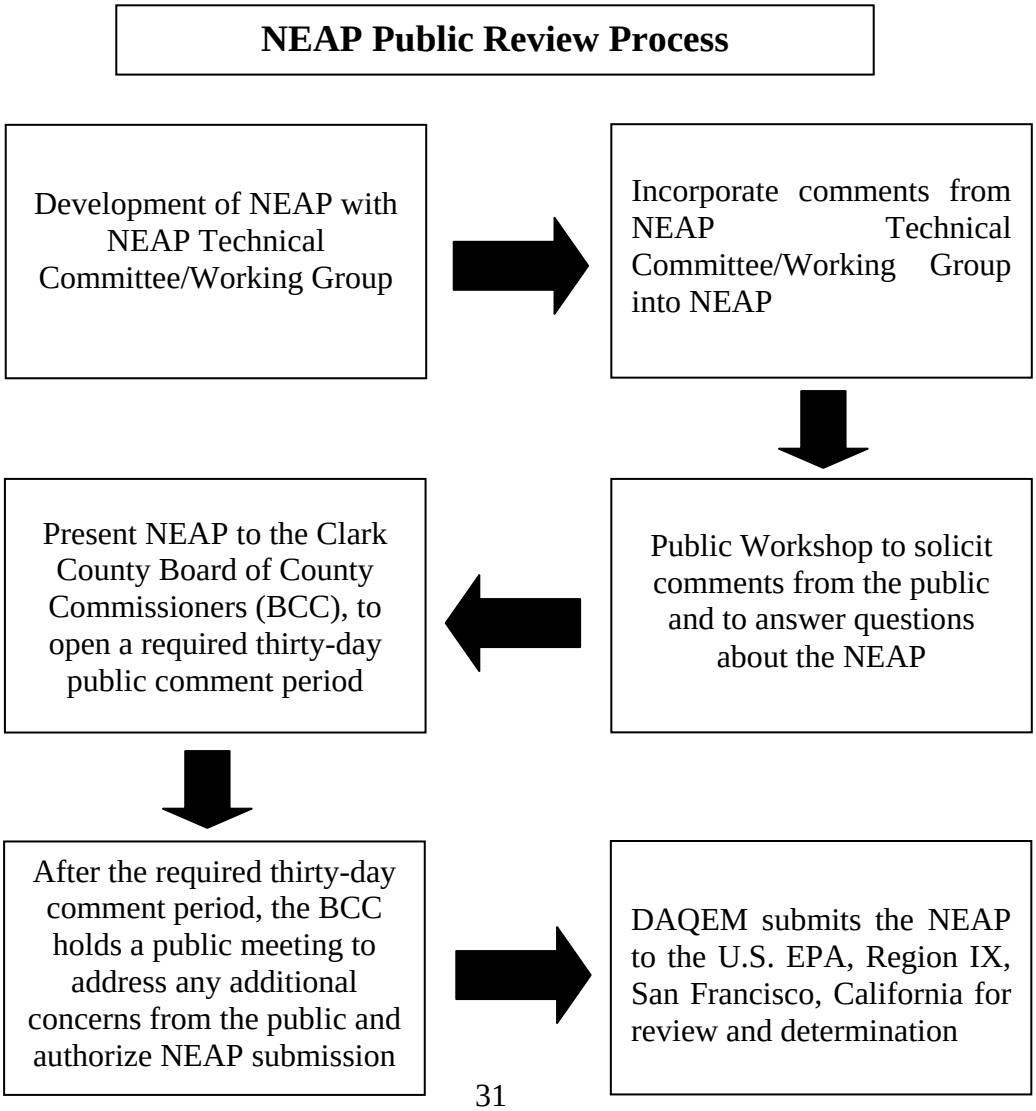
The U.S. EPA's NEP development guidance states that the NEAP should be developed by the agency in conjunction with the stakeholders affected by the Plan. The Department of Air Quality & Environmental Management (DAQEM) worked with stakeholders. This group consists of DAQEM personnel; representatives of the local municipalities; Clark County Health District; Clark County School District Educators; Southern Nevada Home Builders Association; Environmental Groups; National Weather Service Las Vegas Office; and the Conservation District of Southern Nevada. Numerous meetings and telephone conversations occurred with stakeholders, and the final agreement reflects support of control measures and public education efforts included as part of the NEAP. The municipalities mutually agreed to support this effort and will assist in the education efforts to support the NEAP requirements, as requested. The Sierra Club, Southern Nevada Chapter generally disagrees with the NEP, but does support the Public Education and Outreach Program Section (Section 2), and the Public Notification and Air Quality Advisory Program Section (Section 3), of the NEAP document.

Section 7: PUBLIC REVIEW AND COMMENTS

Public Review Process for NEAP Development

Public Review

The Department of Air Quality and Environmental Management (DAQEM) developed this NEAP with the assistance of a stakeholder committee (NEAP Technical Committee/Working Group). DAQEM incorporated the comments and suggestions from the stakeholder committee. DAQEM conducted a public workshop to solicit comments, and answer questions about the NEAP. After the public workshop, DAQEM presented the NEAP to the Clark County Board of County Commissioners (BCC), at a regular meeting, where the BCC accepted the plan and opened the required thirty-day public comment period. The required thirty-day comment period ensured ample time for review and comment (see Appendix G for notifications, etc.). At the end of a required thirty-day comment period, the BCC held a public meeting to address any additional concerns from the public. The BCC authorized the DAQEM to finalize the NEAP, and submit the NEAP to the U.S. EPA for review and determination.



NEAP Technical Committee/Working Group

The stakeholder committee assisted in the Quality Control and Quality Assurance (QA/QC) phase of the development and public review of this NEAP. The stakeholder committee consisted of representatives from the DAQEM, Clark County Health District, Clark County School District, Southern Nevada Home Builders Association, Environmental Groups, National Weather Service, Las Vegas Office and the Conservation District of Southern Nevada, the cities of Henderson, North Las Vegas, and Las Vegas. Individual participants may change from time to time, as necessary, by written request of the appointing authority of the group, organization, or municipality.

Section 8: PERIODIC EVALUATION (Due every 5-years)

Periodic Evaluation

U.S. EPA's Natural Events Policy guidance requires the Department of Air Quality & Environmental Management (DAQEM) to periodically reevaluate the conditions causing violations of the PM_{10} NAAQS in Clark County; status of implementation of the NEAP; and adequacy of the actions being implemented.

The agency will formally evaluate the NEAP for Clark County at a minimum of every five (5) years and make appropriate changes to the plan accordingly. The first formal evaluation is scheduled for early 2010. In addition to the formal review, an annual review will occur during the first six months of each calendar year, prior to the new fiscal year. This review will allow for any additional program additions requiring funding that were not budgeted for in the previous year's budget.

As part of the public review, formal review and annual evaluation of the NEAP document, the same entities that serve on the existing NEAP Technical Committee/Working Group will be asked to serve on the panel to evaluate the effectiveness and the update requirements of the Clark County NEAP as appropriate.

Appendix A

May 30, 1996
U. S. EPA Memorandum

{Mary D. Nichols, Assistant Administrator for Air and Radiation (6101)}

Areas Effected by PM_{10} Natural Events

(Natural Events Policy - NEP)

US EPA NATURAL EVENTS POLICY MEMO

(original dated May 30, 1996)

MEMORANDUM

SUBJECT: Areas Affected by PM-10 Natural Events

FROM: Mary D. Nichols
Assistant Administrator
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TO: Director, Air, Pesticides and Toxics Management Division, Regions I and IV
Director, Air and Waste Management Division, Region II
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Purpose

This memorandum sets forth the Environmental Protection Agency's (EPA's) policy for protecting public health in areas where the PM-10 (particulate matter having a nominal aerodynamic diameter less than or equal to 10 microns) national ambient air quality standards (NAAQS) are violated due to natural events. This policy will be followed in implementing the PM-10 NAAQS until it is superseded.[1] The need for revisions to this policy will be considered by EPA, State agencies and the Federal

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[1]This document contains EPA policy and, therefore, does not establish or affect legal rights or obligations. It does not establish a binding norm and it is not finally determinative of the issues addressed. In applying this policy in any particular case, the EPA will consider its applicability to the specific facts of that case, the underlying validity of the interpretations set forth in this memorandum, and any other relevant considerations, including any that may be required under applicable law and regulations.

Advisory Committee Act's Particulate Matter/Ozone/Regional Haze Subcommittee if the NAAQS for particulate matter are revised.

Three categories of natural events have been identified as affecting the PM-10 NAAQS: (1) volcanic and seismic activity, (2) wildland fires, and (3) high wind events. These PM-10 natural events are defined further below. If other significant categories of natural events are identified, they may be added to this policy in the future.[2]

Background

Prior to the 1990 Clean Air Act Amendments (Act), the Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (exceptional events guideline) and Appendix K to 40 CFR, part 50, were issued by EPA to address, in part, the situation where natural sources strongly influence an area's PM-10 air quality. To avoid imposing potentially unreasonable State implementation plan (SIP) requirements on such areas, EPA provided for the exclusion of certain natural source data from nonattainment determinations. Thus, Appendix K provides, in part, that measured exceedances of the PM-10 NAAQS in an area may be discounted from decisions regarding nonattainment status if the data are shown to be influenced by uncontrollable events caused by natural sources of particulate matter. The 1986 exceptional events guideline contains EPA's guidance regarding the process States should follow when dealing with PM-10 air quality data that may be eligible for the adjustments authorized under section 2.4 of Appendix K.

Subsequently, the Act added section 188(f) which provides EPA with discretionary statutory authority to waive either a specific attainment date or certain planning requirements for serious PM-10 nonattainment areas that are impacted significantly by nonanthropogenic sources. The EPA states in current PM-10 guidance documents that it interprets the section 188(f) waiver provision to mean that the data exclusion policy contained in Appendix K and the procedures described in the exceptional events guideline no longer apply.

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[2]Other types of temporary or exceptional events that can impact ambient PM-10 concentrations are structural fires, chemical spills, industrial accidents, and clean-up activities following a major disaster. The EPA's Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events, July 1986, is still applicable for treating air quality data resulting from these types of exceptional, anthropogenic events.

Under this natural events policy, those statements no longer reflect EPA's interpretation of the relationship between the section 188(f) waiver provision, Appendix K, and the exceptional events guideline and should be treated as revised to the extent described herein.

In establishing this natural events policy, EPA now believes that, under certain circumstances, it is appropriate to again exclude PM-10 air quality data that are attributable to uncontrollable natural events from the decisions regarding an area's nonattainment status. The discussion in the Appendix at the end of this memorandum briefly describes the legal rationale underlying this revised interpretation.

Description of Policy

The policy described in this document addresses PM-10 NAAQS violations caused by natural events in areas designated unclassifiable or attainment. It also addresses certain reclassification and redesignation questions for PM-10 nonattainment areas. This policy applies at the time the State determines that a PM-10 NAAQS has been violated due to natural events and addresses the question of what should be done to protect public health. The policy provides that EPA will: (1) exercise its discretion under section 107(d)(3) not to redesignate areas as nonattainment if the State develops and implements a plan to respond to the health impacts of natural events; and, (2) redesignate nonattainment areas as attainment by applying Appendix K, on a case-by-case basis, to discount data in circumstances where an area would attain but for exceedances that result from uncontrollable natural events.

The guiding principles followed in developing this policy are:

1. Protection of public health is the highest priority of Federal, State, and local air pollution control agencies.

2. The public must be informed whenever the air quality in an area is unhealthy.[3]

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[3]The air quality is considered unhealthy whenever the 24-hour PM-10 NAAQS is exceeded. The short-term PM-10 NAAQS is exceeded when the 24-hour average PM-10 concentration is greater than 150 micrograms per cubic meter ($\mu g/m^3$). The 24-hour NAAQS is violated when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is greater than 1.0, as determined by procedures described in Appendix K.

3. All valid ambient air quality data should be submitted to the EPA Aerometric Information Retrieval System (AIRS) and made available for public access.

4. State and local agencies must take appropriate reasonable measures to safeguard public health regardless of the source of PM-10 emissions.

5. Emission controls should be applied to sources that contribute to exceedances of the PM-10 NAAQS when those controls will result in fewer violations of the standards.

Definition of PM-10 Natural Events

Volcanic and seismic activities: Ambient PM-10 concentrations caused by volcanic eruptions or seismic activity will be treated as due to natural events. Volcanic eruptions contribute to ambient PM-10 concentrations in two ways: (1) with emissions of primary PM-10 (e.g., ash), and (2) with emissions of precursor pollutants (e.g., sulfur dioxide) that react to form secondary particulate matter. Seismic activity (e.g., earthquakes) can also contribute to ambient PM-10 concentrations by shaking the ground, causing structures to collapse and otherwise raising dust (primary PM-10 emissions).

Also, emissions caused by anthropogenic activities that re-entrain volcanic ash during the first year (12 months) following an event will be treated as due to the natural event. One year is considered adequate time for cleaning ash deposits from areas where anthropogenic activities (e.g., vehicle traffic) would cause reentrainment. After 1 year, only emissions resulting from reentrainment of ash by high winds will be treated as due to a natural event.

Wildland fires: Ambient PM-10 concentrations caused by smoke from wildland fires will be treated as due to natural events if the fires are unwanted fires, not designated or managed as prescribed fires, and requiring appropriate suppression action by the wildlands manager.[4]

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[4]The EPA recognizes and endorses the Federal Wildland Fire Policies adopted by the Departments of Interior and Agriculture in December 1995. These policies refer to all fires on sparsely populated lands managed by Federal agencies (e.g., national parks, national forests, grasslands, etc.) as wildland fires. The wildland fires term includes unwanted fires that do not meet a prescription (wildfires), management-ignited prescribed fires, and naturally-ignited fires that meet a prescription (prescribed

For the purposes of this policy, wildland fire natural events are limited to unwanted fires that do not meet a prescription (wildfires) and, therefore, require appropriate suppression actions. Wildland prescribed fires, burning of forest harvest residues, agricultural burning, and fires for land clearing are not covered by this natural events policy. The EPA will develop broader guidance in the near future to address issues raised by smoke emissions from wildland prescribed fires and other policy issues surrounding prevention of significant deterioration, conformity, visibility protection programs and regional haze.

High Winds: Ambient PM-10 concentrations due to dust raised by unusually high winds will be treated as due to uncontrollable natural events under the following conditions: (1) the dust originated from nonanthropogenic sources, or (2) the dust originated from anthropogenic sources controlled with best available control measures (BACM).[5]

The BACM must be implemented at contributing anthropogenic sources of dust in order for PM-10 NAAQS exceedances to be treated as due to uncontrollable natural events under this policy. Therefore, BACM must be implemented for anthropogenic dust sources contributing to NAAQS exceedances in attainment and unclassifiable areas and in moderate PM-10 nonattainment areas. In unclassifiable and attainment areas, BACM must be implemented for those contributing sources for which it has been defined within 3 years after the first NAAQS violation attributed to high wind events or from the date of this policy. In these same areas, implementation should be as expeditious as practicable for sources for which BACM are undefined.

The conditions that create high wind events vary from area to area with soil type, precipitation and the speed of wind gusts. Therefore, the State must determine the unusually high wind conditions that will overcome BACM in each region or subregion of the State.

Response to NAAQS Violations

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natural fire). Only wildland fires that meet a prescription may be used to accomplish land and resource management objectives.

[5]BACM for PM-10 are techniques that achieve the maximum degree of emissions reduction from a source as determined on a case-by-case basis considering technological and economic feasibility (59 FR 42010, August 16, 1994).

If natural events cause ambient concentrations of PM-10 to violate a NAAQS, a plan should be developed to address future events.[6] A natural events action plan (NEAP) should include commitments to:

1. Establish public notification and education programs. Such programs may be designed to educate the public about the short-term and long-term harmful effects that high concentrations of PM-10 could have on their health and inform them that: (a) certain types of natural events affect the air quality of the area periodically, (b) a natural event is imminent, and (c) specific actions are being taken to minimize the health impacts of events.

2. Minimize public exposure to high concentrations of PM-10 due to future natural events. Programs to minimize public exposure should: (a) identify the people most at risk, (b) notify the at-risk population that a natural event is imminent or currently taking place, (c) suggest actions to be taken by the public to minimize their exposure to high concentrations of PM-10, and (d) suggest precautions to take if exposure cannot be avoided.

3. Abate or minimize appropriate contributing controllable sources of PM-10. Programs to minimize PM-10 emissions may include:

(a) volcanic and seismic activities - cleaning ash and dust deposits from areas where it would be re-entrained into the air by anthropogenic activities;

(b) wildland fires - prohibition of other burning activities during wildland fire events and steps to minimize fuel loadings in areas vulnerable to fire. Appropriate suppression actions, as determined by the wildlands manager, should be taken for fires that do not meet a prescription. The Federal Wildland Fire Policies require that fire management plans (FMP) be developedfor

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[6]The annual PM-10 NAAQS is violated if the expected average annual arithmetic mean concentration for the past 3 calendar years is greater than 50 $\mu g/m^3$. Several elevated 24-hour PM-10 concentrations caused by natural events can potentially cause the annual NAAQS (which is an annual arithmetic mean of 24-hour concentrations) to be exceeded. If natural events cause the annual NAAQS to be violated, one NEAP for the area will cover both the 24-hour and annual NAAQS.

all Federal lands with burnable vegetation.[7] It is anticipated that a goal of FMP will be to prevent NAAQS exceedances caused by wildland fires. Therefore, EPA envisions treating future FMP as acceptable plans for mitigating the public health impacts of smoke from wildland fires on Federal lands. Similar FMP should be developed to serve the same purpose for State and private wildlands.

(c) High winds - application of BACM to any sources of soil that have been disturbed by anthropogenic activities. The BACM application criteria require analysis of the technological and economic feasibility of individual control measures on a case-by-case basis. The NEAP should include analyses of BACM for contributing sources. The BACM for windblown dust include, but are not limited to, application of chemical dust suppressants to unpaved roads, parking lots and open areas; dust suppression at construction sites; use of conservation farming practices on agricultural lands; tree rows and other physical wind breaks; restricting or prohibiting recreational off-road vehicle activities; and use of surface coverings. If BACM are not defined for the anthropogenic sources in question, step 4 below is required.

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[7]FMP are not in place for all Federal lands at this time. These plans will be developed by Federal land managers in conjunction with all stakeholders including Federal, State and local air management agencies. The FMP will integrate fire, as a natural ecological process, into land and resource management plans and will form the basis for management actions taken on wildland fires. The FMP must include prescriptions for any use of fire to meet land and resource management objectives.

The EPA anticipates that FMP will achieve an acceptable balance between forest health and public health concerns. Public health concerns caused by the potential effects of smoke on air quality from wildland fires will be addressed in FMP through smoke management plans and other measures. Smoke management plans attempt to minimize smoke impacts by monitoring fire behavior, meteorology and air quality during the fire and by publicly announcing forecasts of likely smoke conditions in communities impacted by ongoing fires. Since FMP will treat fire as a natural ecological process, the impact of wildland fires on air quality and regional haze is expected to increase in the future. Therefore, EPA will encourage Federal land management agencies to support air quality monitoring near fires, to assess air and haze impacts, and to develop a fire information data base and regional-scale smoke management plans.

4. Identify, study and implement practical mitigating measures as necessary. The NEAP may include commitments to conduct pilot tests of new emission reduction techniques. For example, it may be desirable to test the feasibility and effectiveness of new strategies for minimizing sources of windblown dust through pilot programs. The plan must include a timely schedule for conducting such studies and implementing measures that are technologically and economically feasible.

5. Periodically reevaluate: (a) the conditions causing violations of a PM-10 NAAQS in the area, (b) the status of implementation of the NEAP, and (c) the adequacy of the actions being implemented. The State should reevaluate the NEAP for an area every 5 years at a minimum and make appropriate changes to the plan.

Form and Timing of the Response

The NEAP should be developed by the State air pollution control agency in conjunction with the stakeholders affected by the plan. Development of a NEAP for wildland fires should include input from Federal, State and private land managers in areas vulnerable to fire. Also, agencies responsible for suppressing fires and the citizens in the affected area should be involved in developing the plan. Development of a NEAP for high-wind events should include input from Federal, State and private managers of open desert lands, rangelands, agricultural lands; the construction industry; and organizations promoting the use of recreational off-road vehicles. Development of a NEAP for volcanic and seismic activities should include input from geophysicists and public works officials who will be responsible for ash removal and disposal. The plan should include documented agreements among the stakeholders as to planned actions, the implementation schedule, and the parties responsible for carrying out those actions.

At a minimum, States should develop NEAP for any areas where natural events cause or have caused a PM-10 NAAQS to be violated within 18 months of the violation or the date this policy is issued. The NEAP should be made available for public review and comment and may, but are not required to, be adopted as revisions to the SIP if current SIP rules are not revised. Final plans should be submitted to EPA for review and comment.

Documentation of Natural Events

In circumstances where a State has reason to believe that natural events have caused measured exceedances of the NAAQS, the

State is responsible for establishing a clear causal relationship between the measured exceedance and the natural event. Supporting documentation concerning the natural event could include filter analysis, meteorological data (e.g., wind speed and wind direction to support a source receptor relationship), modeling and receptor analysis, videos and/or photographs of the event and the resulting emissions, maps of the area showing sources of emissions and the area affected by the event, and news accounts of the event.

In the case of high-wind events where the sources of dust are anthropogenic, the State must document that BACM were required for those sources, and the sources were in compliance at the time of the high-wind event. If BACM are not required for some dust sources, the NEAP developed must include agreements with appropriate stakeholders to minimize future emissions from such sources using BACM.

The type and amount of documentation provided for each event should be sufficient to demonstrate that the natural event occurred, and that it impacted a particular monitoring site in such a way as to cause the PM-10 concentrations measured. This documentation should also provide evidence that, absent the emissions from the natural event, concentrations of PM-10 at the monitoring site under consideration would not cause a NAAQS exceedance.

The State should also make the documentation of natural events and their impact on measured air quality available to the public for review. This may be accomplished through a number of means, such as the publishing of newspaper announcements, periodic reports on air quality in the area, and through public hearings. This would serve to allow the public an opportunity to comment on whether the causal relationship between the natural event and the air quality measurement is convincing. Also, open hearings, where State and local regulatory boards review the documentation, are useful forums in which to notify the public of potentially-important policy decisions.

When air quality data affected by a natural event are submitted to EPA for inclusion into the AIRS data base, the State should request that a flag be placed on the data to indicate that a natural event was involved. Documentation to support the flagged data should be maintained by the State. A copy of the documentation should be sent to the relevant EPA Regional Office monitoring representative no later than 180 days from the time the exceedance occurred or from the date of this policy for past events. The Regional Office will acknowledge receipt of the

documentation and confirm that the natural event data were flagged within 60 days.

Current PM-10 Nonattainment Areas

States may request that a moderate nonattainment area not be reclassified as serious if it can be demonstrated that the area would attain the standards by the statutory attainment date but for emissions caused by natural events. Similarly, States may request redesignation of nonattainment areas to attainment if it can be demonstrated that the area would be meeting the NAAQS but for the emissions caused by natural events. This policy applies to emissions caused by natural events that have occurred since January 1, 1994.[8]

Approval of the above requests will be made by EPA on a case-by-case basis as determined by the sufficiency of the information submitted by the State to substantiate its claim. At a minimum, the State must have adopted a SIP for the area which demonstrates that, but for the emissions from natural events, the area would be able to attain the NAAQS. All of the requirements under section 107(d)(3)(E) of the Act must also be satisfied before an area can be redesignated to attainment. Those requirements include the submittal of a maintenance plan under section 175A, among other things. The maintenance plan for areas affected by natural events must include a NEAP.

Failure to Submit a Natural Events Action Plan

If a State fails to submit an adequate NEAP within 18 months in response to violations of a PM-10 NAAQS, EPA will notify the governor of the State that the area should be redesignated as nonattainment. The EPA's action, in such instances, would be authorized under the Act based on the conclusion that the health of citizens affected by such events is not being protected by the State.

Once the area violating the NAAQS is designated nonattainment, the State will be required to adopt a federally-enforceable SIP revision and address the sources of PM-10 emissions. Most likely, the SIP revision will include many of

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[8]The 1990 Amendments to the Clean Air Act required that control measures for anthropogenic sources in PM-10 nonattainment areas be implemented by the end of 1993. Therefore, this policy is made retroactive to January 1, 1994 so that NAAQS exceedances that may prevent areas from having sufficient clean air quality data to meet the standards will be covered by this policy.

the same mitigative measures that could have been included in a NEAP.

APPENDIX

INTERPRETATION OF THE CLEAN AIR ACT (ACT) AS AMENDED IN 1990

Section 107(d)(4)(B) of the Act, as amended in 1990, provided EPA with the authority to designate initial areas as nonattainment for PM-10. Where such determinations involved an assessment of a potential PM-10 nonattainment area's air quality data, Congress expressly required such assessments to be made in accordance with Appendix K (section 107(d)(4)(B)(ii)). Since, upon enactment, Congress did not alter or revise Appendix K in any way, all the provisions of Appendix K, including section 2.4, remained applicable under the Act. Among other things, section 2.4 authorizes EPA to discount air quality data that are attributable to "an uncontrollable event caused by natural sources" of PM-10. Consequently, if an area's nonattainment problem was attributable to uncontrollable natural sources, application of section 2.4 of Appendix K would allow the data from the uncontrollable natural event to be excluded from regulatory determinations regarding an area's nonattainment status.

The Act also added section 188(f) which specifically addresses the adverse influence of nonanthropogenic PM-10 sources. This section provides EPA with discretionary authority to waive a specific attainment date for all areas or certain planning requirements for serious PM-10 nonattainment areas that are significantly impacted by nonanthropogenic sources.

The EPA previously interpreted the inclusion of such an express waiver provision in the 1990 Amendments as implying that Congress may have intended to limit the application of section 2.4 of Appendix K. The argument in support of this interpretation was that in contrast to section 2.4 of Appendix K, which contemplates the discounting of data due to emissions from certain events, the section 188(f) waiver provisions envisioned that adjustments prompted by adverse air quality impacts that are attributable to data from natural uncontrollable sources of PM-10 should be made only after all the data have been considered and the area has been designated nonattainment.

The EPA, however, believes that this is not the only reasonable interpretation of the Act's provisions that is possible. The EPA believes that the congressional directive in section 107(d)(4)(B)(ii) to base designation decisions on Appendix K, and the differences in how section 188(f) and Appendix K address issues related to emissions from natural sources, indicate that it is not necessary to conclude that section 188(f) limits the application of section 2.4 of Appendix K. Rather, it is possible to view both section 188(f) and

section 2.4 of Appendix K as being operative and dealing with related but distinct aspects of the issues connected with emissions from natural PM-10 sources.

The starting point for this analysis is section 107(d)(4)(B)(ii), which, by operation of law, designated nonattainment any area with data showing a violation of the PM-10 NAAQS before January 1, 1989 "(as determined under part 50, appendix K of title 40 of the Code of Federal Regulations)." In that section, Congress required the use of Appendix K in designating areas nonattainment without indicating that any portion of Appendix K was to be considered invalid. Thus, that provision indicates that Congress intended designation decisions to be based on that appendix, including the procedures in section 2.4 regarding exceptional events.

Notably, section 2.4 defines an exceptional event as "an uncontrollable event caused by natural sources of particulate matter or an event that is not expected to recur at a given location." Thus, exceptional events include both uncontrollable natural sources and nonrecurring events related to any kind of source of particulate matter. Section 2.4 further provides that data from such events may be discounted (i.e., EPA may compensate for such data or exclude such data entirely from decisions regarding an area). Consequently, Appendix K contemplates that data from "exceptional events" may be discounted, including, but not limited to, data due to emissions from uncontrollable natural events.

On the other hand, section 188(f), which was enacted by Congress in the same amendments as section 107(d)(4)(B)(ii), discusses PM-10 natural sources in terms of whether they are "anthropogenic" or "nonanthropogenic." It does not discuss such sources or emissions in the terms of Appendix K (i.e., it does not discuss matters in terms of exceptional or nonexceptional events, nor does it distinguish between uncontrollable and controllable natural sources). In general, section 188(f) provides that EPA may waive certain requirements where EPA determines that anthropogenic sources do not contribute significantly to a violation of the PM-10 standard, and that EPA may waive a specific attainment date if it determines that the contribution of nonanthropogenic emissions to a violation is demonstrated to be "significant."

As Congress, without express exception, directed the use of Appendix K in determining whether areas were attaining the PM-10 standard, EPA believes it is reasonable to interpret section 188(f) as not limiting the use of that appendix, provided that such an interpretation does not render section 188(f) invalid. The EPA believes that the approach taken in this natural events

policy does not do that, and that it represents a reasonable harmonization of these provisions of the Act and the language of Appendix K regarding exceptional events.

Under EPA's revised interpretation, section 188(f) continues to have force and effect. As section 188(f) addresses the issues in terms of "anthropogenic" and "nonanthropogenic" sources, not in terms of exceptional events (which are defined in Appendix K as both uncontrollable natural events and nonrecurring events from both natural and other sources), it is possible to view the waivers of section 188(f) as being potentially applicable only to areas that are designated nonattainment because the data do not qualify for adjustment under Appendix K. For such areas, it may be reasonable and appropriate to grant waivers from some requirements that simply do not make sense in light of the nature of the sources generating the PM-10 problem in the area. Thus, EPA's new interpretation does not render section 188(f) meaningless. Consequently, EPA believes that the exercise of its discretionary authority under Appendix K to discount or de-weight air quality data that are affected by uncontrollable natural sources of PM-10 is reasonable and appropriate.

Appendix B

Geography and Climatic Summary for the Las Vegas and Apex Valleys

Geography and Climatic Summary for the Las Vegas and Apex Valleys

Geography of the Las Vegas and Apex Valleys

The Las Vegas Valley is one of the fastest growing metropolitan areas in the nation. The population has expanded from about 400,000 in 1980 to 1.4 million in 2000. The cities of Las Vegas, North Las Vegas and Henderson are located in the Las Vegas Valley within Clark County, in the southern tip of Nevada. Situated in the Las Vegas Valley, the Las Vegas metropolitan area serves as one of the largest growing cities, and busiest entertainment centers for the United States. Las Vegas is located in Hydrographic Area 212 in the extreme part of southern Nevada. Mountains surrounding the valley extend 2,000 to 10,000 feet above the valley floor. The Las Vegas Valley comprises about 600 square miles and runs from northwest to southeast. The Sheep Range bound the valley on the north. The Black Mountains bound the valley on the south. The Spring Mountains are to the west, which includes Mt. Charleston. Mount Charleston is the region's highest peak at 11,918 feet. There are several smaller ranges on the eastern rim of the valley, including the Muddy Mountains, and the Eldorado Range. The Las Vegas Valley slopes downward from west to east. This affects the local climatology significantly in terms of driving variations in wind, precipitation, and storm water runoff.

The Apex Valley area is located at the northeast corner of the Las Vegas Valley and is comprised of Hydrographic Areas 216 and 217. No residences are located in the Apex Valley, but a number of people are employed at the industrial facilities located in the valley. A regional landfill, power plants, mining operations, and mineral processing facilities are located in the southern part of the Apex Valley. All stationary sources within the Apex Valley have installed Best Available Control Technology for PM_{10}.

The two hydrographic areas that set the boundaries of the Apex Valley area comprises approximately 236 square miles and is split by the Arrow Canyon Range that divides Hydrographic Area 216 from Hydrographic Area 217. The Apex Valley area is bounded on the west by the Las Vegas Range with a peak elevation of approximately 5,880 feet, located in Hydrographic Area 217. The valley slopes to the southwest around the southerly foot of the Arrow Canyon Range and then northwest to the dry lake located in the Hydrographic Area 216. The dry lake elevation is approximately 1,970 feet. The Apex Valley area is bounded on the east by the Dry Lake Range. Air movement generally flows from the Las Vegas Valley into the Hydrographic Area 216 portion of the Apex Valley area and moves in a northeasterly direction.

Official weather observations began in 1937 at what is now Nellis Air Force Base[1]. In late 1948, the U.S. Weather Bureau moved to McCarran Field, now McCarran

[1] Skrbac, P. and S. Cordero, 1995: Climate of Las Vegas. NOAA Technical Memorandum NWS WR-235, updated March 12, 2002.

International Airport. McCarran is located in unincorporated Clark County, 7 miles south of downtown Las Vegas. The airport is approximately 5 miles southwest of, and 300 feet higher than the lowest part of the valley.

The climate is generally very pleasant during the fall, winter, and spring. However, during the summer months of June through August temperatures can climb into the 100's and humidity can reach the 90's, though rarely. Average annual precipitation is about 4.16 inches. However, during the years of 1999 through the present, the Las Vegas Valley and southern Nevada area has experienced a severe drought with an annual precipitation average of .68 inches of rainfall from July 1, 2001 to July 2002. Summers are long and have hot days and warm nights with accompanying mild winds that occur especially during these drier years. Problematic windstorms (High-Wind Event Level) are common during the late winter months and throughout the spring months. The predominant wind direction generally occurs from the southwest. It is due to these high-wind natural events that Clark County experiences most of the PM_{10} problems for the area.

General Climatic Summary

Beyond the formal climatic data publications, there are very few publications containing summaries of extreme wind events relevant to this plan.

The four seasons are well defined in the Las Vegas Valley, although different from the traditional view of seasonal variation. Summers display classic desert southwest characteristics. Daily high temperatures typically exceed 100 degrees with lows in the 70s. The summer heat is tempered by extremely low relative humidity. It is not uncommon for humidity to increase markedly for several weeks each summer in association with a moist "monsoonal flow" from the south, typically during July and August. Aside from increasing the discomfort level, these moist winds also support the development of spectacular desert thunderstorms, which are frequently associated with significant flash flooding and/or strong downburst winds.

Winters are mild and pleasant. Afternoon temperatures average near 60 degrees and skies are mostly clear. Pacific storms occasionally produce rainfall in the Las Vegas Valley, but in general, the Sierra Nevada Mountains of eastern California and the Spring Mountains immediately west of the Las Vegas Valley act as effective barriers to moisture.

The spring and fall seasons are generally considered ideal. Although rather sharp temperature changes can occur during these months, outdoor activities are seldom hampered. Strong winds are the most persistent and provoking weather hazard experienced in the area. Winds over 50 mph are infrequent but can occur with some of the more vigorous storms. Winter and spring wind events often generate widespread

areas of blowing dust and sand. Strong wind episodes in the summertime are usually connected with thunderstorms, and are thus more isolated and localized[2].

[2] Skrbac, P. and S. Cordero, 1995: Climate of Las Vegas. NOAA Technical Memorandum NWS WR-235, updated March 12, 2002.

Appendix C

Public Outreach Education Pamphlets, Presentations, Flyers, Advisory/Alert Language, Facility Faxes, News & Media Articles

Appendix C

Exhibits

1. **Dust Storms and Your Health, brochure (English & Spanish Versions)**

2. **Protecting the Air We Share, brochure**

3. **Dust Storms and Your Health, postcard (English & Spanish Versions)**

4. **Tips to Reduce Dust and Particulates, fact sheet**

5. **Air Quality Questions and Answers – Particulate Matter, fact sheet**

6. **Particulate Air Pollution – Particulate Matter Air Pollution From Natural Events, briefing sheet (English & Spanish Versions)**

7. **The Natural Events Action Plan, a presentation by the Clark County Department of Air Quality and Environmental Management**

8. **PM_{10} Monitoring Site Network Map**

9. **Media Advisory - An example of a Air Quality Wind Advisory**

10. **Clark County Department of Air Quality and Environmental Management Standard Operating Procedure (SOP) for a High-Wind Air Quality Advisory Notice to be issued to Dust Control Permit Permittees and Operators of Applicable Stationary Sources with an example of a FAX to Construction Industry Permittees**

11. **Medical Advisory Committee (MAC) Protocol**

12. **News Articles**

Exhibit 1

“*Dust Storms and Your Health*”, brochure

Appendix C
Exhibit 1 – Dust Storms & Your Health Brochure

Air Quality

Protecting the air we share

Clark County Department of
Air Quality & Environmental Management
(DAQEM)
500 South Grand Central Parkway
P.O. Box 555210
Las Vegas, NV 89155-5210

Dust Storms & Your Health

"What Everyone Should Know"

Air Quality

Protecting the air we share

Dust Storm Recap

Why is dust a public health issue?

- Increases breathing problems
- Damages lung tissue
- Aggravates existing health problems

What is the concern about dust and natural events?

The Clark County Department of Air Quality & Environmental Management in partnership with Public Health Officials, developed a plan to protect public health. The plan is called the Natural Events Action Plan (NEAP) for Clark County.

- As described in this document dust can cause a negative health impact. Not all sources of dust are caused by humans or can be controlled. When high winds occur, we all need to be aware of the potential health impacts and how to avoid exposure.

What is Clark County doing as part of the Natural Events Action Plan?

- Notify the public of when the air quality is affected by high-wind events.
- Minimize public exposure to high levels of PM_{10} using notification and health advisory programs.
- Take actions needed to reduce particulate matter (when and where) possible during high-wind events.

For more information visit our web-site at: www.accessclarkcounty.com

A monitoring link at this website will tell you about current air quality conditions in your neighborhood. Below is the Air Quality Index (AQI) used to rate air quality.

GOOD
MODERATE
UNHEALTHY FOR SENSITIVE GROUPS
UNHEALTHY
VERY UNHEALTHY

Protecting the air we share

Air Quality

Appendix C
Exhibit 1 – Dust Storms & Your Health Brochure

The Natural Events Action Plan

The Natural Event Action Plan allows states flexibility to meet the PM_{10} standard, while providing public health protection. The NEAP applies to three categories of natural events that can cause high PM_{10} levels: (1) volcanic; (2) seismic (earthquake) activities; and (3) high-wind events. Under this policy, particulate matter (or dust) exceedances generated by high winds are considered natural events if they occur over natural undisturbed areas or areas that have been disturbed by human activities with appropriate controls in place.

The Clark County Department of Air Quality & Environmental Management, Public Health Officials, and local governmental agencies are encouraged to develop such a plan to protect public health during high-wind events. The plan includes the following:

- Public education about the harmful effects of particulate matter;
- Public notification when air quality is or will be affected by high-wind events;
- Programs to enable the general public and high risk individuals to minimize their exposure to air laden with particulate matter; and
- Actions to reduce particulate matter (when possible) during high-wind events.

Why should I be concerned about dust storms?

Dust storms can cause a number of serious health problems and they can make some health problems worse. Dust is made up of tiny solid particles ("particulate matter") floating in the air. These tiny particles can get past the lungs' natural defenses and build up. This can harm sensitive lung tissue. Of course, during severe dust storms, more dust can get into the lungs. Dust irritates the lungs and can trigger allergic reactions, as well as asthma attacks. For people who already have these health conditions these attacks can be serious and cause breathing problems. Dust can cause coughing, wheezing and runny noses. Finally, breathing a lot of dust over a long period of time can cause chronic breathing and lung problems.

Who should take special precautions?

Everyone!

Anyone can potentially be harmed by breathing too much dust. However, the following groups are at the highest risk:

- Infants, children, teens and elderly
- People with asthma, bronchitis, emphysema, or other respiratory conditions
- People with heart disease
- Pregnant women
- Healthy adults working or exercising vigorously outdoor (for example, agricultural workers, construction workers, and runners)

How will I know if there is a problem?

A child visiting the doctor after a windy day

For you, the easiest way to tell if there may be a problem is if you see a lot of dust in the air. For instance, if the blowing dust is so thick that it's hard to see the mountains, then that could mean that dust levels might be harmful right now. More detail on federal standards plus the previous days particulate matter levels can be found by visiting the Clark County Department of Air Quality & Environmental Management web site.

What causes dust storms?

Dust storms are caused by a combination of weather conditions, features of the natural environment, and human activity. High winds can raise large amounts of dust from areas of dry, loose, exposed soil. In this area, high winds are most common during the months of March through August. Most dust storms last about 4 to 6 hours.

For more information on *Dust Storms and Your Health* contact the Clark County Department of Air Quality & Environmental Management at (702) 455-5942 or log on to: www.accessclarkcounty.com

Air Quality Tips

Health Tips:

- *The best precaution is simply to avoid going outside during severe dust storms*
- *Avoid hard or vigorous exercise outdoors*
- *Wear some type of covering over your nose and mouth, which will provide protection from small particles.*

Prevention Tips:

- *Drive slowly on unpaved roads and other dirt surfaces.*
- *Don't take shortcuts across vacant lots*
- *Avoid OHV riding in nonattainment areas.*
- *Fence-off barren property or cover it with gravel, rock or desert friendly landscaping.*
- *Call the Department of Air Quality's dust complaint hotline at 385-DUST (3878) to report excessive amounts of blowing dust from construction sites and other sources. Every complaint is investigated.*

Appendix C
Exhibit 1 (S) – Dust Storms & Your Health Brochure (Spanish Version)

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Protecting the air we share
Clark County Department of
Air Quality & Environmental Management
(DAQEM)
500 South Grand Central Parkway
P.O. Box 555210
Las Vegas, NV 89155-5210

Las Tormentas de Polvo Y Su Salud

"Lo que todos deben saber"

Air Quality
Protecting the air we share

Un Resumen acerca de las Tormentas de Polvo

¿Por qué el polvo es un tema de salud pública?

- Incrementa los problemas respiratorios
- Daña los tejidos de los pulmones
- Agrava los problemas existentes de salud

¿Cuáles son las consecuencias de las tormentas de polvo y eventos naturales?

El Departamento de Control de la Calidad del Aire y Manejo Ambiental, en colaboración con functionarios de salud pública desarrollaron un plan. Este plan se llama el Plan de Acción ante Eventos de la Naturaleza.

- Tal como se describe en este documento el polvo puede causar un impacto negativo en la salud. No todas las fuentes de polvo son causadas por humanos o pueden ser controladas. Cuando vientos fuertes ocurren, necesitamos estar concientes del posible impacto a la salud y de cómo podemos evitar estar expuestos.

¿Que está haciendo el Condado de Clark, como parte del plan de acción ante Enventos de la Naturaleza?

- Notifica al publico cuando la calidad del aire ha sido afectada por vientos fuertes.
- Minimiza la exposición del público a altos niveles de PM_{10} en el aire, notificando al publico y ofreciendo programas de asesoramiento relacionados con la salud.
- Realiza las acciones necesarias para reducir el material particulado (dónde y cuando sea posible) durante los eventos de vientos fuertes.

Para obtener más información, visite nuestro sitio de la Internet en www.accessclarkcounty.com

Un enlace de monitoreo en este sitio le notificará de las condiciones de la calidad del aire en su vecindario. A continuación está el índice de Calidad del Aire (AQI) que se utiliza para calificar la calidad del aire.

BUENO
MODERADO
INSALUBRE PARA GRUPOS SENSIBLES
INSALUBRE
MUY INSALUBRE

Air Quality
Protecting the air we share

Appendix C
Exhibit 1 (S) – Dust Storms & Your Health Brochure (Spanish Version)

PLAN DE ACCIÓN PARA EVENTOS NATURALES

El Plan de Acción para Eventos Naturales le permite a los estados tener flexibilidad para cumplir con las normas del PM10, mientras proveen protección a la salud pública. El NEAP es procedente a tres categorías de eventos naturales que pueden causar un alto nivel de PM10: (1) volcánicos; (2) sísmicos (terremotos) y (3) vientos fuertes. Según este reglamento, el exceso de material particulado (o polvo) que se genera por medio de vientos fuertes es considerado un acto de la naturaleza si es que ocurre en zonas virgenes o en zonas que han sido alteradas por actividad humana, con debidos controles sobre las mismas.

Se le ha sugerido al Departamento de Control de Calidad del Aire y Manejo Ambiental del Condado de Clark y a las agencias del gobierno local que implementen tal programa para proteger la salud pública cuando ocurren vientos fuertes. El Plan incluye lo siguiente:

- Instrucción Pública acerca de los efectos dañinos de material particulado en el aire;
- Anuncios públicos cuando el aire es o será afectado por vientos fuertes;
- Programas para capacitar al público en general y a los individuos de alto riesgo a que reduzcan su exposición al aire saturado con material particulado; y
- Tomar medidas para reducir el material particulado en el aire (siempre que sea posible) cuando ocurren vientos fuertes.

¿POR QUÉ ME DEBO PREOCUPAR POR LAS TORMENTAS DE POLVO?

Las tormentas de polvo pueden causar un número de serios problemas de salud y también pueden empeorar algunos problemas ya existentes. El polvo está formado de pequeñísimas partículas (material particulado) que flotan en el aire. Estas pequeñas partículas pueden escapar a las defensas naturales de los pulmones y acumularse. Esto puede dañar el tejido sensible de los pulmones. Y desde luego, durante una tormenta fuerte de polvo, más polvo puede entrar en los pulmones. El polvo irrita los pulmones y puede provocar reacciones alérgicas, así como ataques de asma. Para las personas que ya sufren de esas afecciones, estos ataques pueden ser serios y causar problemas respiratorios. El polvo puede provocar tos, dificultad para respirar y secreciones nasales. Y por último, el respirar mucho polvo por un largo periodo de tiempo, puede causar problemas crónicos del pulmón y respiratorios.

¿QUIÉN DEBE TOMAR PRECAUCIONES ESPECIALES?

¡TODOS!

Cualquier persona puede perjudicarse por respirar demasiado polvo. Sin embargo, los siguientes grupos, son los de más alto riesgo:

- Infantes, niños, adolescentes y ancianos.
- Personas con asma, bronquitis, enfisema, u otras afecciones del sistema respiratorio.
- Personas con problemas cardíacos.
- Mujeres embarazadas.
- Adultos sanos que trabajan o se ejercitan vigorosamente al aire libre (por ejemplo: agricultores, trabajadores de la construcción y corredores).

¿CÓMO SABE SI EXISTE UN PROBLEMA?

Un niño visitando un doctor despues de un dia ventoso

Para usted, la forma más fácil de saber que puede haber un problema es ver si hay mucho polvo en el aire. Por ejemplo, si el polvo que acarrea el viento es tanto que es difícil ver las montañas, entonces eso puede indicar que los niveles de polvo pueden ser dañinos en ese momento. Información más detallada sobre las normas federales además de los niveles de material particulado en el aire en días previos, se puede encontrar visitando el sitio en la Internet del Departamento de Control de Calidad del Aire y Manejo Ambiental del Condado de Clark.

¿QUÉ PROVOCA LAS TORMENTAS DE POLVO?

Las tormentas de polvo pueden ser causadas por una combinación de condiciones del clima, características del medio ambiente natural y la actividad humana. Los vientos fuertes pueden levantar grandes cantidades de polvo de áreas secas, tierra suelta y expuesta. En esta zona, los vientos son comunes durante los meses de Marzo hasta Agosto. La mayor parte de las tormentas de polvo, duran como entre 4 y 6 horas.

Para recibir mas informacion acerca de *las tormentas de polvo y su salud*, póngase en contacto con el Departamento de Control de las Calidad del Aire y Manejo Ambiental al (702) 455-5942 o entre al sitio de la internet www.accessclarkcounty.com

CONSEJOS ACERCA DE LA CALIDAD DEL AIRE

Consejos acerca de la salud.

- *La mejor precaución es simplemente evitar salir durante las tormentas severas de polvo.*
- *Evite ejercicio duro y vigoroso al aire libre.*
- *Use algún tipo de protección sobre su nariz y boca lo cual le protegerá de pequeñas partículas.*

Consejos de prevención.

- *Maneje despacio cuando circule sobre caminos no pavimentados y superficies de tierra.*
- *No corte camino por lotes baldíos.*
- *No use vehículos de todo terreno (OHV) en zonas virgenes.*
- *Coloque un cerco en terrenos baldíos o cúbralos con grava, piedra o con jardinería típica del desierto.*
- *Llame al Departamento de Calidad del Aire, a la línea de quejas de polvo al 385-DUST(3878) para reportar niveles alto de polvo en zonas de construcción y otras fuentes. Todas las quejas serán investigadas.*

Exhibit 2

“*Protecting the Air We Share*”, brochure

Appendix C
Exhibit 2 – Protecting the Air We Share Brochure

Air Quality Information

For more information visit our website at: www.accessclarkcounty.com

A monitoring link at this website will tell you about current air quality conditions in your neighborhood. Below is the Air Quality Index (AQI) used to rate air quality.

GOOD
MODERATE
Unhealthy for Sensitive Groups
Unhealthy
Very Unhealthy

Contact Information

Department of Air Quality Management
Public Information
Phone: (702) 455-5942

Air Quality and Pollen Report Recording
Phone: (702) 385-4613

Dust Control Hotline
Phone: (702) 385-DUST (3878)

Smog Hotline
Phone: (702) 642-SMOG (7664)

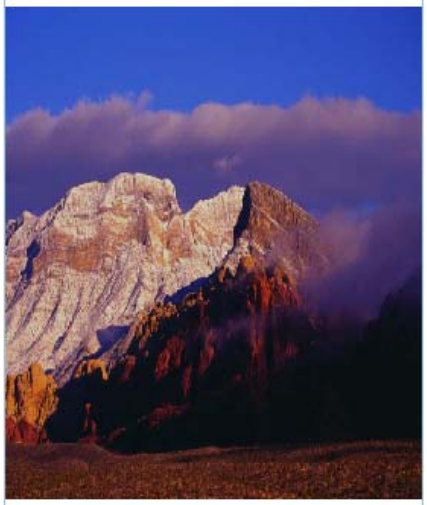
Small Business Assistance Program
(702) 262-9047 x117

Protecting the air we share
Air Quality

Clark County
Department of Air Quality Management
500 South Grand Central Pkwy
P.O. Box 551776
Las Vegas, NV 89155-1776

Protecting the air we share
Air Quality

Clark County Department of Air Quality Management



"Protecting the Air We Share"

Picture Courtesy of Brian Battaglia

Appendix C
Exhibit 2 – Protecting the Air We Share Brochure

Mission

The mission of the Department of Air Quality Management is to evaluate and improve the air quality through:

- Active public participation
- Air quality monitoring
- Outreach and education
- Regulation and compliance assurance
- Long-term planning

We implement clean air programs for the health and welfare of Clark County!

Air Quality Tips

- ✓ Drive on paved roads only
- ✓ Don't take short cuts across vacant lots
- ✓ Fence-off barren property or cover it with gravel, rock or desert-friendly landscaping
- ✓ Limit drive time by combining errands and car-pooling when possible
- ✓ Avoid driving your car on days when air quality is poor
- ✓ Limit use of wood-burning fireplaces, especially on bad air quality days
- ✓ Call DAQM's dust complaint hotline to report excessive amounts of blowing dust at 385-DUST (3878)
- ✓ Call DMV's smog hotline to report smoking vehicles on the road ways at 642-SMOG (7664)
- ✓ Take advantage of the RTC's local rideshare programs and public transit options. Call 228-7433 for CAT-RIDE or CLUB-RIDE information

Pollutants of Concern in Clark County

$PM_{2.5}$ & PM_{10}—Particulate Matter (smaller than the width of a human hair)
Sources: disturbed vacant lands/open areas, dust from unpaved roads, construction, burning wood, fuels, off-road vehicles; industrial plants

O_3—Ozone
Sources: chemical reaction of pollutants; VOCs and NO_x

VOC—Volatile Organic Compounds
Sources: burning fuel, boats, planes, trains, solvents, paints, glues and other products

NO_x— Oxides of Nitrogen
Sources: burning fuels, natural gas, coal, oil, etc.

CO—Carbon Monoxide
Sources: burning of fuels, natural gas, coal, oil, etc.

SO_2—Sulfur Dioxide
Sources: burning of coal and oil, especially high-sulfur coal from the Eastern United States; industrial processes (paper, metals)

Clark County's Air Quality Program

In 1970, the United States Congress passed the Clean Air Act. Together with amendments passed in 1977 and 1990 this law, administered by the U.S. Environmental Protection Agency, is the foundation of air pollution control efforts in the United States. The Nevada Division of Environmental Protection and the Department of Air Quality Management regulates sources of air pollution in Clark County to insure compliance with the Clean Air Act.

Exhibit 3

“*Dust Storms and Your Health*”, postcard

Appendix C Exhibit 3 – Dust Storms and Your Health Postcard

Clark County Department of Air Quality & Environmental Management

Dust Storms & Your Health

Particulate Matter, also known as "dust" is a big problem in Clark County. Dust is among the most harmful of all air pollutants. Activities such as construction and driving on unpaved roads cause dust to become airborne. Dust can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infection.

TIPS TO REDUCE DUST

- √ Drive slowly on unpaved roads and other dirt surfaces.
- √ Don't take short cuts across vacant lots.
- √ Avoid ORV riding in nonattainment areas.
- √ Fence off barren property or cover it with gravel, rock or desert friendly landscaping.
- √ If you own or operate an industrial source of PM, comply with local rules that apply to your operation. Work with local agencies to develop strategies that will further reduce PM emissions.
- √ Get involved with air quality improvement programs in your community. Call the Department of Air Quality's dust complaint hotline at 386-DUST (3878) to report excessive amounts of blowing dust.

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P.O. Box 555210
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(702) 455-5942
www.accessclarkcounty.com

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& Environmental Management
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PLEASE
PLACE
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Back of the Postcard

Appendix C Exhibit 3 (S) – Dust Storms and Your Health Postcard (Spanish Version)

Departamento de Control de Calidad del Aire y Manejo Ambiental del Condado de Clark

Las Tormentas de Polvo Y Su Salud

El Material Particulado, también conocido como "polvo" es un gran problema en el Condado de Clark. De los contaminantes del aire, el polvo es uno de los mas dañinos. El trabajo en la construcción y el conducir en calles no pavimentadas causan que el polvo se levante en el aire. El polvo puede aumentar el número y la severidad de ataques de asma, causar o empeorar bronquitis y otras enfermedades pulmonares, y reducir la habilidad del organismo para combatir infecciones.

Ideas Para Reducir el Polvo

- ✓ Maneje despacio en caminos y otras superficies no pavimentadas.
- ✓ No corte camino a través de lotes baldíos.
- ✓ No pasee en vehículo de todo terreno (TT), en áreas no capacitadas para ello.
- ✓ Cercar terrenos baldíos o cubrirlos con grava, piedra o crear áreas de jardinería desértica.
- ✓ Si usted es propietario o es operador de una industria donde se origine Material Particulado, cumpla con las normas que son procedentes a su operación. Trabaje con las Agencias locales para desarrollar estrategias que mejoren las emisiones bajo las normas de Material Particulado.
- ✓ Participe con los programas de mejoramiento de control de la calidad del aire en su comunidad.
- ✓ Llame al Departamento de Control de Calidad del Aire, a la línea de quejas al 385-DUST para informar cantidades excesivas de polvo en el aire.

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Exhibit 4

“*Tips to Reduce Dust and Particulates*”, fact sheet

Appendix C
Exhibit 4 – Tips to Reduce Dust and Particulates Factsheet

Protecting the air we share

Air Quality

Tips to Reduce Dust & Particulates

- Drive on paved roads only.
- Don't take short cuts across vacant lots.
- Fence off barren property or cover it with gravel, rock or desert-friendly landscaping.
- Ride ATV's and other off-road vehicles outside the valley's non-attainment area.
- Call the Department of Air Quality's dust complaint hotline at 385-DUST (3878) to report excessive amounts of blowing dust from construction sites and other sources. Every complaint is investigated.
- Combine vehicle trips to reduce how often you start your car and the number of miles you travel.
- Car pool and/or use alternative methods of transportation when possible. For bus-route and CLUB Ride Commuter Services information, contact the Regional Transportation Commission at 228-7433, CAT-RIDE.
- Reduce wood burning, especially on high dust days.
- Click on **accessclarkcounty.com** to visit the Air Quality Department's website and find out more about local air quality issues. You can even check out the current air quality of your own neighborhood. Get involved. Want more information? Please call 702-455-5942.

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Exhibit 5

"Air Quality Questions and Answers – Particulate Matter", fact sheet

Appendix C

Exhibit 5 – Air Quality Questions and Answers – Particulate Matter Fact Sheet

Protecting the air we share

Air Quality

Air Quality Questions & Answers – Particulate Matter:

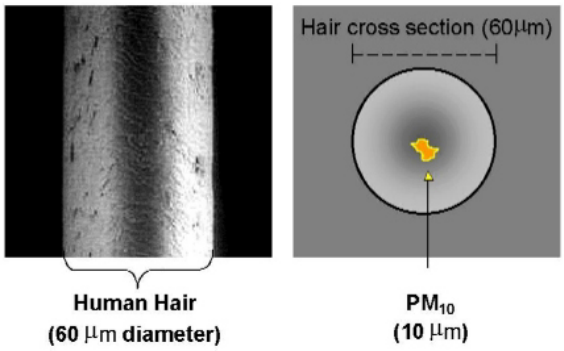
What is particulate matter?

Particulate matter is a type of air pollution that includes fine dust, dirt, soot and smoke. It can also appear as droplets. Much of the matter is so small you can't see it. It is generally grouped into two sizes:

- PM_{10} stands for particulate matter measuring 10 microns or less, thinner than the width of a human hair.

- $PM_{2.5}$ (Referred to as "P-M two-point five.") identifies particulates smaller than 2.5 micrometers. These particles can stay airborne several days and make up as much as half the haze you see around the valley.

HOW SMALL IS PM_{10}?



How does particulate matter get into your body?

When you inhale, you breathe in air as well as any particles that are floating in the air. The particles can travel into your respiratory system, and get lodged in your airway or lungs.

What effects can particulate matter have on my health?

Research suggests particulate matter may have more impact on human health than any other type of air pollutant. Exposure aggravates respiratory diseases like asthma and may cause coughing, wheezing and shortness of breath.

Which type of particulate matter is worse for you?

Researchers say the smaller $PM_{2.5}$ particles may be more hazardous to your health because they can travel deeper into your lungs. Clark County's Department of Air Quality Management has collected data on $PM_{2.5}$ since 1996. The valley remains in attainment with new $PM_{2.5}$ national air pollution standards set by the U.S. Environmental Protection Agency.

What is a State Implementation Plan?

States are required to develop a State Implementation Plan (SIP) if they don't comply with national air quality standards involving one of six major air pollutants: carbon monoxide, particulate matter, ozone, lead, sulfur dioxide, and nitrogen dioxide. Elevated concentrations of these pollutants beyond national standards pose health risks. State Implementation Plans typically include a collection of new regulations a state will use to improve air quality in an affected area. The plan development process must involve public hearings.

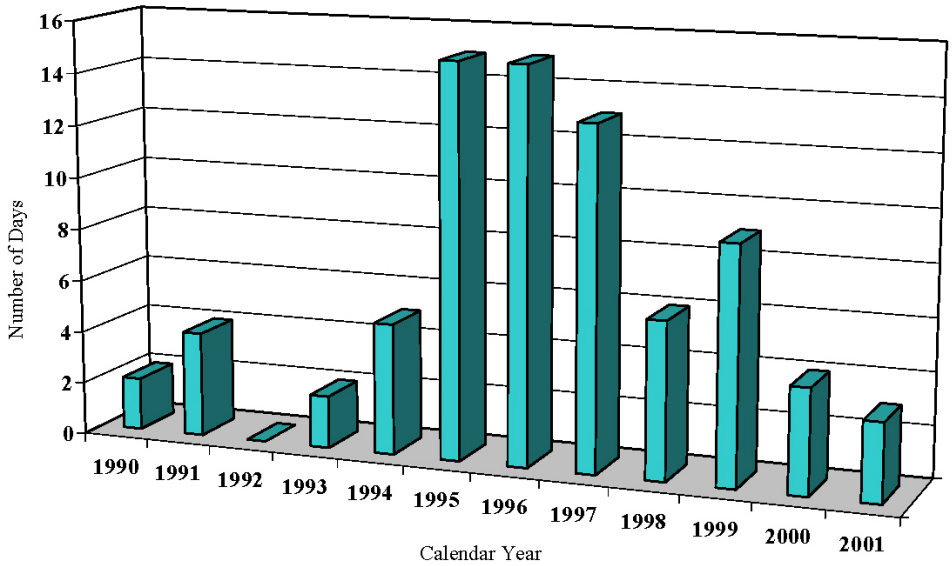
Which pollutants are of most concern in Clark County?

In Clark County, concentrations of lead, sulfur dioxide and nitrogen oxide are well below national air quality standards, but local air quality officials have completed State Implementation Plans to address PM_{10} and carbon monoxide.

Appendix C

Exhibit 5 – Air Quality Questions and Answers – Particulate Matter Fact Sheet

- The Las Vegas Valley was designated as a serious nonattainment area for PM_{10} on Jan. 8, 1993. However, officials expect the EPA to approve the county's SIP to control PM_{10} soon. The plan requires the valley to demonstrate attainment of the EPA's 24-hour standard for PM_{10} by 2006.



PM_{10} Violation Days (1990-2001)

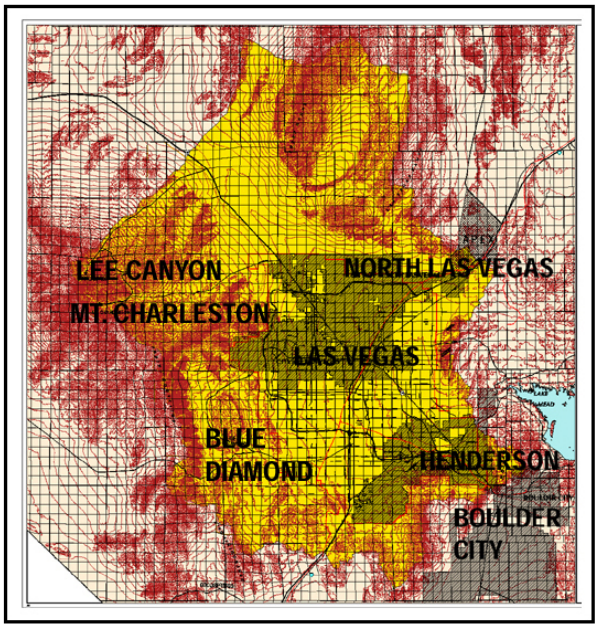
- The Las Vegas Valley was designated as a serious nonattainment area for carbon monoxide on Nov. 3, 1997. Carbon monoxide is a colorless, odorless gas created from the burning of fossil fuels such as gasoline, oil or wood. Automobiles produce 85 percent of the valley's carbon monoxide emissions. The county submitted a SIP to control carbon monoxide in August 2000. Officials hope EPA approval of the plan will come in the spring of 2003. Southern Nevada has not violated national carbon monoxide standards since 1999.

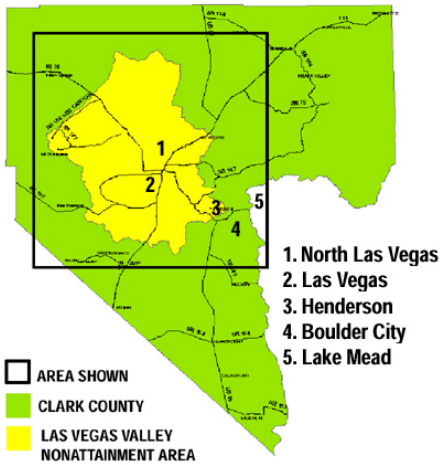
- Ozone is a concern in the valley, especially during the summer months. Ten to 30 miles above the earth, ozone protects us from the sun's harmful rays, but formation of the gas at lower altitudes

can trigger coughing, reduce lung function and worsen respiratory illnesses like asthma or bronchitis. Ozone is created from a complex chemical reaction involving sunlight, high temperatures and man-made pollutants in smog. On April 15, 2004, Clark County and almost 300 other communities in the United States were designated as nonattainment for failing to meet the EPA's new, eight-hour ozone standard. Clark County was classified as basic nonattainment, which is the least severe of the possible classifications. However, the designation means Clark County has three to five years to meet the new standard or face sanctions, including the loss of millions of dollars in federal highway funds.

How big is the valley's nonattainment area?

Southern Nevada's nonattainment area for both carbon monoxide and PM_{10} extends 1,500 square miles and covers all urban areas in the Las Vegas Valley, including the cities of Las Vegas, Henderson and North Las Vegas.





Appendix C

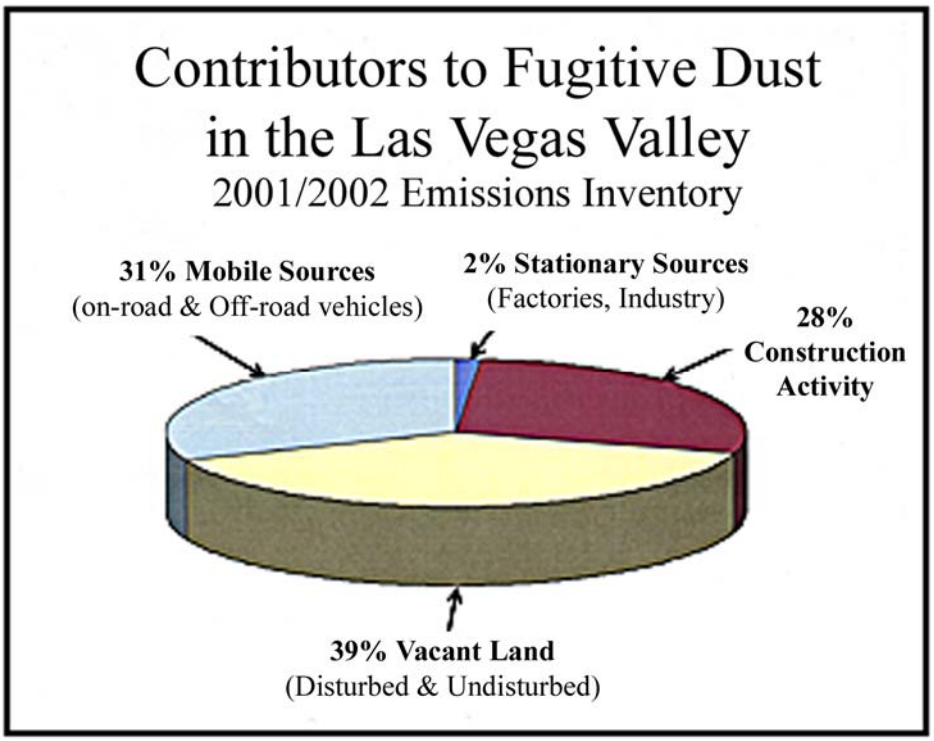
Exhibit 5 – Air Quality Questions and Answers – Particulate Matter Fact Sheet

Protecting the air we share

Air Quality

What are the major sources of dust in the valley?

Most PM_{10} emissions are due to wind-blown dust from a variety of sources, including construction, unpaved roads, urban mining operations, and off-road riding on vacant lands. Combustion particles from car and truck emissions also play a role.



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Note: For more information, please call the department at 702-455-5942

Exhibit 6

“*Particulate Air Pollution – Particulate Matter Air Pollution From Natural Events*”, briefing sheet

Appendix C
Exhibit 6 - Particulate Air Pollution – Particulate Matter Air Pollution From Natural Events – Briefing Sheet

Revised in August 2004

Particulate Air Pollution

Particulate Matter Air Pollution From Natural Events

BACKGROUND

Particulate matter (PM) air pollution is caused by tiny dust particles that float in the air. Small particles, ten (10) microns or less in size, are called PM_{10}. Ten (10) microns is equal to about one-seventh of the diameter of a human hair. These tiny particles are small enough for us to breathe deeply into our lungs. We usually associate air pollution from particulate matter with human activities like construction; disturbing vacant land; driving on unpaved roads; and soot from industry. Natural events like windstorms, volcanic eruptions, earthquakes and wildfires also affect air quality. These natural events produce airborne particles of dust and soot that can cause health problems. The United States Environmental Protection Agency (U. S. EPA) regulates particulate matter through health-based air quality standards.

HEALTH CONCERN ASSOCIATED WITH PARTICULATE AIR POLLUTION

PM_{10} includes a variety of substances, such as dust, smoke, and soot. These tiny particles are small enough to bypass our natural defenses and go deep into our lungs. High amounts of PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Infants, children, the elderly, people suffering from chronic lung diseases, and anyone who is exercising (because they breathe in more air, and therefore more particles), are the most at risk.

In addition to health concerns, dust generated from certain activities, like high winds, reduce visibility, and can cause accidents. Particulate matter pollution can impair the health of animals and vegetation, cause property damage, and in general reduce the quality of life.

THE PROBLEM

Clark County is working very hard to meet the National Ambient Air Quality Standards (NAAQS) for particulate matter (PM_{10}). However, dust storms generated by high winds have caused unhealthful levels of airborne particulate matter within Clark County. Drier conditions, lower precipitation regionally, and windy conditions that often exceed the threshold of 25 mph with wind gusts of 40 miles per hour and higher, overwhelm natural and developed lands to

create exceedances of the NAAQS for PM_{10}. The frequency and severity of these exceedances in Clark County are well above the national standards. While much of the dust in the Clark County area is caused by natural events such as high wind speeds and dry conditions throughout the area, the numbers of man-made dust sources are also increasing as Clark County becomes more populated and development increases.

To protect public health, the U. S. EPA designates areas where particulate matter levels exceed the standard as "nonattainment areas." State and local governments must then adopt plans to reduce air pollution in these areas to protect public health. Federal requirements for these areas are focused on reducing air pollution from industries and motor vehicles. Federally enforceable state and local requirements control dust sources. However, the traditional approach of controlling factories, processes, tailpipe emissions, and dust sources do not fix a PM_{10} problem created by natural events such as blowing dust caused by high winds. Scientific studies and real world experience demonstrate that high winds overwhelm even the most effective dust control measures. High wind events also cause exceedances of the NAAQS for PM_{10}, on native desert areas that have not been disturbed by human activity. Because of this, in 1996 the western states requested a new U. S. EPA policy for air pollution caused by natural events.

U. S. EPA'S POLICY ON NATURAL EVENTS

At the urging of western states, the U. S. EPA agreed to try a common sense approach to the problem. In May 1996, the U. S. EPA adopted a new policy for natural events. The Natural Events Policy (NEP) allows states flexibility to meet the PM_{10} standard, while providing public health protection. The NEP applies to three categories of natural events that can cause high PM_{10} levels: (1) volcanic and seismic (earthquake) activities; (2) wildfires; and, (3) high wind events. Under this policy, particulate matter (or dust) exceedances generated by high winds are considered natural events if they occur over natural undisturbed areas or areas that have been disturbed by human activities with appropriate controls in place. These "natural events" exceedances may be excluded when making a determination on air quality compliance with the federal standard. However, if controls are not in place for human caused sources of windblown dust, the exceedances due to high winds cannot be excluded.

This policy outlines requirements in general terms and urges local stakeholder involvement in developing the actual plan. These general requirements include public health education, public notification, and control of human-caused sources of windblown dust where feasible and effective. If a state, with stakeholder involvement, develops and implements a plan that responds to public health effects influenced by natural events, the U. S. EPA allows exclusion of natural event exceedances in the determination of an area's air quality designation.

The Clark County Department of Air Quality and Environmental Management and local governmental agencies are encouraged to develop such a plan to protect public health during natural events. The plan includes:

- public education about the harmful effects of particulate matter;
- public notification when air quality is or will be affected by high-wind events;
- programs to enable the general public and high risk individuals to minimize their exposure to air laden with particulate matter; and
- actions to reduce particulate matter (when possible) during high-wind events.

Since Clark County's exceedances are typically due to blowing dust driven by high winds, these actions could include enhanced public outreach efforts, requirements for additional dust suppression during a wind event and additional enforcement/compliance efforts by air regulatory agencies during wind events.

HOW DOES THIS POLICY AFFECT Clark COUNTY?

Dust storms are the most common natural events causing particulate matter air pollution in Clark County. Clark County could fail to reach attainment of the NAAQS for PM_{10} as projected in the June 2001 PM_{10} State Implementation Plan (SIP). By excluding uncontrollable wind events from consideration in the determination of Clark County air quality attainment status, Clark County will avoid the preparation of additional five percent (5%) per year, State Implementation Plan revisions[1].

FUTURE ACTIONS

Once a natural event action plan is developed and implemented for Clark County, the plan's effectiveness is reviewed and evaluated every five years. The re-evaluation process evaluates the plan's effectiveness and feasibility and makes any necessary changes. Public education continues for both health concerns and available control measures.

FOR MORE INFORMATION

Call the Clark County Department of Air Quality and Environmental Management at (702) 455-5942 or visit our WEB Site at www.co.clark.nv.us/air_quality/index.htm

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[1] Federal Clean Air Act (CAA) SEC. 189. PLAN PROVISIONS AND SCHEDULES FOR PLAN SUBMISSIONS (b) Serious Areas. (d) Failure to Attain. - In the case of a Serious PM_{10} nonattainment area in which the PM_{10} standard is not attained by the applicable attainment date, the State in which such area is located shall, after notice and opportunity for public comment, submit within 12 months after the applicable attainment date, plan revisions which provide for attainment of the PM_{10} air quality standard and, from the date of such submission until attainment, for an annual reduction in PM_{10} or PM_{10} precursor emissions within the area of not less than five percent (5%) of the amount of such emissions as reported in the most recent inventory prepared for such area.

Appendix C
Exhibit 6 - Particulate Air Pollution – Particulate Matter Air Pollution From Natural Events – Briefing Sheet (Spanish Version)

Revised in August 2004

PROTEGIENDO EL AIRE QUE COMPARTIMOS

LA CALIDAD DEL AIRE

CONTAMINACIÓN DEBIDO A MATERIAL PARTICULADO EN EL AIRE

CONTAMINACIÓN DEBIDO A MATERIAL PARTICULADO EN EL AIRE QUE PROVIENE DE EVENTOS NATURALES

ANTECEDENTES

La contaminación por material particulado (PM) en el aire es causado por pequeñas partículas de polvo que flotan en el aire. Esas pequeñas partículas, diez (10) micras o menos en tamaño, se les conoce como PM_{10}. Diez (10) micras corresponden a la séptima parte del diámetro de un cabello humano. Esas pequeñas partículas son lo suficientemente pequeñas como para que las inhalemos profundamente en nuestros pulmones. Generalmente asociamos la contaminación del aire con actividades humanas tales como la construcción, modificación de terrenos baldíos; manejar en caminos no pavimentados y el hollín industrial. Los eventos naturales, tales como ventarrones, erupciones volcánicas, terremotos e incendios forestales, también afectan la calidad del aire. Estos eventos naturales producen material particulado aéreo de polvo y de hollín que pueden causar problemas de salud. La Agencia de Protección del Medio Ambiente de los Estados Unidos (U.S. EPA) regula el material particulado, por medio de las normas que rigen la calidad del aire basados en la salud.

EFECTOS SOBRE LA SALUD ASOCIADOS CON LA CONTAMINACIÓN DE MATERIAL PARTICULADO EN EL AIRE

PM_{10} se compone de una variedad de substancias, tales como polvo, humo y hollín. Esas diminutas partículas, son tan pequeñas que escapan a nuestras defensas naturales y penetran a lo más profundo de nuestros pulmones. Altas cantidades de PM_{10} pueden aumentar la severidad y el número de los ataques de asma, pueden causar una bronquitis más severa y otras enfermedades pulmonares y pueden reducir la habilidad del cuerpo para combatir infecciones. Los infantes, niños, ancianos, personas que sufren de

enfermedades pulmonares crónicas y cualquier persona que hace ejercicio (debido a que aspiran más aire y por lo tanto más partículas contaminantes) son los que corren alto riesgo.

Además de los efectos sobre la salud, el polvo generado por ciertas actividades, como vientos fuertes, reducen la visibilidad y pueden causar accidentes. La contaminante por material particulado puede perjudicar la salud de los animales como también puede perjudicar la vegetación, causar daños a la propiedad y en general reducir la calidad de la vida.

EL PROBLEMA

El Condado de Clark, está trabajando diligentemente para lograr que el nivel del material particulado en el aire (PM_{10}) esté de acuerdo con las Normas Ambientales de la Calidad del Aire a Nivel Nacional. (NAAQS). Sin embargo las tormentas de polvo generadas por los vientos fuertes han creado niveles insalubres en lo que respecta a partículas aéreas dentro del Condado de Clark. Las condiciones de una mayor sequía, baja precipitación regional y vientos que con frecuencia exceden el umbral de 25 MPH con ráfagas de 40 millas por hora y aún más altas, imponiéndose sobre terrenos naturales y desarrollados y así se sobrepasa el NAAQS para PM_{10}. La frecuencia y severidad de esos excedentes en el Condado de Clark, van más allá de las normas Nacionales. Mientras que mucho del polvo en el Condado de Clark es causado por eventos naturales tales como vientos de alta velocidad y condiciones de sequía por toda la zona, el número de fuentes de polvo provocadas por el hombre también están aumentando debido al crecimiento de la población y urbanización del Condado de Clark.

Para proteger la salud del público el U.S. EPA señala zonas en donde los niveles de las partículas del aire exceden las normas como “áreas de incumplimiento.” Entonces los gobiernos estatales y locales deben de adoptar planes para reducir la contaminación del aire en esas zonas para proteger la salud de la población. Los requisitos Federales para esos lugares están enfocados en reducir la contaminación del aire provocada por las industrias y vehículos de motor. Requisitos estatales y locales regidos por el gobierno federal controlan las fuentes de polvo. Sin embargo el enfoque tradicional de controlar industrias, procesos, emisiones de tubos de escape, y de fuentes de polvo no solucionan el problema de PM_{10} creado por eventos naturales, tales como polvaredas causadas por vientos fuertes. Estudios científicos y la experiencia en el mundo real, demuestran que los vientos fuertes pueden vencer aún las mejores medidas de control del polvo. Los vientos fuertes también causan excedentes de NAAQS para PM_{10} en las zonas del desierto natural que no han sido alteradas por la actividad humana. Debido a esto, en 1996 los estados occidentales solicitaron a U.S. EPA un nuevo reglamento para la contaminación ambiental causada eventos naturales.

POLÍTICAS DE U.S. EPA ANTE EVENTOS NATURALES

Ante el pedido urgente de algunos estados occidentales, el U.S. EPA accedió a tratar de resolver el problema usando el sentido común. En Mayo de 1996, el U.S. EPA adoptó

una nueva política ante eventos naturales. Esta nueva política le permite a los estados tener flexibilidad para lograr las normas de PM_{10}, mientras provee al público protección para la salud. El NEP tiene que ver con tres categorías de eventos naturales que pueden ocasionar PM_{10} más altos: 1) erupciones volcánicas y movimientos sísmicos (terremotos); (2) incendios forestales; y (3) vientos de alta velocidad. Según esta política, los excedentes de material particulado (o polvo) generados por ventarrones, son considerados eventos naturales, si esto ocurre en zonas vírgenes o en lugares que han sido alterados por el hombre con regulamentos vigentes adecuados. Estos excedentes de "eventos naturales" se pueden excluír cuando se hace una determinación sobre el cumplimiento de las normas federales de la calidad del aire. Sin embargo, si no existen controles adecuados para los casos donde los humanos son los causantes de que haya polvo en el aire, los excedentes debido a vientos fuertes, no podrán ser excluídos.

Esta política delinea los requisitos en términos generales y urge a los interesados a participar para que en realidad se desarrolle el plan. Estos requisitos generales incluyen instrucción relacionada con la salud pública, notificación al público, y control de las fuentes de polvo que levanta el viento generadas por el hombre, siempre y cuando sea factible y efectivo. Si un estado, con la participación de las partes interesadas, desarrolla e implementa un plan que responda a los efectos de los eventos naturales en la salud pública, el U.S. EPA permite la exclusión de excedentes causados por actos de la naturaleza en la determinación de la designación de la calidad del aire de una zona.

El Departamento de Control de Calidad del Aire en el Condado de Clark y las agencias de gobiernos locales, han sido alentados a desarrollar dicho plan para proteger la salud pública, durante actos de la naturaleza. El plan incluye:

- Instrucción pública, acerca de los efectos dañinos del material particulado.
- Notificación pública cuando la calidad del aire es o será afectada por eventos naturales.
- Programas para permitir que el público en general y los individuos que corren un alto riesgo minimicen su exposición al aire cargado de materia particulada; y
- Tomar acciones para la reducción de materia particulada (cuando sea posible) durante eventos de vientos fuertes.

Puesto que los excedentes en el Condado de Clark se deben típicamente a polvo levantado que acarrean los vientos de alta velocidad, esta acción pudiera incluir un esfuerzo del público en mayor proporción, requisitos para la supresión de polvo adicional durante tormentas de viento y un mayor esfuerzo para cumplir/ejecutar las normas de las agencias que regulan la calidad del aire durante vientos fuertes.

¿CÓMO PUEDE ESTA POLÍTICA AFECTAR AL CONDADO DE CLARK?

Las tormentas de polvo, son los incidentes más comunes que causan contaminación de materia particulada en el Condado de Clark. El Condado de Clark podría fallar en alcanzar las metas establecidas de la NAAQS para PM_{10}, tal como se proyectó en Junio

del 2001, en la Implementación del Plan de PM_{10} para el Estado (SIP). Al excluir los incidentes de viento incontrolables en la consideración para determinar la meta de alcanzar un estado de cumplimiento de la calidad del aire en el Condado de Clark, el Condado de Clark evitará la preparación de un cinco por ciento (5%) adicional de revisiones del Plan Estatal de Implementación.[1]

ACCIONES FUTURAS

Una vez que se desarrolla un Plan de acción para eventos naturales, en el Condado de Clark, la efectividad de dicho plan será evaluado y revisado cada cinco años. El proceso de re-evaluación analiza la efectividad del plan y su viabilidad y hará los cambios necesarios. La instrucción del público continuará, tanto para los efectos sobre la salud como para medidas de control disponibles.

PARA RECIBIR MAYOR INFORMACIÓN

Llame al Departamento de Control de Calidad del Aire del Condado de Clark al (702) 455-5942 o visítenos en nuestro sitio de la Internet en www.co.clark.nv.us-quality-index.htm

[1] La Ley General Federal de Aire Limpio (CAA) SEC. 189 PROVISIONES PARA LOS PLANES Y CALENDARIZACIÓN PARA LA PRESENTACION DEL PLAN. (b) Areas Severas (d) Incumplimiento – En el caso severo, de no lograr un PM_{10} en la zona en la cual la norma del PM_{10} no se logra en la fecha indicada, el Estado puede, en tal zona, después de la debida notificación y oportunidad para que el público haga comentarios, presentar dentro de doce meses después de la fecha indicada para el cumplimiento, un plan con revisiones que provea el logro de las normas del control del aire del PM_{10}, y a partir de la fecha de dicha presentación hasta que sea logrado, para una reducción anual de PM_{10}, o de emisiones precursoras de PM_{10}, dentro de la zona de no menos de un cinco por ciento (5%), de las cantidades de tales emisiones como se informa en el inventario más reciente preparado para tal zona.

Exhibit 7

"The Natural Events Action Plan", a presentation by the Clark County Department of Air Quality & Environmental Management"

Note: Slides are read left to right →

Protecting the air we share

Air Quality

Clark County
Natural Events Action Plan (NEAP) for High-Wind Events

(Las Vegas & Apex Valley's)

U. S. Environmental Protection Agency Requirements

- Natural Events Policy (NEP)
  - May 30, 1996 U. S. EPA Memorandum
- Protecting Public Health when PM_{10} Standards are violated due to Natural Events
- Natural Events:
  - Volcanic and Seismic Activity
  - Wild Land Fires
  - High-Wind Events

Natural Events Policy

- The guiding principles of the Natural Events policy are:
  - Federal, State, and local air quality agencies must protect public health
  - The public must be informed whenever air quality is unhealthy
  - All valid ambient air quality data should be submitted to the U. S. EPA Aerometric Information Retrieval System (AIRS) and made available for public access
  - Reasonable measures safeguarding public health must be taken regardless of the source of PM_{10} emissions
  - Emission controls should be applied to sources that contribute to exceedances of the PM_{10} NAAQS when those controls will result in fewer violations of the standards (BACM)

High Wind Event Analysis & Justification Requirements

- High-Wind Events in the Las Vegas Valley in 2002, 2003, and 2004 were:
  1. March 1, 2002
  2. March 13, 2002
  3. April 15, 2002
  4. April 17, 2002
  5. October 29, 2003
  6. October 30, 2003
  7. April 28, 2004
  8. May 11, 2004

Note: Slides are read left to right ⟶

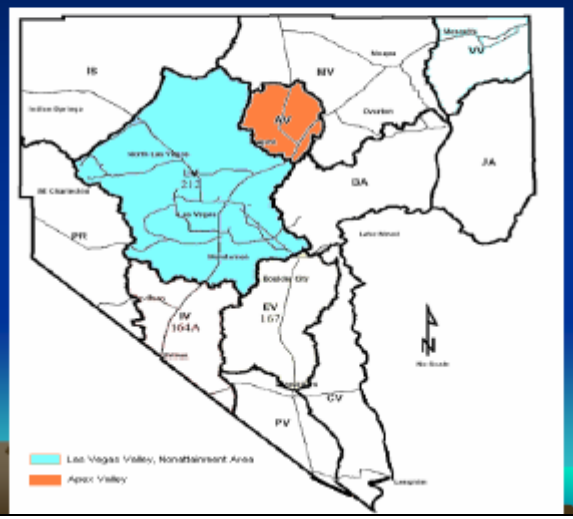
Elements of the Plan

- Public Outreach and Education
  - Notification made to the public of a High-Wind Event (Imminent or Occurring)
- Air Quality Advisory Notice
  - To Media, Public
  - FAX to Selected Stationary Sources, Dust Permit Permittees
- Air Quality Alert/Warning (Issued)
- Best Available Control Measure (BACM) Application
- Compliance/Enforcement Actions

Map of the NEAP Coverage Areas

- Only the Las Vegas Valley (Blue) and the Apex Valley (Brown) are specifically covered by this NEAP
- NEAP will have several elements that will address any events, which may occur in the future and will standardize the methodology in which the events will be handled to protect the health of the public

Map of the NEAP Area – All Clark County Airsheds

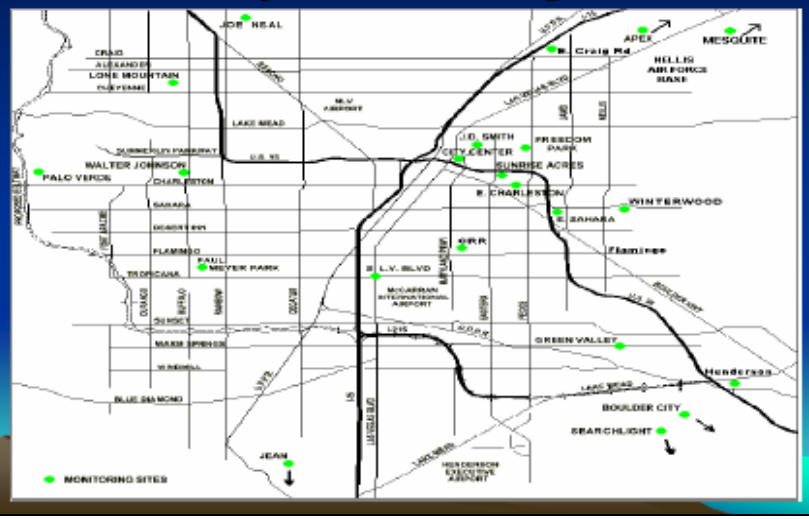


Air Quality Monitoring Network

- Clark County DAQEM operates a total of twenty-two (22) Air Quality Monitoring Sites within the Air Quality Monitoring Network
- Seventeen (17) sites are within the Las Vegas Valley – Hydrographic Area 212
- One (1) site is located in the Apex Valley - Hydrographic Areas 216/217

Note: Slides are read left to right ⟶

Clark County DAQEM Air Quality Monitoring Network



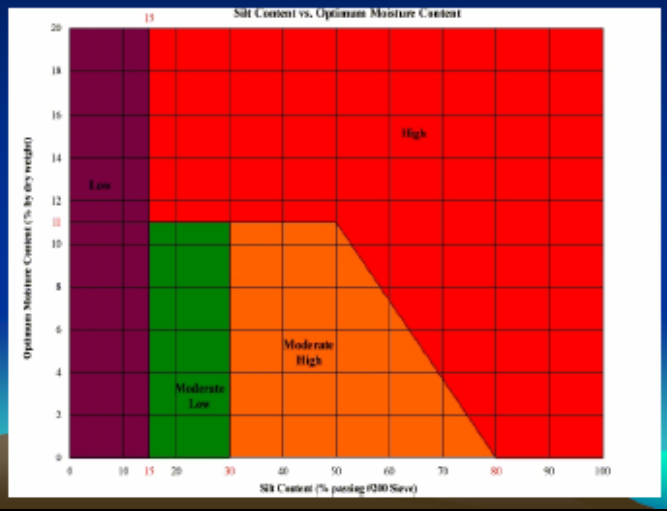
Soil Type Categories

- Soil types are classified into five categories (high, moderately high, moderately low, low, and slight) based on their particulate emission potential (PEP)
- PEP is determined by soil silt content (measured by the soil percentage that will pass through a 200-mesh sieve) and optimum moisture content (measured by the percent of moisture necessary to compact soils)

Soil Type Categories (cont'd)

- A graph, which plots measured optimum moisture content vs. silt content for Las Vegas Valley soils, is used to classify PEP

Silt Content vs. Optimum Moisture Content

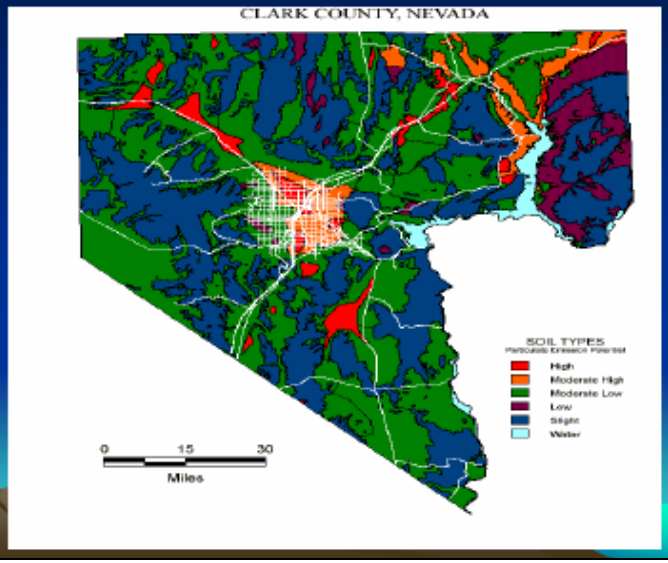


Note: Slides are read left to right →

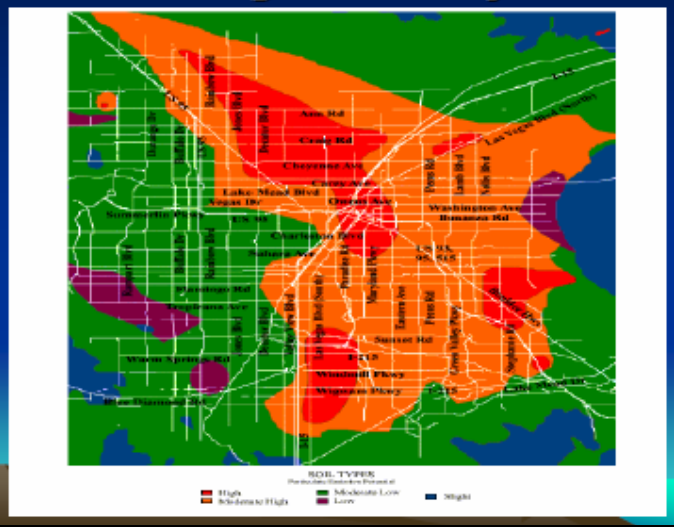
Soil Type Categories (cont'd)

- If optimum moisture content or silt content is not known for a specific project location, maps of Clark County and Las Vegas Valley delineating the five soil type categories are provided next
- Soil type category maps are to be used as a guideline only

County Soils Type Map



Valley Soils Type Map – Las Vegas Valley



Public Notification Program and Health Advisory Program

- The Natural Events Policy states that advisories should inform the public that a dust episode is imminent, currently taking place, or likely to occur

Note: Slides are read left to right →

Media Advisory

Public Communications • 500 S. Grand Central Parkway, 6th Fl., Las Vegas, NV 89155-1111 • Fax: (702) 455-3558

Contact: Stacey Welling
Sr. Public Information Analyst

Phone: (702) 455-3201
Cell: (702) 249-3823
E-mail: stac@co.clark.nv.us

For Immediate Release **Wednesday, March 26, 2003**

Air Quality Officials Issue Wind Advisory

Wednesday Forecast Calls for 45-Mile-Per-Hour Gusts

With strong winds expected in Southern Nevada this afternoon and tonight, Clark County Air Quality officials are advising residents and operators of local construction sites to brace for blowing dust and higher levels of PM-10.

The Las Vegas office of the National Weather Service predicts sustained winds of 25 to 35 miles an hour by Wednesday evening in Southern Nevada, with some gusts reaching 45 miles an hour. Under those conditions, Air Quality officials say people with asthma, emphysema and other respiratory diseases should consider staying indoors. As part of this advisory, officials also encourage construction site operators to take steps to check and stabilize their property for blowing dust and debris as required by local air quality regulations.

High winds in excess of 25 miles per hour tend to make the valley's PM-10 problems worse. PM-10 stands for particulate matter, primarily dust, 10 microns or less, which is smaller than the diameter of a human hair. It's a type of inhalable air pollution that aggravates respiratory diseases such as bronchitis or asthma. **During windy conditions, children, seniors and people with chronic respiratory problems are urged to stay indoors; Air Quality officials also advise all residents to limit outdoor exercise.**

The Las Vegas Valley currently does not meet the federal 24-hour air quality standard for PM-10. The U.S. Environmental Protection Agency, however is reviewing a plan that meets those standards. An important component of the plan is for the county's Air Quality Department to step up efforts to educate the public about the health hazards of dust and the possible economic consequences of not meeting federal air quality standards.

"The Las Vegas Valley faces the loss of millions of dollars in federal highway funding and other sanctions if we as a community don't do a better job controlling dust," said Christine Robinson, director of the Air Quality Management Dept. "We may not be able to control Mother Nature, but we certainly can work with residents and local industry to cut down on man-made sources of dust contributing to the problem."

Residents are encouraged to call Air Quality's dust-complaint hotline at 385-DUST to report excessive amounts of blowing dust. To find out more about local air quality issues, visit the department's website at www.accessclarkcounty.com.

###

News release also available on the Internet at www.accessclarkcounty.com

Mary Kincaid-Chauncey, Chairwoman • Chip Maxfield, Vice Chairman • Yvonne Atkinson Gates • Mark A. Jacobs • Rory Reid • Myrna Williams • Bruce L. Woodbury / Thom Reilly, County Manager

Mail-Out Education Campaign

(English Version)

Clark County Department of Air Quality & Environmental Management

Dust Storms & Your Health

Particulate Matter, also known as "dust" is a big problem in Clark County. Dust is among the most harmful of all air pollutants. Activities such as construction and driving on unpaved roads cause dust to become airborne. Dust can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infection.

TIPS TO REDUCE DUST

- √ Cover dirt piles or unpaved roads and other dust sources.
- √ Don't take dust into your vehicle.
- √ Avoid ATV riding in sensitive areas.
- √ Water off heavy equipment or cover it with sheet, rock or dense breathable landscaping.
- √ If you own or operate an industrial source of PM, comply with local rules that apply to your operation. Work with local agencies to develop strategies that will further reduce PM emissions.
- √ Be involved with air quality improvement programs in your community. Call the Department of Air Quality's dust complaint hotline at 385-DUST (3878) to report excessive amounts of blowing dust.

Air Quality

Protecting the air we share

500 S. Grand Central Parkway
P.O. Box 555210
Las Vegas, NV 89155-5210
(702) 455-5942
www.accessclarkcounty.com

Mail-Out Education Campaign

(Spanish Version)

Departamento de Control de Calidad del Aire y Manejo Ambiental del Condado de Clark

Las Tormentas de Polvo Y Su Salud

El Material Particulado, también conocido como "polvo" es un gran problema en el Condado de Clark. De los contaminantes del aire, el polvo es uno de los más dañinos. El trabajo en la construcción y el conducir en calles no pavimentadas causan que el polvo se levante en el aire. El polvo puede aumentar el número y la severidad de ataques de asma, causar o empeorar bronquitis y otras enfermedades pulmonares, y reducir la habilidad del organismo para combatir infecciones.

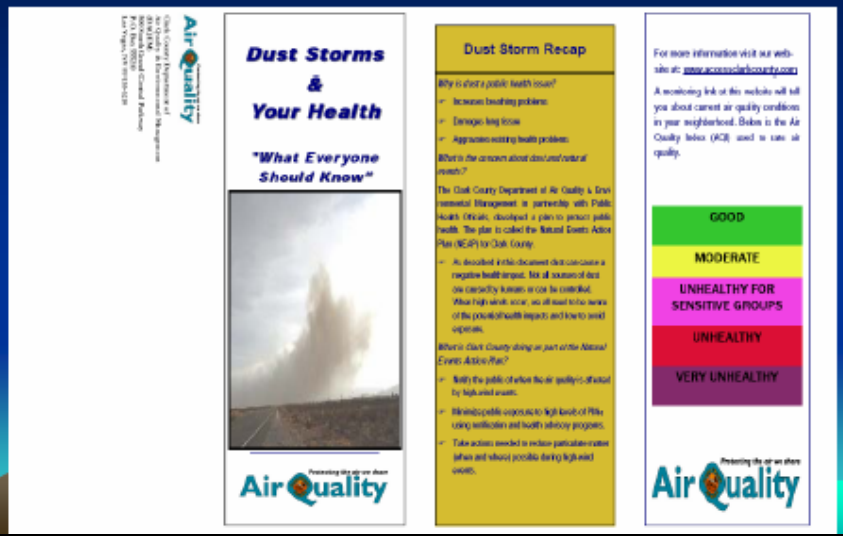
Air Quality

Protegiendo el aire que nos rodea

500 S. Grand Central Parkway
P.O. Box 555210
Las Vegas, NV 89155-5210
(702) 455-5942
www.accessclarkcounty.com

Educational Brochures

(English Version)



Air Quality

Clark County Department of Air Quality & Environmental Management
500 South Grand Central Parkway
P.O. Box 555210
Las Vegas, NV 89155-5210

Dust Storms & Your Health

"What Everyone Should Know"

Air Quality

Protecting the air we share

Dust Storm Recap

Why is dust a public health issue?

- Increases breathing problems
- Damages lung tissue
- Aggravates existing health problems

What is the concern about dust and natural events?

The Clark County Department of Air Quality & Environmental Management in partnership with Public Health Officials, developed a plan to protect public health. The plan is called the Natural Events Action Plan (NEAP) for Clark County.

- As described in this document dust can cause a negative health impact. Not all sources of dust are caused by humans or can be controlled. When high winds occur, we all need to be aware of the potential health impacts and how to avoid exposure.

What is Clark County doing as part of the Natural Events Action Plan?

- Notify the public of when the air quality is affected by high wind events.
- Minimize public exposure to high levels of PM by using notification and health advisory programs.
- Take action needed to reduce particulate matter (when and where possible during high wind events.

For more information visit our website at: www.accessclarkcounty.com

A monitoring link on this website will tell you about current air quality conditions in your neighborhood. Below is the Air Quality Index (AQI) used to rate air quality.

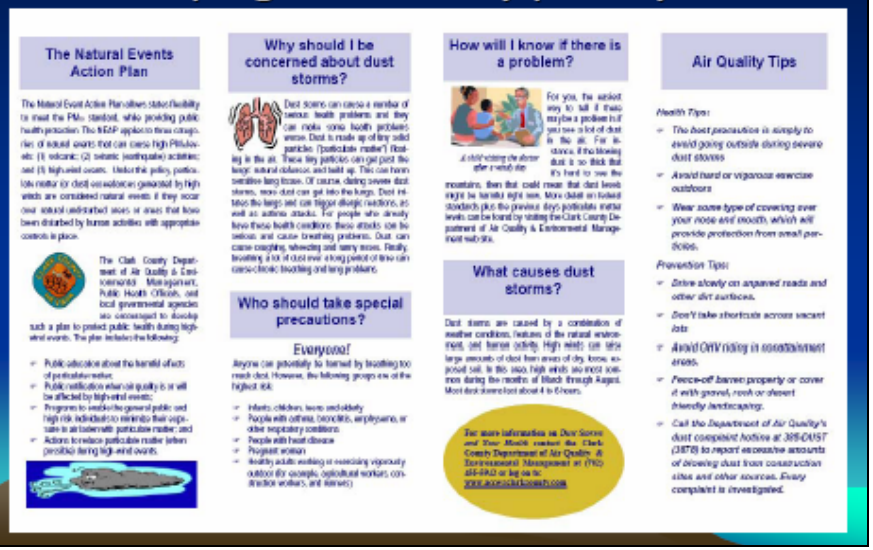
GOOD
MODERATE
UNHEALTHY FOR SENSITIVE GROUPS
UNHEALTHY
VERY UNHEALTHY

Air Quality

Protecting the air we share

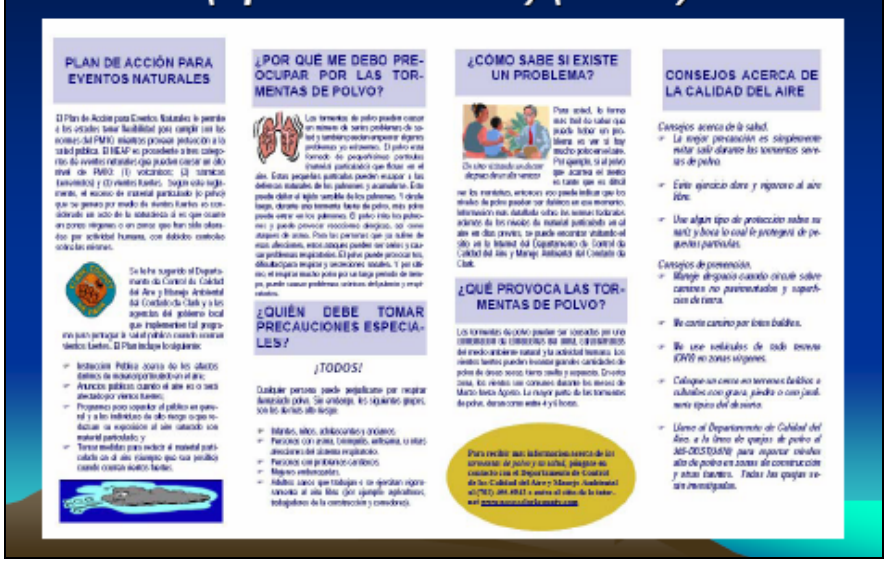
Note: Slides are read left to right →

Educational Brochure
(English Version) (Inside)



Educational Brochures
(Spanish Version)

Educational Brochures
(Spanish Version) (inside)



Questions ?

Please call:

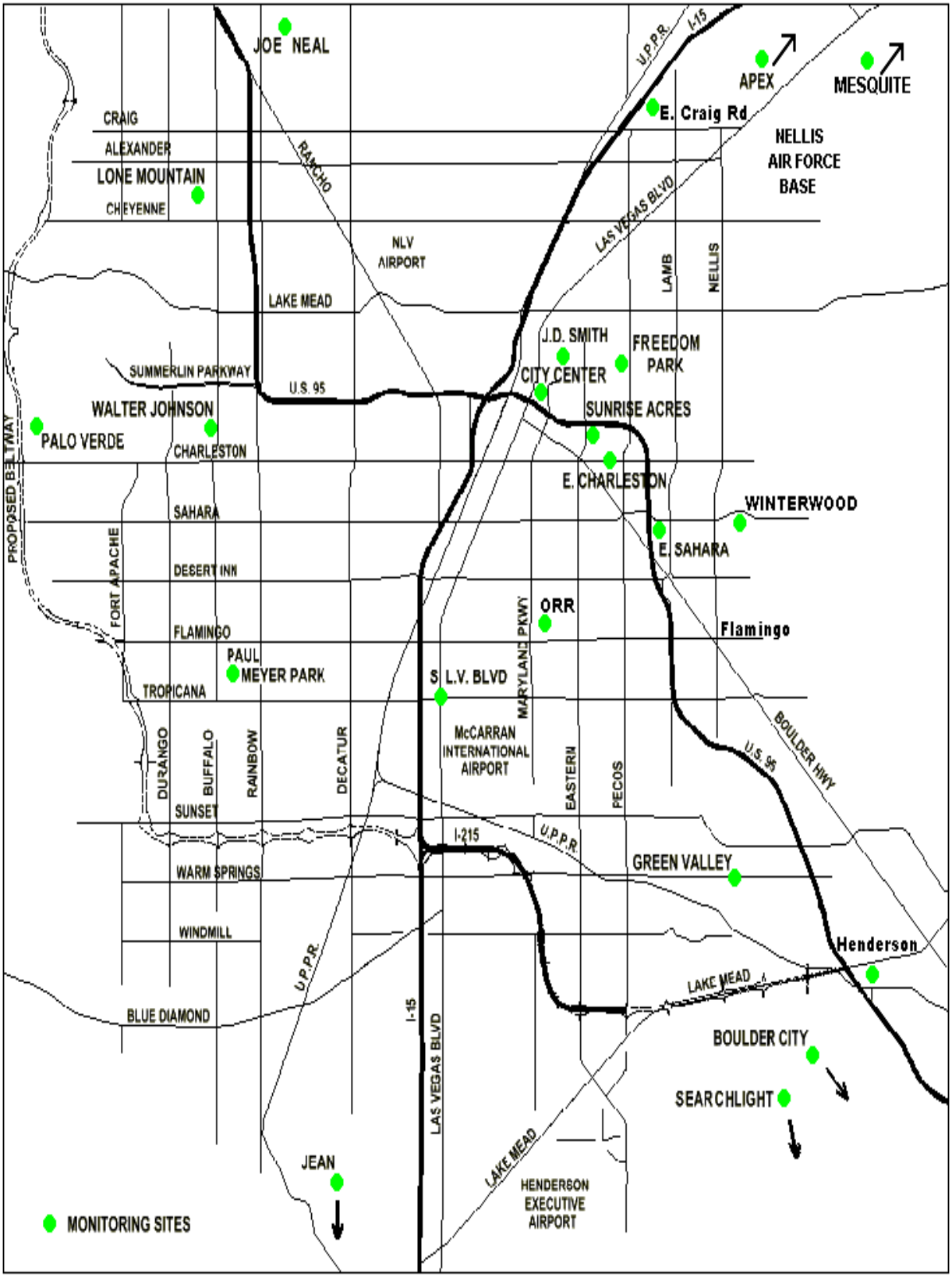
Department of Air Quality & Environmental Management

(702) 455-5942

Exhibit 8

"PM_{10} Monitoring Site Network Map"

Appendix C
Exhibit 8 - PM_{10} Monitoring Site Network Map



Clark County Department of Air Quality Management – Air Quality Monitoring Division, Monitoring Sites Las Vegas Valley & Outline Areas

Exhibit 9

"Media Advisory" - An Example of a Air Quality Wind Advisory

Media Advisory

Public Communications ■ 500 S. Grand Central Parkway, 6th Fl., Las Vegas, NV 89155-1111 ■ Fax: (702) 455-3558

Contact: **Stacey Welling**
Sr. Public Information Analyst

Phone: **(702) 455-3201**
Cell: **(702) 249-3823**
E-mail: **stac@co.clark.nv.us**

For Immediate Release **Wednesday, March 26, 2003**

Air Quality Officials Issue Wind Advisory

Wednesday Forecast Calls for 45-Mile-Per-Hour Gusts

With strong winds expected in Southern Nevada this afternoon and tonight, Clark County Air Quality officials are advising residents and operators of local construction sites to brace for blowing dust and higher levels of PM-10.

The Las Vegas office of the National Weather Service predicts sustained winds of 25 to 35 miles an hour by Wednesday evening in Southern Nevada, with some gusts reaching 45 miles an hour. Under those conditions, Air Quality officials say people with asthma, emphysema and other respiratory diseases should consider staying indoors. As part of this advisory, officials also encourage construction site operators to take steps to check and stabilize their property for blowing dust and debris as required by local air quality regulations.

High winds in excess of 25 miles per hour tend to make the valley's PM-10 problems worse. PM-10 stands for particulate matter, primarily dust, 10 microns or less, which is smaller than the diameter of a human hair. It's a type of inhalable air pollution that aggravates respiratory diseases such as bronchitis or asthma. **During windy conditions, children, seniors and people with chronic respiratory problems are urged to stay indoors; Air Quality officials also advise all residents to limit outdoor exercise.**

The Las Vegas Valley currently does not meet the federal 24-hour air quality standard for PM-10. The U.S. Environmental Protection Agency, however is reviewing a plan that meets those standards. An important component of the plan is for the county's Air Quality Department to step up efforts to educate the public about the health hazards of dust and the possible economic consequences of not meeting federal air quality standards.

"The Las Vegas Valley faces the loss of millions of dollars in federal highway funding and other sanctions if we as a community don't do a better job controlling dust," said Christine Robinson, director of the Air Quality Management Dept. "We may not be able to control Mother Nature, but we certainly can work with residents and local industry to cut down on man-made sources of dust contributing to the problem."

Residents are encouraged to call Air Quality's dust-complaint hotline at 385-DUST to report excessive amounts of blowing dust. To find out more about local air quality issues, visit the department's website at www.accessclarkcounty.com.

###

News release also available on the Internet at www.accessclarkcounty.com

Clark County Board of Commissioners
Mary Kincaid-Chauncey, Chairwoman ■ Chip Maxfield, Vice Chairman ■ Yvonne Atkinson Gates ■ Mark A. James ■ Rory Reid ■ Myrna Williams ■ Bruce L. Woodbury / Thom Reilly, County Manager

Exhibit 10

***"Clark County Department of Air Quality & Environmental Management Standard Operating Procedure (SOP) for a High-Wind Air Quality Advisory Notice to be issued to Dust Control Permit Permittees and Operators of Applicable Stationary Sources"* with an example of a FAX to Construction Industry Permittees**

Appendix C
Exhibit 10 – High-Wind Advisory Protocol with Example of FAX Sent to Dust Control Permittees

Clark County Department of Air Quality & Environmental Management (DAQEM) Standard Operating Procedure (SOP) for a High-Wind Air Quality Advisory Notice to be issued to Dust Control Permit Permittees and Operators of Applicable Stationary Sources

The following outlines the standard operating procedure for implementation of the system to notify DAQEM permittees of a forecasted high-wind event.

The DAQEM staff serving as: The NEAP Coordinator and the Assistant Planning Manager from the Planning and Projects Section will monitor the National Weather Service (NWS) forecast. A forecast of 25 mph sustained winds and/or gusts of 40 mph or greater, initiates a discussion about the need to issue an (High-Wind) Air Quality Advisory by the DAQEM.

The DAQEM decision authority members are: the NEAP Coordinator; Compliance Manager; Compliance Supervisor; Assistant Planning Manager, and the Public Information and Education Coordinator (PIEC).

A majority vote, with all members present, **is not** necessary for the authority to enact a High-Wind Air Quality Advisory. At a minimum, the NEAP coordinator, Compliance representative and the PIEC will be involved. In the event of a tie in the decision vote, the Compliance Manager will make the final decision.

The decision to issue a High-Wind Air Quality Advisory Fax will be made within a reasonable time frame (30 minutes).

National Weather Service (NWS) Wind Advisory Language

The standard wind advisory language issued by the NWS varies with each forecasted event or alert. The Wind Advisory always lists the applicable area affected by the advisory and a length of time that the advisory is in effect. Further, the NWS posts the direction, wind speed and expected gusts resulting from the event. An example of a NWS advisory is as follows:

"WIND ADVISORY FOR THE LAS VEGAS VALLEY FOR LATE TONIGHT THROUGH SUNDAY AFTERNOON"
Urgent – Weather Message National Weather Service Las Vegas NV 3:41 PM PST Mon Mar 17 2003

…*A Wind Advisory Has Been Issued For Tonight Through Sunday Afternoon…*

Southwest Winds of 20 to 30 Mph with Gust to 40 mph Will Increase Overnight Tonight Ahead Of A Strong Cold Front. Winds Will Then Shift To The Northwest And Become 25 to 35 Mph With Gust To Over 45 Mph Behind The Front. These Winds Will Begin To Decrease Sunday Afternoon.

In conjunction with the advisory above, the NWS posts this statement:

The Clark County Department of Air Quality & Environmental Management Has Also Issued A Health Advisory For The Las Vegas Valley Due To The Potential For Unhealthful Levels Of Inhalable Particulate Matter Resulting From Wind Gust Exceeding 40-Miles Per Hour. Sensitive Persons With Chronic Respiratory Conditions…Including Both Elderly Citizens And Young Children…Should Stay Indoors Until The Wind Subsides.

The National Weather Service High-Wind Advisory language above triggers the procedures as discussed in the next section.

<u>High-Wind Air Quality Advisory Procedure for Clark County</u>:

A High-Wind Air Quality Advisory Fax is sent via Clark County's mass faxing server to all Dust Control Permit Permittees and selected Operators of Stationary Sources 12 to 24 hours in advance of the event. Access to the fax server is provided to the DAQEM staff positions listed above. The Compliance Manager is designated to initiate the fax and in his absence the Compliance Supervisor is responsible for the issuance of the Fax.

The PIEC, or designee, is responsible for notifying the Clark County, Public Information Officer, to issue a high-wind air quality **Advisory**, or high-wind air quality **Alert.** The Clark County PIO issues a prepared public health advisory or public health alert to the media.

1. **ADVISORY –** The Las Vegas Office of the National Weather Service confirms forecasted wind events of sustained winds of 25 miles per hour or more with frequent gusts of 40 miles per hour or more.
2. **ALERT –** Meteorological and ambient monitoring data confirm that the high-wind event is happening.

DAQEM Compliance Responsibilities:

Twelve (12) to twenty-four (24) hours in advance of a forecasted high-wind event by the National Weather Service (NWS), the Compliance Supervisor, or designee, is responsible for ensuring the deployment of all available Compliance Officers not already in the field. The purpose of ensuring this deployment is to reiterate the importance of aggressive compliance/enforcement in the field in addition to their routine duties prior to high winds occurring. Furthermore, the Compliance Supervisor, or designee, is responsible for initiating the Fax to Dust Control Permit Permittees and Stationary Source permit holders, initiating the telephone contact list to selected contractors.

During a weekend/holiday high-wind events, the Compliance Supervisor is responsible for ensuring deployment, of a minimum of four (4) Compliance Officers, as designated for compliance and enforcement activities during the event for enforcement / compliance activities, in case not all Permittees or Construction sites received the pre-wind event facsimile. Additionally, during the High-Wind Event, the Compliance Officers are responsible for documentation gathering (digital photography, statements of occurrences, witness statements, etc.) to assist the DAQEM Planning and Projects Staff in the justification submittal packages required for an event.

Distribution of the mass Fax or press releases may trigger return calls to DAQEM. These calls shall be routed to the Compliance Manager or the Compliance Supervisor.

DAQEM Information Technology (IT) responsibilities:

1. Maintain the Fax to Dust Permit Permittees and the selected Stationary Source list and update as necessary, to ensure validity of the list.

DAQEM Public Information and Education Coordinator (PIEC) responsibilities:

1. Maintain “Boiler Plate” (template) press releases in cooperation with the Clark County Public Information Officer (PIO) representative.

Exhibit 10 – Example FAX sent to Dust Control Permittees

Protecting the air we share

Air Quality

CLARK COUNTY NEVADA

HIGH WIND NOTICE
Attention Dust Control Permit Holders
Contractors and Stationary Sources

The National Weather Service has forecast strong sustained winds in excess of 25 mph with higher gust for Tuesday April 1, 2003.

The Department of Air Quality & Environmental Management (DAQEM) directs each permittee to immediately inspect their site and employ Best Available Control Measures (BACM) to stabilize all disturbed soils to reduce wind blowing dust. Permittees with multiple sites should contact each site Superintendent to ensure compliance with the DAQEM Air Quality Regulations.

DAQEM Compliance Officers will inspect construction and stationary source sites during the wind episode and any observed air quality violation will receive a Notice of Violation (NOV).

Please direct questions about this Wind Advisory to a DAQEM Compliance Supervisor at 702-455-5942.

Exhibit 11

Medical Advisory Committee (MAC) Protocol

Appendix C
Exhibit 11 - Medical Advisory Committee (MAC) Protocol

Medical Advisory Committee (MAC) PROTOCOL

1. Introduction

To reduce the health impacts of dust pollution on the community the Department of Air Quality and Environmental Management (DAQEM) established the *Natural Events Action Plan (NEAP)* for the Las Vegas Valley. The NEAP provides for early warning to the community of high-wind events that may cause increased amounts of dust pollution in the air. The NEAP program also provides early warning to and also directs permitted sources (construction sites) to restrict or curtail activities during high-wind events.

DAQEM and the local municipalities, including the cities of Las Vegas, North Las Vegas, Henderson, and Boulder City recognized the need to provide public health information about the effects of wind-blown dust. The Medical Advisory Committee (MAC), established by this section, provides a source of this information. Members of the MAC will provide timely public health information to the public, including members of the media, local schools and government entities.

2. Membership

Memberships of the Medical Advisory Committee will, as much as practicable, include physicians from such disciplines as pulmonology, family and general medicine, geriatrics, pediatrics and industrial health. The DAQEM in cooperation with the Clark County Public Information Office and the Clark County Health District Public Information Office will maintain a list of the current membership.

3. MAC Operation

Members of the MAC will be contacted by DAQEM or the county's Public Information Office upon request for health-related information following the issuance of an air quality advisory. General information will either be disseminated by an available physician or via DAQEM staff who have consulted a committee member based on the requested information.

The following receive Air Quality Advisories:

- Local media (TV, radio and newspapers),
- Construction sources,
- Clark County School District,
- Clark County Health District,
- Clark County Parks and Community Services
- Cities of Las Vegas, N. Las Vegas, Henderson, and Boulder City

4. Inquiries

Inquiries directed to the member physicians are limited to *air quality* health-related information that is pertinent to the public. Although the inquiry may target a high-risk group, such as individuals with respiratory illness, the health advice will be for the general good and will not contain specific or individual diagnosis. All inquiries shall be directed the DAQEM Outreach Coordinator or the staff of the Clark County Public Information Office, which will contact the member physicians and coordinate/facilitate the response or interview.

5. Contact Information

DAQEM Outreach Coordinator	455-5942
Clark County Public Information Office	455-3530

Exhibit 12

News Articles

March 18, 2003

High winds expected to continue in valley

By Mary Manning
<manning@lasvegassun.com>LAS VEGAS SUN

Winds gusting over 50 mph were expected to rake the Las Vegas Valley today, and the National Weather Service has issued an advisory for people with respiratory problems and vehicles affected by wind, such as trucks and vans, to avoid the bluster.

After local downpours and pea-sized hail pelted Southern Nevada Monday, the storm system that dumped 0.22 an inch of rain on the valley moved eastward.

That brought the jetstream over the valley and with it the wind, Weather Service meteorologist Brian Fuis said.

About 11 p.m. winds blew from the northwest across the valley, reaching 16 mph at the North Las Vegas Airport and gusting above 20 mph in the western section of the valley.

While recent rains have settled Southern Nevada's normally dusty conditions, those with allergies still were feeling the effect of mulberry tree pollen that was very high despite the rain, with more than 10,000 grains per cubic yard of air.

After a low of 44 degrees Monday night, the high for today was expected to be in the low 60s with lows in the lower 40s.

Monday's high of 57 degrees was 12 degrees below average.

The blustery winds are expected to last through Wednesday with another chance of rain on Thursday, when a new storm system is expected to drop southward from the Pacific Northwest.

By the weekend, however, forecasters expect clear skies and temperatures warming into the low 70s.

Las Vegas SUN

March 19, 2003

Residents warned of dangers of dust

By Mary Manning
<manning@lasvegassun.com>
LAS VEGAS SUN

There's more to Southern Nevada's springtime than warmer temperatures and longer days.

That extra something is dust, and it prompted Clark County officials to issue an air quality watch Tuesday, advising construction operators to control dust clouds on working sites.

"Our windy season usually starts in March and lasts through May, but dust storms can happen any time of year, depending on weather conditions," said Christine Robinson, director of Clark County's Air Quality Division.

Air quality officials issue health advisories for blowing dust when peak wind gusts exceed 40 mph and average hourly wind speeds are greater than 25 mph, Robinson said.

Under an advisory, children, seniors and people with chronic respiratory problems are urged to stay indoors.

Health officials also advise against exercising outdoors during wind and dust storms because of an increased risk of inhaling dust particles.

When spring officially arrives in Southern Nevada at about noon on Friday, a drying trend could begin that will raise dust and pollen through the summer months, forecasters said.

Conditions ranging from warm, sunny days to cooler, windier and wetter weather are typical of spring in the Las Vegas Valley.

Dust tips

Here are some ways to help reduce dust:

- DIRT ROADS Drive on paved roads only. If you must drive on an unpaved road, go slowly.

- VACANT LOTS Fence off empty lots or cover them with gravel or desert-friendly landscaping.
- OFF-ROAD Ride ATVs and other off-road vehicles outside urban areas.
- FIREPLACES Reduce wood burning, especially on dusty days.
- WEBSITE Click on www.accessclarkcounty.com to find out more about local dust.
- HOTLINE The Clark County Air Quality Department has a 24-hour hotline to report dust pollution. It is 385-DUST (3878).

Bursts of showers across the valley since Saturday had dropped enough moisture on desert surfaces to keep dust to a minimum during Tuesday's winds, National Weather Service meteorologist Brian Fuis said.

But winds gusted above 40 mph on Tuesday, prompting the air quality watch. The winds peaked at 49 mph at Nellis Air Force Base on Tuesday.

High winds stir up airborne particles that are smaller than the width of a human hair and can become lodged in the lungs. Inhaled dust aggravates respiratory diseases such as bronchitis and asthma.

The Las Vegas Valley currently does not meet the federal 24-hour air quality standard for dust. The federal Environmental Protection Agency, however, is reviewing a plan that meets those standards by 2006, Robinson said.

"Clark County has developed one of the most stringent dust-control programs in the country, but a government agency can't solve this problem alone," Robinson said. "We need the community's help."

Residents can help officials clear the county's air by reporting blowing dust clouds. The hotline is designed to help field compliance officers locate sources of dust plumes and blowing debris, Robinson said.

Las Vegas SUN main page

Questions or problems? Click here.

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April 11, 2003

Wind prompts dust advisory

LAS VEGAS SUN

Clark County officials issued an air quality advisory today as high winds were forecast for the weekend.

Officials were advising construction site operators and residents about the potential for dust in the air due to the winds and were advising construction site operators to take steps to lessen the dust.

County officials said children, seniors and people with chronic respiratory problems to stay indoors. To report a dust problem, call the county's dust-control hotline at 385-DUST.

Questions or problems? Click here.

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Wednesday, April 02, 2003
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Winds might cause dust problems today

REVIEW-JOURNAL

Clark County officials warn seniors and people with chronic respiratory problems to use caution today because of possible dust storms in the Las Vegas Valley.

Wind gusts of up to 35 mph are expected by this afternoon, Clark County's Department of Air Quality Management said.

Officials said the high winds could worsen the valley's dust problems and make life miserable for people with respiratory ailments, such as bronchitis or asthma. Residents can call the agency's dust-complaint hot line at 385-DUST to report excessive amounts of blowing dust.

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release
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• Print the announcement forms

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Appendix D

Clark County Department of Air Quality & Environmental Management - Air Quality Regulations (AQRs)

1. Section 90 – Fugitive Dust from Open Areas and Vacant Lots
2. Section 91 – Fugitive Dust from Unpaved Roads, Unpaved Alleys and Unpaved Easement Roads
3. Section 92 – Fugitive Dust from Unpaved Parking Lots; Material Handling and Storage Yards; and Vehicle and Equipment Storage Yards
4. Section 93 – Fugitive Dust from Paved Roads and Street Sweeping Equipment
5. Section 94 – Permitting and Dust Control for Construction Activities
6. Construction Activities Dust Control Handbook

Clark County Department of Air Quality & Environmental Management - Air Quality Regulations (AQRs)

1. Section 90 – Fugitive Dust from Open Areas and Vacant Lots

CLARK COUNTY

AIR QUALITY REGULATIONS

SECTION 90 - FUGITIVE DUST FROM OPEN AREAS AND VACANT LOTS

90.1 **FUGITIVE DUST From OPEN AREAS AND VACANT LOTS**

90.1.1 **Purpose:** To limit the EMISSION of PARTICULATE MATTER into the AMBIENT AIR from OPEN AREAS AND VACANT LOTS.

90.1.2 **Applicability:** The provisions of this Regulation shall apply to OPEN AREAS AND VACANT LOTS which are located in the PM_{10} NONATTAINMENT AREA (HYDROGRAPHIC BASIN 212) and the Apex Valley (HYDROGRAPHIC BASINS 216 and 217). Nothing in Section 90 of these Regulations shall be construed to prevent enforcement of Section 40 (Prohibition of NUISANCE Conditions) of these Regulations. The provisions of this Regulation shall not apply to Normal Farm Cultural Practices or the raising of fowl or animals. The provisions of this Regulation shall not apply to STATIONARY SOURCES as defined in Section 0, except that these control measures shall be considered as part of a BACT determination.

90.1.3 **Effective Date Of This Regulation:**

90.1.3.1 Section 90, adopted by the Clark County Board of County Commissioners on June 22, 2000, shall be effective in HYDROGRAPHIC BASIN 212 on January 1, 2001, except as otherwise provided herein.

90.1.3.2 Section 90 shall be effective in HYDROGRAPHIC BASINS 216 and 217 on April 1, 2002, except as otherwise provided herein.

90.2 **Requirements:**

90.2.1 **OPEN AREAS AND VACANT LOTS:** If OPEN AREAS AND VACANT LOTS are 5,000 square feet or larger and are disturbed by any means, including use by MOTOR VEHICLES and/or OFF-ROAD MOTOR VEHICLES or material dumping, then the OWNER AND/OR OPERATOR of such OPEN AREAS AND VACANT LOTS shall implement one or more of the CONTROL MEASURES described in Subsection 90.2.1.1 of this Regulation within 30 calendar days following the initial discovery of disturbance or vehicle use on OPEN AREAS AND VACANT LOTS. The OWNER AND/OR OPERATOR shall implement all control measures necessary to limit the disturbance of open areas and

vacant lots in accordance with the requirements of this regulation. **Advisory Notice:** In order to conserve water to the greatest extent practicable, the use of RECLAIMED WATER is highly encouraged.

90.2.1.1 **CONTROL MEASURES:**

(a) Where there is evidence of soil disturbance by MOTOR VEHICLES and/or OFF-ROAD VEHICLE use, 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 traffic Control Measures. A stable surface area shall be established and maintained by using one of the CONTROL MEASURES set forth in Subsections 90.2.1.1(b) or (c) or by the effective application of water in compliance with the stabilization standards set forth in Subsection 90.2.1.2. Where measures to prevent vehicular trespassing and movement are not effective, the application of water will not be utilized for surface stabilization. For the purposes of this Subsection, use of or parking on OPEN AREAS AND VACANT LOTS for noncommercial and non-institutional purposes by the OWNER AND/OR OPERATOR of such OPEN AREAS AND VACANT LOTS shall not be considered vehicle use under this Subsection. In addition, vehicle use related to landscaping maintenance shall not be considered vehicle use under this Subsection. For the purpose of this Regulation, landscape maintenance does not include grading, trenching, or any other mechanized surface disturbing activities performed to establish initial landscapes or to redesign existing landscapes; or

(b) Where a DISTURBED SURFACE AREA exists (including disturbed surfaces caused by MOTOR VEHICLES), uniformly apply and maintain surface gravel or DUST PALLIATIVES to all areas disturbed by MOTOR VEHICLES in compliance with one of the stabilization standards described in Subsection 90.2.1.2 of this Regulation; or

(c) Where a DISTURBED SURFACE AREA exists (including disturbed surfaces caused by MOTOR VEHICLES and/or OFF-ROAD MOTOR VEHICLES), apply and maintain an alternative CONTROL MEASURE approved in writing by the CONTROL OFFICER and the Region IX ADMINISTRATOR of the Environmental Protection Agency (EPA).

90.2.1.2 **Stabilization Standards:**

(a) A visible crust shall be established, as determined by Subsection 90.4.1.1 (The Drop Ball/Steel Ball Test) of these Regulations; or,

(b) A percent cover that is equal to or greater than 20% for non-erodible elements shall be established, as determined by Subsection 90.4.1.2 (Rock Test Method) of these Regulations; or,

(c) A threshold friction velocity, corrected for non-erodible elements of 100 cm/second or higher, shall be established, as determined by Subsection 90.4.1.3 (Determination Of Threshold Friction Velocity) of this Regulation; or,

(d) An alternative test method approved in writing by the CONTROL OFFICER and the Region IX ADMINISTRATOR of the EPA.

90.2.2 **Dust Mitigation Plans Required:** Any OWNER AND/OR OPERATOR of OPEN AREAS AND VACANT LOTS having a cumulative area of 10,000 acres or greater must submit a dust mitigation plan to the Department of Air Quality and Environmental Management for approval by March 31, 2003, in a format prescribed by the CONTROL OFFICER.

90.2.3 **Mechanized Weed Abatement and/or Trash Removal:** If machinery is used to clear weeds and/or trash from OPEN AREAS AND VACANT LOTS of 5,000 square feet or larger, then the following Control Measures set forth in Subsection 90.2.3.1 shall be applied. **Advisory Notice:** In order to conserve water to the greatest extent practicable, the use of RECLAIMED WATER is highly encouraged.

90.2.3.1 **CONTROL MEASURES**

(a) Pre-wet surface soils before mechanized weed abatement and/or trash removal occurs; and,

(b) Maintain dust control measures while mechanized weed abatement and/or trash removal is occurring; and,

(c) PAVE, apply gravel, apply water, or apply a suitable DUST PALLIATIVE, in compliance with the stabilization standards set forth in Subsection 90.2.1.2 of this Regulation, after mechanized weed abatement and/or trash removal occurs.

90.3 **Record Keeping Requirements**

90.3.1 **Record Keeping:** Any PERSON subject to the requirements of this Regulation shall compile and retain records that provide evidence of CONTROL MEASURE application, by indicating type of treatment or CONTROL MEASURE, extent of coverage, and date applied. The records and supporting documentation shall be made available to the CONTROL OFFICER within 24 hours of a written request.

90.3.2 **Record Retention:** Copies of the records required by Subsection 90.3.1 (Record Keeping Requirements) of this Regulation shall be retained for at least one year.

90.4 **Test Methods**

90.4.1 **Stabilization Standards For OPEN AREAS AND VACANT LOTS**: The test methods described in Subsections 90.4.1.1 through Subsections 90.4.1.3 of this Regulation 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, or other characteristics which are visibly distinguishable, each representative surface must be tested separately for stability in an area that represents a random portion of the overall disturbed conditions of the site, utilizing the appropriate test methods in Subsections 90.4.1.1 through Subsections 90.4.1.3 of this Regulation. Depending upon test method results, include or eliminate each representative surface from the total size assessment of the DISTURBED SURFACE AREA(S).

90.4.1.1 **Soil Crust Determination** (**The Drop Ball Test):** 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 the soil surface. If blowsand is present, clear the blowsand from the surfaces on which the soil crust test method is conducted. Blowsand is defined as thin deposits of loose uncombined grains covering less than 50% of an OPEN AREA or VACANT LOT which have not originated from the representative OPEN AREA or VACANT LOT surface being tested. If material covers a visible crust, which is not blowsand, apply the test method in Subsection 90.4.1.3 (Determination Of Threshold Friction Velocity) of this Regulation to the loose material to determine whether the surface is stabilized.

(a) A sufficient crust is defined under the following conditions: once a ball has been dropped according to Subsection 90.4.1.1 of this Regulation, the ball does not sink into the surface, so that it is partially or fully surrounded by loose grains and, upon removal of the ball, the surface upon which it fell has not been pulverized, so that loose grains are visible.

(b) Randomly select each representative DISTURBED SURFACE for the drop ball test by using a blind “over the shoulder” toss of a throwable object (for example, a metal weight with survey tape attached). Using the point of fall as the lower left hand corner, measure a 1-foot square area. Drop the ball three times within the 1-foot by 1-foot square survey area, using a consistent pattern

across the survey area. The survey area shall be considered to have passed the Soil Crust Determination Test if at least two of the three times the ball was dropped, the results met the criteria in Subsection 90.4.1.1(a) of this Regulation. 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 90.4.1.1(a) of this Regulation for all of the survey areas tested, then the site shall be considered to have passed the Soil Crust Determination Test and shall be considered sufficiently crusted.

(c) 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 soil crust test as often as necessary on each portion of the overall conditions of the site using the random selection method set forth in Subsection 90.4.1.1(b) of this Regulation for an accurate assessment.

90.4.1.2 **Rock Test Method:** The Rock Test Method, which is similar to Subsection 90.4.1.3 (Determination Of Threshold Friction Velocity) of this Regulation, 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.”

(a) Randomly select a 1 meter by 1 meter survey area within an 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). Use a blind “over the shoulder” toss of a throwable object (for example, a metal weight with survey tape attached) to select the survey surface and using the point of fall as the lower left hand corner, measure a 1 meter by 1 meter survey area. Mark-off the survey area by tracing a straight, visible line in the dirt along the edge of a measuring tape or by placing short ropes, yard sticks, or other straight objects in a square around the survey area.

(b) Without moving any of the rocks or other elements, examine the survey area. Since rocks greater than 3/8 inch (1 cm) in diameter

are of interest, measure the diameter of some of the smaller rocks to a get a sense of which rocks need to be considered.

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

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

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

(f) Divide the total rock area, calculated in Subsection 90.4.1.2(e) of this Regulation, by two (to get frontal area). Divide the resulting number by the size of the survey area (make sure the units of measurement match), and multiply by 100 for percent rock cover. For example, the total rock area is 1,400 square centimeters, divide 1,400 by 2 to get 700. Divide 700 by 10,000 (the survey area is 1 meter by 1 meter, which is 100 centimeters by 100 centimeters or 10,000 centimeters) and multiply by 100. The result is 7% rock cover. If rock measurements are made in inches, convert the survey area from meters to inches (1 inch = 2.54 centimeters).

(g) Select and mark-off two additional survey areas and repeat the procedures described in Subsection 90.4.1.2(a) through Subsection 90.4.1.2(f) of this Regulation. Make sure the additional survey areas also represent the general rock distribution on the site. Average the percent cover results from all three survey areas to estimate the average percent of rock cover.

(h) If the average rock cover is greater than or equal to 20%, the surface is stable. If the average rock cover is less than 20%, follow the procedures in Subsection 90.4.1.2(i) of this Regulation.

(i) If the average rock cover is less than 20%, the surface may or may not be stable. Follow the procedures in Subsection 90.4.1.3 (Determination Of Threshold Friction Velocity) of this Regulation

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 Threshold Friction Velocity (TFV) to be stable without accounting for rock cover.

(j) After completing the procedures described in Subsection 90.4.1.2(i) of this Regulation, use Table 2 of this Regulation 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.

90.4.1.3 **Determination Of Threshold Friction Velocity (TFV):** For DISTURBED SURFACE AREAS that are not crusted or vegetated, determine TFV according to the following sieving field procedure (based on a 1952 laboratory procedure published by W. S. Chepil).

(a) Obtain and stack a set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm, and 0.25 mm, or obtain and stack a set of standard/commonly available sieves. Place the sieves in order according to size openings, beginning with the largest size opening at the top. Place a collector pan underneath the bottom (0.25 mm) sieve. Collect a sample of loose surface material from an area at least 30 cm by 30 cm in size, to a depth of approximately 1 cm using a brush and dustpan or other similar device. Only collect soil samples from dry surfaces (i.e., when the surface is not damp to the touch). Remove any rocks larger than 1 cm in diameter from the sample. Pour the sample into the top sieve (4 mm opening) and cover the sieve/collector pan unit with a lid. Minimize escape of particles into the air when transferring surface soil into the sieve/collector pan unit. Move the covered sieve/collector pan unit by hand using a broad, circular arm motion in the horizontal plane. Complete twenty circular arm movements, ten clockwise and ten counterclockwise, at a speed just necessary to achieve some relative horizontal motion between the sieves and the particles. Remove the lid from the sieve/collector pan unit and disassemble each sieve separately, beginning with the largest sieve. As each sieve is removed, examine it for loose particles. If loose particles have not been sifted to the finest sieve through which they can pass, reassemble and cover the sieve/collector pan unit and gently rotate it an additional ten times. After disassembling the sieve/collector pan unit, slightly tilt and gently tap each sieve, and the collector pan, so that material aligns along one side. In

doing so, minimize escape of particles into the air. Line up the sieves and collector pan in a row and visibly inspect the relative quantities of catch in order to determine which sieve (or whether the collector pan) contains the greatest volume of material. If a visual determination of relative volumes of catch among sieves is difficult, use a graduated cylinder to measure the volume. Estimate TFV for the sieve catch with the greatest volume using Table 1 of this Subsection, which provides a correlation between sieve opening size and TFV.

Table 1. Determination Of Threshold Friction Velocity

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

(b) Collect at least three soil samples which represent random portions of the overall conditions of the site, repeat the above TFV test method for each sample and average the resulting TFVs together to determine the TFV uncorrected for non-erodible elements. Non-erodible elements are distinct elements, in the random portion of the overall conditions of the site, that are larger than 1 cm in diameter, remain firmly in place during a wind episode, and inhibit soil loss by consuming 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 Subsection 90.4.1.2 (Rock Test Method) of this Regulation. 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:

Eq. 1: (Average length) x (Average width) = Average Dimensions.
Eq. 2: (Average Dimensions) x (Number of Elements) = Overhead Area.
Eq. 3: Overhead Area Of Group 1 + Overhead Area Of Group 2 (etc.) = Total Overhead Area.
Eq. 4: Total Overhead Area/2 = Total Frontal Area.
Eq. 5: (Total Frontal Area/Survey Area) x 100 = Percent Cover Of Non-Erodible Elements.

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 Subsection 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

- -

History: Initial adoption: June 22, 2000
Amended: November 16, 2000; November 20, 2001; December 17, 2002; June 3, 2003; July 1, 2004.

Clark County Department of Air Quality & Environmental Management - Air Quality Regulations (AQRs)

2. Section 91 – Fugitive Dust from Unpaved Roads, Unpaved Alleys and Unpaved Easement Roads

SECTION 91 - FUGITIVE DUST FROM UNPAVED ROADS, UNPAVED ALLEYS, AND UNPAVED EASEMENT ROADS

91.1 **FUGITIVE DUST From Unpaved Roads, Unpaved Alleys, and Unpaved EASEMENT Roads**

91.1.1 **Purpose:** To limit the Emission of PARTICULATE MATTER into the AMBIENT AIR from unpaved roads, unpaved alleys, unpaved ROAD EASEMENTS and unpaved access roads for utilities and railroads.

91.1.2 **Applicability:** The provisions of this Regulation shall apply to unpaved roads, which includes unpaved alleys, unpaved ROAD EASEMENTS and unpaved access roads for utilities and railroads which are located in the PM_{10} NON-ATTAINMENT AREA (HYDROGRAPHIC BASIN 212) and the Apex Valley (HYDROGRAPHIC BASINS 216 and 217). Nothing in Subsections 91.1 through 91.3 of these Regulations shall be construed to prevent enforcement of Section 40 (Prohibition of NUISANCE Conditions) of these Regulations. The provisions of this Regulation shall not apply to non-commercial and non-institutional private driveways and shall not apply to horse trails, hiking paths, bicycle paths, or other similar paths that have been officially designated by a governing body for exclusive use for purposes other than travel by motor vehicles. The provisions of this Regulation shall not apply to STATIONARY SOURCES as defined in Section 0, except that these control measures shall be considered as part of a BACT determination.

91.1.3 **Effective Date Of This Regulation**:

91.1.3.1 Regulations 91.1 through 91.3 shall be effective in HYDROGRAPHIC BASIN 212 on their adoption by the District Board of Health of Clark County on June 22, 2000.

91.1.3.2 Regulations 91.1 through 91.3 shall be effective in HYDROGRAPHIC BASINS 216 and 217 on April 1, 2002.

91.2 **Requirements:**

91.2.1 **Unpaved Roads:** An OWNER AND/OR OPERATOR of an unpaved road in the PM_{10} NON-ATTAINMENT AREA, shall implement one of the CONTROL MEASURES

set forth in Subsection 91.2.1.3 of this Regulation, except as set forth in Subsection 91.2.1.1 of this Regulation. For the purpose of this Regulation, the CONTROL MEASURES shall be considered effectively implemented when the unpaved roadway complies with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation. **Advisory Notice:** In order to conserve water to the greatest extent practicable, the use of RECLAIMED WATER is highly encouraged.

91.2.1.1 **Implementation Of CONTROL MEASURES For Existing Unpaved Roads:**

91.2.1.1.1 OWNERS AND/OR OPERATORS of existing unpaved roads that were constructed prior to June 22, 2000 in HYDROGRAPHIC BASIN 212 shall implement one of the CONTROL MEASURES set forth Subsection 91.2.1.3 of this Regulation according to the following schedule:

(a) CONTROL MEASURES shall be implemented for one third (1/3) of the total miles of unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by June 1, 2001.

91 CONTROL MEASURES shall be implemented for two thirds (2/3) of the total miles of unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by June 1, 2002.

(c) CONTROL MEASURES shall be implemented for all unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by June 1, 2003.

(d) CONTROL MEASURES set forth in Subsection 91.2.1.3 shall be implemented for existing unpaved roads on which vehicular traffic is equal to or greater than 150 vehicles per day that develops after June 1, 2003. CONTROL MEASURES shall be implemented within 365 calendar days following the initial discovery that vehicular traffic equals or exceeds 150 vehicles per day and that the road surface does not comply with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation. The CONTROL OFFICER may require short-term stabilization of any unpaved road subject to Subsection 91.2.1.1(d).

(e) Non-federal Requirement: CONTROL MEASURES set forth in Subsection 91.2.1.3 shall be implemented for existing unpaved roads having vehicular traffic of less than 150 vehicles per day within 365 calendar days following the initial discovery that the road surface does not comply with the stabilization standards set forth in Section 91.2.1.4 of this Regulation. The requirements of this

Subsection (91.2.1.1 (e) shall not constitute applicable State Implementation Plan requirements pursuant to Section 189 of the federal Clean Air Act. The CONTROL OFFICER may require short-term stabilization of any unpaved road subject to Subsection 91.2.1.1 (e)). For the purpose of this Subsection, the CONTROL MEASURES shall be considered effectively implemented when the unpaved road complies with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation.

91.2.1.1.2 OWNERS AND/OR OPERATORS of existing unpaved roads that were constructed prior to April 1, 2002 in HYDROGRAPHIC BASINS 216 and 217 shall implement one of the CONTROL MEASURES set forth Subsection 91.2.1.3 of this Regulation according to the following schedule:

(a) CONTROL MEASURES shall be implemented for one third (1/3) of the total miles of unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by April 1, 2003.

(b) CONTROL MEASURES shall be implemented for two thirds (2/3) of the total miles of unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by April 1, 2004.

(c) CONTROL MEASURES shall be implemented for all unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by April 1, 2005.

(d) CONTROL MEASURES set forth in Subsection 91.2.1.3 shall be implemented for existing unpaved roads on which vehicular traffic is equal to or greater than 150 vehicles per day that develops after April 1, 2005. CONTROL MEASURES shall be implemented within 365 calendar days following the initial discovery that vehicular traffic equals or exceeds 150 vehicles per day and that the road surface does not comply with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation. The CONTROL OFFICER may require short-term stabilization of any unpaved road subject to Subsection 91.2.1.1(d).

(e) Non-federal Requirement: CONTROL MEASURES set forth in Subsection 91.2.1.3 shall be implemented for existing unpaved roads having vehicular traffic of less than 150 vehicles per day within 365 calendar days following the initial discovery that the road surface does not comply with the stabilization standards set forth in Section 91.2.1.4 of this Regulation. The requirements of this Subsection (91.2.1.1 (e) shall not constitute applicable State

Implementation Plan requirements pursuant to Section 189 of the federal Clean Air Act. The CONTROL OFFICER may require short-term stabilization of any unpaved road subject to Subsection 91.2.1.1 (e)). For the purpose of this Subsection, the CONTROL MEASURES shall be considered effectively implemented when the unpaved road complies with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation.

91.2.1.2 No unpaved roads or alleys may be constructed in public thoroughfares in HYDROGRAPHIC BASIN 212 after June 22, 2000, or in HYDROGRAPHIC BASINS 216 and 217 after April 1, 2002, unless the unpaved road is an interim component of an active paving project.

91.2.1.3 **CONTROL MEASURES:**

(a) PAVE, or

(b) Apply DUST PALLIATIVES, in compliance with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation, or

(c) Apply and maintain and alternative CONTROL MEASURE approved in writing by the CONTROL OFFICER and the Region IX Administrator of the EPA.

91.2.1.4 **Stabilization Standards:** For the purpose of this rule, CONTROL MEASURES shall be considered effectively implemented when stabilization observations for FUGITIVE Dust EMISSIONS from unpaved roads and unpaved alleys do not exceed 20% OPACITY and do not equal or exceed 0.33 oz/ft^2 silt loading, or do not exceed 6% silt content, as determined by Subsection 91.4.1 of these Regulations.

91.3 **Record Keeping Requirements**

91.3.1 **Record Keeping:** Any person subject to the requirements of this Regulation shall compile and retain records that provide evidence of CONTROL MEASURE application, by indicating type of treatment or CONTROL MEASURE, extent of coverage, and date applied. The records and supporting documentation shall be made available to the CONTROL OFFICER within 24 hours from written or verbal request.

91.3.2 **Records Retention:** Copies of the records required by Subsection 91.3.1 (Record Keeping Requirements) of this Regulation shall be retained for at least one year.

91.3.3 **Reports Required:** In addition to complying with the record keeping requirements specified in Subsection 91.3.1, OWNERS of unpaved roads shall be subject to the requirements set forth in Subsection 91.2.1.1, and

shall prepare and submit a written report to the CONTROL OFFICER documenting compliance with the provisions of Subsection 91.2.1.1. This report shall be prepared for the years 2001, 2002, and 2003 for OWNERS of unpaved roads in HYDROGRAPHIC BASIN 212, for the years 2003, 2004, and 2005 for OWNERS of unpaved roads in HYDROGRAPHIC BASINS 216 and 217, and shall be submitted to the CONTROL OFFICER no later than October first of each year and shall include:

91.3.3.1 The total miles of unpaved roads under the jurisdiction of the OWNER and the miles PAVED during the reporting period subject to the requirements of Subsection 91.2.1.1. Miles of PAVING for roads subject to Subsections 91.2.1.1.1(a), 91.2.1.1.1(b), and 91.2.1.1.1(c) must be listed separately from paving of roads found to be subject Subsection 91.2.1.1.1 (d). Miles of PAVING for roads subject to Subsections 91.2.1.1.2(a), 91.2.1.1.2(b), and 91.2.1.1.2(c) must be listed separately from paving of roads found to be subject Subsection 91.2.1.1.2(d).

91.4 Test Methods

91.4.1 Stabilization Test Methods For Unpaved Roads And Unpaved Alleys:

91.4.1.1 **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, unpaved alleys, and unpaved EASEMENTS. This method can only be conducted by an individual who has received certification as a qualified Visible EMISSIONS Evaluator.

(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-degree 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 91.4.1.1(c) of this Regulation) and Step 4 (Subsection 91.4.1.1 (d) of this Regulation) 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 Section 91 of these Regulations.

91.4.1.2 **Silt Content Test Method:** The purpose of this test method is to estimate the silt content of the trafficked parts of unpaved roads, unpaved alleys, and unpaved EASEMENTS. The higher the silt content, the greater the amount of fine dust particles that are entrained into the atmosphere when cars and trucks drive on unpaved roads, unpaved alleys, and unpaved EASEMENTS.

(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, a lid, and collector pan

(2) A small whiskbroom or paintbrush with stiff bristles and dustpan 1 foot 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 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 greater than 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 91.4.1.2(c) of this Regulation) 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, unpaved alley, or unpaved EASEMENT and the average percent silt content is 6% 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, alley, or EASEMENT), it is recommended that you collect 3 additional samples from the source according to Step 1 (Subsection 91.4.1.2(b) of this Regulation) 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 91.4.1.2(b) of this Regulation), 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 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

History: Initial Adoption: June 22, 2000.
Amended: November 16, 2000; December 21, 2000; June 3, 2003; July 1, 2004.

Clark County Department of Air Quality & Environmental Management - Air Quality Regulations (AQRs)

3. Section 92 – Fugitive Dust from Unpaved Parking Lots; Material Handling and Storage Yards; and Vehicle and Equipment Storage Yards

CLARK COUNTY

AIR QUALITY REGULATIONS

SECTION 92 - FUGITIVE DUST FROM UNPAVED PARKING LOTS; MATERAIL HANDLING AND STORAGE YARDS; AND VEHICLE AND EQUIPMENT STORAGE YARDS

92.1 **FUGITIVE DUST From UNPAVED PARKING LOTS**

92.1.1 **Purpose:** To limit the EMISSION of PARTICULATE MATTER into the AMBIENT AIR from UNPAVED PARKING LOTS; material handling and storage yards; and vehicle and equipment storage yards.

92.1.2 **Applicability:** The provisions of this Regulation shall apply to UNPAVED PARKING LOTS; material handling and storage yards; and vehicle and equipment storage yards which are located in the PM10 NON-ATTAINMENT AREA (HYDROGRAPHIC BASIN 212), in the Apex Valley (HYDROGRAPHIC BASINS 216 and 217), and which are not regulated by Section 94 of this Regulation. For the purposes of this Regulation, UNPAVED PARKING LOT means any area of 5,000 square feet or larger that is not PAVED and that is used for parking, maneuvering, or storing MOTOR VEHICLES, equipment, or materials. UNPAVED PARKING LOT includes automobile impound yards, wrecking yards, automobile dismantling yards, salvage yards, material handling yards, and storage yards. For the purposes of this regulation, maneuvering shall not include military maneuvers or exercises conducted on federal facilities. Nothing in Subsections 92.1 through 92.4 of these Regulations shall be construed to prevent enforcement of Section 40 (Prohibition of NUISANCE Conditions) of these Regulations. The provisions of this Regulation shall not apply to STATIONARY SOURCES as defined in Section 0, except that these control measures shall be considered as part of a BACT determination.

92.1.3 **Effective Date Of This Regulation:**

92.1.3.1 Regulations 92.1 through 92.4 shall be effective in HYDROGRAPHIC BASIN 212 on their adoption by the District Board of Health of Clark County on June 22, 2000, except as otherwise provided herein.

92.1.3.2 Regulations 92.1 through 92.4 shall be effective in HYDROGRAPHIC BASINS 216 and 217 on April 1, 2002, except as otherwise provided herein.

92.2 **Requirements:**

92.2.1 **UNPAVED PARKING LOTS, Including Material Handling and Storage Yards and Equipment and Vehicle Storage Yards:** The OWNER AND/OR OPERATOR of an existing UNPAVED PARKING LOT in HYDROGRAPHIC BASIN 212 shall implement one of the CONTROL MEASURES described in Subsection 92.2.1.2 of this Regulation by July 1, 2001. The OWNER AND/OR OPERATOR of an existing UNPAVED PARKING LOT in HYDROGRAPHIC BASINS 216 and/or 217 shall implement one of the CONTROL MEASURES described in Subsection 92.2.1.2 of this Regulation by April 1, 2003. For UNPAVED PARKING LOTS that are utilized intermittently, for a period of 35 days or less during the calendar year, the OWNER AND/OR OPERATOR shall implement one of the CONTROL MEASURES described in Subsection 92.2.1.2 during the period that the UNPAVED PARKING LOT is utilized for vehicle parking. For the purpose of this Regulation, the CONTROL MEASURES set forth in Subsection 92.2.1.2 shall be considered effectively implemented when the UNPAVED PARKING LOT meets the stabilization requirements described in Subsection 92.2.1.3 of this Regulation.

92.2.1.1 No UNPAVED PARKING LOTS may be constructed in HYDROGRAPHIC BASIN 212 or in HYDROGRAPHIC BASINS 216 and 217 after adoption of this Subsection except as provided in Subsection 92.1.1.1 (a), (b), or (c) below:

(a) The requirements of Subsection 92.2.1.1 shall not be applicable to parking lots for rural public facilities such as trailheads, campgrounds, and similar facilities where paved parking lots would conflict with the rural nature of these facilities provided such UNPAVED PARKING LOT is stabilized in accordance with Subsection 92.2.1.2(b) through (d) prior to being used. For the purposes of this Subsection, a rural public facility shall not include any facility located within the BLM Disposal Boundary.

(b) If the UNPAVED PARKING LOT is used for storing and handling of landscaping, aggregate, and other similar bulk materials, the OWNER/OPERATOR shall implement one of the CONTROL MEASURES described in Subsection 92.2.1.2 of this Regulation subject to the approval of the CONTROL OFFICER, provided however, all access, parking and loading areas used by on-road vehicles shall be paved.

(c) If the UNPAVED PARKING LOT is used primarily for storage of non-rubber tired vehicles or equipment, the OWNER/OPERATOR shall implement one of the CONTROL MEASURES described in Subsection 92.2.1.2 of this Regulation subject to the approval of the CONTROL OFFICER, provided however, all access, parking and loading areas primarily used by rubber tired vehicles shall be paved.

92.2.1.2 CONTROL MEASURES:

(a) PAVE, or

(b) Apply DUST PALLIATIVES, in compliance with the stabilization standards set forth in Subsection 92.2.1.3 of this Regulation, or

(c) Apply DUST PALLIATIVES to vehicle travel lanes within the parking lot in compliance with the stabilization standards set forth in Subsection 92.2.1.3 of this Regulation and uniformly apply and maintain surface gravel to a depth of two (2) inches on the vehicle parking areas, or

(d) Apply and maintain an alternative CONTROL MEASURE approved in writing by the CONTROL OFFICER and the Region IX Administrator of the Environmental Protection Agency (EPA).

92.2.1.3 Stabilization Standards: For the purpose of this rule, CONTROL MEASURES shall be considered effectively implemented when stabilization observations for FUGITIVE DUST EMISSIONS from UNPAVED PARKING LOTS do not exceed 20% OPACITY and do not equal or exceed 0.33 oz/ft^2 silt loading, or do not exceed 8% silt content, as determined by Subsection 92.4.1 (Test Methods-UNPAVED PARKING LOTS) of these Regulations except for areas on which gravel has been applied under the provisions of Subsection 92.2.1.2(c).

92.2.1.4 Prohibition of Dust Over Property Line: Where Best Available Control Measures provided for in this Regulation have not been applied, NO OWNER AND/OR OPERATOR of an UNPAVED PARKING LOT shall permit a dust plume from that UNPAVED PARKING LOT to cross a property line.

92.3 **Record Keeping Requirements**

92.3.1 **Record Keeping:** Any PERSON subject to the requirements of this Regulation shall compile and retain records that provide evidence of CONTROL MEASURE application, by indicating type of treatment or CONTROL MEASURE, extent of coverage, and date applied. The records and supporting documentation shall be made available to the CONTROL OFFICER within 24 hours of a written request.

92.3.2 **Records Retention:** Copies of the records required by Subsection 92.3.1 (Record Keeping Requirements) of this Regulation shall be retained for at least one year. Facilities subject to Section 19 (PART 70 OPERATING PERMITS) shall maintain records in accordance with Part 70 record keeping requirements.

92.4 **Test Methods**

92.4.1 **Stabilization Test Methods For UNPAVED PARKING LOTS:**

92.4.1.1 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 PARKING LOTS. This method can only be conducted by an individual who has received certification as a qualified Visible EMISSIONS Evaluator.

(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-degree 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, evaluator'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), 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 92.4.1.1(c) of this Regulation) and Step 4 (Subsection 92.4.1.1 (d) of this Regulation) 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 Section 92 of these Regulations.

92.4.1.2 Silt Content Test Method: The purpose of this test method is to estimate the silt content of the trafficked parts of UNPAVED PARKING LOTS. The higher the silt content, the greater the amount of fine dust particles that are entrained into the atmosphere when cars and trucks drive on 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, a lid, and collector pan

(2) A small whiskbroom or paintbrush with stiff bristles and dustpan 1 foot 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 greater than 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, restack 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 92.4.1.2(c) of this Regulation) 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/ft^2, the surface is stable. If the average silt loading is greater than or equal to 0.33 oz/ft^2, then proceed to examine the average percent silt content. 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, 6%-10% silt content on an UNPAVED PARKING LOT), it is recommended that you collect 3 additional samples from the source according to Step 1 (Subsection 92.4.1.2(b) of this Regulation) 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 92.4.1.2(b) of this Regulation), 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 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

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Clark County Department of Air Quality & Environmental Management - Air Quality Regulations (AQRs)

4. Section 93 – Fugitive Dust from Paved Roads and Street Sweeping Equipment

CLARK COUNTY

AIR QUALITY REGULATIONS

SECTION 93 - FUGITIVE DUST FROM PAVED ROADS AND STREET SWEEPING EQUIPMENT

93.1 **FUGITIVE DUST From PAVED Roads and Street Sweeping Equipment**

93.1.1 **Purpose:** To limit the EMISSION of PARTICULATE MATTER into the AMBIENT AIR from PAVED roads and PAVED alleys.

93.1.2 **Applicability:** The provisions of this Regulation shall apply to PAVED roads and PAVED alleys which are located in the PM_{10} NONATTAINMENT AREA (HYDROGRAPHIC BASIN 212) and the Apex Valley (HYDROGRAPHIC BASINS 216 and 217). Nothing in Subsections 93.1 through 93.4 of these Regulations shall be construed to prevent enforcement of Section 40 (Prohibition of NUISANCE Conditions) of these Regulations. The provisions of this Regulation shall not apply to non-commercial and non-institutional private driveways. The provisions of this Regulation shall not apply to STATIONARY SOURCES as defined in Section 0, except that these control measures shall be considered as part of a BACT determination.

93.2 **Requirements:**

93.2.1 **PAVED Road Development Standards:** OWNERS AND/OR OPERATORS having jurisdiction over, or ownership of, public or private PAVED roads shall construct, or require to be constructed, all new or modified PAVED roads in conformance with the road shoulder width and drivable median stabilization requirements as specified below:

93.2.1.1 New CONSTRUCTION, MODIFICATION, or approvals of PAVED roads shall be constructed with a PAVED travel section, and four (4) feet of PAVED or stabilized shoulder on each side of the PAVED travel section. The four (4) feet of shoulder shall be PAVED or stabilized with a dust palliative or gravel to prevent the trackout of mud and dirt to the PAVED section. Where shoulder stabilization is used in place of PAVING, the stabilized shoulders must be maintained in compliance with the stabilization standards set forth in Subsection 93.2.1.5 of this Regulation.

93.2.1.2 New CONSTRUCTION, MODIFICATION, or approvals of PAVED roads on which vehicular traffic is greater than or equal to 3,000 vehicles per day after March 1, 2003 shall be constructed with a PAVED travel section, and eight (8) feet of stabilized shoulder adjacent to the PAVED travel section where right-of-way is available for the stabilized shoulder. Where the right-of-way is not available for the full eight (8) feet of stabilized shoulder, curbing shall be installed adjacent to the shoulder. Stabilized shoulders must be maintained in compliance with the stabilization standards set forth in Subsection 93.2.1.5 of this regulation.

93.2.1.3 Where curbing is constructed adjacent to and contiguous with the travel lane or PAVED shoulder of a road, the shoulder width design standards specified in Subsection 93.2.1.1 shall not be applicable.

93.2.1.4 Where PAVED roads are constructed, or modified with shoulders and/or medians, the shoulders and/or medians shall be constructed as set forth below. If the shoulder, median, or extended right-of-way is located in a limited access freeway right-of-way, then the requirements of Section 90 apply.

(a) With curbing, or

(b) With solid PAVING across the median, or

(c) Apply DUST PALLIATIVES, in compliance with the stabilization standards set forth in Subsection 93.2.1.5 of this Regulation, or

(d) Apply two (2) inches of gravel in compliance with the stabilization standards set forth in Subsection 93.2.1.5 of this Regulation, or

(e) With materials that prevent the trackout of mud and dirt to the PAVED section such as landscaping or decorative rock.

93.2.1.5 Stabilization Standards: For the purpose of this regulation, the unpaved shoulders and medians of PAVED roads shall be considered to have CONTROL MEASURES effectively implemented when FUGITIVE DUST EMISSIONS do not exceed 20% OPACITY and silt loading does not equal or exceed 0.33 oz/ft^2 silt loading, as determined by Subsection 93.4.1 (Test Methods-Stabilized PAVED Road Shoulders and Medians) of these regulations, except for unpaved shoulders on which gravel has been applied under the provisions of Subsection 93.2.1.1. Failure to comply with either the 20% OPACITY limit or silt loading limit indicates that the shoulder is not stable. Where gravel is utilized to prevent trackout from unpaved shoulders and medians of PAVED roads, surface gravel shall be

uniformly applied and maintained to a depth of two (2) inches to comply with the 20% OPACITY standards set forth in Subsection 93.4.1.1 of these Regulations and the Gravel Depth And Silt Content Test Method set forth in Subsection 93.4.1.3 of these Regulations. For the purposes of this section, the term Gravel shall include "aggregate" and shall mean unconsolidated material greater than 0.25 (1/4) inch but less than three (3) inches, and contain no more than six (6) percent silt, by dry weight, that will pass through a No. 200 sieve. Failure to comply with either the 20% OPACITY limit or the Gravel Depth And Silt Content Test Method indicates that the shoulder is not stable.

93.2.1.6 Requirements For Existing Nonconforming PAVED Roads: OWNERS AND/OR OPERATORS having jurisdiction over, or ownership of, existing public or private PAVED roads which do not conform with the requirements of Subsections 93.2.1.1 through 93.2.1.5 of this Regulation, shall reconstruct, or require to be reconstructed, the existing nonconforming PAVED road within 365 calendar days following the initial discovery that the road fails to meet the requirements set forth in Subsections 93.2.1.1 through 93.2.1.5 of these Regulations. The CONTROL OFFICER may require short-term stabilization of any PAVED road subject to the requirements set forth in Subsections 93.2.1.1 through 93.2.1. of these Regulations. Other stabilization methods of equal or greater effectiveness may be implemented with the written approval of the CONTROL OFFICER, providing emissions do not exceed 20% opacity, unless the US EPA Region 9 objects to such approval within ninety (90) days from the date notification of the proposed alternative stabilization method is sent to the US EPA Region 9 by the CONTROL OFFICER. If the US EPA Region 9 does not object within the ninety (90) days from the date notification, the proposed alternative stabilization method may be implemented. If the US EPA Region 9 objects to the proposed alternative stabilization method, the proposed alternative stabilization method shall require written approval from both the CONTROL OFFICER and the US EPA Region 9 prior to the implementation of the proposed alternative stabilization method.

93.2.2 **Street Sweeper Requirements:** After January 1, 2001, any OWNER AND/OR OPERATOR which utilizes street sweeping equipment or street sweeping services for street sweeping on PAVED roads or PAVED parking lots, shall acquire or contract to acquire only certified PM_{10}-efficient street sweeping equipment.

93.2.2.1 PM_{10}-Efficient Street Sweepers: For the purposes of Subsection 93.2.2 of this Regulation, a PM_{10}-efficient street sweeper is a street sweeper which has been certified by the South Coast Air Quality Management District (California) (SCAQMD) to comply with the District's performance

standards set forth in SCAQMD Rule 1186 utilizing the test methods set fourth in SCAQMD Rule 1186, Appendix A.

93.2.3 **Equipment Restriction:** The use of dry rotary brushes and blower devices for the removal of dirt, rock, or other debris from a PAVED road or PAVED parking lot is prohibited without the use of sufficient wetting to limit the visible emissions to not greater than 20% opacity when measured as set forth in Subsection 93.4.1.1. The use of dry rotary brushes or blower devices without the use of water is expressly prohibited.

93.2.4 **Crack Seal Equipment Requirements:** After December 31, 2005 any OWNER AND/OR OPERATOR which utilizes crack seal cleaning equipment shall acquire, or contract to acquire, only vacuum type crack cleaning seal equipment.

93.3 **Record Keeping And Reporting Requirements**

93.3.1 **Record Keeping:** Any PERSON subject to the requirements of this Regulation shall compile and retain records that provide evidence of CONTROL MEASURE application, by indicating type of treatment or CONTROL MEASURE, extent of coverage, and date applied. The records and supporting documentation shall be made available to the CONTROL OFFICER within 24 hours of a written request.

93.3.2 **Reporting Requirements:** OWNERS AND/OR OPERATORS having jurisdiction over PAVED roads shall prepare and submit a written report to the Clark County Department of Air Quality and Environmental Management documenting compliance with the provisions of this Regulation. This report shall be prepared annually on a calendar year basis. The reports shall be transmitted no later than 90 days after the end of the calendar year and shall include:

93.3.2.1 The total miles of PAVED roads under the jurisdiction of the OWNER AND/OR OPERATOR and the miles of PAVED roads constructed or modified during the reporting period.

93.3.2.2 For newly constructed or modified roads, documentation on how the requirements of Subsections 93.2.1.1 through 93.2.1.5 have been met.

93.3.2.3 Other information which may be needed by the CONTROL OFFICER for compliance with EPA requirements for enforcement of this regulation.

93.3.3 **Records Retention:** Copies of the records required by Subsection 93.3.1 (Record Keeping Requirements) of this Regulation shall be retained for at least one year.

93.4 **Test Methods**

93.4.1 **Stabilization Test Methods For UNPAVED Shoulders And Medians of PAVED Roads:**

93.4.1.1 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 road shoulders and medians of PAVED roads. This method can only be conducted by an individual who has received certification as a qualified observer.

(a) Step 1: Stand at least 20 feet from the FUGITIVE DUST source in order to provide a clear view of the EMISSIONS with the sun oriented in the 140-degree 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 3 feet 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 93.4.1.1 (c) of this Regulation) and Step 4 (Subsection 93.4.1.1 (d) of this Regulation) 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 Section 93 of these Regulations.

93.4.1.2 Silt Loading Test Method: The purpose of this test method is to estimate the silt loading of the representative surfaces of dust palliative and untreated shoulders and medians of PAVED roads. The higher the silt loading, the greater the amount of fine dust particles that are entrained into the atmosphere when vehicles drive on unpaved shoulders and medians of PAVED roads.

(a) Equipment:

(1) A set of sieves with the following openings: 4 millimeters (ASTM No. 5), 2 millimeters, (ASTM No. 10), 1 millimeter (ASTM No. 18), 0.5 millimeter (ASTM No. 35) and 0.25 millimeter (ASTM No. 60), (or a set of standard/commonly available sieves), a lid, and collector pan.

(2) Equipment necessary to collect a sample of material from the surface of the subject area. (e.g., a small whisk broom or paintbrush with bristles no longer than 1.5 inches, dustpan, spatula, shallow container, sealable plastic bags.)

(3) Equipment necessary to complete field analysis of material. (e.g., weighting scale with half once increments, calculator, writing material.)

(b) Step 1: Look for a representative surface within four (4) feet of the edge of the pavement. [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.] Gently press the edge of a dustpan into the surface 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 or similar device to lift heavier elements such as gravel. Only collect dirt/gravel to an approximate depth of 3/8 inch in the 1 square foot area. If you reach a hard, underlying subsurface that is less than 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 3/8 inch. In order to confirm that samples are collected to 3/8 inch 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 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 return to the DAQM facilities to complete the remaining steps or take it to an independent laboratory for silt loading 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.

(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 or place on a powered shaker 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 calibrated on the scale in Step 2 (Subsection 93.4.1.2(c)). 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: Multiply the resulting weight by 0.38. The resulting number is the estimated silt loading.

(i) Step 8: Select another two representative surfaces of the unpaved road shoulder or median and repeat this test method. Once you have calculated the silt loading 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/ft^2, the surface is stable.

(k) Independent Laboratory Analysis: You may choose to collect 3 samples from the source, according to Step 1 (Subsection 93.4.1.2 (b) of this Regulation), and send them to an independent laboratory for silt loading 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 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

93.4.1.3 **GRAVEL DEPTH AND SILT CONTENT TEST METHOD:** The purpose of this two (2) part test method is to estimate the gravel depth and silt content of graveled road shoulders and medians of PAVED roads. Two (2) inches of gravel are required to prevent vehicle tires from digging through the gravel. The higher the silt content in the top inch of the gravel, the greater the amount of fine dust particles that are entrained into the atmosphere when vehicles drive on gravel-stabilized shoulders.

(a) Equipment necessary to collect a sample of material from the surface of the subject area, including a sampling device one (1) foot by one (1) foot by one (1) inch deep, and other equipment such as, a small whisk broom or paintbrush with bristles no longer than 1.5 inches, dustpan, spatula, shallow container, sealable plastic bags, ruler, and wood dowel or similar straight edge device.

(b) Step 1: Look for a section within four (4) feet of the edge of pavement that has an existing gravel surface that appears representative of the gravel shoulder. Using the spatula, remove the gravel from a three (3) to five (5) inch diameter area to the depth of the applied gravel surface. Make sure that the removed gravel is placed well away from the cleared area. Place a wooden dowel or other similar narrow object across the cleared survey area, and measure, perpendicular to the narrow object, to depth of the cleared area to determine the depth of the gravel material. If the depth of the gravel material is less than two (2) inches, the area fails and is not considered stable. If the depth of the gravel material is two (2) inches or greater, go to Step 2 (Subsection 93.4.1.3 (c) of this Regulation).

(c) Step 2. Using the one (1) foot by one (1) foot by one (1) inch deep sampling frame, gently press the edges of the frame into the road shoulder surface to a depth of one (1) inch. Collect the sample of loose surface material using the whiskbroom, brush, spatula, and dustpan to collect the material into the sample bag, minimizing escape of dust particles. Collect all material to a one (1) inch depth in the one (1) square foot sampling frame.

(d) Step 3. Repeat Steps 1 and 2 to obtain two (2) additional samples for a total of three (3) samples. In the event any sampled location is found to have less than (2) inches of gravel under Step 1, the shoulder is considered to be unstable. Do not proceed with additional sampling.

(e) Step 4. Laboratory Analysis: Samples collected from this source, according to Step 3 (Subsection 93.4.1.3 (d) of this Regulation), are sent to a laboratory for silt content analysis. The test method the laboratory is required to use is:

i. Wet screen the entire sample through a one (1) inch sieve.

ii. For all material passing through the one (1) inch sieve, use ASTM No. 200 wet Sieve Method to determine the percentage content of silt.

(f) Step 5: Examine Results. Average the silt content for the (3) samples. If the average silt content of the three samples is equal to or less than or six (6) percent, the surface is stable.

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Clark County Department of Air Quality & Environmental Management - Air Quality Regulations (AQRs)

5. Section 94 – Permitting and Dust Control for Construction Activities

CLARK COUNTY

AIR QUALITY REGULATIONS

SECTION 94 – PERMITTING AND DUST CONTROL FOR CONSTRUCTION ACTIVITIES

94.1 **Purpose.**

94.1.1 The purpose of this section of the Air Quality Regulations is:

(a) To limit the EMISSION of PARTICULATE MATTER into the AMBIENT AIR by preventing, controlling, and mitigating FUGITIVE DUST from CONSTRUCTION ACTIVITIES; and

(b) To establish FUGITIVE DUST control standards for Clark County, define reasonable precautions for the prevention and control of FUGITIVE DUST from all CONSTRUCTION ACTIVITIES and to establish thresholds for enforcement of these standards.

94.2 **Applicability.**

94.2.1 This section of the Air Quality Regulations applies to all CONSTRUCTION ACTIVITIES that disturb or have the potential to disturb soils and that emit or have the potential to emit particulate matter into the atmosphere. This section covers the requirements for a Dust Control Permit and a Dust Mitigation Plan as well as the application procedures.

94.2.2 For the purpose of this Regulation, CONSTRUCTION ACTIVITIES include, but are not limited to, the following practices:

(a) Land clearing, maintenance, and land cleanup using machinery;

(b) soil and rock excavation or removal;

(c) soil or rock hauling;

(d) soil or rock crushing or screening;

(e) filling, compacting, stockpiling and grading;

(f) explosive blasting;

(g) demolition;

(h) implosion;

(i) handling of building materials capable of entrainment in air (e.g., sand, cement powder);

(j) abrasive blasting;

(k) concrete, stone, and tile cutting;

(l) mechanized trenching;

(m) initial landscaping;

(n) operation of motorized machinery;

(o) driving vehicles on a CONSTRUCTION site; and

(p) establishing and/or using staging areas, parking areas, material storage areas, or access routes to or from a CONSTRUCTION site.

94.2.3 This regulation shall not apply to operation of emission units or activities permitted under any other section of the Air Quality Regulations, with the specific exception that any CONSTRUCTION ACTIVITIES that occur at such facilities and the land area that Various Location Operating Permits are located on shall be subject to this regulation. In all permits issued under the Air Quality Regulations the provisions of this section shall be considered as part of a BACT determination.

94.2.4 This regulation shall not apply to NORMAL FARM CULTURAL PRACTICES and existing equestrian facilities that are in compliance with zoning requirements.

94.2.5 This regulation shall not apply to emergency activities that may disturb the soil, conducted by any utility or government agency in order to prevent public injury or restore critical utilities to functional status.

94.3 **Definitions.**

94.3.1 For the purpose of this section of the Air Quality Regulations, terms listed in this subsection have the meanings ascribed.

94.3.2 Best Available Control Measures (BACM): means those control measures that are the best available with current technology for reducing or eliminating the release of particulate matter into the atmosphere from construction activities. These include but are not limited to all measures listed in the Construction Activities Dust Control Handbook as Best Management Practices, any control measure required by a Corrective Action Order, and any other control measures required by the Control Officer.

94.3.3 Construction Activities Dust Control Handbook: means the reference manual used to complete a Dust Control Permit and a Dust Mitigation Plan, and contains a listing of the Best Management Practices, copies of

which are on file in the office of the Clark County Department of Air Quality and Environmental Management.

94.3.4 Department or DAQEM: means the Clark County Nevada, Department of Air Quality and Environmental Management.

94.3.5 Dust Mitigation Plan: means an attachment to a Dust Control Permit that lists all the Construction Activities that shall occur and the Best Management Practices that shall be used, to mitigate dust at a permitted site. Upon approval of the application the Dust Mitigation Plan becomes an enforceable part of the Dust Control Permit.

94.3.6 Gravel: means a mineral or rock aggregate ranging in size from 0.25 inch to 3 inch on its longest dimension that is either natural or the product of a mineral processing operation and contains no more than 6% silt, by weight.

94.4 **Permits Required, Exemptions from Required Permit and Responsibility when Exempt.**

94.4.1 Prior to engaging in any CONSTRUCTION ACTIVITIES, the property OWNER AND/OR OPERATOR, who is the owners designee shall apply for and obtain a DUST CONTROL PERMIT from the Clark County Department of Air Quality and Environmental Management.

94.4.2 A DUST CONTROL PERMIT shall not be required for soil disturbing or CONSTRUCTION ACTIVITIES less than 0.25 acre in overall area, mechanized trenching less than one hundred (100) feet in length, or for mechanical demolition of any structure smaller than one thousand (1,000) square feet.

94.4.3 The following activities shall not require a DUST CONTROL PERMIT:

(a) Landscaping by an individual at his/her place of residence;

(b) EMERGENCY maintenance activities conducted by government agencies on publicly maintained roads, road shoulders, right-of-ways and on public flood control facilities; or,

(c) Weed removal or dust palliative application projects conducted solely for the purpose of compliance with weed abatement or vacant land dust control regulations, wherein no grade elevation changes, no soil or rock is imported or exported, or no cut and fill operations occur. Importing of gravel or rock for use as a dust palliative is allowed under this subsection.

94.5 **Permit Applications.**

94.5.1 Application for issuance or renewal of a DUST CONTROL PERMIT shall be made on a form and in a manner prescribed by the CONTROL OFFICER.

94.5.2 Each application shall be accompanied by payment of a fee in accordance with Section 18.

94.5.3 Public agency maintenance projects, performed by that agency's employees, may be eligible for a waiver of permit fees upon approval of the CONTROL OFFICER.

94.5.4 All applications for a DUST CONTROL PERMIT shall include a Dust Mitigation Plan with appropriate CONTROL MEASURES from the Construction Activities Dust Control Handbook for every CONSTRUCTION ACTIVITY to be conducted. Other CONTROL MEASURES that are at least as effective as CONTROL MEASURES contained in the Construction Activities Dust Control Handbook may be implemented provided they meet the criteria outlined in Section 2 of the introduction to the Best Management Practices section of the handbook and with the approval of the CONTROL OFFICER.

94.5.5 An application for a DUST CONTROL PERMIT for a CONSTRUCTION project ten (10) acres or more in area, for trenching activities one (1) mile or greater in length, or for structure demolition using implosive or explosive blasting techniques, shall be required to submit a detailed supplement to the Dust Mitigation Plan. This supplement shall be in the form of a written report and shall, at minimum, detail the project description, the area and schedule of the phases of land disturbance, the Control Measures and the Contingency Measures to be used for all CONSTRUCTION ACTIVITIES. This supplement shall become part of the DUST CONTROL PERMIT as an enforceable permit condition.

94.5.6 An application for a DUST CONTROL PERMIT that includes demolition of a structure One thousand (1,000) square feet or greater in area or explosive blasting of rock or soil, shall include the appropriate supplemental form that is provided in Attachment 1 of the Construction Activities Dust Control Handbook for each activity. These forms shall become part of the DUST CONTROL PERMIT as an enforceable permit condition.

94.5.7 An application for a Dust Control Permit for a Construction project of fifty (50) acres or more in area shall contain an actual soils analysis of the entire project. The soils analysis shall use the appropriate ASTM test method to determine soil types. If the soils analysis identifies two or more soil types, the area of each soil type shall be shown on a map of the project. A copy of the map shall be included in the application for the Dust Control Permit. The soils analysis shall utilize at least one (1) sample taken from the top one (1) foot of soil for each soil type identified. The

soils analysis shall use the appropriate ASTM test to determine the silt content and optimum moisture of the sample(s). The application for the Dust Control Permit shall contain the particulate emission potential (PEP) for each soil type identified calculated from the results of the soils analysis and the Silt Content vs. Optimum Moisture Content Chart (figure 2) in the Construction Activities Dust Control Handbook. The choice of Best Management Practices for the Dust Mitigation Plan may be different for each soil type area, if not, the highest PEP identified on the project shall be used.

94.5.8 The application shall be signed by the property owner or the owner's designee as listed on the "Owner's Designee for Dust Control Permit for Construction Activities" form.

94.5.9 Upon approval, the completed DUST CONTROL PERMIT application, Dust Mitigation Plan and related maps and forms shall become a part of the DUST CONTROL PERMIT.

94.6 **DUST CONTROL PERMIT Requirements.**

94.6.1 Issuance or renewal of each DUST CONTROL PERMIT requires payment of a DUST CONTROL PERMIT fee in accordance with Section 18.

94.6.2 A DUST CONTROL PERMIT is to be granted subject to the right of inspection of such affected land without prior notice by the CONTROL OFFICER.

94.6.3 The permit shall be granted subject to, but not limited to, the following conditions:

(a) The permittee is responsible for ensuring that all PERSONS abide by the conditions of the permit and these regulations;

(b) The permittee is responsible for supplying complete copies of the DUST CONTROL PERMIT including the Dust Mitigation Plan, to all project contractors and subcontractors; and,

(c) The permittee is responsible for all permit conditions, until a Certificate of Project Completion (form DCP 08 see Attachment 1) has been submitted by the permittee and approved by the Control Officer.

94.6.4 The signature of the OWNER AND/OR OPERATOR who is the OWNER's designee on the DUST CONTROL PERMIT shall constitute agreement to accept responsibility for meeting the conditions of the permit and for ensuring that Best Available Control Measures are implemented throughout the project site.

94.6.5 Requirements and conditions of the DUST CONTROL PERMIT shall be made a part of the specifications of the CONSTRUCTION contract between the owner and prime contractor and contracts between the prime contractor and applicable subcontractors. Said contracts must provide a monetary allowance for any dust control options specified in the Dust Mitigation Plan. The amount of the allowance may be specified either by the OWNER, competitively bid, or negotiated by and amongst the parties.

94.6.6 Projects less than 0.25 acres in area under common control that are either contiguous or separated only by a public or private roadway and that cumulatively equal or exceed 0.25 acre in area are also required to obtain a DUST CONTROL PERMIT. These projects are required to meet all DUST CONTROL PERMIT requirements based on cumulative area. All contiguous projects under common control may be required to obtain and operate under a single permit, at the discretion of the CONTROL OFFICER.

94.6.7 A DUST CONTROL PERMIT shall be required for routine, public agency road maintenance, road shoulder maintenance, flood control facility maintenance, and maintenance activities that disturb soil and are capable of causing FUGITIVE DUST. Such Dust Control Permits may be issued based upon written monthly, quarterly, semi-annual, or annual schedules of work for routine maintenance activities. Such permits shall include a Dust Mitigation Plan listing all activities to be performed that may disturb the soil, and shall include BEST MANAGEMENT PRACTICES for all these activities. Public agencies shall quantify miles and acres of maintenance activities to be performed under the conditions of the Dust Control Permit.

94.6.8 The permit holder shall notify the DEPARTMENT OF AIR QUALITY AND ENVIRONMENTAL MANAGEMENT in writing within ten (10) days following the cessation of active operations on all or part of a CONSTRUCTION site when cessation will extend thirty (30) days or longer.

94.6.9 A Dust Control Permit is valid for one calendar year from the date of issuance.

94.6.10 A complete copy of the Dust Control Permit shall be kept on the project site at all times that Construction Activities occur and made available upon request of the Control Officer.

94.7 **General and Administrative Standards.**

94.7.1 Anyone engaging in CONSTRUCTION ACTIVITIES on a site having a Dust Control Permit shall be subject to all conditions set forth in that permit. Failure to comply with any condition set forth in the permit shall be in violation of this section of the Air Quality Regulations.

94.7.2 The Construction Activities Dust Control Handbook, excluding all attachments, is adopted and made a part of this section of the Air Quality Regulation, as if it were fully set forth herein, except as amended by this Regulation.

94.7.3 **DUST CONTROL PERMIT: Restrictions on issuance; Suspension; Revocation; Requirement for Bond; Right to Appeal:**

94.7.3.1 Permits shall not be issued to an applicant having outstanding unpaid DAQEM fees and/or penalties, not under appeal.

94.7.3.2 If an OWNER AND/OR OPERATOR has three (3) Notices of Violation that have been adjudicated by the HEARING OFFICER at the same project for which the Dust Control Permit was issued, the CONTROL OFFICER or his/her representative may suspend or revoke the permit. Upon suspension or revocation of a permit, all activities that are authorized by that permit shall cease. The CONTROL OFFICER shall post notices of suspension or revocation conspicuously on the property involved. The notice shall state the reasons and indicate the date and time of suspension and/or revocation. The suspension or revocation shall remain in effect until such time as rescinded by the CONTROL OFFICER. If the permit has been suspended, the permit may be reinstated. If revoked, a new permit will not be issued until an application is made and fees paid in accordance with Section 18 of these regulations. The permittee shall have a right to hearing before the HEARING OFFICER within five (5) working days from date of issuance of the suspension or revocation. Alternatively, in such instances, the CONTROL OFFICER may require compliance with Subsection 94.7.6 for all operators of earth moving or soil disturbing equipment.

94.7.3.3 If during any 180 day period an OWNER AND/OR OPERATOR has three (3) NOTICES OF VIOLATION that have been adjudicated by the HEARING OFFICER for the same construction site, the CONTROL OFFICER shall require the posting of a surety bond to ensure implementation of the mitigation measures set forth in the approved Dust Control Permit for the subject site. If an OWNER AND/OR OPERATOR has two (2) or more NOTICES OF VIOLATION that have been adjudicated by the HEARING OFFICER from the DAQEM for: failure to obtain a Dust Control Permit; failure to implement BEST MANAGEMENT PRACTICES; or failure to comply with a Corrective Action Order, the CONTROL OFFICER may, as a condition of obtaining or maintaining a Dust Control Permit, issue a Corrective Action Order requiring the OWNER AND/OR OPERATOR to post a surety bond to ensure the implementation of the mitigation measures set forth in said Dust Control Permits.

The OWNER AND/OR OPERATOR shall provide the CONTROL OFFICER the surety bond executed in a form acceptable to the CONTROL OFFICER for the approved Dust Control Permit as the principal with a corporation authorized to transact surety business in the State of Nevada. The OWNER AND/OR OPERATOR shall condition the surety bond upon the faithful performance of all other conditions of the permit and faithful compliance with the provisions of these regulations. The surety bond shall remain in effect until the construction activity specified in the said Dust Control Permit is complete and the department closes the said Dust Control Permit. The amount of each bond required by this section shall equal the estimated cost of implementing the dust CONTROL MEASURES set forth in the approved Dust Control Permit plus an additional 10% of the estimated cost to cover contingencies, as determined by the DAQEM.

94.7.3.4 Any PERSON aggrieved by a decision of the CONTROL OFFICER pursuant to this section may appeal in accordance with Section 7 of these Regulations.

94.7.4 **Corrective Action Orders (CAO) and Notices of Violation (NOV).**

94.7.4.1 If it is found that any provision of Section 94, a DUST CONTROL PERMIT, or a Dust Mitigation Plan has not been complied with, the CONTROL OFFICER may issue a Corrective Action Order to any OWNER AND/OR OPERATOR or other PERSON that they may be in violation of these regulations and said finding shall be corrected within a specified period of time, dependent upon the scope and extent of the problem.

94.7.4.2 The failure to comply with the corrective measures of a Corrective Action Order within the specified period of time shall be a violation of this section of the Air Quality Regulations.

94.7.4.3 Regardless of whether a Corrective Action Order has been issued, the CONTROL OFFICER may issue a Notice of Violation upon determination that the OWNER AND/OR OPERATOR is out of compliance with any provisions of this section of the Air Quality Regulations, a DUST CONTROL PERMIT, a Dust Mitigation Plan, or upon the failure to comply with a previously issued Corrective Action Order.

94.7.4.4 The CONTROL OFFICER, or his/her designee shall be further empowered to enter upon any said land where any loose soil or dust problem exists, and to take such remedial and corrective action as may be deemed appropriate to cope with and relieve, reduce, or remedy the loose soil, dust situation or condition, when the OWNER AND/OR OPERATOR fails to do so.

94.7.4.4.1 Any cost incurred in connection with any such remedial or corrective action by the Department of Air Quality and Environmental Management or any PERSON acting for the Department of Air Quality and Environmental Management shall be reimbursed by the land OWNER AND/OR OPERATOR. If these costs are not reimbursed the CONTROL OFFICER may request a lien be placed on the subject lands that shall remain in full force and effect until any and all such costs have been collected.

94.7.4.5 Any additional CONTROL MEASURES prescribed by the CONTROL OFFICER in a Corrective Action Order, issued to the holder of a Dust Control Permit, shall become a part of that permit's Dust Mitigation Plan.

94.7.5 **Dust Control Monitor.**

94.7.5.1 Any CONSTRUCTION project having 50 acres or more of actively disturbed soil at any given time shall be required by the CONTROL OFFICER to have in place an individual designated as the Dust Control Monitor with full authority to ensure that dust CONTROL MEASURES are implemented, including inspections, record keeping, deployment of resources, and shut-down or modification of CONSTRUCTION ACTIVITIES as needed. This individual shall be listed on the Construction Site Dust Control Monitor form provided in Attachment 1 of the Construction Activities Dust Control Handbook.

94.7.5.2 A Dust Control Monitor shall also be required for individually permitted projects that have less than fifty (50) acres of actively disturbed soil if they are:

(a) under common control and are either contiguous or separated by a public or private roadway and cumulatively have fifty (50) acres or more of actively disturbed soil; or

(b) under common control and not contiguous, but are contained within a common master-planned community and cumulatively have fifty (50) acres or more of disturbed soil.

94.7.5.3 The Dust Control Monitor shall be present at all times CONSTRUCTION ACTIVITIES occur on the project site and shall devote the majority of his/her time specifically to managing dust prevention and control on the site.

94.7.5.4 The requirement for a Dust Control Monitor shall lapse when:

(a) the area of actively disturbed soil becomes less than fifty (50) acres;

(b) the previously disturbed areas have been stabilized in accordance with the requirements of these Regulations; and,

(c) the stabilization has been approved and the acreage verified by the CONTROL OFFICER.

94.7.5.5 A Dust Control Monitor shall be considered qualified when he/she has met the following minimum qualifications:

(a) successfully completed the Basic Dust Control Class;

(b) successfully completed the Dust Control Monitor Class;

(c) two years of experience in the CONSTRUCTION industry; and,

(d) successfully completed a course that certifies him/her in Visual Emissions Evaluation (VEE) that has been approved or is conducted by the CONTROL OFFICER.

94.7.5.6 For a Dust Control Monitor to maintain his/her certification he/she must successfully complete the Dust Control Monitor class at least once every three years.

94.7.6 **Dust Control Class.**

94.7.6.1 The CONSTRUCTION site superintendent or other designated on-site representative of the project developer and all construction site supervisors and foremen shall be required to have successfully completed a Clark County Department of Air Quality and Environmental Management Dust Control Class.

94.7.6.2 Water truck and water pull driver(s) for each CONSTRUCTION project shall be required to have successfully completed a Clark County Department of Air Quality and Environmental Management Dust Control Class.

94.7.6.3 All individuals required to attend and successfully complete the Dust Control Class shall do so at least once every three years.

94.7.6.4 CONSTRUCTION site workers and equipment operators, may be required to attend a Dust Control Class as a remedial or corrective measure.

94.7.7 Signage Requirements.

94.7.7.1 For each Dust Control Permit issued where the project site is less than or equal to ten (10) acres, or for trenching projects between one hundred (100) feet and one (1) mile in length, or for demolition of a structure totaling one thousand (1,000) square feet or more, the permittee shall install a sign on the project site prior to commencing CONSTRUCTION ACTIVITY that is visible to the public and measures, at minimum, four (4) feet wide by four (4) feet high, conforming to Department policy on Dust Control Permit Design and Posting of Signage listed in Attachment 4 of the Construction Activities Dust Control Handbook.

94.7.7.2 For each Dust Control Permit issued where the project site is over ten (10) acres, or for trenching projects aggregating one (1) mile or greater in length, the permittee shall install a sign on the project site prior to commencing CONSTRUCTION ACTIVITY and visible to the public and measures, at minimum, eight (8) feet wide by four (4) feet high, conforming to Department policy on Dust Control Permit Design and Posting of Signage listed in Attachment 4 of the Construction Activities Dust Control Handbook.

94.7.7.3 Projects shorter than two (2) weeks in duration may request a waiver of the requirement of posting a DUST CONTROL PERMIT Sign.

94.7.8 **Record Keeping.**

94.7.8.1 On a site having a Dust Control Permit a written record of self inspection shall be made each day soil disturbing work is conducted. The "Record of Daily Dust Control" form provided in Appendix A of the Construction Activities Dust Control Handbook, or other written record that provides at a minimum the same information, shall be completed.

94.7.8.2 Records of CONSTRUCTION site self inspections shall be kept for a minimum of one (1) year or for six (6) months beyond the project duration, whichever is longer. Self inspection records include daily inspections for crusted or damp soil, trackout conditions and cleanup measures, daily water usage, DUST SUPPRESSANT application records, etc.

94.7.8.3 For CONTROL MEASURES involving chemical or organic soil stabilization, records shall indicate the type of product applied, vendor name, label instructions for approved usage, and the method, frequency, concentration, and quantity of application.

94.8 **Soil Stabilization Standards.**

94.8.1 All permittees, contractors, OWNERS, operators, or other PERSONS involved in CONSTRUCTION ACTIVITIES shall employ CONTROL MEASURES as set forth in the Construction Activities Dust Control Handbook.

94.8.2 One or a combination of the following methods shall be used to maintain dust control on all disturbed soils on Construction Sites and staging areas:

(a) The soil shall be maintained in a sufficiently damp condition to prevent loose grains of soil from becoming dislodged when the disturbed soil is tested using the Drop Ball Test outlined in Subsection 94.12.5; or

(b) The soil shall be crusted over by application of water, as demonstrated by the Drop Ball Test outlined in Subsection 94. 12.5; or

(c) The soil shall be completely covered with clean gravel or treated with a DUST SUPPRESSANT approved by the CONTROL OFFICER, to the extent necessary to pass a Drop Ball Test outlined in Subsection 94.12.5.

94.8.3 When a CONSTRUCTION site or part thereof becomes inactive for a period of thirty (30) days or longer, long-term stabilization shall be implemented within ten (10) days following the cessation of active operations.

94.8.4 Stockpiles located within one hundred (100) yards of occupied buildings shall not be constructed over eight (8) feet in height.

94.8.5 Stockpiles over eight (8) feet high shall have a road bladed to the top to allow water truck access or shall have a sprinkler irrigation system installed, used and maintained.

94.9 **Best Available Control Measures (BACM)**

94.9.1 Any PERSON who engages in a Construction Activity as defined in this regulation shall employ BACM for the purpose of dust control.

94.9.2 All CONTROL MEASURES that are necessary to maintain soil stability as well s those listed in an approved Dust Mitigation Plan, shall be implemented twenty four (24) hours a day, seven (7) days a week, until the permit is closed in accordance with Subsection 94.6.3(c).

94.9.3 In the event there are wind conditions that cause FUGITIVE DUST EMISSIONS; in excess of 20% OPACITY using the Time Averaged Method or Intermittent Emissions Method, in excess of 50% OPACITY using the Instantaneous Method, or one hundred (100) yards in length from the point of origin, in spite of the use of Best Available CONTROL MEASURES, all CONSTRUCTION ACTIVITIES that may contribute to these emissions shall immediately cease. Water trucks and water pulls shall continue to operate under these circumstances, unless wind conditions are such that the continued operation of watering equipment cannot reduce FUGITIVE DUST EMISSIONS or that continued equipment operation poses a safety hazard.

94.9.4 If a Dust Control Permit is not required, the OWNERS, operators, or any other PERSON involved in CONSTRUCTION ACTIVITIES shall employ BEST MANAGEMENT PRACTICES, as set forth in the Construction Activities Dust Control Handbook and comply with the soil stabilization standards listed in Subsections 94.8 and emissions standards listed in Subsection 94.11.

94.10 **CONSTRUCTION ACTIVITIES Violations.**

94.10.1 Any of the following circumstances constitute a violation of the Clark County Air Quality Regulations:

(a) Failure to obtain an approved DUST CONTROL PERMIT before engaging in activities that disturb or have the potential to disturb soils and/or cause or have the potential to cause FUGITIVE DUST to enter the air.

(b) Failure to obtain an approved DUST CONTROL PERMIT for all areas subject to CONSTRUCTION ACTIVITIES.

(c) Conducting a CONSTRUCTION ACTIVITY as defined by Subsection 94.2 for which no specified control option is indicated in the approved DUST CONTROL PERMIT or the Dust Mitigation Plan.

(d) Failure to perform any duty to allow or carry out an inspection, entry, or monitoring activity required by the Department of Air Quality and Environmental Management.

(e) Failure to renew or obtain a new permit, prior to a DUST CONTROL PERMIT expiring, provided the site does not meet the exemption requirements for a DUST CONTROL PERMIT as defined in Subsection 94.4.2.

(f) Failure to implement any item that is listed as a "Requirement" in the Best Management Practices section of the Construction Activities Dust Control Handbook for an applicable Construction Activity.

(g) Failure to implement any BEST MANAGEMENT PRACTICE listed in an approved DUST CONTROL PERMIT / Dust Mitigation Plan.

(h) Failure to maintain static (not actively worked) project soils with adequate surface crusting to prevent wind erosion as measured by test method "Soil Crust Determination (The Drop Ball Test)" in Subsection 94.12.5, or alternative control measures approved in the Dust Mitigation Plan.

(i) Failure to comply with any record keeping requirements of this section.

(j) Failure to maintain project haul routes or haul roads in a stable condition as measured by the Intermittent Emissions test method outlined in Section 94.12.3.

(k) Failure to have a Dust Control Monitor in place, per Subsection 94.7.5, for a Construction project.

(l) Allowing FUGITIVE DUST emissions to exceed the standards set forth in Subsection 94.11.1 through 94.11.4.

(m) Using a dry rotary brush or blower device without sufficient water to limit emissions per Subsection 94.11.5.

(n) Allowing mud or dirt to be tracked out onto a paved road that exceed the standards set forth in Subsection 94.11.6.

(o) Failure to comply with any other provision of this section.

94.11 **Emission Standards.**

94.11.1 No PERSON shall cause or permit the handling, transporting, or storage of any material in a manner that allows visible emissions of particulate matter to exceed: 20% OPACITY using the Time Averaged Method or the Intermittent Emissions Method; 50% OPACITY using the Instantaneous Method. These Test Methods are set forth in Subsection 94.12.

94.11.2 No PERSON shall cause or permit the handling, transporting, or storage of any material in a manner that allows a dust plume that extends one hundred (100) yards or more, horizontally or vertically, from the point of origin.

94.11.3 Where a DUST CONTROL PERMIT is required and has not been issued or in the event Best Available CONTROL MEASURES have not been fully implemented, no PERSON shall cause or permit the handling, transportation, or storage of any material in a manner that exceeds the limits listed in any one of the following:

(a) The limits set forth in Subsection 94.11.1; or

(b) Allow a dust plume to extend more than one hundred (100) feet, horizontally or vertically, from the point of origin; or

(c) Allow a dust plume to cross a property line.

94.11.4 Visible emissions from abrasive blasting shall be limited to no more than an average of 40% OPACITY for any period aggregating three (3) minutes in any sixty (60) minute period, utilizing the test method set forth in Subsection 94.12.

94.11.5 The use of dry rotary brushes and blower devices for removal of deposited mud/dirt trackout from a paved road is prohibited, unless sufficient water is applied to limit the visible emissions to an OPACITY of not greater than: 20% OPACITY using the Time Averaged Method or Intermittent Emissions Method; 50% OPACITY using the Instantaneous Method. These test methods are set forth in Subsection 94.12. The use of rotary brushes without water is prohibited.

94.11.6 Mud or dirt shall not be allowed to be tracked out onto a paved road where such mud or dirt extends fifty (50) feet or more in cumulative length from the point of origin or allow any trackout to accumulate to a depth greater than 0.25 inch. Notwithstanding the preceding, all accumulations of mud or dirt on curbs, gutters, sidewalks, or paved roads including trackout less than fifty (50) feet in length and 0.25 inch in depth, shall be cleaned and

maintained to eliminate emissions of Fugitive Dust. At a minimum all trackout must be cleaned up by the end of the workday or evening shift, as applicable.

94.12 Test Methods

94.12.1 Visual Determination of OPACITY of EMISSIONS from Sources of Visible EMISSIONS.

Applicability: This method is applicable for the determination of the OPACITY of EMISSIONS from sources of visible EMISSIONS The Time Averaged Method requires averaging of visible EMISSION readings over a specific time period to determine the OPACITY of visible EMISSIONS. The Time Averaged Method is applicable to continuous EMISSIONS sources. The Intermittent Emissions Method requires averaging a set number of visible EMISSIONS readings to determine the OPACITY of visible EMISSIONS. The Intermittent Emissions Method is applicable to Intermittent EMISSIONS sources. The Instantaneous Method sets an OPACITY limit that shall not be exceeded at any time. The Instantaneous Method is applicable to any emissions source and is a non-federal requirement.

Principle: The OPACITY of EMISSIONS of a source of visible EMISSIONS is determined visually by an observer who has current certification approved by the Control Officer, as a qualified Visible EMISSIONS Evaluator, using US EPA Method 9.

Procedures: A qualified Visible EMISSIONS Evaluator shall use the procedures set forth in Subsections 94.12.2, 94.12.3, and 94.12.4 for visually determining the OPACITY of EMISSIONS.

94.12.2 Time Averaged Method: These procedures is for evaluating continuous FUGITIVE DUST EMISSIONS and are for the determination of the OPACITY of continuous FUGITIVE DUST EMISSIONS by a qualified observer. Continuous FUGITIVE DUST EMISSIONS sources include activities that produce emissions continuously during operations such as earthmoving, grading, and trenching. Emissions from these types of continuous activities are considered continuous even though speed of the activity may very and Emissions may be controlled to 100%, producing no visible emissions, during parts of the operation. The qualified observer should do the following:

(a) Position: Stand at a position at least twenty (20) 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. 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 earth moving equipment, as long as the sun

remains oriented in the 140° sector to the back. As much as possible, 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 (e.g., earthmoving, grading, trenching), 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 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. Make OPACITY observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet 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 at a point just beyond where material is not being deposited out of the plume (normally three (3) feet above the mechanical equipment generating the plume).

(d) Recording Observations: Record the OPACITY observations to the nearest 5% every fifteen (15) seconds on an observational record sheet. Each momentary observation recorded represents the average OPACITY of EMISSIONS for a fifteen (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 fifteen (15) second interval reading. Readings identified as "x" shall be considered interrupted readings.

(e) Data Reduction For Time-Averaged Method: For each set of twelve (12) or twenty four (24) consecutive readings, calculate the appropriate average OPACITY. Sets shall 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.

94.12.3 Intermittent EMISSIONS Method: This procedure is for evaluating Intermittent FUGITIVE DUST EMISSIONS: This procedure is for the determination of the OPACITY of intermittent FUGITIVE DUST EMISSIONS by a qualified observer. Intermittent FUGITIVE DUST EMISSIONS sources include activities that produce

emissions intermittently such as screening, dumping, and stockpiling where predominant emissions are produced intermittently. The qualified observer should do the following:

(a) Position: Stand at a position at least twenty (20) 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. 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. As much as possible, 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 (e.g., pile, material handling, 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 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. Make OPACITY observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated). Make two observations per plume at the same point, beginning with the first reading at zero (0) seconds and the second reading at five (5) seconds. The zero (0) second observation should begin immediately after a plume has been created above the surface involved.

(d) Recording Observations: 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 five (5) second period.

(e) Repeat Subsection 94.12.3(c) of this Regulation and Subsection 94.12.3(d) of this Regulation until you have recorded a total of 12 consecutive OPACITY readings. This will occur once six intermit plumes on which you are able to take proper readings have been observed. 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) Average the 12 OPACITY readings together. If the average OPACITY reading equals 20% or lower, the source is in compliance with the averaged method OPACITY standard described in this Section.

94.12.4 Instantaneous Method: This is a non-federal procedure for evaluation of FUGITIVE DUST EMISSIONS: This procedure is for the instantaneous determination of the OPACITY of FUGITIVE DUST EMISSIONS by a qualified observer. This method is a Clark County local requirement and is not submitted as part of the applicable State Implementation Plan. The qualified observer should do the following:

(a) Position: Stand at a position at least twenty (20) 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. 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 earth moving equipment, as long as the sun remains oriented in the 140° sector to the back. As much as possible, 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 (e.g., earthmoving, grading, storage pile, material handling, 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 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. Make OPACITY observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated).

(d) Recording Observations: Record the OPACITY observations to the nearest 5%.

(e) Data Reduction For Instantaneous Regulations: Evaluate all observations for conformance with the instantaneous regulation.

94.12.5 Soil Crust Determination (The Drop Ball Test):

(a) Drop a steel ball with a diameter of 0.625 ($5/8^{th}$) inch and a mass ranging from 0.56-0.60 ounce from a distance of one (1) foot directly above the soil surface. If blowsand is present, clear the blowsand from the surfaces on which the soil crust test method is conducted. Blowsand is defined as thin deposits of loose uncombined grains covering less than 50% of a project site that have not originated from the representative surface being tested. If material covers a visible crust, which is not blowsand, apply the test method in Subsection 90.4.1.3 (Determination Of Threshold Friction Velocity) of this Regulation to the loose material to determine whether the surface is stabilized.

A sufficient crust is defined under the following conditions: once a ball has been dropped according to Subsection 90.4.1.1 of this Regulation, 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.

(b) Randomly select each representative disturbed surface for the drop ball test by using a blind "over the shoulder" toss of a throwable object (e.g., a metal weight with survey tape attached). Using the point of fall as the lower left hand corner, measure a one (1) foot square area. Drop the ball three times within the 1-foot by 1-foot square survey area, using a consistent pattern across the survey area. The survey area shall be considered to have passed the Soil Crust Determination Test if at least two out of the three times that the ball was dropped, the results met the criteria in Subsection 90.4.1.1(a) of this Regulation. 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 90.4.1.1(a) of this Regulation for all of the survey areas tested, then the site shall be considered to have passed the Soil Crust Determination Test and shall be considered sufficiently crusted.

(c) 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 soil crust test as often as necessary on each portion of the overall conditions of the site using the random selection method set forth in Subsection 90.4.1.1(b) of this Regulation for an accurate assessment.

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History: Initial adoption: June 22, 2000
Amended: November 16, 2000; March 18, 2003; June 3, 2003; July 1, 2004.

94.12.5 Soil Crust Determination (The Drop Ball Test):

(a) Drop a steel ball with a diameter of 0.625 (5/8th) inch and a mass ranging from 0.56-0.60 ounce from a distance of one (1) foot directly above the soil surface. If blowsand is present, clear the blowsand from the surfaces on which the soil crust test method is conducted. Blowsand is defined as thin deposits of loose uncombined grains covering less than 50% of a project site that have not originated from the representative surface being tested. If material covers a visible crust, which is not blowsand, apply the test method in Subsection 90.4.1.3 (Determination Of Threshold Friction Velocity) of this Regulation to the loose material to determine whether the surface is stabilized.

A sufficient crust is defined under the following conditions: once a ball has been dropped according to Subsection 90.4.1.1 of this Regulation, 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.

(b) Randomly select each representative disturbed surface for the drop ball test by using a blind “over the shoulder” toss of a throwable object (e.g., a metal weight with survey tape attached). Using the point of fall as the lower left hand corner, measure a one (1) foot square area. Drop the ball three times within the 1-foot by 1-foot square survey area, using a consistent pattern across the survey area. The survey area shall be considered to have passed the Soil Crust Determination Test if at least two out of the three times that the ball was dropped, the results met the criteria in Subsection 90.4.1.1(a) of this Regulation. 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 90.4.1.1(a) of this Regulation for all of the survey areas tested, then the site shall be considered to have passed the Soil Crust Determination Test and shall be considered sufficiently crusted.

(c) 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 soil crust test as often as necessary on each portion of the overall conditions of the site using the random selection method set forth in Subsection 90.4.1.1(b) of this Regulation for an accurate assessment.

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History: Initial adoption: June 22, 2000
Amended: March 18, 2003

Clark County Department of Air Quality & Environmental Management - Air Quality Regulations (AQRs)

6. Construction Activities Dust Control Handbook

Clark County

Department of Air Quality Management

Protecting the air we share

Air Quality

ACKNOWLEDGEMENTS

This Handbook includes the procedures for obtaining a Dust Control Permit and the development of the accompanying Dust Mitigation Plan. This Handbook is included by reference in Section 94 of the Clark County Air Quality Regulations. This Handbook replaces in its entirety the current Construction Activities Notebook that includes the Section 94 Handbook. These documents were produced to facilitate the development of a comprehensive construction activities program within Clark County to address the mitigation of PM_{10} (particulate matter less than 10 microns in diameter) impacts as the County continues to grow and prosper.

The original Handbook was prepared by the Clark County Health District–AQD and Clark County Department of Comprehensive Planning, with the guidance of the Particulate Matter Emissions Control Research Advisory Committee (PM Committee). The Clark County Department of Air Quality Management (DAQM) has completed this revision of that document. External and internal workshops and meetings were held for both the private and public sectors to develop, revise, and publish these documents. An abbreviated list of contributors to this process is included below.

Allstate-Nevada Environmental
American Asphalt
Apex Industrial Park
Association of General Contractors
Broadbent & Associates
Chemical Lime Company
City of Boulder City
City of Henderson
City of Las Vegas
City of North Las Vegas
Clark County Department of Air Quality Management
Clark County Department of Aviation
Clark County Department of Public Works
Clark County Health District-Environmental Health Division
Clark County Regional Flood Control District
Clark County School District
COLGENCON
Concordia
Conservation District of Southern Nevada
Converse Consultants
Copper State Emulsions, Inc.
Creel Farms
Del Webb
Envirocon
Geotechnical Environmental Services
Golden West Industries
Goldie, Inc.
Granite Construction
J.A. Jones Construction
J.M.B. Construction
Kalb Construction
Kaufman & Broad
Kerr-McGee
Kleinfelder
Korte-Bellew Construction
Lake at Las Vegas
Las Vegas Paving Corporation
Las Vegas Valley Water District
Meadow Valley Contractors
Mel Clark, Inc.
Meranto Construction
MGM Grand Hotel & Casino
Nevada Contractors Association
Nevada Department of Transportation
Nevada Division of Environmental Protection
Nevada Power Company
Nevada Underground, Inc.
Pentacore Engineering, Inc.
Perini Building Company
Perma-Built Homes
Sanders Construction
Sandia Construction
Scientific Applications International Corporation
Soil Tech
Southern Nevada Homebuilders Association
Southwest Gas Corporation
Standpark Homes
Underground, Inc.
U.R.S. Corporation
U.S. Homes
Weaver Construction

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ATTACHMENT 4: Dust Control Permit Design and Posting of Signage
ATTACHMENT 5: Air Quality Regulations

ACRONYMS/DEFINITIONS

A complete set of definitions is included in Section 0 of the DAQM Regulations.

ASHTO - American Association of State Highway Transportation Officials

DAQM - Clark County Department of Air Quality Management

ASTM - American Society for Testing and Materials

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, dirt, mud, demolition debris, cotton, trash, cinders, pumice, saw dust, feeds, grains, fertilizers, and dry concrete, which is capable of producing fugitive dust at an industrial, institutional, governmental, construction, and/or demolition site.

Control Measure – An action or practice employed to comply with a Control Requirement.

Control Requirement – A summary statement of the regulation requirements pertaining to a particular activity or action.

Dust Palliative – Hygroscopic material, non-toxic chemical stabilizer or other dust palliative material which is not prohibited for ground surface application by EPA or NDEP or any applicable law or regulation, as treatment material for reducing fugitive dust emissions.

Dust Suppressant – Water, hygroscopic material, solution of water and chemical surfactants, foam, non-toxic chemical stabilizer or any other dust palliative which is not prohibited for ground application by the EPA or NDEP or any applicable law or regulation, as treatment material for reducing fugitive dust emissions.

EPA – Environmental Protection Agency

NDEP – Nevada Division of Environmental Protection

Freeboard – The distance measured from the top of the side of storage area of a truck to the fill line.

Opacity – A visual measurement of the density of a particulate matter such as soil dust when suspended in air. Opacity is evaluated using specified test methods.

Optimum Soil Moisture Content – The water content at which soil can be compacted to the maximum dry weight by modified compactive effort using ASTM D 1557 for Optimum Soil Moisture Content/Maximum Density.

PEP - Particulate Emission Potential

Silhouette Area – The area of a shadow produced if a light was shown directly from the opposite side of an object.

Stable, and **Stabilized** – Stationary soils are considered stable or stabilized when they are in compliance with the standard set forth per Regulation Section 90. Soils that are being actively handled or disturbed by construction related activity or off-road construction traffic and vehicle parking are considered stable or stabilized when they are in compliance with the opacity and plume limitations set forth per Regulation Section 94. Unpaved haul roads are considered stable or stabilized when they are in compliance with standards set forth per Regulation Section 91. Test methods for stability are expected to be used when necessary, but are not required to be utilized continuously during active construction activity.

Staging area – Any portion of a construction project used for storing materials, parking vehicles, and equipment; may be a separate area from the main construction project area.

Surfactant – A compound or element that reduces the surface tension of a liquid. The term is used in this document to describe wetting and spray adjuvants designed to promote the economical application of water to hydrophobic soils. Surfactants prevent drifting, decrease run-off, increase the penetrating and wetting properties, and promote more even, consistent spray patterns.

Tack coat – An asphaltic material applied as a binder to Type II Aggregate prior to the placement of asphalt during road construction.

Tackifier – A substance mixed with water that binds together mulches, small particles, or other dust palliatives without forming a hard crust. Many dust palliatives, in a more dilute concentration, can be used as tackifiers.

Trackout – Soil on paved roadways deposited from vehicles that have passed from a construction site or from an unpaved access route onto the paved surface.

Type II Material – Base Aggregate as defined in Section 704 of the Uniform Standards Specifications for Public Works' Construction Off-Site Improvements, Clark County Area, Nevada.

Wheel shaker – A device capable of spreading the tread on tires and shaking the wheels and axles of vehicles for the purpose of releasing mud, soil, and rock from the tires and undercarriage to prevent tracking those materials onto paved surfaces.

Wheel washer – A station or device, either temporary or permanent, that utilizes a bath or spray of water for the purpose of cleaning mud, soil, and rock from the tires and undercarriage of vehicles to prevent tracking those materials onto paved surfaces.

Wobbler - Type of sprinkler head designed to minimize evaporation of water by enhancing the horizontal spray pattern.

INTRODUCTION

This Handbook replaces in its entirety the current Construction Activities Notebook that includes the Section 94 Handbook.

The Clark County Department of Air Quality Management (DAQM) regulates construction activities that disturb soil in Clark County, Nevada. A Dust Control Permit for Construction Activities (Dust Control Permit) is required for most soil-disturbing projects.

An approved Dust Control Permit must be obtained before soil is disturbed. Dust Control Permits are valid for one (1) year. If a project continues for more than one year, the permit must be renewed prior to expiration. DAQM must be notified within 10 working days after the completion of a project. Each Dust Control Permit application must have a Dust Mitigation Plan outlining control measures to prevent fugitive dust. Control measures are based upon soil type and project activities. Soil types are classified based upon particulate emission potential (high, moderate high, moderate low, low, and slight). Guidelines and maps are provided within this Handbook.

Fugitive dust emission violations are strictly enforced. Permittees and contractors are responsible for controlling dust on their projects 24 hours a day, 7 days a week; there are no exceptions. Violators may be required to pay penalties or possibly suspend operations until the fugitive dust is mitigated on the construction sites.

This Construction Activities Dust Control Handbook provides a guideline for obtaining a Dust Control Permit and developing a Dust Mitigation Plan. The Construction Activities Dust Control Handbook is included by reference in Section 94 of the Clark County Air Quality Regulations. The Construction Activities Dust Control Handbook has been divided into the following segments:

GENERAL INFORMATION:

a. Dust Control Permit Requirements (DCP).
b. General Construction Project Activities (GEN).

BEST MANAGEMENT PRACTICES:

a. Soil Particulate Emission Determination Charts and Maps.
b. Best Management Practices (BMP) for Construction Activities.

APPENDACIES:

a. Appendix A - Dust Control Permit Supplemental Forms.
b. Appendix B - Supplement to Dust Control Permit Mitigation Plans.

ATTACHMENTS:

a. Attachment 1 - Dust Control Permit Forms.
b. Attachment 2 - Dust Suppressant/Palliative/Surfactant Information.
c. Attachment 3 - California Air Resources Board (CARB)-Approved Abrasives Information.
d. Attachment 4 - Dust Control Permit Signage.
e. Attachment 5 - Air Quality Regulations.

DUST CONTROL PERMIT APPLICATION SUMMARY

DCP 01

Dust Control Permit Application Summary

REQUIREMENTS

- **Permit required for soil-disturbing projects greater than or equal to 0.25 acres.**
- **Permit required for demolition of any structure greater than or equal to 1,000 sq. ft.**
- **Permit required for trenching operations greater than or equal to 100 feet in length.**
- **Construction BMP *Control Requirements* must be addressed by *Control Measures***
- **Construction BMP Control Measures must be followed for every soil disturbing or construction activity.**

CONTROL MEASURES

1. A Dust Control Permit is required for projects with the following dimensions:
   a. Soil-disturbing or construction projects greater than or equal to 0.25 acres;
   b. Trenching projects greater than or equal to 100 feet in length; or
   c. Mechanical demolition of any structure larger than or equal to 1,000 square feet.

2. **Dust Control Permits may be issued to the following persons:**
   a. Property owner or authorized designee; or
   b. Representative of a municipality that owns the property.

3. **Dust Control Permit requirements:**
   a. Submit a complete application that includes project vicinity and assessor's parcel maps (see Attachment 1: Dust Control Permit Application Form DCP01). Permit applications should be submitted to the DAQM offices at 500 S. Grand Central Parkway, 1st Floor, PO Box 551776, Las Vegas, NV 89155-1776.

b. For soil disturbing or construction projects greater than or equal to 0.25 acres, a *Dust Mitigation Plan* using the Best Management Practices in the Construction Activities Dust Control Handbook must be submitted. Control Measures must be selected to meet all Control Requirements. Consider project conditions and logistics when identifying and selecting Best Management Practices and Control Measures (see Attachment 1: Dust Control Permit Forms).

   A *Supplement to the Dust Mitigation Plan* is required for soil disturbing or construction projects 10 acre or larger in size, trenching activities one (1) mile or more in length and structural demolition using implosive or explosive techniques (see Appendix B: Supplement to Dust Control Permit Mitigation Plans). This required supplement will detail the Dust Mitigation Plan and include the Project Description, Control Measures drawn from Construction Activities Best Management Practices, Site Plan, Soil Stabilization Measures, and Employee Dust Control Training and Compliance.

c. Any construction project having more than 50 acres of actively disturbed soil at any given time is required to have a Dust Control Monitor as described in Section 94.7.5.

d. The construction site superintendent(s), foremen or other designated on-site representative(s) of the project developer, as well as the water truck/pull driver(s) for each construction site, are required to successfully complete a DAQM Dust Control Class and possess a current Dust Control Card.

4. A Dust Control Permit sign must be conspicuously posted on every construction site (see Attachment 4: Dust Control Permit Signage).

5. Copies of the Dust Control Permit, including the Dust Mitigation Plan and related maps, must be supplied to all contractors and subcontractors. A complete copy must be kept at the construction site at all times.

6. Notifications:

   a. Notify DAQM of any proposed modifications to the Dust Control Permit, including the Dust Mitigation Plan. Submit an Application For Dust Control Permit Modification form DCP06 (see Attachment 1: Dust Control Permit Forms); and,

b. Inform DAQM within 10 working days of project completion and final site stabilization. Submit a Certificate of Completion form DCP08. (See Attachment 1: Dust Control Permit Forms).

7. DAQM typically issues Dust Control Permits for Construction Activities within 10 working days of receipt of complete application. Adequate time for application processing must be provided. Emergency measures are exempt from permitting requirements, but are not exempt from the application of dust mitigation measures or the use of Best Management Practices.

DUST CONTROL CLASS

DCP 02

DAQM Dust Control Class

REQUIREMENTS

- **The construction site superintendent(s), foremen and other designated on-site representative(s) must attend Dust Control Class.**
- **The water truck/pull driver(s) for each project must attend Dust Control Class.**

CONTROL MEASURES

1. The construction site superintendent(s), foremen and other designated on-site representative(s) of the project developer, as well as the water truck/pull driver(s) for each construction site, are required to successfully complete a Clark County Department Air Quality Management Dust Control Class or possess a current Dust Control Card.

2. Dust Control Card must be renewed every three (3) years.

3. The content of the Dust Control Class includes information on completing Dust Mitigation Plans, health effects of particulates, Clark County Air Quality Regulations, enforcement, and pertinent dust mitigation measures.

4. The Dust Control Class, including a written exam, typically lasts three to four hours. Contact DAQM at (702) 455-5942 to register for a class time. Evening and Saturday classes may be arranged through DAQM to provide instruction for larger groups. This service is provided to any group, including contractors and subcontractors, wishing to certify more than 15 employees at one time.

DUST CONTROL PERMIT SIGNAGE

DCP 03

DAQM Dust Control Permit Signage

REQUIREMENTS

- **The Dust Control Permit sign must be placed in a conspicuous place on the project site prior to commencement of construction activities.**
- **The "*Dust Control Matters*" phone numbers posted on the Dust Control Permit sign must be for a person who can be reached during evening and weekend hours.**

CONTROL MEASURES

1. The Dust Control Permit sign must be placed on the project site and must be conspicuous to the public. The "*Dust Control Matters*" phone number posted on the Dust Control Permit sign must be for a person who can be reached during evening and weekend hours.

2. Each Dust Control Permit aggregating from 0.25 acres up to and equal to 10 acres must install a sign on the property prior to the commencement of construction. This sign must measure, at minimum, four (4) feet wide by four (4) feet high, conforming to DAQM policy on Dust Control Permit Design and Posting of Signage (see Attachment 4: Dust Control Permit Design and Posting of Signage).

3. For each Dust Control Permit aggregating more than 10 acres, a sign must be installed on the property prior to the commencement of construction. This sign must measure, at minimum, eight (8) feet wide by four (4) feet high, conforming to DAQM policy on Dust Control Permit Design and Posting of Signage (see Attachment 4).

4. Projects less than two (2) weeks in duration may request a waiver of the requirement of posting a Dust Control Permit sign.

DUST CONTROL PERMIT MODIFICATIONS

DCP 04

Dust Control Permit Modifications

REQUIREMENTS

- **Modifications must be made on a Dust Control Permit Modification form and submitted to DAQM for approval.**
- **If the modification is in response to a CAO, it must be noted on the modification form, and corrective action must take place as directed.**

CONTROL MEASURES

1. Modifications to the Dust Control Permit can be made with DAQM approval.
2. A Dust Control Permit Modification application form must be submitted to the DAQM (see Attachment 1: Dust Control Permit Forms).
3. If the parcel changes ownership or you wish to change the permittee during the lifetime of a Dust Control Permit, an APPLICATION FOR MODIFICATION OF A DUST CONTROL PERMIT – TRANSFER OF PERMIT AND/OR CHANGE OF OWNER form DCP 11 (see Attachment 1) must be submitted and approved, proof of ownership must be provided with the Application. This modification does not change the expiration date of the permit.
4. The Dust Control Permit Modification application form must be signed by the permittee or written designee. If a modification is requested for revision of project acreage due to long term stabilization of a portion of a project with a dust palliative, a Dust Palliative Information Form must be included with the modification form (Attachment 1: Dust Control Permit Forms).
5. If the modification is in response to a Corrective Action Order (CAO) issued by the Control Officer or their representative, this should be noted on the modification form. The corrective action must take place as directed. All other permit requirements remain in effect while the modification is being processed.
6. If selected control measures are inadequate to meet the requirements of Section 94.8, Soil Stabilization Standards, of the Air Quality regulations, additional or more stringent standards must be selected. A Dust Control Permit Modification form must be submitted.
7. If the modification adds acreage to the permit, the fees for the added acreage must be included with the application.
8. A modification does not change the expiration date of the permit.

DUST CONTROL PERMIT CLOSURE / RENEWAL

DCP 05

Dust Control Permit Closure/Renewal

REQUIREMENTS

- **Within 10 working days of the completion of the project, the site must be stabilized and a Certificate Of Project Completion form submitted to DAQM.**
- **Dust Control Permits are valid for one (1) year. If a project is not completed in that time, the Dust Control Permit must be renewed.**

CONTROL MEASURES

Dust Control Permit Closure

Within 10 working days of the completion of the project, a Certificate Of Project Completion form DCP08 must be submitted to DAQM (see Attachment 1: Dust Control Permit Forms). A site visit will be conducted to determine if the parcel is properly stabilized. Upon verification of stabilization, the permit will be closed. If the parcel has not been properly stabilized, the permit holder will be notified of the deficiencies with a Corrective Action Order outlining corrective measures and timelines. Another Dust Control Permit Closure form must be submitted and another site visit will be conducted.

Dust Control Permit Renewal

Dust Control Permits are valid for up to one (1) year. If a project will not be completed before the Dust Control Permit expires, the Dust Control Permit must be renewed. Submit an Application For Renewal Of A Dust Control Permit, form DCP10 (see Attachment 1; Dust Control Permit Forms), to the DAQM prior to expiration of the original permit. The number of acres for the renewal will only include those acres that will be disturbed throughout the rest of the project. Acreage that has been verified by DAQM to be stable or areas that no longer contain disturbed soil need not be included in the renewal. Unpaved staging areas must still be included in the project acreage submitted for permitting.

DUST CONTROL PERMIT COMPLIANCE

DCP 06

Dust Control Permit Compliance

REQUIREMENTS

- **Comply with all Control Measures as required by DAQM regulations.**
- **Comply with all Control Measures as directed by an Enforcement Officer in a Corrective Action Order.**
- **Comply with all Control Measures listed in the Dust Mitigation Plan of the Dust Control Permit.**
- **Employ BACM in all phases of construction activities.**
- **Comply with Best Management Practices requirements**

CONTROL MEASURES

Section 94 Regulation Overview

1. All permittees, contractors, owners, operators, or other persons involved in construction activities must employ Control Measures as set forth in the Dust Control Handbook.

2. One or a combination of the following methods must be used to maintain dust control on all disturbed soils and Construction Sites, including all access routes and staging areas:

   (a) The soil shall be maintained in a sufficiently damp condition to prevent loose grains of soil from becoming dislodged; or

   (b) The soil shall be crusted over by application of water; or

   (c) The soil shall be completely covered with clean gravel or treated with an approved Dust Suppressant.

3. The following circumstances constitute a violation of the Clark County Air Quality Regulations:

   (a) Failure to obtain an approved Dust Control Permit before engaging in activities that disturb or have the potential to disturb soils and/or cause or have the potential to cause Fugitive Dust to enter the air.

(b) Failure to obtain an approved Dust Control Permit for all areas subject to Construction Activities.

(c) Failure by an Owner or a permittee to include in his Construction contract with his prime contractor and/or his subcontractors a monetary allowance for any dust control options specified in either the Dust Control Permit or the Dust Mitigation Plan.

(d) Conducting a Construction Activity as defined by Section 94.2 for which no specified control option is indicated in the approved Dust Control Permit or the Dust Mitigation Plan.

(e) Failure to perform any duty to allow or carry out an inspection, entry, or monitoring activity required by the Department of Air Quality Management.

(f) Failure to renew or obtain a new permit, prior to a Dust Control Permit expiring, provided the site does not meet the exemption requirements for a Dust Control Permit as defined in Subsection 94.4.2.

(g) Failure to implement any item that is listed as a “Requirement” in the Best Management Practices section of the Construction Activities Dust Control Handbook for an applicable Construction Activity.

(h) Failure to implement any Best Management Practice listed in an approved Dust Control Permit or Dust Mitigation Plan.

(i) Failure to maintain static (not actively worked) project soils with adequate surface crusting to prevent wind erosion as measured by test method “Soil Crust Determination (The Drop Ball Test)” contained in Subsection 94.12, “Test Methods”, or alternative control measures approved in the Dust Mitigation Plan.

(j) Failure to comply with any record keeping or miscellaneous requirements of this Section.

(k) Failure to maintain project haul routes or haul roads in a stable condition as measured by the test methods outlined in Section 91.

(l) Failure to have a Dust Control Monitor in place, per Subsection 94.7.5, for a Construction project.

(m) Allowing FUGITIVE DUST emissions to exceed the standards set forth in Subsection 94.11.1 through 94.11.3.

(n) Using a dry rotary brush or blower device without sufficient water to limit emissions per Subsection 94.11.4.

(o) Allowing mud or dirt to be tracked out onto a paved road that exceed the standards set forth in Subsection 94.11.5.

(p) Failure to comply with any other provision of this section.

Corrective Action Order (CAO)

When a Compliance Officer observes a potential violation of Section 94 regulations, Permitting, or Dust Control for Construction Activities, a CAO may be issued to the permittee and/or persons conducting the activity. Corrective action should be taken as directed. If the corrective action is intended to be a permanent change to the methods for dust mitigation on site, a modification to the Dust Control Permit must be filed by the permittee to incorporate the control measures specified by the CAO as a condition of the permit.

Notice of Violation (NOV)

If a NOV is received, it will be accompanied by a form entitled "Option Letter." The following choices will be presented:

a. **Contest neither the "facts alleged" nor the "penalty;"**

b. **Contest the facts alleged in the NOV and request an appearance before the Air Quality Hearing Officer.** This option should be selected if the alleged facts of the NOV can be reasonably disputed. Proper and complete documentation of fugitive dust mitigation measures should be submitted with the option letter; or

c. **Contest the penalty assessed.** In this instance, the alleged facts are not contested. Only the penalty is considered inappropriate. When appearing before the Hearing Officer the testimony should be focused on the factors regarding the penalty.

Appealing a Notice of Violation

If the Hearing Officer rules on the NOV, and you are not satisfied with the results, you may appeal to the Air Quality Hearing Board. The Hearing Board will hear your appeal *de novo*. Therefore, any information you wish to be considered must be brought to the Hearing Board assuming they have no prior knowledge of the alleged facts or penalty.

There is a time limit in which to appeal to the Hearing Board and a "Request for Hearing Before the Air Quality Hearing Board" form must be submitted to DAQM. You will receive an "Order to Pay" from the Hearing Officer. Enclosed with that Order will be the information for the appeal process.

Penalty Structure

Penalties are assessed for:

-- violations of permit conditions;
-- failure to maintain soils in a damp, crusted, or stabilized condition, or to clean track-out from paved roads; and
-- fugitive dust emissions.
-- non-compliance with a CAO.

Penalties are listed in Section 9 of the Air Quality Regulations.

The maximum penalties can reach $10,000.00 per day, per offense.

PHASING

GEN 01

Project Phasing

CONTROL MEASURES

1. The Dust Control Permit and Dust Mitigation Plan must address all phases and stages of the construction project. For projects with large cut and fill requirements, the land not active after the cut and fill must be stabilized using a palliative or other approved control measure and vehicle access must be prevented. Permittees should also limit the area disturbed at any one time.

2. The construction project may consist of a single phase or be divided into as many phases as the permittee chooses. Each phase must have distinct physical boundaries to make it easily identifiable. Construction project activities are to be further divided, whenever applicable, into the following six stages of project activities: (1) offsite utility and street development; (2) site preparation and earthwork; (3) forms construction and pouring; (4) subgrade preparation and paving; (5) building; and (6) landscaping.

3. When project stages are identified, the following information must be provided for each project stage:

   a. Stage number and title;

   b. Amount of acreage included in stage;

   c. Control Requirements for activity; and

   d. Best Management Practice Control Measures to be implemented to meet Control Requirements.

4. Project phase planning for dust control is a cost-effective method for reducing potential emissions on a construction site. Project planning may include the following procedures:

   a. Reducing the size of the staging area;

   b. Disturbing only a portion of the overall site at one time;

   c. Paving roadways as soon as possible;

   d. Constructing block walls as soon as possible;

   e. Planting perimeter vegetation with greater than 50 percent silhouette areas at the beginning of the project;

   f. Limiting the number of ingress and egress points;

   g. Paving parking lots as soon as possible;

   h. For large cut and fill projects, stabilizing the portion of the construction site not being actively worked for the period of time it is vacant; or

   i. Confine import haul traffic to compacted or paved routes, where possible, to avoid picking up soil and rock in tire treads.

RECORD KEEPING

GEN 02

Recording Dust Control Measures

REQUIREMENTS

- **Record Use of Dust Palliatives**
- **Record Trackout Conditions and Cleanup**
- **Notify DAQM when project is complete**
- **Record verification of compliance with all applicable Dust Control Measures**
- **Notify DAQM of compliance with CAOs**
- **Retain project records**

CONTROL MEASURES

1. Document all use of dust palliatives on the Dust Palliative Information form DCP07 (see Attachment 1: Dust Control Permit Forms).

2. Record Trackout conditions daily and document cleanup measures taken.

3. Record other dust control measures taken, including date, time, and amount of water applied for dust control purposes.

4. Notify DAQM of compliance with any CAOs issued.

5. Notify DAQM upon completion of project.

6. Retain all project records for one year or six months beyond project completion, whichever is greater.

WEATHER MONITORING

GEN 03

Weather Conditions

REQUIREMENTS

- **Monitor current weather conditions and weather predictions from National Weather Service**
- **Cease all construction activities if fugitive dust exceeds 20% opacity or visible plume restrictions and cannot be controlled.**

CONTROL MEASURES

1. When winds occur that cause fugitive dust emissions, despite adhering to all Best Management Practices, all construction activities must cease immediately, except water trucks/pulls which should continue to operate.

2. Water trucks/pulls should continue to operate under these circumstances unless wind conditions are such that continued operation of watering equipment cannot reduce fugitive dust emissions or visibility is limited to an extent that it is hazardous to continue operating equipment.

BEST MANAGEMENT PRACTICES FOR DUST CONTROL

Best Management Practices are site-specific dust control measures that are based on each project soil type, specific construction activities, phases and stages. These practices must be included in each Dust Mitigation Plan and are established to meet the goal of reducing particulate emissions from construction sites. Additionally, some practices are designed for the purpose of reducing the amount of water needed for dust control.

1. Soil Type Categories

Soil types are classified into five categories (high, moderately high, moderately low, low, and slight) based on their particulate emission potential (PEP). The fifth category, "slight", is created solely to identify areas of bedrock outcrops. PEP is determined by soil silt content (measured by the soil percentage that will pass through a 200-mesh sieve) and optimum moisture content (measured by the percent of moisture necessary to compact soils).

Figure 1 depicts a "decision flowchart" using these parameters. A graph, which plots measured optimum moisture content vs. silt content for Las Vegas Valley soils, is used to classify PEP and is included as Figure 2. If optimum moisture content or silt content is not known for a specific project location, maps of Clark County and Las Vegas Valley delineating the five soil type categories are provided as Figures 3 and 4, respectively.

Soil type category maps are to be used as a guideline. The actual measured silt content and moisture content for maximum compaction shall take precedence over any mapped soil type categories. Permit holders shall immediately modify their Dust Control Permit if construction site soils are found to be different than mapped categories.

2. Best Management Practices

The following subsections list the current Best Management Practices (BMPs) developed and approved for use in Clark County for dust mitigation for construction activities. The BMPs are organized alphabetically by construction activity.

The Control Requirements of each construction activity category to be conducted on the construction project must be met through implementation of Control Measures. Within most construction activity categories, there are choices of Control Measure(s) to be selected from to meet the Control Requirements. Control Requirements are stated for each construction activity. All Control Measures that will be used to meet the Control Requirements on the construction project must be identified in the Dust Mitigation Plan for each construction activity.

Control Measures are presented by soil type category where applicable. Some Control Measures apply to construction activities regardless of soil type. The Control Measures selected to meet Control Requirements must address the soil type for the area in which the construction project is permitted (see Figures 3 and 4).

Control Measures not currently listed in the Dust Control Handbook may be proposed in a Dust Mitigation Plan. Such unlisted Control Measures will be reviewed by DAQM staff and may require additional information regarding their effectiveness. Any unlisted Control Measure must clearly meet the Control Requirements for an activity category.

The DAQM will apply the following minimum criteria when evaluating any unlisted Control Measures that are proposed to meet the Control Requirements for a BMP:

1. The Control Measure technique is a new or alternative technology that is demonstrated to be equally or more effective in meeting the Control Requirement than the existing Control Measures; or
2. Site logistics do not practically allow for implementation of a listed Control Measure as written (e.g. road width or pre-existing barriers limit the size or width of a gravel pad); or
3. The owner/operator demonstrates that a listed Control Measure is technically infeasible due to site-specific or material-specific conditions, such that implementation of the Control Measure will not provide a benefit in reducing fugitive dust (e.g. pre-soaking screened, washed rock when handling).

Permit deviations from specific soil type BMPs in the form of a “downgrade” to the BMPs listed for a soil type with a lower PEP, or applying a Control Measure listed for all soil types in lieu of a specific soil type BMP, are not approvable unless demonstrated to meet at least one of the above criteria.

FIGURE 1
Particulate Emission Potential (PEP) Flowchart

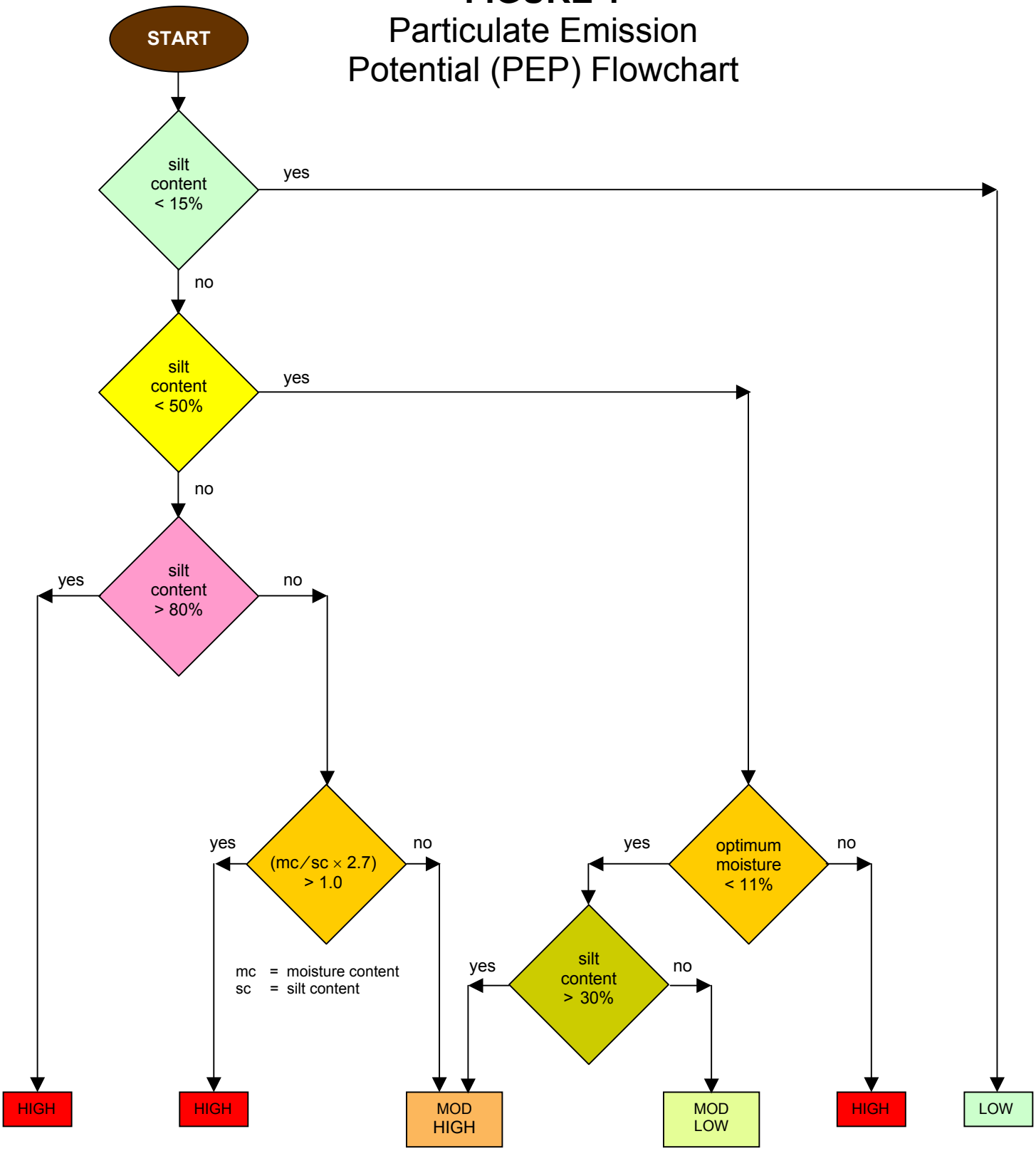

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FIGURE 2
Silt Content vs. Optimum Moisture Content

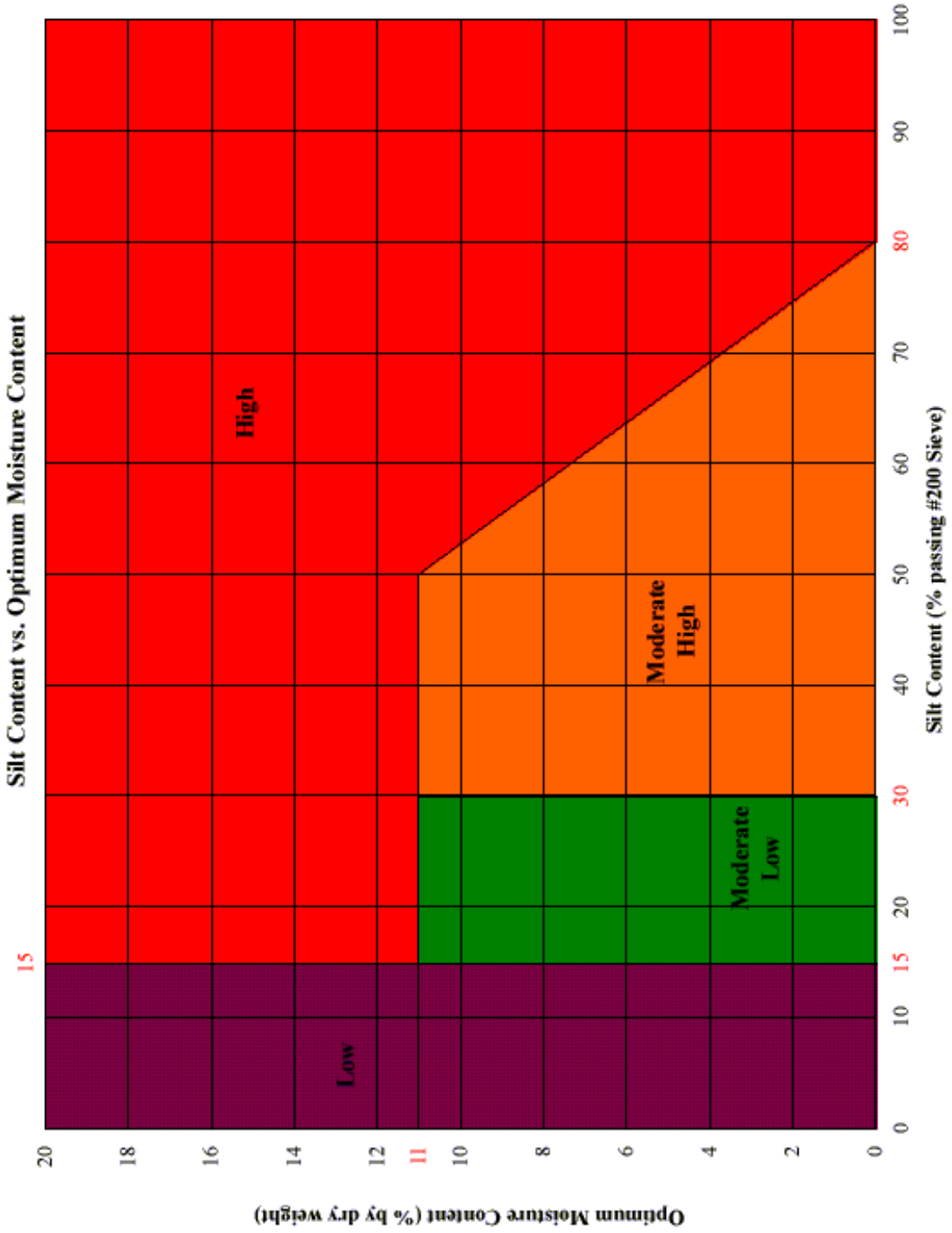

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FIGURE 3: COUNTY SOIL TYPES MAP

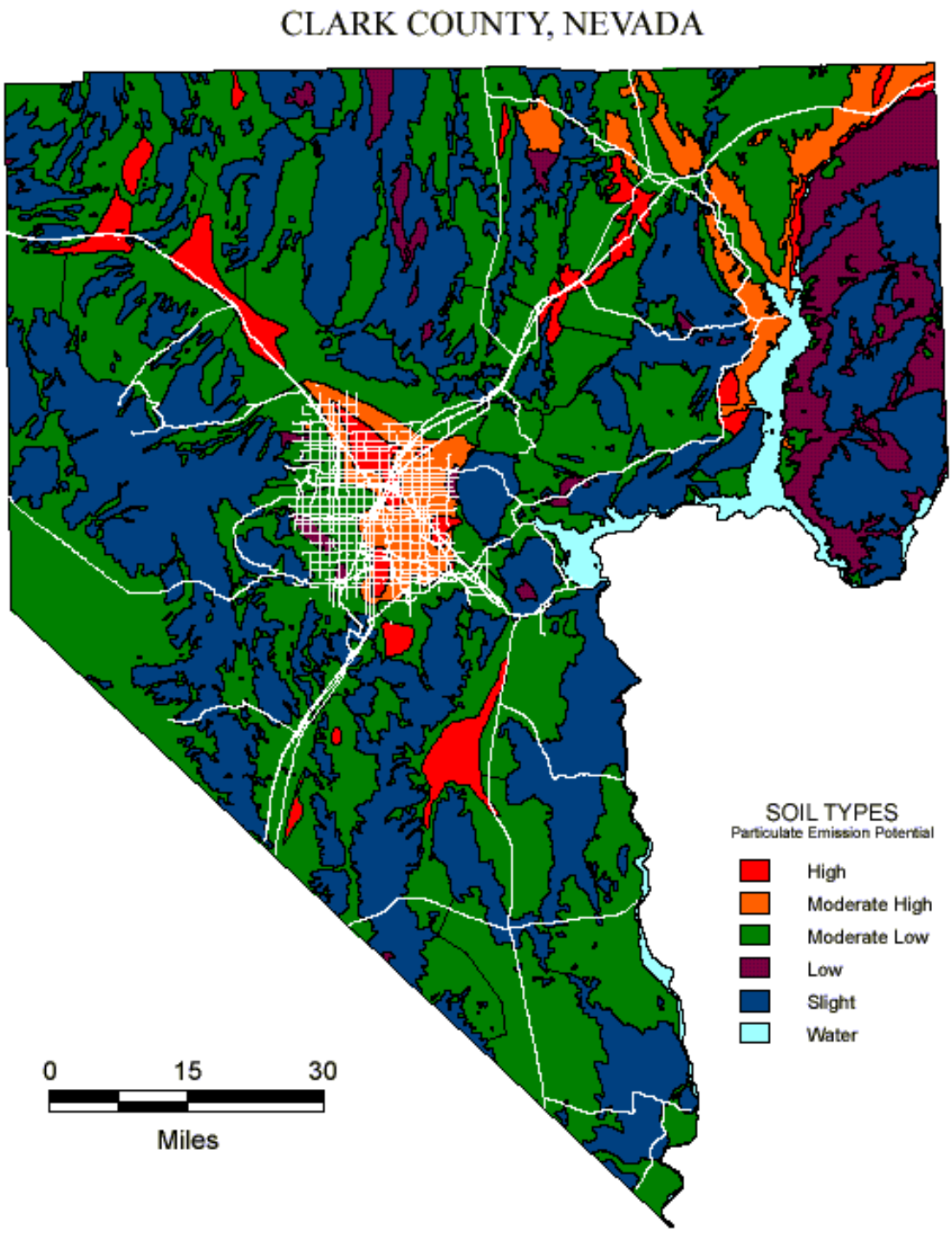

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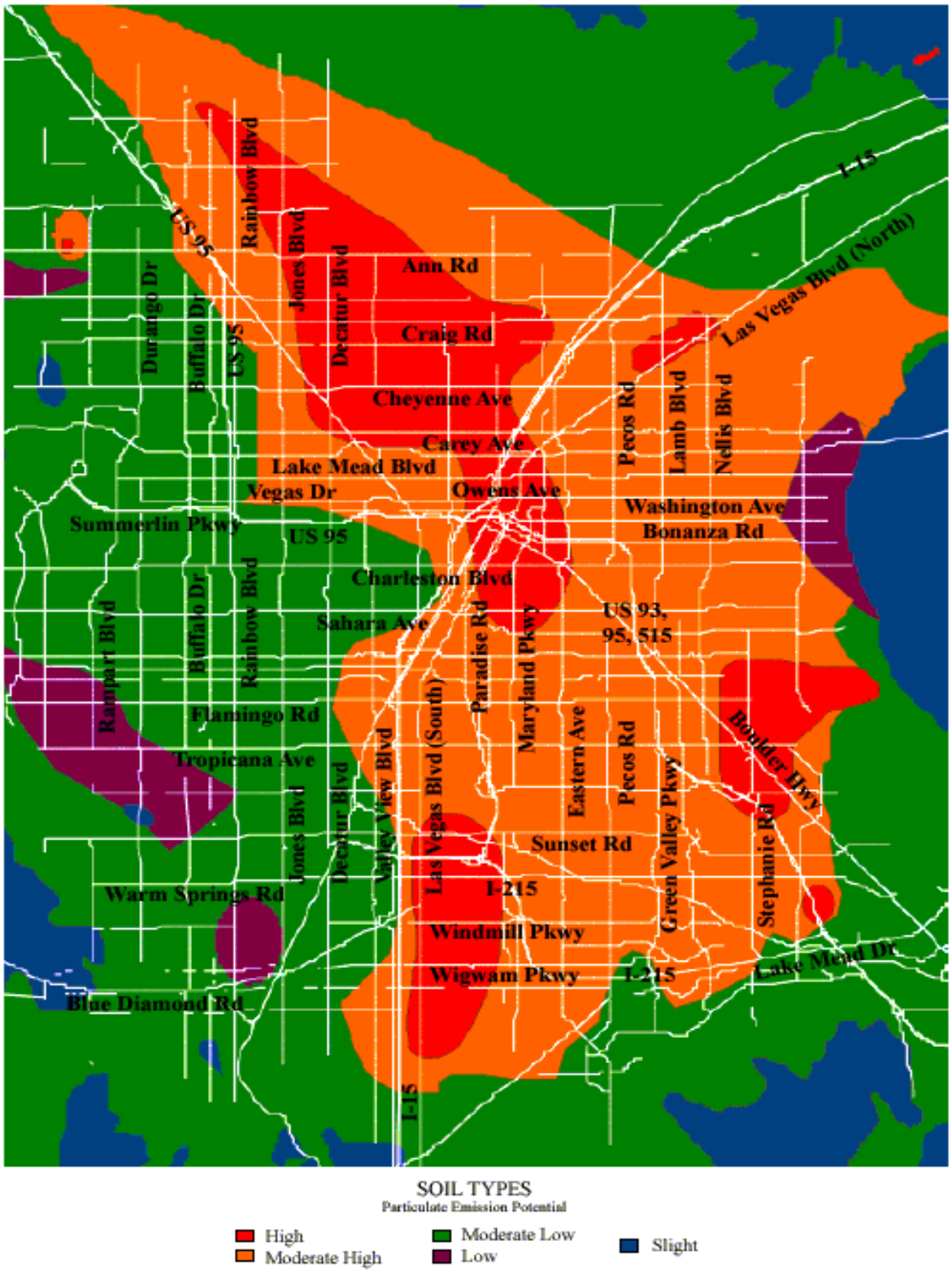
FIGURE 4: VALLEY SOIL TYPES MAP
Las Vegas Valley



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BACKFILLING

BMP 01

Definition: Filling area previously excavated or trenched.

Requirement: Stabilize backfill material when not actively handling.

01-1 Water backfill material to maintain moisture or to form crust when not actively handling.

01-2 Apply and maintain a dust palliative to backfill material to form crust when not actively handling.

01-3 Cover or enclose backfill material when not actively handling.

Requirement: Stabilize backfill material during handling.

01-4 Empty loader bucket slowly and minimize drop height from loader bucket.

01-5 Dedicate water truck or large hose to backfilling equipment and apply water as needed.

Note: Select at least one of the above; in addition the appropriate control measure for your soil type must be selected from the following.

01-6 **L:** Mix moist soil with dry soil until the optimum moisture is reached.

01-7 **ML:** Apply and mix water into the backfill material until optimum moisture is reached.

01-8 **MH:** Apply and mix water and tackifier solution into the backfill material until optimum moisture is reached.

01-9 **H:** Apply and mix water and surfactant solution into the backfill material until optimum moisture is reached.

Requirement: Stabilize soil at completion of backfilling activity.

01-10 Apply water and maintain disturbed soils in a stable condition until permanent stabilization is complete.

01-11 Apply and maintain a dust palliative on disturbed soils to form a crust following backfilling activity.

Requirement: Stabilize material while using pipe padder equipment.

01-12 Mix moist soil with dry soil until the optimum moisture is reached.

01-13 Dedicate water truck or large hose to equipment and apply water as needed.

BLASTING – Abrasive

BMP 02

Definition: Sandblasting and/or abrasive blasting.

Requirement: Stabilize surface soils where support equipment and vehicles will operate.

02-1 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

02-2 Apply and maintain a dust palliative on surface soils where support equipment and vehicles will operate.

Requirement: Limit visible emissions to no more than an average of 40% opacity for any period aggregating 3 minutes in any 60-minute period pursuant to Air Quality Regulations.

02-3 Hydro-blasting, using water as the propellant, must be conducted in a manner to maintain visible emissions within opacity standards.

02-4 Dry, unconfined blasting with abrasive material must use only those abrasives that are approved and certified by the California Air Resources Board (CARB) for such use (see Attachment 3: CARB-Approved Abrasives Information).

Requirement: Stabilize particulate matter in surrounding area following blasting.

02-5 Clean particulate material from surrounding area and water disturbed soils following blasting.

02-6 Apply and maintain a dust palliative to surrounding area following blasting.

Recommendation: Abrasive blasting should be conducted within an enclosed structure whenever possible to preclude the release of visible emissions to the atmosphere.

BLASTING – Soil and Rock

BMP 03

Definition: Explosive blasting of soil and rock.

Requirement: A Blasting Supplemental form must be filled out, submitted and approved by the DAQM prior to any blasting (see Appendix A: Dust Control Permit Supplemental Forms)

Requirement: No blasting within 1,500 feet of a residential area, occupied building or major roadway, when wind direction is toward these structures.

Requirement: Blasting shall be between the hours of 8:00 a.m. and 4:30 p.m., excluding Saturdays, Sundays and holidays unless prior permission is obtained from the Control Officer.

Requirement: No blasting allowed when the National Weather Service forecasts wind gusts above 25 miles per hour (mph).

03-1 Prior to setting explosive charges in holes, document current and predicted weather conditions as provided by the National Weather Service. If the current forecast is for wind gusts of 25 mph or greater or they are forecasted to be 25 mph or greater within the next 24 hours, do not charge any blast holes. When setting explosive charges, monitor weather reports for wind gusts of 25 mph or greater on the National Weather Service Radio and/or Internet sites. If wind gusts above 25 mph are stated, discontinue charging additional blast holes. Limit the blast to holes charged at time the wind report is made.

Requirement: Stabilize surface soils where drills, support equipment and vehicles will operate.

03-2 Pre-water and maintain surface soils in a stabilized condition where drills, support equipment and vehicles will operate.

03-3 Apply and maintain a dust palliative on surface soils where drills, support equipment and vehicles will operate.

(Continued on next page.)

Requirement: Stabilize soil during blast preparation activities.

03-4 Limit the blast footprint area to no larger than what can be practically stabilized immediately following the blast.

03-5 Maintain surface rock and vegetation where possible to reduce exposure of disturbed soil to wind.

Note: Select at least one of the above; in addition the appropriate control measure for your soil type must be selected from the following.

03-6 **L & ML:** Presoak surface soils to depth of the caliche or bedrock with water using water trucks, water pulls, sprinklers or wobblers.

03-7 **MH:** Presoak surface soils to depth of the caliche or bedrock with water and tackifier mixture using water trucks, water pulls, sprinklers or wobblers.

03-8 **H:** Presoak surface soils to depth of the caliche or bedrock with water and surfactant mixture using water trucks, water pulls, sprinklers or wobblers.

Requirement: Stabilize soil after blasting.

03-9 Water disturbed soils to form crust immediately following blast and safety clearance.

03-10 Apply and maintain a dust palliative to form crust immediately following blast and safety clearance.

See also: BMP 11: DISTURBED LAND – Long-Term Stabilization, if no continuing activity will occur within 30 days.

CLEARING AND GRUBBING

BMP 04

Definition: Clearing and grubbing for site preparation and vacant land cleanup.

Requirement: Stabilize surface soils where support equipment and vehicles will operate.

04-1 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

04-2 Apply and maintain a dust palliative on surface soils where support equipment and vehicles will operate.

Requirement: Stabilize soil during clearing and grubbing activities.

04-3 **L & ML:** Apply water during clearing and grubbing activities.

04-4 **MH:** Apply water and tackifier mixture during clearing and grubbing activities.

04-5 **H:** Apply water and surfactant mixture during clearing and grubbing activities.

Requirement: Stabilize disturbed soil immediately after clearing and grubbing activities.

04-6 Water disturbed soils to form crust immediately following clearing and grubbing activities.

04-7 Apply and maintain a dust palliative on disturbed soils to form crust immediately following clearing and grubbing activities.

Recommendations: Maintain live perennial vegetation and desert pavement where possible.

See also: BMP 11: DISTURBED LAND – Long-Term Stabilization, if no continuing activity will occur within 30 days.

CLEARING FORMS, FOUNDATIONS AND SLABS

BMP 05

Definition: Clearing and cleaning of forms, foundations and slabs.

Requirement: Limit visible emissions to no more than an average of 20% opacity for any period aggregating 3 minutes in any 60-minute period pursuant to Air Quality Regulations.

05-1 Use single stage pours, unless prohibited by engineering design or building code, to minimize clearing.

Note: At least one of the following must be selected.

05-2 Use water spray to clear forms, foundations and slabs.

05-3 Use sweeping and water spray to clear forms, foundations and slabs.

05-4 Use industrial vacuum to clear forms, foundations and slabs prior to the use of high pressure air to blow soil and debris.

05-5 Use industrial vacuum to clear forms, foundations and slabs.

Recommendations: Verify Building Code Restrictions for use of water on slabs.

Avoid use of high pressure air to blow soil and debris from forms, foundations and slabs.

CRUSHING

BMP 06

Definition: Crushing of construction and demolition debris, rock and soil.

Requirement: Obtain the appropriate Operating Permit for powered crushers prior to engaging in crushing activity. Comply with permit conditions.

Requirement: Stabilize surface soils where support equipment and vehicles will operate.

06-1 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

06-2 Apply and maintain a dust palliative to surface soils where support equipment and vehicles will operate.

Requirement: Stabilize material before crushing.

06-3 Pre-water material prior to loading into crusher.

06-4 Test material to determine moisture content and silt loading, crush only material that is at optimum moisture content.

Requirement: Stabilize material during crushing.

06-5 Apply water to stabilize material so as to remain in compliance with opacity standards and permit conditions, during crushing.

06-6 Monitor emissions opacity. Make adjustments to remain in compliance with opacity standards and permit conditions.

Requirement: Stabilize material after crushing.

06-7 Water crushed material to form crust immediately following crushing.

06-8 Apply and maintain a dust palliative to crushed material.

See also: BMP 19. STOCKPILING

CUT AND FILL

BMP 07

Definition: Cut and/or fill soils for site grade preparation.

Requirement: Stabilize surface soils where support equipment and vehicles will operate.

07-1 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

07-2 Apply and maintain a dust palliative to surface soils where support equipment and vehicles will operate.

Requirement: Pre-water soils.

07-3 Dig a test hole to depth of cut or equipment penetration to determine if soils are moist at depth. Continue to pre-water if not moist to depth of cut.

07-4 **L & ML:** Pre-water with sprinklers or wobblers to allow time for penetration.

07-5 **L & ML:** Pre-water with water trucks or water pulls to allow time for penetration.

07-6 **MH:** Pre-water with a water and tackifier mixture using sprinklers or wobblers to allow time for penetration.

07-7 **MH:** Pre-water with a water and tackifier mixture using water trucks or water pulls to allow time for penetration.

07-8 **H:** Pre-water with a water and surfactant mixture using sprinklers or wobblers to allow time for penetration.

07-9 **H:** Pre-water with a water and surfactant mixture using water trucks or water pulls to allow time for penetration.

Requirement: Stabilize soil during cut activities.

07-10 Apply water, using water truck or water pull, to depth of cut prior to subsequent cuts.

07-11 No cut activities fill only.

Requirement: Stabilize soil after cut and fill activities.

07-12 Water disturbed soils to form crust following fill and compaction.

07-13 Apply and maintain a dust palliative on disturbed soils to form crust following fill and compaction.

See also: BMP 11: DISTURBED LAND – Long-Term Stabilization if no continuing activity will occur within 30 days.

DEMOLITION – Implosion **BMP 08**

Definition: Implosive blasting demolition of structure.

Requirement: A Demolition Supplemental form (see Appendix A) and a Supplement To The Dust Mitigation Plan (see Appendix B) must be filled out, submitted and approved by the Control Officer prior to implosion.

Requirement: An asbestos survey must be conducted on any facility before demolition can commence.

Requirement: A complete Clark County NESHAP Notification form must be submitted to the DAQM at least ten working days prior to demolition. The asbestos survey must be attached to this notification.

Requirement: All friable and non-friable asbestos containing material must be removed from the facility prior to implosion.

Requirement: Confine blasting to times when wind direction is away from closest residential areas, occupied buildings and major roadways.

Requirement: Implosion time must be pre-approved by the Control Officer.

Requirement: Monitor and document current weather conditions and weather predictions from National Weather Service.

08-1 Prior to setting explosive charges, obtain and document current and predicted weather conditions as provided by the National Weather Service. If wind advisory (over 20 miles per hour gusts or average wind speed of 10 miles per hour) is current or forecasted for blast period, do not set charges and do not blast. Maintain a calibrated anemometer and log ambient air velocity and direction within 1,000 feet of the implosion site, beginning at least 1 (one) hour prior to and 15 minutes after the implosion.

(Continued on next page)

Requirement: Stabilize surface area where support equipment and vehicles will be operated.

08-2 Restrict support equipment and vehicles to existing paved and/or stable areas.

Note: You must select one of the following if paved and/or stable areas do not already exist and you have not selected 08-2.

08-3 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

08-4 Apply and maintain a dust palliative on surface soils where support equipment and vehicles will be operated.

Requirement: Stabilize demolition debris immediately following blast and safety clearance.

08-5 Apply water to debris immediately following blast and safety clearance.

08-6 Apply and maintain a dust palliative to debris immediately following blast and safety clearance.

Requirement: Stabilize and clean surrounding area immediately following blast and safety clearance.

08-7 Water all disturbed soil surfaces to establish crust and prevent wind erosion of soil.

08-8 Thoroughly clean blast debris from paved and other surfaces following blast and safety clearance.

See also: BMP 23: TRUCK LOADING.

DEMOLITION - Mechanical/Manual **BMP 09**

Definition: Mechanical and manual demolition of walls, stucco, concrete, freestanding structures, buildings, load-bearing walls and removal of transit pipe

Requirement: For renovation or demolition of a structure, a Demolition Supplemental form (see Appendix A) must be filled out, submitted and approved by the Control Officer prior to commencing demolition.

Requirement: An asbestos survey must be conducted on any facility or structure that is subject to NESHAP requirements before demolition can commence.

Requirement: A complete Clark County NESHAPS Notification form must be submitted to the DAQM at least ten working days prior to demolition. The asbestos survey must be attached to this notification.

Requirement: Stabilize surface soils where support equipment and vehicles will operate.

09-1 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

09-2 Apply and maintain a dust palliative to surface soils where support equipment and vehicles will operate.

09-3 Area where support equipment and vehicles will operate is completely covered with paving or concrete.

Requirement: Stabilize demolition debris during handling.

09-4 Apply water to demolition debris during handling.

Requirement: Stabilize debris following demolition.

09-5 Apply water to stabilize demolition debris.

09-6 Apply a dust palliative to stabilize demolition debris.

Requirement: Stabilize surrounding area following demolition.

09-7 Apply water to stabilize surrounding area following demolition.

09-8 Apply and maintain a dust palliative to stabilize surrounding area following demolition.

See also: BMP 23: TRUCK LOADING.

DISTURBED SOIL — BMP 10

Definition: Disturbed soil throughout project including between structures.

Requirement: For each non-linear project to be permitted for 5 acres or less; install perimeter wind barrier 3 feet or more in height made of material with a porosity of 50% or less.

Requirement: Limit vehicle traffic and disturbance of soils where possible.

10-1 Limit vehicle traffic and disturbance of soils with the use of fencing, barriers, barricades, and/or wind barriers.

Requirement: Stabilize and maintain stability of all disturbed soil throughout construction site.

Note: You must choose one or more of the following.

10-2 Apply water to stabilize disturbed soils. Soils must be kept in a sufficiently damp, crusted or covered condition.

10-3 Apply and maintain a dust palliative based on soil type and future plans.

Requirement: Soil conditions, including preventive and corrective measures, must be recorded every day the construction project is active.

10-4 Record soil conditions and dust control actions in daily project records.

Recommendations: If interior block walls are planned, install as early in the construction as possible.

See also: BMP 11: DISTURBED LAND – Long-Term Stabilization, if no continuing activity will occur within 30 days.

DISTURBED LAND – Long-Term Stabilization

BMP 11

Definition: Large tracts of disturbed land that will not have continuing activity for more than 30 days.

Requirement: Stabilize soil to meet standards required by Air Quality Regulation Section 90.

11-1 Apply and maintain a dust palliative on disturbed soils for long-term stabilization.

11-2 Stabilize disturbed soil with vegetation for long-term stabilization.

11-3 Pave or apply surface rock for long-term stabilization.

11-4 Use wind breaks in accordance with a site-specific plan approved by the Control Officer and Region IX Administrator of the EPA.

11-5 Apply water and maintain soils in a visible damp or crusted condition for temporary stabilization.

Requirement: Prevent access to limit soil disturbance.

11-6 Prevent access by fencing, ditches, vegetation, berms or other suitable barrier or means approved by the Control Officer.

Recommendations: Plant perimeter vegetation early. Use of native and drought-tolerant plants with greater than 50 % silhouette area is encouraged.

See also: BMP 12: DUST SUPPRESSANT, DUST PALLIATIVE AND SURFACTANT – Selection and Use.

DUST PALLIATIVE – Selection and Use

BMP 12

Definition: Selection and use of chemical and organic dust suppressing agents and other dust palliatives.

Requirement: Follow AQD "Interim Policy on Dust Palliatives Use In Clark County, Nevada".

Requirement: Record use of suppressants and dust palliatives and retain records.

Requirement: Follow applicable federal and state regulations.

Requirement: Select method of long-term stabilization taking into consideration future land use.

12-1 For traffic area applications use Table 1: Traffic Area Application Requirements, Appropriate Use of Liquid Dust Palliatives and Application Rates, from the Interim Policy on Dust Palliatives Use In Clark County, Nevada.

12-2 For non-traffic area applications use Table 2: Non-Traffic Area Application Requirements, Appropriate Use of Liquid Dust Palliatives and Application Rates, from the Interim Policy on Dust Palliatives Use In Clark County, Nevada.

IMPORTING/EXPORTING SOIL, ROCK AND OTHER BULK MATERIAL

BMP 13

Definition: Importing or exporting of soil, aggregate, decorative rock, debris, Type II and other bulk material.

Requirement: Limit visible dust opacity from vehicular operations.

13-1 Apply water and limit vehicle speeds to 15 mph on the work site.

13-2 Apply and maintain dust suppressant on haul routes.

Requirement: Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage.

Requirement: Maintain 3-6 inches of freeboard to minimize spillage.

Requirement: Stabilize materials during transport on site.

13-3 Use tarps or other suitable enclosures on haul trucks.

13-4 Stabilize materials with water.

Requirement: Clean wheels and undercarriage of haul trucks prior to leaving construction site.

Recommendations: Verify State and local laws, concerning the hauling of bulk materials on public roadways.

See also: BMP 20: TRACKOUT PREVENTION AND CLEANUP.

BMP 23: TRUCK LOADING.

LANDSCAPING

BMP 14

Definition: Installation of sod, decorative rock, desert or other landscape material.

Requirement: Stabilize soils, materials and slopes during handling.

14-1 **L & ML:** Apply water prior to leveling or any other earth moving activity to keep the soil moist throughout the process.

14-2 **MH:** Apply a water and tackifier mixture prior to leveling or any other earth moving activity to keep the soil moist throughout the process.

14-3 **H:** Apply a water and surfactant mixture prior to leveling or any other earth moving activity to keep the soil moist throughout the process.

Requirement: Stabilize soils, materials and slopes at completion of activity.

14-4 Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slope.

14-5 Apply water and maintain sloping surfaces in a crusted condition.

14-6 Maintain effective cover over materials.

PAVING/SUBGRADE PREPARATION

BMP 15

Definition: Subgrade preparation for paving streets, parking lots, etc.

Requirement: Stabilize soils prior to activities.

15-1 Pre-water subgrade surface until optimum moisture content is reached and maintained.

Requirement: Stabilize soils during activities.

15-2 Maintain at least 70% of optimum moisture content for Type II material while aggregate is being applied.

Requirement: Stabilize soils following activities.

15-3 Place tack coat on Type II aggregate base immediately after it is applied.

15-4 Apply water to Type II aggregate base immediately after it is applied.

Requirement: Stabilize adjacent disturbed soils following paving activities.

15-5 Stabilize adjacent disturbed soils following paving activities by crusting with water.

15-6 Stabilize adjacent disturbed soils following paving activities by applying a dust palliative.

15-7 Stabilize adjacent disturbed soils following paving activities with immediate landscaping activity or installation of vegetative or rock cover.

15-8 There are no soils adjacent to paving activities.

SAWING/CUTTING MATERIALS

BMP 16

Definition: Sawing or cutting materials such as concrete, asphalt, block or pipe.

Requirement: Limit visible emissions to no more than an average of 20% opacity, pursuant to Air Quality Regulations.

16-1 Use water to control dust when cutting materials.

16-2 Use a vacuum to collect dust when cutting materials.

SCREENING

BMP 17

Definition: Screening of rock, soil or construction debris.

Requirement: If using a powered screen, obtain the appropriate Operating Permit for powered screens prior to engaging in screening activity. Comply with permit conditions.

Requirement: Drop material through the screen slowly and minimize drop height.

Requirement: Stabilize surface soils where support equipment and vehicles will operate.

17-1 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

17-2 Apply and maintain a dust palliative on surface soils where support equipment and vehicles will operate.

Requirement: Pre-treat material prior to screening.

17-3 Apply sufficient water to obtain at least 70% optimum moisture in material prior to screening.

17-4 Apply a dust suppressant to material prior to screening.

Requirement: Stabilize material during screening.

17-5 Dedicate water truck or large hose to screening operation and apply water as needed to prevent dust.

17-6 Apply water to material as it is being dropped through the screen.

17-7 Install wind barrier upwind of screen as high as the screen drop point and made of material with a porosity of 50% or less.

Requirement: Stabilize material and surrounding area immediately after screening.

17-8 Apply water to stabilize screened material and surrounding area after screening.

17-9 Apply and maintain a dust palliative to stabilize screened material and surrounding area after screening.

See also: BMP 19: STOCKPILING

STAGING AREAS

BMP 18

Definition: Staging areas, equipment storage and material storage areas.

Requirement: Limit visible dust opacity from vehicular operations.

18-1 Limit vehicle speeds to 15 mph in the staging area and on all unpaved access routes.

18-2 Apply and maintain dust suppressant on all vehicle traffic areas in the staging areas and unpaved access routes.

Requirement: Stabilize staging area soils during use.

18-3 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

18-4 Apply and maintain a dust palliative to surface soils where support equipment and vehicles will be operated.

Requirement: Stabilize staging area soils at project completion.

18-5 Apply a dust palliative.

18-6 Apply screened or washed Type II aggregate.

18-7 Use wind breaks in accordance with a site-specific plan approved by the Control Officer and Region IX Administrator of the EPA.

18-8 Pave with thin paving.

18-9 Completed project will cover staging area with buildings, paving, and/or landscaping.

18-10 Apply water to form adequate crust and prevent access.

Recommendations: Limit size of staging areas.

Limit ingress and egress points.

See also: BMP 20: TRACKOUT PREVENTION AND CLEANUP

STOCKPILING

BMP 19

Definition: Stockpiling of materials, such as Type II, rock or debris, for future use or export.

Requirement: To the extent possible, maintain stockpile to avoid steep sides or faces.

Requirement: Stockpile location and height must be maintained pursuant to Air Quality Regulations. Stockpiles located within 100 yards of occupied buildings must not be constructed over 8 feet in height.

19-1 Stockpiles will not be constructed over 8 feet in height.

19-2 Stockpiles will be constructed over 8 feet high and must have a road bladed to the top to allow water truck access or must have a sprinkler irrigation system installed, used and maintained

Requirement: Stabilize surface soils where support equipment and vehicles will operate.

19-3 Pre-water and maintain surface soils in a stabilized condition where support equipment and vehicles will operate.

19-4 Apply and maintain a dust palliative on surface soils where support equipment and vehicles will operate.

Requirement: Stabilize stockpile materials during handling.

19-5 Maintain stockpile materials with at least 70% optimum moisture content.

19-6 Remove material from the downwind side of the stockpile, when safe to do so.

Note: Select at least one of the above; in addition the appropriate control measure for your soil type must be selected from the following.

19-7 **L & ML:** Apply water during stacking, loading and unloading operations.

19-8 **MH:** Apply a water and tackifier mixture during stacking, loading and unloading operations.

19-9 **H:** Apply a water and surfactant mixture during stacking, loading and unloading operations.

(Continued on next page)

Requirement: Stabilize stockpiles at completion of activity.

19-10 Water stockpiles to form a crust immediately at the completion of activity.

19-11 Apply and maintain a dust palliative to all outer surfaces of the stockpiles.

19-12 Provide and maintain wind barriers on 3 sides of the pile, 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 made of material with a porosity of 50% or less.

19-13 Apply a cover or screen to stockpiles.

TRACKOUT PREVENTION AND CLEANUP — BMP 20

Definition: Prevention and cleanup of mud, silt and soil tracked out onto paved roads.

Requirement: In soils that have a PEP classification of "High", pave construction activities roadways as early as possible.

Requirement: Use of soil to create a ramp for vehicle access over a curb is prohibited.

Requirement: Trackout conditions, including preventive and corrective measures, must be recorded daily for every day that the construction project access is used by vehicles.

20-1 Record soil conditions and dust control actions in daily project records.

Requirement: Prevent dust from trackout.

20-2 Immediately clean trackout from paved surfaces to maintain dust control. Trackout must not extend 50 feet or more.

20-3 Maintain dust control during working hours and clean trackout from paved surfaces at the end of the work shift/day. Trackout must not extend 50 feet or more and must be cleaned daily, at minimum.

Requirement: Install and maintain trackout control devices in effective condition at all access points where paved and unpaved access or travel routes intersect.

20-4 Install gravel pad(s) consisting of 1" to 3" rough diameter, clean, well-graded gravel or crushed rock. Minimum dimensions must be 30 feet wide by 3 inches deep, and, at minimum, 50' or the length of the longest haul truck, whichever is greater. Re-screen, wash or apply additional rock in gravel pad to maintain effectiveness.

20-5 Install wheel shakers. Clean wheel shakers on a regular basis to maintain effectiveness.

20-6 Install wheel washers. Maintain wheel washers on a regular basis to maintain effectiveness.

20-7 Install wheel shakers in the event that trackout cannot be controlled with gravel pads.

20-8 Install wheel washer in the event that trackout cannot be controlled with gravel pads and wheel shakers.

20-9 Motorized vehicles will only operate on paved surfaces.

(Continued on next page)

Requirement: All exiting traffic must be routed over selected trackout control device(s).

20-10 Clearly establish and enforce traffic patterns to route traffic over selected trackout control device(s).

20-11 Limit site accessibility to routes with trackout control devices in place by installing effective barriers on unprotected routes.

TRAFFIC – Unpaved Routes and Parking Areas

BMP 21

Definition: Construction related traffic on unpaved interior and/or access roads and unpaved employee/worker parking areas.

Requirement: Limit visible dust opacity from vehicular operations.

21-1 Limit vehicle speeds to 15 mph on all unpaved routes and parking areas.
21-2 Apply and maintain dust palliative on all vehicle travel areas.

Requirement: Stabilize all haul routes.

21-3 Apply water to haul routes and maintain in a stabilized condition.

21-4 Apply a dust palliative to haul routes and maintain in a stabilized condition.

21-5 Apply gravel to haul routes and maintain in a stabilized condition.

21-6 Supplement dust palliative or aggregate applications with watering, if necessary.

Requirement: Stabilize all off-road and parking areas.

21-7 Apply water to off-road traffic and parking areas and maintain in a stabilized condition.

21-8 Apply gravel to off-road traffic and parking areas and maintain in a stabilized condition.

21-9 Apply recycled asphalt (or other suitable material) to off-road traffic and parking areas and maintain in a stabilized condition.

21-10 Apply and maintain a dust palliative (designed for vehicle traffic) to off-road traffic and parking areas and maintain in a stabilized condition.

Recommendations: Use of bumps or dips for speed control is encouraged.

Apply paving as soon as possible to all future roadway areas for PEP categories other than “High”.

TRENCHING

BMP 22

Definition: Trenching with track or wheel mounted excavator, shovel, backhoe or trencher.

Requirement: Stabilize surface soils where trenching equipment, support equipment and vehicles will operate.

22-1 Pre-water and maintain surface soils in a stabilized condition where trenching equipment, support equipment and vehicles will operate.

22-2 Apply and maintain a dust palliative to surface soils where trenching equipment, support equipment and vehicles will operate.

Requirement: Presoak soils prior to trenching activities.

22-3 Pre-water surface, pre-trench to 18" depth, soak soils via pre-trench prior to deep trenching.

22-4 **L & ML:** Presoak soil with water using sprinklers or wobblers.

22-5 **L & ML:** Presoak with water, using water truck and/or water pull.

22-6 **MH:** Presoak soil with a water and tackifier mixture using water pulls and/or water trucks.

22-7 **MH:** Presoak soil with a water and tackifier mixture using sprinklers or wobblers.

22-8 **H:** Presoak soil with a water and surfactant mixture using water pulls and/or water trucks.

22-9 **H:** Presoak soil with a water and surfactant mixture using sprinklers or wobblers.

Requirement: Stabilize soil during trenching activities.

22-10 **L & ML:** Complete trenching with a dedicated water truck or large hose maintaining water as needed to prevent dust.

22-11 **L & ML:** Use spray nozzles mounted on trenching machine.

22-12 **MH:** Complete trenching with a dedicated water truck or large hose maintaining a water and tackifier mixture as needed to prevent dust.

22-13 **H:** Complete trenching with a dedicated water truck or large hose maintaining a water and surfactant mixture as needed to prevent dust.

(Continued on next page)

Requirement: Stabilize soils at the completion of trenching activities.

22-14 Use water to form crust on excavated soil windrow as it is formed.

22-15 Use dust palliative to form crust on excavated soil windrow as it is formed.

Recommendations: Wash mud and soil from equipment at completion of trench to prevent crusting and drying of soil on equipment.

See also: BMP 01: BACKFILLING, if applicable.

TRUCK LOADING

BMP 23

Definition: Loading trucks with materials including construction and demolition debris, rock and soil.

Requirement: Ensure all loads are covered prior to leaving the construction site and traveling on public roadways.

Requirement: Stabilize surface soils where loaders, support equipment and vehicles will operate.

23-1 Pre-water and maintain surface soils in a stabilized condition where loaders, support equipment and vehicles will operate.

23-2 Apply and maintain a dust palliative on surface soils where loaders, support equipment and vehicles will operate.

Requirement: Stabilize material during loading.

23-3 Empty loader bucket slowly and keep loader bucket close to the truck to minimize the drop height while dumping.

Note: You must selected 23-3 if PEP is greater than LOW, in addition one of the following must be selected.

23-4 **L & ML:** Mix material with water prior to loading.

23-5 **L & ML:** Spray material with water while loading.

23-6 **MH:** Mix material with a water and tackifier mixture prior to loading.

23-7 **MH:** Spray material with a water and tackifier mixture while loading.

23-8 **H:** Mix material with a water and surfactant mixture prior to loading.

23-9 **H:** Spray material with a water and surfactant mixture while loading.

APPENDIX A

DUST CONTROL PERMIT SUPPLEMENTAL FORMS

1. Blasting Supplemental
2. Demolition Supplemental
3. Record of Daily Dust Control

CLARK COUNTY
DEPARTMENT OF AIR QUALITY MANAGEMENT
500 S. Grand Central Pkwy. P.O. Box 551776, Las Vegas Nevada 89155-1776
Office (702) 455-5942 · Fax (702) 383-9994

BLASTING SUPPLEMENTAL

Each blasting contractor working under a Dust Control Permit must complete a separate Blasting Supplemental Form and submit applicable fees prescribed in Section 18 of the Air Quality Regulations.

1. PERMIT INFORMATION:

Permit Number:_____

Applicant/Permittee:_____

Project Name:_____

Project Address/Location:_____

2. BLASTING CONTRACTOR INFORMATION:

Blasting Company:_____

Address:_____

Contact Person:_____

Phone #:_____ Cellular #:_____ Fax #:_____

3. BLASTING DETAILS:

Attach selected Control Measures for BMP 03: BLASTING - Soil and Rock.

Monitor and record weather conditions using a suitable source such as the website http://www.wrh.noaa.gov/Lasvegas/, Las Vegas Weather - Local Forecast.

Duration of Blasting:_____ Start Date:_____ Finish Date:_____

Hours during which blasting will occur: _____a.m. to _____p.m.
(Hours other than 8:00 a.m. through 4:00 p.m., Monday through Friday, excluding holidays, require Control Officers prior review and approval.)

Description of material to be blasted:_____

Total number of acres to be blasted:_____acres Depth:_____

Distance: To nearest residence:_____ To commercial facility:_____

Have nearby residents been informed? ☐ Yes ☐ No

4. SUBMITTED BY:

Name:_____ Title:_____

Company Name:_____

Signature:_____ Date:_____

CLARK COUNTY
DEPARTMENT OF AIR QUALITY MANAGEMENT
500 S. Grand Central Pkwy. P.O. Box 551776, Las Vegas Nevada 89155-1776
Office (702) 455-5942 · Fax (702) 383-9994

DEMOLITION SUPPLEMENTAL

NESHAP notifications must be submitted with renovation/demolition applications regardless of age and/or size of the building.

Permit Number: _____
(If known, otherwise to be completed by DAQM)

1. PERMIT INFORMATION:

Applicant/Permittee:_____

Project Name:_____

Project Address/Location:_____

2. DEMOLITION CONTRACTOR:

Company Name:_____ Responsible Person:_____

Address:_____

Phone #:_____ Cellular #:_____ FAX #:_____

3. DEMOLITION INFORMATION:

Describe demolition to take place:_____

Size of building:_____ft^2 Date of building construction:_____

Total Number of buildings on site: _____ Number of buildings to be demolished: _____

4. **BEFORE A DUST CONTROL PERMIT CAN BE ISSUED ON SITES REQUIRING AN ASBESTOS SURVEY, THE FOLLOWING IS REQUIRED:**

A. If Regulated Asbestos Containing Material (RACM) is present, a NESHAP notification must be submitted to DAQM and an Asbestos Waste Certificate must be issued before the asbestos can be removed and disposed.

B. Once the RACM has been abated, submit a final clearance letter from a certified asbestos consultant along with a copy of the license of the individual that cleared the site.

C. Has Asbestos Waste Certificate been received from DAQM?

No: ☐ Yes: ☐, Certificate #:_____

5. SUBMITTED BY:

Name:_____ Title:_____

Company Name:_____

Signature:_____ Date:_____

CLARK COUNTY

DEPARTMENT OF AIR QUALITY MANAGEMENT

500 S. Grand Central Pkwy. P.O. Box 551776, Las Vegas Nevada 89155-1776
Office (702) 455-5942 · Fax (702) 383-9994

RECORD OF DAILY DUST CONTROL FOR CONSTRUCTION ACTIVITIES

Permit Number:_____

Applicant/Permittee:_____

Project Name:_____

Record inspections results and corrective actions taken daily at minimum.

Date	Time	Visible Dust	Project Soils Crusted or Damp	Access Roads Crusted or Damp	Trackout Present/ Cleaned	Verification of Compliance With Dust Control Measures

Construction Site Dust Control Records are required by Clark County Air Quality Regulations, Section 94. Records must be retained and made available for inspection by the Department of Air Quality Management.

APPENDIX B

SUPPLEMENT TO THE DUST CONTROL PERMIT MITIGATION PLANS

Instructions for completing a Supplement to a Dust Mitigation Plan for projects 10 acres and larger.

CLARK COUNTY
DEPARTMENT OF AIR QUALITY MANAGEMENT
500 S. Grand Central Pkwy. P.O. Box 551776, Las Vegas Nevada 89155-1776
Office (702) 455-5942 · Fax (702) 383-9994

INSTRUCTIONS FOR COMPLETING A SUPPLEMENT TO THE DUST MITIGATION PLAN FOR PROJECTS 10 ACRES OR LARGER

1. A supplement to the Dust Mitigation Plan is required to be submitted for the following activities:
   (a) Soil disturbing construction activities 10 acres or greater in size.
   (b) Trenching one mile or more.
   (b) Structural demolition using implosive or explosive blasting.

2. Upon approval by the Control Officer, this supplement to the Dust Mitigation Plan will become part of the Dust Control Permit as an enforceable permit condition. The applicant for the Dust Control Permit must sign this supplement to the Dust Mitigation Plan.

3. For a project 50 acres or greater in size the determination of the Particulate Emission Potential (PEP) must be calculated using an actual soils analysis of the entire project. If the soils analysis for the project identifies two or more soil types, the area of each soil type shall be shown on a map of the project. A copy of the map shall be included in the application for the Dust Control Permit. The soils analysis shall utilize at least one (1) sample taken from the top one (1) foot of soil for each soil type identified. The soils analysis shall use the appropriate ASTM test to determine the silt content and optimum moisture of the sample(s). The application for the Dust Control Permit shall contain the particulate emission potential (PEP) for each soil type identified calculated from the results of the soils analysis and the Silt Content vs. Optimum Moisture Content Chart (figure 2). The choice of Best Management Practices for the Dust Mitigation Plan may be different for each soil type area, if not, the highest PEP identified on the project shall be used.

4. This supplement is required in addition to the Dust Control Permit Application and Dust Mitigation Plan for All Projects. If you are preparing and submitting this supplement it must include all of the following information:

   (a) Project Description: This section of the supplement must provide a complete description of the project, a development plan, a schedule of activities, and a time frame for project completion. List any contractors and/or subcontractors known. In addition, this section should contain an estimated proposed expenditure for the total project dust control budget. For projects 50 acres or more, the total acreage that will be disturbed during each stage of the project.

(b) Site Plan: This section must include one or more maps showing the following information:
(1) Number, description, and estimated duration of project phases,
(2) Location of project construction offices and access routes, and
(3) Areas to be treated with dust palliatives, suppressants or stabilizers.
(4) If soil samples are taken to determine PEP, location of each sample.

(c) Additional Explanation of Control Measures: This section shall include a description of fugitive dust control during non-working hours and an explanation of trackout cleaning and maintenance on adjacent paved roadways. The trackout cleaning description should include the method of street cleaning and the frequency with which it will be accomplished.

(d) Site Plan: This section must include a description of the contingency measures to be implemented if a primary control measure fails to adequately control dust emissions. Contingency measures should also be denoted by checking the Contingency Measure box and listing the measure on the Control Measure Identification form (DCP 03). This section must describe the steps that will be taken to verify that a dust control measure is working and, upon discovery of an inadequacy, the steps that will be taken to initiate a contingency measure.

(e) Soil Stabilization Measures: This section must include a description of the method of soil stabilization along with the type of stabilization product, application rate, and frequency of application for traffic and non-traffic areas. Documentation as to the stabilizer efficiency and reapplication time is necessary. Record keeping and evaluation of environmental impacts of the dust suppressant applied are required to be maintained for the duration of the project. For linear projects state the method of final stabilization and the means of access prevention upon completion of the project, if applicable.

(f) Employee Dust Control Training and Compliance: This section must include a statement of the authority and training of personnel who will insure the construction site remains in compliance with the Site-Specific Dust Mitigation Plan. This section must list the responsible parties that are in addition to those listed in the Dust Control Permit Application. For projects having 50 or more acres of actively disturbed soil at any time, list the person that will be the designated Dust Control Monitor and complete form DCP09: Construction Site Dust Control Monitor, found in attachment 1.

(g) The supplement to the Dust Mitigation Plan must be signed.

ATTACHMENT 1

DUST CONTROL PERMIT FORMS

1. Dust Control Permit Application (form DCP 01)
2. Instruction Sheet for Dust Mitigation Plan
3. Dust Mitigation Plan for all Projects including Project Activities Checklist (form DCP 02) and Control Measure Identification (form DCP 03)
4. Supplemental Permits/Approvals Checklist (form DCP 04)
5. Owner's Designee (form DCP 05)
6. Application for Dust Control Permit Modification (form DCP 06)
7. Dust Palliative Information (form DCP 07)
8. Certificate of Project Completion (form DCP 08)
9. Construction Site Dust Monitor (form DCP 09)
10. Application for Dust Control Permit Renewal (form DCP 10)
11. Application for Modification of Dust Control Permit – Transfer of Permit and/or Change of Property Owner (form DCP 11)
12. Soil Analysis for Projects 50 Acres or More (form DCP 12)

Protecting the air we share

Air Quality

APPLICATION
DUST CONTROL PERMIT FOR CONSTRUCTION ACTIVITIES

Construction activities include but are not limited to: blasting, cut and fill, demolition, site cleanup, staging areas, stockpiles, surface grading, trenching, landscaping and construction.

- A Dust Mitigation Plan is required for all projects. Attach a copy of the Dust Mitigation Plan including maps and required supplemental forms and documents.
- A copy of the Dust Control Permit and an approved Dust Control Permit Application including the Dust Mitigation Plan and all maps must be on-site prior to commencing construction activity.
- A Dust Control Permit Sign must be erected on-site prior to commencing construction activity.
- Permittees are responsible for dust control 24 hours a day, 7 days a week until a Certificate of Project Completion is submitted by the Permittee and approved by a Control Officer.

Please print in ink or type. Blank spaces must be completed for the application to be processed. If not applicable, enter N/A.

1. **Project Name:**_____

2. **Applicant/Permittee:**

   ☐ Property Owner ☐ Developer ☐ Prime Contractor ☐ Other

   Name:_____

   Address:_____

   City:_____ State:_____ Zip:_____

   Telephone:_____ Fax:_____

   E-mail Address:_____

3. **Property Owner: (if applicant is NOT the Property Owner, Owner's Designee form DCP05 is required, See Attachment 1: Dust Control Permit Forms)**

   Name:_____

   Address:_____

   City:_____ State:_____ Zip:_____

   Telephone:_____ Fax:_____

4. **Project Address or Location:**

Address:_____ City:_____

Nearest major cross-streets:_____

Township(s):_____ Range(s):_____ Section(s):_____

Assessor's Parcel number(s) (Attach map):_____

5. **Point of Contact for dust control matters and to whom a NOTICE OF VIOLATION should be sent if necessary:**

Name:_____

Company:_____

Address:_____

City:_____ State:_____ Zip:_____

Telephone:_____ Ext:_____ Fax:_____

Cell/Pager:_____ After Hours Phone:_____

6. **On-site Superintendent/Supervisor/Foreman contact:**

Name: _____ Company: _____

On-site phone: _____ Cellular/Pager: _____

DAQM Dust Class Certification/Card #: _____ Expiration date:_____

Have all other on-site supervisory personnel attended the DAQM Dust Class? ☐ Yes ☐ No

If yes, Name(s): _____

Companies: _____

Certificate/Card #s: _____

Expiration date(s): _____

If no, list the name(s) of the on-site supervisory personnel who will be attending:

_____

_____

_____

7. **Project Summary (check all that apply):**

Project Timeline:

☐ New Project ☐ Existing/Ongoing Project, Existing Permit #:_____

Anticipated Start Date: _____ Completion Date: _____

Project Description:_____

_____

_____

Project Acreage: _____ acres (rounded to the nearest 0.1 acre, min. fee 1 acre)

(All land to be disturbed must be included in project acreage: project site, new or existing unpaved access roads, stockpile, and staging areas)

Water source: ☐ Hydrant with Jones Valve ☐ Fire hose ☐ Water trucks/pulls ☐ Well
☐ Stand tanks ☐ Ponds ☐ Other:_____

8. **Project Soil "Particulate Emission Potential" (check all that apply):**

Using silt and optimum moisture content to determine the particulate emission potential (PEP) is the preferred method. Be aware that imported soils may have a different PEP than on-site project soils.

☐ PEP determined using silt vs. optimum moisture table in Figure 2 of the Dust Control Handbook.

Percentage of silt through a #200 sieve: _____% Optimum moisture content: _____%

☐ PEP determined using generalized PEP determination maps included in the Dust Control Handbook.

PEP for this project is determined to be:

☐ High ☐ Moderate High ☐ Moderate Low ☐ Low

9. **Attach completed Dust Mitigation Plan**

All projects regardless of size must complete and attach a Dust Mitigation Plan (Form # DCP02 and as many copies of form # DCP03 as needed).

For projects greater than 10 acres in size attach the supplement to the Dust Mitigation Plan as outlined in appendix B.

10. **DAQM Notification of Project Completion:**

DAQM must be notified within ten (10) working days of the completion of the project (Certificate of Project Completion DCP 08 – Attachment 1, Dust Control Permit Forms)

The signatory on this Application shall constitute agreement by the Applicant to be the person with authority to enforce compliance by all contractors and subcontractors of the permit conditions, Dust Control Handbook, Dust Control Measures, Dust Mitigation Plan, any permit supplements and Section 94 of the Clark County Air Quality Regulations.

It is a condition of the issuance of any operating permit required by the commission or pursuant to any local ordinance for the holder of the operating permit agrees to permit inspection of the premises to which the permit relates by any authorized officer of the department at any time during the holder's hours of operation without prior notice. This condition must be stated on each application form and operation permit. NRS 445B.580.

APPLICANT (AGENT) SIGNATURE	DATE
PRINTED NAME	TITLE AND COMPANY NAME

Application completed by, if not completed by signatory (Please Print):

Name _____ Phone Number, ext. _____

FOR DAQM USE ONLY

PERMIT NUMBER _____ ISSUE DATE _____ ISSUED BY _____

DATE PAID _____ $_____ AMOUNT _____ CHECK # _____ COMPANY NAME _____

RECEIVED BY _____ $_____ BALANCE DUE

DAQM REVIEW:_____ DATE:_____

BLASTING APPROVAL (if applicable):_____ DATE:_____

DEMOLITION APPROVAL (if applicable):_____ DATE:_____

COPY TO:_____ RE:_____ DATE:_____

TO:_____ RE:_____ DATE:_____

TO:_____ RE:_____ DATE:_____

COMPLIANCE AREA ASSIGNMENT:_____ Hydrographic Basin: _____

☐ Airport ☐ Blasting ☐ Commercial ☐ Demo-Structure ☐ Demo–Other ☐ Staging/Stockpiling

☐ Highway ☐ Schools ☐ Residential ☐ Public Works ☐ Flood Detention ☐ Utilities ☐ Misc

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INSTRUCTION SHEET FOR A DUST MITIGATION PLAN

1. Use the **Project Activities Checklist (**DCP 02) to determine which Construction Best Management Practices (BMPs) are to be included in the Dust Mitigation Plan. The checklist divides the construction project into seven (7) groups based on typical project stages: 1) Offsite Utility and Street Development, 2) Site Preparation and Earthwork, 3) Forms Construction and Slab Pouring, 4) Sub grade Preparation and Paving, 5) Building, 6) Landscaping and Activities for Every Stage. Mark the box next to all Project Activities that are applicable to your project.
2. Complete the **Control Measure Identification** form (DCP 03). Use the Project Activities Checklist (DCP 02) to itemize project stages and activities. Select and list BMP Control Measures to be used to fulfill each requirement for the Project Activity on the Control Measure Identification form. If available, select at least one Control Measure corresponding to the identified soil particulate emission potential (PEP). See Control Measures Identification Instruction page of this section for detailed instructions.
3. Complete a **Supplemental Permits/Approvals Checklist (**DCP 04) and submit with the Dust Control Permit Application.
4. Provide a map showing the vicinity of the project, clearly identifying the closest major cross streets or other landmarks and the project location. Label this map "**Vicinity Map.**" Required map size is 8 ½ x 11 inches. For projects less than 10 acres, where the required Assessor Parcel Maps listed below indicates known cross streets, this map is not required.
5. Provide an 8 ½ x 11 inch **Assessor Parcel Map** for the property(s) on which the project will be occurring. Outline or highlight the affected parcels. Assessor Parcel Maps may be obtained from the Clark County Assessor's office or from the Assessor's Internet site http://gisgate.co.clark.nv.us:8487/openweb/. Projects that are only installing or constructing linear features such as roads, pipelines or other utilities that border or cross more than two Assessor's Parcel Maps are only require to provide an Assessor's Parcel Maps for those areas that show the material and equipment staging areas, but you must provide a detailed vicinity map adequately depicting the entire project area including staging areas.
6. For projects; ten (10) acres or greater, trenching one (1) mile or more, or implosion or explosive blasting of a structure, attach a **Supplement to the Dust Mitigation Plan** (see Appendix B).
7. Submit application materials and application fee to the Clark County Department of Air Quality Management. Applications will be accepted Monday through Friday, 8:00 a.m. to 4:30 p.m.

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DUST MITIGATION PLAN FOR ALL PROJECTS

PROJECT ACTIVITIES CHECKLIST

Instructions: In each Stage column, place a mark in the box in the Project Activity row for each activity that will occur in your project. Refer to the Best Management Practices (BMP) for dust control in the Dust Control Handbook for a complete list and descriptions.

If additional soil disturbing activities are to be included in a project stage, include them as “Other” and provide a description.

If a stage is not applicable to your project mark the box in the “Stage Not Applicable” row.

If an activity is applicable to all stages of your project, for example BMP 10 Disturbed Soil, mark the box in the “Activities for Every Stage” column.

Project Name: _____

Permittee Name: _____

PROJECT ACTIVITIES CHECKLIST

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Stage

BMP	Project Activity	Activities for Every Stage	1 Offsite Utility and Street Development	2 Site Preparation and Earthwork	3 Forms Construction and Slab Pouring	4 Subgrade Preparation and Paving	5 Building	6 Landscaping
	Stage Not Applicable							
01	Backfilling							
02	Blasting - Abrasive							
03	Blasting Soil & Rock							
04	Clearing & Grubbing							
05	Clearing Forms, Foundations and Slabs							
06	Crushing							
07	Cut and/or Fill							
08	Demolition - Implosion							
09	Demolition - Mechanical/Manual							
10	Disturbed Soil							
11	Disturbed Land - Long Term Stabilization							
12	Dust Suppressants - Selection and Use							
13	Importing/Exporting Materials							
14	Landscaping							
15	Paving/Subgrade Preparation							
16	Sawing/Cutting Material							
17	Screening							
18	Staging Areas							
19	Stockpiles							
20	Trackout Prevention and Cleanup							
21	Traffic - Unpaved Routes and Parking							
22	Trenching							
23	Truck Loading							
	Other (include description below)							

Form # DCP 02
3/18/03

Control Measure Identification

Instructions:

1. **Control Measures must be chosen for each Project Activity marked on the Project Activities Checklist (DCP 02). Make as many copies of DCP 03 as needed, to list them all.**
2. Control Requirements and Control Measures are listed in Best Management Practices section of the Construction Activities Dust Control Handbook.
3. On the "**Project Activity**:" line enter the name of each Activity identified from the **Project Activities Checklist** then on the "**BMP #**:" line, enter the corresponding BMP #, these are found on pages 27 through 54, of the Construction Activities Dust Control Handbook.
4. Check the box that indicates what stage(s) of your project this **Project Activity's** Control Measures will apply. If a Project Activity will have different Control Measures in different stages, repeat steps 2-5 as needed, do not indicate the same stage on more than one entry for one type of Project Activity.
5. Select and list all BMP Control Measures to be used to fulfill each requirement for each Project Activity, enter the Control Measure number and an abbreviated description on the form. If a Requirement does not apply to the Project Activity, briefly explain the reason.
6. If listed, you must select at least one Control Measure corresponding to the identified soil Particulate Emission Potential (PEP) for your site. These are abbreviated as "**L:**" for Low**, "ML:"** for Moderate Low**, "MH:"** for Moderate High**,** and **"H:"** for High, on the BMP pages. If you select Contingency measures they must be denoted with a mark in the check box.
7. Recommendations are included for some Project Activities. If applied, these suggestions may reduce the amount of additives and water required to effectively prevent fugitive dust.

   An example is provided below.

   Project Stages:
   ALL = Activities for Every Stage (1) = Offsite Utility and Street Development
   (2) = Site Preparation and Earthwork (3) = Forms Construction and Slab Pouring
   (4) = Sub grade Preparation and Paving (5) = Building (6) = Landscaping

EXAMPLE:

Control Measure Identification

Project Activity: Backfilling BMP #: 01

Stage(s) (Check all that apply for this Project Activity):
ALL ☐ (1) ☒ (2) ☒ (3) ☐ (4) ☐ (5) ☐ (6) ☒

Control Measure # 01-1 Description: Stabilize material with water
Control Measure # 01-4 Description: Dedicate large hose
Control Measure # 01-10 Description: Stabilize with water upon completion
Control Measure # _____ Description: _____
Contingency Measure: ☒ Control Measure # 01-7 Description: Water backfill with tackifier

Control Measure Identification

(Make additional copies of this page as necessary)

STAGE IDENTIFICATION:

ALL = Activities for Every Stage
(1) = Offsite Utilities and Street Development
(2) = Site Preparation and Earthwork
(3) = Forms Construction and Slab Pouring
(4) = Sub grade Preparation and Paving
(5) = Building
(6) = Landscaping

Project Activity:_____ BMP #:_____

Stage(s) (Check all that apply for this Project Activity):

ALL ☐ (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5) ☐ (6) ☐

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Contingency Measure: ☐ Control Measure # _____ Description:_____

Project Activity:_____ BMP #:_____

Stage(s) (Check all that apply for this Project Activity):

ALL ☐ (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5) ☐ (6) ☐

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Contingency Measure: ☐ Control Measure # _____ Description:_____

Project Activity:_____ BMP #:_____

Stage(s) (Check all that apply for this Project Activity):

ALL ☐ (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5) ☐ (6) ☐

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Contingency Measure: ☐ Control Measure # _____ Description:_____

Project Activity:_____ BMP #:_____

Stage(s) (Check all that apply for this Project Activity):

ALL ☐ (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5) ☐ (6) ☐

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Control Measure # _____ Description:_____

Contingency Measure: ☐ Control Measure # _____ Description:_____

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CONSTRUCTION ACTIVITIES DUST CONTROL PERMIT SUPPLEMENTAL PERMITS/APPROVALS CHECKLIST

The following construction activities require permits or approval in addition to a Dust Control Permit. Permits or approvals must be obtained prior to conducting the activity. This form must be submitted with every Dust Mitigation Plan. *Check all activities that apply to the construction project.*

Activities requiring a Various Locations Permit (VLP):
(Comply with VLP regulations prior to installation of this equipment on the project site.)

Operation of a: List Name of VLP Company and/or VLP#

- ☐ powered crusher at temporary locations. _____
- ☐ powered screen at temporary locations. _____
- ☐ concrete batch plant at temporary locations. _____
- ☐ asphalt batch plant at temporary locations. _____

Activities requiring Supplemental Permit:
(Submit applicable supplemental forms. Asbestos survey is required for any size demo/remodel. NESHAP notification is required for ANY size demolition or for remodel if RACM is found.)

- ☐ Blasting to fracture rock, hardpan, or caliche.
- ☐ Blasting to implode a structure.
- ☐ Demolition of a structure greater than 1,000 square feet.
  - ☐ Structural remodeling
  - ☐ Structure relocation

Activities requiring Authority to Construct (ATC) Certificate and Operating Permit:
(An ATC must be obtained prior to installation of this equipment/facility.)

- ☐ Construction of or installation of any Emission Unit
  - ☐ Gasoline Dispensing Facility
  - ☐ Plating Shop
  - ☐ Cooling Tower
  - ☐ Incinerator
  - ☐ Dry Cleaning Equipment
  - ☐ Boiler
  - ☐ Emergency Standby Generator or Other Internal Combustion Engine
  - ☐ Woodworking Process Equipment
  - ☐ Power Generation Facility or Equipment
  - ☐ Crushing or Screening Stationary Source
  - ☐ Concrete or Asphalt Plant Stationary Source
  - ☐ Commercial Surface Coating Equipment including Paint Spray Booth
  - ☐ Other Source of PM_{10}, CO, VOC, NO_X, SO_2, Lead, Hazardous Air Pollutant, or Toxic Chemical Substance

- ☐ Activities Listed Above Do Not Apply to this Construction Project:

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OWNER'S DESIGNEE FOR DUST CONTROL PERMIT FOR CONSTRUCTION ACTIVITIES (Must be notarized)

An Excavation / Encroachment / Offsite permit for government owned land may be submitted in lieu of this form.

1. **DESIGNEE INFORMATION:**

Applicant/Permittee:_____

Address:_____

City:_____ State:_____ ZIP:_____

Phone:_____ Ext:_____ Fax:_____

2. **PROPERTY OWNERS INFORMATION:**

☐ Property Owner ☐ Easement Holder ☐ Right of Way Holder

Name:_____

Address:_____

City:_____ State:_____ ZIP:_____

Phone:_____ Ext:_____ Fax:_____

3. **PROPERTY PHYSICAL INFORMATION:**

Project Address or, if none, description of location :_____

_____

Major Cross Street:_____ Assessor Parcel Map #:_____

I hereby authorize the person listed as my designee to act on my behalf in all matters regarding the issuance and requirements of the DUST CONTROL PERMIT for Construction Activities. The Designee is responsible until such time the permit is closed in accordance with Air Quality Regulations. The Designee has or will successfully complete the Dust Control Class. Furthermore, the Designee is responsible for ensuring the contractor(s), subcontractor(s), and all other persons associated with the Project be certified and comply with the "Conditions of Permit" and "Dust Mitigation Plan". They have full authorization to modify and close the Dust Control Permit for Construction Activities for my property.

_____ _____

Signature Owner/Holder Printed Name

_____ _____

Title and Company Date

_____

Notary's Signature Date

Notary
Stamp Here

Form # DCP 05
03/18/03

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Air Quality

APPLICATION FOR DUST CONTROL PERMIT MODIFICATION

Submit applicable fee per Section 18 of the Air Quality Regulations

1. PERMIT INFORMATION: Permit Number:_____

Applicant/Permittee:_____

Project Name:_____

Project Address/Location:_____

2. IS MODIFICATION REQUESTED AS A RESULT OF A CAO? ☐Yes ☐No

3. INFORMATION TO BE MODIFIED:

☐ Control/Contingency Measures and/or Stages: *(check all stages to be modified)*

☐ Activities for Every Stage
☐ Site Preparation and Earthwork
☐ Subgrade Preparation and Paving
☐ Offsite Utility and Street Development
☐ Forms Construction and Slab Pouring
☐ Building
☐ Landscaping

Attach modified Project Activities Checklist and Control Measure Identification forms for additional activities (Attachment 1).

☐ Project Acreage:

Acreage to be added:_____ Acreage to be removed:_____
Attach a revised map showing the originally permitted area and the area to be added/removed. Attach Owners Designee form(s) for any additional parcel(s) to be added.

☐ Contact Information:

☐ Point of Contact ☐ On-site Contact ☐ Dust Control Monitor

Attach current information.

☐ Supplemental Forms:

☐ Blasting ☐ Demolition

Attach Supplemental forms and Control Measure Identification forms.

☐ Other:

_____

_____

Attach modifications and/or current information.

4. SUBMITTED BY:

Signature:_____ Date:_____

Name:_____ Company Name/Title:_____

5. APPROVED BY:

DAQM Approval:_____ Date:_____

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Air Quality

DUST PALLIATIVE INFORMATION

1. DUST CONTROL PERMIT INFORMATION: *(if applicable)*

Permit Number:_____

Applicant/Permittee:_____

Project Name:_____

2. DUST PALLIATIVE INFORMATION:

Project Address/Location:_____

Date of Application:_____ Acreage or Square Footage stabilized:_____

Product Name of Dust Palliative:_____

Type of Dust Palliative:_____

Dilution Rate:_____ Application Rate:_____

Method of Application (Topical/Blended):_____

☐ Traffic ☐ Non-Traffic Equipment Used:_____

3. APPLICATOR INFORMATION:

Company:_____

Address:_____

Contact Name:_____ Nevada Contractor's License #:_____

Phone Number:_____ FAX Number:_____

Is there a warrantee on services provided? ☐ Yes ☐ No

If yes, terms of warrantee:_____

If no, how long is the Dust Palliative expected to be effective:_____

Signature of Applicator:_____ Date:_____

4. SUBMITTED BY:

Signature:_____ Date:_____

Name:_____

Company Name/Title:_____

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Air Quality

CERTIFICATE OF PROJECT COMPLETION

1. PERMIT INFORMATION:

Permit Number:_____

Applicant/Permittee:_____

Project Name:_____

Project Address/Location:_____

2. CLOSURE INFORMATION:

Permittee Statement

I verify no further soil disturbing construction activities will occur at the above referenced location. All project soils designated in the Dust Control Permit have been permanently stabilized by the following method(s) (Check all that apply):

- ☐ Buildings
- ☐ Landscaping
- ☐ Paving
- ☐ Application of gravel cover
- ☐ Application of dust palliative
- ☐ <1/4 acre disturbed soil remains
- ☐ Permit #:_____is valid
- ☐ Other method (describe): _____

I further verify that this project has not created any emission units that require an Authority to Construct/Operating Permit, that have not been issued by DAQM.

Permittee Signature:_____ Date:_____

Request return fax with inspection results? ☐ No ☐ Yes, Fax #:_____

DAQM use only

Inspection Results

An inspection by a DAQM Enforcement Officer has been performed with the following results:

- ☐ Construction has ceased and the entire site has been adequately treated for long-term stabilization (PASS)
- ☐ Construction has ceased, but the site has not been adequately treated for long-term stabilization *in certain areas* (FAIL)
- ☐ Construction has ceased, but the site has not been adequately treated for long-term stabilization (FAIL)
- ☐ This project will require an ATC/OP for the following equipment: _____

_____

Notes: _____

_____

Enforcement Officer:_____ Date:_____

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CONSTRUCTION SITE DUST CONTROL MONITOR

Air Quality Regulation Section 94.7.5 requires a Dust Control Monitor for any construction **project** that has 50 acres or more of disturbed soils. This requirement is applicable to multiple sites that are individually permitted at less than 50 acres each, if they are adjacent to one another, under common ownership, or are within a master planned community, and together they have 50 acres or more of disturbed soil.

Permittee: _____

Project Name and Dust Control Permit Number(s):

Project Name	Permit number	Acreage
	Total Acreage:	

Monitor's Name: _____

Company: _____

Dust Monitor Card #: _____ Cellular Phone #: _____

Office Phone #: _____ FAX #: _____

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Air Quality

APPLICATION FOR RENEWAL OF A DUST CONTROL PERMIT

1. PERMIT INFORMATION:

Permit Number:_____

Applicant/Permittee:_____

Project Name:_____

Project Address/Location:_____

2. INFORMATION TO BE CHANGED/MODIFIED:

☐ Project Acreage:

Current permitted acreage:_____ Acreage to be renewed:_____

Attach revised map(s) showing total area to be included in renewed permit.
Attach Owners Designee form(s) for any additional parcel(s) to be added.

☐ Control/Contingency Measures and/or Stages: *(check all stages to be modified)*

☐ Activities for Every Stage
☐ Site Preparation and Earthwork
☐ Subgrade Preparation and Paving
☐ Offsite Utility and Street Development
☐ Forms Construction and Slab Pouring
☐ Building
☐ Landscaping

Attach Project Activities Checklist (DCP02) and Control Measure Identification (DCP03) for all modifications.

☐ Contact Information:
(Check all contacts to be modified or changed if more than one, list on separate page)

☐ Responsible Person ☐ On-site Contact ☐ Dust Control Monitor

Name: _____ Company: _____

On-site phone: _____ Cellular/Pager: _____

DAQM Dust Class Certification/Card #: _____ Expiration date:_____

☐ Supplemental Forms:

☐ Blasting ☐ Demolition ☐ Other

Attach modified and/or current forms if renewal includes Blasting and/or Demolition, for all other forms attach only if there is a change from current approved permit.

The signatory on this Application shall constitute agreement by the Applicant to be the person with authority to enforce compliance by all contractors and subcontractors of the permit conditions, Dust Control Handbook, Dust Control Measures, Dust Mitigation Plan, any permit supplements and Section 94 of the Clark County Air Quality Regulations.

It is a condition of the issuance of any operating permit required by the commission or pursuant to any local ordinance for the holder of the operating permit agrees to permit inspection of the premises to which the permit relates by any authorized officer of the department at any time during the holder's hours of operation without prior notice. This condition must be stated on each application form and operation permit. NRS 445B.580.

APPLICANT (AGENT) SIGNATURE	DATE
PRINTED NAME	TITLE AND COMPANY NAME

Renewal completed by, if not completed by signatory (Please Print):

Name _____ Phone Number, ext. _____

FOR DAQM USE ONLY

PERMIT NUMBER _____ ISSUE DATE _____ ISSUED BY _____

DATE PAID _____ $ AMOUNT _____ CHECK # _____ COMPANY NAME _____

RECEIVED BY _____ $ BALANCE DUE _____

DAQM REVIEW:_____ DATE:_____

BLASTING APPROVAL (if applicable):_____ DATE:_____

DEMOLITION APPROVAL (if applicable):_____ DATE:_____

COPY TO:_____ RE:_____ DATE:_____

TO:_____ RE:_____ DATE:_____

TO:_____ RE:_____ DATE:_____

COMPLIANCE AREA ASSIGNMENT:_____ Hydrographic Basin: _____

☐ Airport ☐ Blasting ☐ Commercial ☐ Demo-Structure ☐ Demo–Other ☐ Staging/Stockpiling

☐ Highway ☐ Schools ☐ Residential ☐ Public Works ☐ Flood Detention ☐ Utilities ☐ Misc

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APPLICATION FOR MODIFICATION OF DUST CONTROL PERMIT TRANSFER OF PERMIT AND/OR CHANGE OF PROPERTY OWNER

Please print in ink or type. Blank spaces must be completed for the application to be processed. If not applicable, enter N/A.

(mark all that apply)

1. **This application is for;** ☐ **Transfer of permit**
   ☐ **Change of Property Ownership**

2. **Permit Number:** _____

   Project Name: _____

3. **Current Permit Holder:** _____

   Current Property Owner: _____

4. **New Permittee (if applicable):**
   (if new Permittee is NOT the Property Owner, Owner's Designee form DCP05 from property owner is required, See Attachment 1: Dust Control Permit Forms)

   ☐ **Property Owner** ☐ **Developer** ☐ **Prime Contractor** ☐ **Other** _____

   Name: _____

   Address: _____

   City: _____ State: _____ Zip: _____

   Telephone: _____ Fax: _____

   E-mail Address: _____

5. **New Property Owner (if applicable):**
   (if new Property Owner is NOT the Permittee, Owner's Designee form DCP05 from new property owner is required, See Attachment 1: Dust Control Permit Forms)

   Name: _____

   Address: _____

   City: _____ State: _____ Zip: _____

   Telephone: _____ Fax: _____

6. **Point of Contact for dust control matters and to whom a NOTICE OF VIOLATION should be sent if necessary (if changed from current permit):**

   Name: _____

   Company: _____

   Address: _____

6. Point of Contact (continued):

City: _____ State: _____ Zip: _____

Telephone: _____ Ext: _____ Fax: _____

Cell/Pager: _____ After Hours Phone: _____

7. On-site Superintendent/Supervisor/Foreman contact (if changed from current permit):

Name: _____ Company: _____

On-site phone: _____ Cellular/Pager: _____

DAQM Dust Class Certification/Card #: _____ Expiration date:_____

8. Have all other on-site supervisory personnel attended the DAQM Dust Class? ☐ **Yes** ☐ **No**

If yes, Name(s): _____

Companies: _____

Certificate/Card #s: _____

Expiration date(s): _____

If no, list the name(s) of the on-site supervisory personnel who will be attending:

_____

_____

_____

The signatory on this Application shall constitute agreement by the Applicant to be the person with authority to enforce compliance by all contractors and subcontractors of the permit conditions, Dust Control Handbook, Dust Control Measures, Dust Mitigation Plan, any permit supplements and Section 94 of the Clark County Air Quality Regulations.

The signatory further stipulates that by signing this application, he/she has read and understood the existing Dust Control Permit and associated documents, and agrees to abide by all conditions and requirements of that permit.

It is a condition of the issuance of any operating permit required by the commission or pursuant to any local ordinance for the holder of the operating permit agrees to permit inspection of the premises to which the permit relates by any authorized officer of the department at any time during the holder's hours of operation without prior notice. This condition must be stated on each application form and operation permit. NRS 445B.580.

_____ _____

APPLICANT (AGENT) SIGNATURE **PRINTED NAME**

_____ _____

DATE **TITLE AND COMPANY NAME**

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Air Quality

Soil Analysis for Projects 50 Acres or More

To comply with Clark County Air Quality Regulation 94.5.7, projects greater than or equal to fifty (50) acres must use actual soil analysis to determine the project's soil Particulate Emission Potential (PEP). To meet this requirement the Clark County Department of Air Quality Management (DAQM) has divided the 32 Unified Soil Classification System (USCS) groups into eight (8) designations in the chart below, the 9 organic soils that are not native to this region are not listed.

DAQM Designation	USCS Group Symbols	USCS Group Names (Generalized)
1	CL, CL-ML, ML	Clay and/or silt with sand and/or gravel
2	CH, MH	Clay and/or silt with sand and/or gravel
3	GW, GP	Gravel with/without sand
4	GW-GM, GW-GC, GP-GM, GP-GC	Gravel with silt, sand and/or clay
5	GM, GC, GC-GM	Gravel with/without sand
6	SW, SP	Sand with/without gravel
7	SW-SM, SW-SC, SP-SM, SP-SC	Sand with/without silt, clay and/or gravel
8	SM, SC, SC-SM	Sand with/without gravel

The soil designation must be determined for each boring for the top one (1) foot using boring/exploration logs from the grading soils reports. Attach copies of all boring/exploration logs. Enter in the chart below the number of bores that were done within each DAQM designation.

For each different designation, at least one (1) bore must be analyzed for percent optimum moisture and percent silt content, using an appropriate ASTM test method from within the top one (1) foot of the bore. The chart below allows for two (2) sets of data per designation if additional tests are completed. List the data in the chart below.

Determine the actual soil PEP using either Figure 1: PEP Flowchart or Figure 2: Silt Content vs. Optimum Moisture Content in the Construction Activities Dust Control Handbook – BMP. List the soil PEP in the chart below using the following abbreviations: H=high, MH=moderate-high, ML=moderate-low and L=low.

DAQM Designation	1	2	3	4	5	6	7	8
# of bores								
% silt								
% opt. moisture								
Actual soil PEP								
% silt								
% opt. moisture								
Actual soil PEP								

Control measures selected may be different for each soil PEP determined, if not, the highest PEP identified on the project shall be used. A map showing boring locations must be attached. If the soils analysis identifies two or more soil designations, the area of each soil designation shall be shown on a map of the project.

ATTACHMENT 2

DUST SUPPRESSANT, PALLIATIVE AND SURFACTANT INFORMATION

Interim Policy On Dust Palliative Use In Clark County, Nevada

Environmental / Regulatory Requirements
General Use Requirements
Application Guidelines - Traffic Area Applications
Application Guidelines - Non-Traffic Area Applications
Glossary of Terms and Definit**ions**

GLOSSARY OF TERMS AND DEFINITIONS[1]

Application rate - For liquid suppressants, the volume of mixed solution (concentrate plus water) applied per unit area of land. Typical application rates range from 0.10 to 1.00 gallons of mixed solution per square yard (gallon/yd^2) of land.

Application rate - For fibers and mulches, the mass of solids in pounds applied per unit area of land. Typical application rates range from 500 pounds per acre to 6,000 pounds per acre.

Brine - Solution of salt in water. Strength of brine measured by percent solids by mass. For example; a 40% magnesium chloride brine has 40% solids by mass.

Deliquescent salts - Calcium chloride and magnesium chloride salts are deliquescent (readily drawing moisture from the atmosphere and melting). Calcium chloride is available as flake or brine. Magnesium chloride is available as brine. Brine solids contents are variable.

Dilution ratio - The ratio of the volume of concentrate to volume of water. Example; 1:4 means 1 volume of concentrate is to be mixed with 4 volumes of water, or 100 gallons of concentrate would be mixed with 400 gallons of water.

Dust Palliative - A hygroscopic material, non-toxic chemical stabilizer or other dust palliative which is not prohibited for ground surface application by the EPA or the Nevada Division of Environmental Protection (NDEP) or any applicable law or regulation, as a treatment material for reducing fugitive dust emissions. Water, solutions of water and chemical surfactants, and foam are not dust palliatives for the purpose of these Regulations.

Dust Suppressant - Water, hygroscopic material, solution of water and chemical surfactants, foam, non-toxic chemical stabilizer or any other dust palliative which is not prohibited for ground surface application by the EPA or the Nevada Division of Environmental Protection (NDEP) or any applicable law or regulation, as a treatment material for reducing fugitive dust emissions.

Fibers/mulches - Blends of wood fiber or paper mulch with binder and or tackifier in water. Fibers and mulches are usually blended on-site. Formulation types and concentrations are often proprietary and depend on soil conditions and intended use.

Hygroscopic - Readily drawing moisture from the atmosphere but not melting. Dry sodium chloride is hygroscopic.

Lignosulfonate - By-product of sulfite paper-making process. Available as 10-25% volumetric residual solution, as a 50% volumetric residual solution, or as powdered solid to be mixed with water. May have high initial BOD (biological oxygen demand).

Organic non-petroleum products - Tall oils; Distilled product of kraft (sulfate) paper-making process. Available as a 40-50% volumetric residual concentrate to be diluted with water.

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[1] Principal source: Bolander and Ymada, Dust Palliative Selection and Application Guide – US Department of Agriculture, November, 1999.

Organic non-petroleum products - Vegetable oils; typical sources include canola oil, cottonseed oil, linseed oil and soybean oil. Applied full-strength at 0.25-0.50 gallon/yd^2.

Organic petroleum products - Available as cutback asphalt, asphalt emulsions, modified asphalt emulsions and other emulsified oils. Application rates highly variable, depending on road surface conditions, product type and dilution.

Synthetic polymers - By-products of adhesive manufacturing process. Available as 40-50% volumetric residual concentrate (40-60% solids by mass) in water, then diluted for application.

Tackifier - A substance used with water to hold together mulches and other dust palliatives. A tackifier binds small particles together without forming a hard crust. Many dust palliatives can be used in a dilute form as a tackifier.

Topical - Liquid dust suppressant application technique using a hose, spray bay or spray cannon.

Windrow- Method of making a temporary road surface. A 4- to 6-inch thick layer of soil is scraped off the surface. The surface is treated with dust suppressant. The windrow is scraped back onto the surface and another treatment of dust suppressant is applied. A compaction step may be necessary.

ENVIRONMENTAL / REGULATORY REQUIREMENTS

Policy Background

The objective of this Interim Policy On Dust Palliative Use In Clark County is to facilitate the implementation of air quality fugitive dust controls in a manner that prevents human exposure to harmful constituents and protects soil and water resources while achieving air quality objectives. This interim policy was based on current state and federal regulations that are applicable to soil contamination, groundwater contamination, and surface water contamination. Some requirements are also incorporated based on information currently available in the scientific literature.

This policy document has been drafted to provide guidance on the use of dust palliatives and suppressants. The document lists applicable state regulations that may be applicable to the manufacture and application of dust palliatives. This interim policy includes guidelines and requirements for the use of dust palliative products based on conditions in the Las Vegas Valley.

This policy document is intended to serve as an interim policy until permanent regulations can be developed based on more complete scientific data. It is envisioned that the permanent regulations will be more comprehensive in scope.

Regulatory Basis For Interim Guidance

- NAC 445A.2272 Contamination of soil: Establishment of action levels
- NAC 445A.22735 Contamination of groundwater: Establishment of action levels
- NAC 445A. 2275 Contamination of surface water
- NRS 444.8565 “Hazardous Waste” defined
- NRS 444.861 “Used Oil” defined

- NRS 444.8632 Compliance with federal regulations adopted by reference.
- NRS 444.8682 Requirements for managing and disposing of mixtures of used oil and hazardous waste or other products
- NRS 444.8683 Regulation of mixtures of used oil with wastes determined not to be hazardous
- NRS 444.8681 Mixing of used oil with hazardous waste or products

COMPLIANCE

Application of dust palliatives may be subject to sample collection and testing for compliance with applicable regulations of the Nevada Administrative Code and the Nevada Revised Statues, and with the prohibited materials requirements and *p*H requirements set forth in this interim policy. Sample collection may be conducted by enforcement staff of the Clark County Department of Air Quality Management or the Nevada Division of Environmental Protection.

The requirements of this policy are applicable to Dust Control Permits and Dust Mitigation Plans submitted under the requirements of Section 94 of the Air Quality Regulations. These requirements are also applicable where soil surface stabilization is performed to comply with a Corrective Action Order issued under Sections 90, 91, 92, and 93 of the Air Quality Regulations.

Prohibited Materials

The materials and compounds listed on the following pages are not permitted in any dust suppressant product at detectable levels:

1) Banned Pesticides:[2]
- aldrin
- chlordane
- DDT
- DDE
- DDD
- Methoxychlor
- Dieldrin/endrin
- Heptachlor
- Hexachlorobenzene
- Lindane ((γ-BHC)

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[2] **References:** a) United States Environmental Protection Agen**cy**
Office of Pesticide Programs
http://www.epa.gov/oppfead1/international/piclist.htm
b) The Merck Index, eleventh edition, Merck and company, Rahway, N. J., 1989
c) Environmental Chemistry, Manahan, S. Lewis Publisher, 1994.
d) Hazardous Wastes, Watts, R. Wiley Intersciencee, 1997.
e) Hazardous Waste Management, La Grega, M. McGraw Hill, 1994.

- 4. 2,3,4,5-Bis(2-butylene)tetrahydro-2- furaldehyde (Repellent-11)
- bromoxynil butyrate
- cadmium compounds
- calcium arsenate
- carbon tetrachloride
- chloranil
- chlordecone (kepone)
- chlorinated camphene [Toxaphene]
- chloromethoxypropylmercuric acetate (CPMA)
- copper arsenate
- DBCP
- Di(phenylmercury)dodecenylsuccinate (PMDS)
- EPN
- ethyl hexyleneglycol (6-12)
- lead arsenate
- leptophos
- mevinphos
- mirex
- nitrofen (TOK)
- OMPA (octamethylpyrophosphoramide)
- phenylmercury acetate (PMA)
- phenylmercuric oleate (PMO)
- potassium 2,4,5-trichlorophenate (2,4,5-TCP)
- pyriminil (Vacor)
- safrole
- silvex
- sodium arsenite
- TDE
- Terpene polychlorinates (Strobane)
- thallium sulfate
- vinyl chloride

2) **Severely Restricted Pesticides**[3]

- arsenic trioxide
- carbofuran (granular only)
- daminozide/alar
- sodium arsenate
- tributyltin compounds

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[3] **References: a) United States Environmental Protection Agency**
Office of Pesticide Programs
http://www.epa.gov/oppfead1/international/piclist.htm
b) The Merck Index, eleventh edition, Merck and company, Rahway, N. J., 1989
c) Environmental Chemistry, Manahan, S. Lewis Publisher, 1994.
d) Hazardous Wastes, Watts, R. Wiley Intersciencee, 1997.
e) Hazardous Waste Management, La Grega, M. McGraw Hill, 1994.

3) **Dioxins**
4) **Asbestos**
5) **PCBs**

***p*H Limits**

All dust suppressant products shall have a *p*H value of not less than four (*p*H = 4) or greater than nine (*p*H = 9) as applied.

GENERAL USE REQUIREMENTS

Open Bodies of Water and Drinking Water Well-Heads:

Organic petroleum products, deliquescent/hygroscopic salts, and lignin-based palliatives may not be used within twenty (20) yards of open bodies of water, including lakes, streams, and canals, within twenty (20) yards of a drinking water well-head. This buffer zone is intended to prevent leachate from these palliatives from reaching an open body of water or a ground water aquifer.

Natural Washes and Flood Control Channels:

Organic petroleum products, deliquescent/hygroscopic salts, and lignin-based palliatives may not be used within twenty (20) yards of any natural wash or flood control channel. This buffer zone is intended to prevent leachate from these palliatives from reaching a natural wash or flood channel, and subsequently being flushed into surface waters or drinking water supplies during a rain event

Surfactants:

Surfactants may not contain phosphates. Surfactants by themselves are not allowed for use as a dust palliative because they do not form a durable soil surface. Non-phosphate surfactants may be combined with dust palliatives to assist penetration of dust palliatives into hydrophobic soils.

Pesticide Application With Dust Palliatives:

Any person who applies any pesticide material with a dust palliative is required to hold a valid pesticide applicators license issued by the State of Nevada.

Dust Palliative Dilution and Tank Cleaning:

Dust palliative applicators should be aware that use of water tainted with any of the above-listed prohibited or severely restricted chemicals, or with other compounds that would result in a violation of applicable codes and regulations for the dilution of dust palliatives could result in a palliative mixture that would not comply with applicable environmental regulations or the *p*H requirements for dust palliatives set forth in this policy.

Only potable water supplies or reclaimed water, meaning wastewater that, as a result of appropriate treatment, is suitable for subsequent beneficial use, may be used as a diluent for dust suppressants. Application or transport tanks that have been used for other purposes, such as pesticide use, must be cleaned in accordance with applicable regulations before being used to transport, mix, or apply a dust palliative.

Traffic Area Applications:

1. Fiber mulch products are not allowed for use as a dust palliative in traffic areas. These products do not hold up well for traffic use.

2. Non-phosphate surfactants may be combined with dust palliatives to assist penetration of into hydrophobic soils. Surfactants by themselves are not allowed for use as a dust palliative because they do not form a durable soil surface. Surfactants may not contain phosphates because phosphates adversely impact water quality.

3. Use of deliquescent/hygroscopic salts are limited to magnesium chloride and only allowed for short-term (less than one year) stabilization of unpaved roads. Treated unpaved roads must be periodically maintained with additional applications of water and magnesium chloride as needed to maintain effectiveness. Magnesium chloride is not effective, even with product reapplication, for periods of more than one year. Magnesium chloride may not be used on trafficked areas within twenty (20) yards of an open body of water, a drinking water well-head, natural or artificial drainage channel, or other surface water feature.

TABLE 1
TRAFFIC AREA APPLICATION REQUIREMENTS
Appropriate Use of Liquid Dust Palliatives and Application Rates

(Traffic Area: Any land area upon which vehicular traffic is reasonably expected to occur due to location, topography or access)

Dust palliative materials must conform to all applicable Environmental / Regulatory Policies and General Use Requirements

Product Type	Use/Treatment	Dilution Ratio Range	Dilution Ratio Typical	Application Rate gallon/yd2	Notes
Synthetic polymers: polyvinyl acetate vinyl acrylic	Topical Road or parking lot Topical Road shoulder Windrow Road surfaces	1:12-1:4 1:12-1:4 1:12-1:4	1:9 1:9 1:9	0.50 0.50 0.25/0.25/0.50	1,2,3,4
Organic petroleum products: modified & unmodified asphalt emulsions	Topical Road or parking lot Topical Road shoulder Windrow Road surfaces	1:8 1:10 1:8	1:4 1:7 1:4	0.50 0.25 0.40	1,2,3,4,5 1,2,3,4,5 1,2,3,4,5
Magnesium chloride only. Other deliquescent/ hygroscopic salts, including calcium chloride and sodium chloride are not permitted	Topical Road or parking lot Topical Road shoulder-not Allowed Windrow Road surfaces			0.50 0.25/0.25	1,2,3,4,6,8,9 1,2,3,4,6,8,9, 10 1,2,3,4,6,8,9
Fibers/Mulches	**Not Allowed** Unpaved Road and other Traffic Applications	Not Applicable		Not Applicable	12
Lignin-Based Types (Lignosulfonate)	Topical Road or parking lot Topical Road shoulder Windrow Road surfaces	1:1 1:7-1:4 1:1	1:1 1:4 1:1	0.50 to 1.00 0.15 to 0.20 0.25/0.25 to 50/0.50	1,2,3,4,5 1,2,3,4,5 1,2,3,4,5
Organic non-petroleum products: animal fats, molasses/sugar beet, tall oil emulsions, vegetable oils	Topical Road or parking lot Topical Road shoulder Windrow Road surfaces	1:10 -1:2 1:10 -1:2 1:2- 1:1	1:5 1:5 1:1	1.00 1.00 0.15/0.15	1,2,3,4,5 1,2,3,4,5 1,2,3,4,5
Other	As approved by Control Officer				

Non-Traffic Area Applications:

1. Organic petroleum products, including modified and unmodified asphalt emulsions, are not permitted on non-traffic areas. These palliatives are subject to NAC 445A.2272(b) and may discolor the land surface and produce unpleasant odors.

2. Deliquescent/hygroscopic salts are not allowed for non-traffic stabilization. These salts require frequent re-watering to be effective in the Las Vegas Valley, are not effective for periods of more than one year, and tend to leach chlorides when precipitation occurs.

3. Lignin-based palliatives are not allowed for non-traffic stabilization. Surface binding action of lignin-based palliatives may be reduced or completely destroyed when heavy rains occur. The decreased binding action of these products following heavy rains renders areas treated with lignin-based palliatives vulnerable to wind erosion after rain occurs. Leachate from lignin-based palliatives may also adversely impact the quality of storm water runoff.

4. Non-phosphate surfactants may be combined with dust palliatives to assist penetration of into hydrophobic soils. Surfactants by themselves are not allowed for use as a dust palliative because they do not form a durable soil surface. Surfactants may not contain phosphates because phosphates adversely impact water quality.

TABLE 2

NON-TRAFFIC AREA APPLICATION REQUIREMENTS

Appropriate Use of Liquid Dust Palliatives and Application Rates

(Non-Traffic Area: Any land area upon which no vehicular traffic is reasonably expected to occur due to site specific conditions; e.g., remoteness, fencing or other access controls)

Dust palliative materials must conform to all applicable Environmental / Regulatory Requirements and General Use Requirements.

Product Type	Use/Treatment	Dilution Ratio Range Typical	Application Rate gallon/yd2	Notes
Synthetic polymers: Polyvinyl acetate Vinyl acrylic	Topical Vacant Land	1:12-1:4 1:9	0.50	1,2,3,4
Organic petroleum products: modified & unmodified Asphalt emulsions	**Not Allowed** Vacant Land	Not Applicable	Not Applicable	10
Deliquescent/ Hygroscopic salts: Magnesium chloride Brine, calcium chloride brine or flakes, sodium chloride	**Not Allowed** Vacant Land	Not Applicable	Not Applicable	10
Lignin-Based Types (Lignosulfonate)	**Not Allowed** Vacant Land	Not Applicable	Not Applicable	10
Fibers/Mulches	Topical Vacant Land	As prepared	500-6000	1,2,3,4,11
Organic non-petroleum products: animal fats, molasses/sugar beet, tall oil emulsions, vegetable oils	Topical Vacant Land	1:10-1:2 1:5	1.00	1,2,3,4,5
Other	As approved by Control Officer			

NOTES: (See last column in preceding Application Guideline tables)

1. Topical application rates shown are to obtain ½ to 1 inch of penetration. Higher application rates should be used if greater penetration is needed. Windrow rate shown is to give sufficient penetration to from a 4-6 inch thick temporary travel surface.
2. The dilution ratio (concentrate: water) is variable, and shall be appropriate for the intended use, and local soil and weather conditions, as proposed by the Contractor and agreed upon by the Control Officer. Warranty conditions in Note 4 apply,'
3. Application rate of mixed solution at the typical dilution ratio. Lifetime conditions in Note 4 apply. For windrow applications, the rates separated by slash marks indicate the first/second/third application. First application is after removal of windrow. Second application is after replacement of windrow. Third application, if needed, is after second application.
4. Application of diluted suppressant shall be sufficient to achieve a minimum warranted lifetime of one year from date of application.
5. These palliatives are subject to NAC 445A.2272(b) and may discolor the land surface and produce unpleasant odors.
6. Must be periodically maintained with additional applications of water and salt as needed to maintain effectiveness. Allowed only for short-term (< 1 year) stabilization of unpaved roads. May not be used on trafficked areas within twenty (20) yards of a drinking water well-head, natural or artificial drainage channel or other surface water feature unless approved by the Control Officer.
7. Surfactants may be added to assist penetration of water and dust palliative into hydrophobic soils. Surfactants by themselves are not allowed for use as dust palliatives. Phosphates not allowed as surfactant constituents.
8. Brine strength may vary as supplied from manufacturer, but is typically in the range of 20-40% solids by mass. Maximum and minimum allowable strengths to be set by the Control Officer.
9. Sodium chloride (NaCl) not allowed for any application, because it is ineffective at ambient relative humidity below 76%. Relative humidity above 50% seldom occurs in the Las Vegas Valley.
10. Deliquescent/hygroscopic salts are not allowed for use on vacant lands or on road shoulders near surface waters or surface drainage because of adverse water quality impacts, including elevated chloride concentrations in storm water runoff and in groundwater.
11. Application rate in pounds per acre at the on-site blended strength.
12. Fiber mulches are not effective for traffic applications.

ATTACHMENT 3

CALIFORNIA AIR RESOURCES BOARD (CARB) - APPROVED ABRASIVES INFORMATION

CERTIFIED ABRASIVES

The California Health and Safety Code authorizes the ARB to adopt air pollution standards for sandblasting operations. Title 17 California Code of Regulations sections 92000 - 92530 require that all abrasive blasting be conducted within a permanent building with some specific exceptions. Exceptions allowing outdoor blasting exist when 1) steel or iron shot/grit is used exclusively, or 2) the blasting is conducted with ARB certified abrasive, wet, hydroblasting, or vacuum blasting techniques and the item blasted exceeds 8 feet in any dimension or is situated at its permanent location. The regulations apply a 40 percent opacity visible emission standard to all permissible outdoor blasting and a 20 percent opacity standard to all permissible indoor blasting regardless of the abrasive or the blasting technique used.

Under the regulations, the ARB is required to certify abrasives used for permissible dry outdoor blasting as complying with specific performance standards. The performance standards require that the abrasives shall not contain more than 1 percent by weight material passing a #70 U.S. standard sieve before blasting, and that after blasting the abrasives shall not contain more than 1.8 percent by weight material 5 microns or smaller. As an alternative to the before-blasting requirements, the abrasive shall not produce visible emissions more than 20 percent opacity when blasted in accordance with a specified test method. Compliance with these certification requirements helps to reduce fine particulate matter emitted to the atmosphere during permissible dry outdoor blasting.

An abrasive which is sold by its producer or vendor during the certified period is certified for use until it is gone. It is not required that the abrasive be used only during the period it is certified. An advisory (Compliance Advisory Number 164) on this issue is available in both Microsoft Word format, or Adobe Acrobat PDF format.

Executive Order G-02-006 lists abrasives currently certified by the ARB in accordance with section 92530 of Subchapter 6, Title 17, California Code of Regulations. The certification of the abrasives on this Executive Order will expire in either 2002 or 2003 depending on when the abrasive was certified. Click below to download a list of **currently** certified abrasives for permissible dry outdoor blasting. New Executive Orders will be issued as appropriate. Click here if you wish to see a list of old Executive Orders. At this time, only the current list of abrasive is available on the Web. If you wish to obtain a hard copy of any list, past or current, or if you would like more information, please contact Ms. Kathryn Gugeler at (916) 322-0221.

Applications to have abrasives certified are accepted year-round. Since the testing is done partially outdoors, and so is weather dependent, no accurate estimate of the length of time to complete the testing is possible. We may, however, be able to complete it within a month or so of receiving the product and a completed application, weather permitting. Submittal of products for testing during the spring renewal season may result in some cost savings. You will be billed for the actual cost of the testing following it's completion. The cost varies, but is generally between $1,500 and $2,000 per sample. Nonpayment of the invoice will result in decertification. Applications are available by contacting Ms. Kathryn Gugeler at (916) 322-0221.

Abrasive Blasting Program
Time Period of Legal Use of Certified Abrasive

The purpose of this advisory is to clarify the time period that an abrasive certified for permissible dry outdoor use under Title 17 of the California Code of Regulations may be used. An abrasive which is sold by it's producer or vendor during the certified period is certified for use until it is gone. It is not required that the abrasive be used only during the period it is certified. A recent legal opinion on this issue is enclosed.

Section 92530 (e) of Title 17 of the California Code of Regulations requires that manufacturers and suppliers of certified abrasives permanently and legibly label invoices, bills of lading, and abrasive packages or containers with the manufacturer's name or identification trade name, the grade, weight proportion of components in abrasive blends, brand name of the abrasive or brand names and grades of components of abrasive blends and the statement "ARB certified for permissible dry outdoor blasting." These labeling requirements may be used by customers and inspectors to ensure that the abrasives being acquired and used are certified. Should an abrasive be mislabeled, the violation would be upon the party that did the mislabeling.

State of California
Air Resources Board

EXECUTIVE ORDER G-02-006

Relating to Certification of Abrasives for Permissible Outdoor Blasting under section 92530, Title 17, California Code of Regulations

WHEREAS, Health and Safety Code, section 41900 authorizes the Air Resources Board (ARB) to adopt abrasive blasting standards;

WHEREAS, in Title 17, California Code of Regulations, section 92000, et seq. The ARB has established abrasive blasting standards;

WHEREAS, Title 17, California Code of Regulations, section 92500 (c), provides in part that any permissible abrasive blasting operation conducted outside a permanent building must use exclusively wet abrasive blasting, hydroblasting, vacuum blasting, or abrasives certified by the ARB for permissible dry outdoor blasting;

WHEREAS, the abrasives listed in Exhibit A (attached) have been tested in accordance with "Method of Test for Abrasive Media Evaluation," Test Method No. California 371-A, dated May 15, 1975, including the "Visible Emission Evaluation test Method for Selected Abrasives Used in Permissible Dry Outdoor Blasting as adopted by the ARB on April 1, 1991 for some selected abrasives, and all have been found to comply with the abrasive certification performance standards set forth in Title 17, California Code of Regulations, section 92530 (b);

NOW, THEREFORE, I, Michael P. Kenny, Executive Officer of the Air Resources Board, order certified the abrasives listed in Exhibit A for permissible dry outdoor blasting pursuant to Title 17, California Code of Regulations, section 92530;

IT IS FURTHER ORDERED, pursuant to Title 17, California Code of Regulations, section 92530 (a), that the certifications granted by this Executive Order will expire on the respective dates listed in Exhibit A, and thereafter no previously listed abrasive will be permissible for dry outdoor blasting until recertified in accordance with Title 17, California Code of regulations, section 92530;

IT IS FURTHER ORDERED that Executive order G-02-001 is superceded by this order.

Executed at Sacramento, California, this 1st day of May 2002.

INTERNET VERSION

Michael P. Kenny
Executive Officer

Attachment
Exhibit A: Abrasives Certified for Permissible Dry Outdoor Blasting

Exhibit A

EXECUTIVE ORDER G-02-006

STATE OF CALIFORNIA
AIR RESOURCES BOARD

ABRASIVES CERTIFIED FOR PERMISSIBLE DRY OUTDOOR BLASTING pursuant to Section 92530 of Subchapter 6, Title 17, California Code of Regulations. Unless otherwise noted, the cut-point for fineness (cpff) is #70 sieve.

Company	**Brand name or Grade**	**Expires**
Abrasives, Incorporated Larry R. Roth Box 233 Elgin, ND 58533 (701) 584-3422 FAX (701) 584-3242 Plant 411 1st Ave. SE, Elgin, ND	Black Magic 8-20 Black Magic 16-40	8/31/02 8/31/02
Barton Mines Company, L.L. C. R. Joseph Ahrberg 1557 State Route 9 Lake George, New York 12845 (518) 798-5462 FAX (518) 798-5728 Plant 17-C Keeraikaranthattu Tisaiyanvilai – 627 657 Tamil Nadu, India	Barton Garnet #16 Barton Garnet #36 Barton Garnet #30x40	8/31/03 8/31/03 8/31/03

Distributors for above products:

Barton Mines Company
Blast Media Division
Joe Ahrberg
P.O. Box 591
Lake George, NY 12845
(518) 798-5462 FAX (518) 798-5728

Mission Abrasive
9292 Activity Road
San Diego, CA 92126
(858) 566-6700 FAX (858) 271-5079

Porter Warner Industries
Steve Cramer
6623 E. Washington Blvd.
Commerce, CA 90040
(323) 722-1335 FAX (323) 724-8858

Temple Associates
Linda Tinkham
11311 Trade Center Drive #115
Rancho Cordova, CA 95742
(916) 635-4337 FAX (916) 635-3475

Company	Brand name or Grade	Expires
Beach Minerals Company 132, Tiruchendur Road Kuttam – 627 651 Tamilnadu – India 91 4637 79260 FAX 91 4637 79230		
Plant Keeraikaranthattu Tisaiyanvilai – 627 657 Nellai District Tamilnadu, India	Beach Minerals Garnet 20x40* Beach Minerals Garnet 30x60*	8/31/02 8/31/02

Distributors for above products:

Gordon Industries
George E. Gordon III
975 66th Ave.
Oakland, CA 94583
(510) 632-6900 (800) 333-7930 FAX (310) 537-2483

USF Surface Preparation
Richard S. Brumley
18416 S. Santa Fe Ave.
Rancho Dominguez, CA 90221
(310) 637-3427 FAX (310) 637-1198

Gordon Sand Company
Clint LeGrant
2201 So. Santa Fe Ave.
Compton, CA 90221
(323) 774-7930 (800) 333-7930 FAX (310) 537-2483

BEI Pecal Peter Graham 407 Parkside Dr. E Waterdown, Ontario L0R 2H0 (905) 689-6661 FAX (905) 689-0485		
Plant 3 Elaine Street New Orleans, LA	Galaxy Plus Garnet 20x40 GW20-48+	8/31/03 8/31/03
Plant 407 Parkside Dr. Waterdown, Ontario Canada	Barshot 20 Barshot 30 Barshot 50 BS 20 BS 30 BS 50 Ebony Grit 12 Ebony Grit 14 Ebony Grit 20 EG12 EG14 EG20	8/31/03 8/31/03 8/31/03 8/31/03 8/31/03 8/31/03 8/31/03 8/31/03 8/31/03 8/31/03 8/31/03 8/31/03

Company	Brand name or Grade	Expires
Bell & MacKenzie Co., Ltd. Richard Bell Post Office Box 844, LCD#1 Hamilton, Ontario L8N 3N9 Canada (888) 794-5665 FAX (888) 794-7263 Plant 500 Sherman Ave. N. Hamilton, Ontario	Black Magic Nickel Slag #12 Black Magic Nickel Slag #20	8/31/02 8/31/02
Black Diamond, Incorporated Albie Kraemer 499 Cottage Grove Drive Woodbury, MN 55129 (651) 436-6071 FAX (651) 436-6744 Plant 499 Cottage Grove Dr., Woodbury, MN	Abrasives Technologies, Inc.	8/31/02
CAE Alpheus Inc. Thomas P. Fahey 9119 Milliken Ave. Rancho Cucamonga, CA 91730 (909) 481-6444 FAX (909) 980-5696 Plant 9119 Milliken Avenue Rancho Cucamonga, CA 91730	Alpheus CO_2 Cleanblast	8/31/02
Charter Resources International Peter R. Del Mastro P.O. Box 27740 Las Vegas, NV 89126 (800) 781-9301 FAX (800) 781-9124 Plant 1st St. and D St., Mina, NV	CRI Garnet Blast 8-12 CRI Garnet Blast 12-30 CRI Garnet Blast 30-60	8/31/03 8/31/03 8/31/03

Company	Brand name or Grade	Expires
Chesapeake Specialty Products, Incorporated Don E. Sanchez 5055 North Point Boulevard Baltimore, Maryland 21219 (410) 388-5055 FAX (410) 388-5194 Plant 5055 North Point Boulevard, Baltimore, Maryland	METgrit METgrain	8/31/03 8/31/03
Cold Jet, Incorporated Ben Shepard 1237 Archer Street San Diego, California 92109 (619) 787-6480 FAX (619) 539-6988 Plant Produced at blasting site	CO2 Dry Ice Pellets	8/31/03
E.I. Du Pont De Nemours & Company, Inc. Phil Pombier P.O. Box 753 Starke, FL 32091 (904) 964-1217 FAX (904) 964-1298 Plant Off SR 230 E, Camp Blanding W Gate Starke, FL	Biasill® (cpff=#270) Starblast® (cpff=#270) Starblast® XL (cpff=#270) Starblast® Ultra (cpff=#200) Coarse Staurolite	8/31/02 8/31/02 8/31/02 8/31/02 8/31/02
Eurogrit BV Jeroen Keswiel P.O. Box 184 3350 AD Papendrecht The Netherlands +31-78-6546770 FAX +31-78-644 94 94 Plant Kilkade 30 3316 BC Dordrecht The Netherlands	Eurogrit 10/40 Eurogrit 12/40 Eurogrit 20/40	8/31/03 8/31/03 8/31/03

Company	Brand name or Grade	Expires
GMA Garnet Pty Ltd. Robert Brand P.O. Box 644 Nedlands, WA 6009 Australia (09) 386 8618 FAX(09) 389 8547	GMA 30x60 (cpff=#140) GMA 80 Mesh (cpff=#140) GMA 80SB (cpff=#140) ROM 30x60 (cpff=#140)	8/31/02 8/31/02 8/31/02 8/31/02

Plant
Lot #24, Goulds Road, Narngulu, Geraldon, WA, Austrailia

Distributors for above products:

Barton Mines Company
Blast Media Division
Joe Ahrberg
P.O. Box 591
Lake George, NY 12845
(518) 798-5462 FAX (518) 798-5728

Mission Abrasive
9292 Activity Road
San Diego, CA 92126
(858) 566-6700 FAX (858) 271-5079

Porter Warner Industries
Steve Cramer
6623 E. Washington Blvd.
Commerce, CA 90040
(323) 722-1335 FAX (323) 724-8858

Temple Associates
Linda Tinkham
11311 Trade Center Drive #115
Rancho Cordova, CA 95742
(916) 635-4337 FAX (916) 635-3475

Gordon Sand Company
Clint LeGrant
P.O. Box 5549
Compton, CA 90224
(323) 774-7930 (800) 333-7930 FAX (310) 537-2483

Plant 4 mi. W. of Guadalupe, CA on W. Main St.	Golden Flint G-16# Golden Flint G-20# Golden Flint G-30#	8/31/02 8/31/02 8/31/02

Distributors

Gordon Industries
George E. Gordon III
(510) 632-6900 (800) 333-7930 FAX (310) 537-2483

Green Diamond Sand Products Cheri. Shivers P.O. Box D Riddle, OR 97469 (541) 874-3111 FAX (541) 874-3113	Green Diamond 1636 Green Diamond 2050	8/31/02 8/31/02

Plant
Corner of 6th & E St., Riddle, OR

Company	Brand name or Grade	Expires
Industrial Mineral Company K. Madhavan Post Office No. 6 Muthiahpuram, Tuticorin 628 005 India 357221 FAX 357223 Plant 4/160-D 26, Harbour Construction Road Muthiahpuram, Tuticorin India	Garnet Abrasive Grit Grade A (Mesh 12-25) Garnet Abrasive Grit Grade B (Mesh 20-40)	8/31/03 8/31/03
International Garnet John W. Burns 3306 Peterson Street Norfolk, VA 23509 (757) 855-5229 FAX (757) 857-5631 Plant 56 Industrial Park Road, Keeseville, NY	International Garnet	8/31/03

Company	Brand name or Grade	Expires
Kleen Blast Division - CanAm Minerals Tim Spurgeon 2600 Old Crow Canyon Road, Suite 200 San Ramon, California 94583 (925) 831-9800 FAX (925) 831-9183		
Plant	Kleen Blast #8/12	8/31/02
Pacific Abrasives & Supply, Inc.	Kleen Blast #16	8/31/02
2465 Carson Road	Kleen Blast #16/30	8/31/02
Grand Forks, BC	Kleen Blast #35	8/31/02
Canada	Kleen Blast #30/60	8/31/02
Plant	Kleen Blast #30-60/15% Blastox	8/31/03
30028 Industrial Parkway SW	Kleen Blast #16-30/15% Blastox	8/31/03
Hayward, CA	Kleen Blast #35/15% Blastox	8/31/03
Plant	Kleen Blast #16-30/15% Blastox	8/31/03
93 - 8th Ave.	Kleen Blast #35/15% Blastox	8/31/03
San Diego, CA		

Distributors for above products:

Kleen Blast Abrasives (Northern California)
Don Stephenson
30028 Industrial Parkway
Hayward, CA 94544
(925) 471-2100 FAX (925) 471-2447

Kleen Blast Abrasives (Southern California)
Matthew Halloran
93 8th Ave.
San Diego, CA 92101
(619) 239-1092 FAX (619) 239-1096

Kleen Blast Abrasives (Oregon)
Craig Pritchard
3650 N. W. Yeon Ave.
Portland, OR 97210
(503) 228-3965 FAX (503) 228-6807

Kleen Blast Abrasives (Washington)
Dave Ketrenos
1448 St Paul Ave.
Tacoma, WA 98421
(253) 383-2168 FAX (253) 383-2267

Prime Equipment Company
R. Al Williams
2177 Jerrold Avenue
San Francisco, CA 94124
(415) 282-7290 FAX (415) 920-0520

USF Surface Preparation
Richard S. Brumley
18416 S. Santa Fe Avenue
Rancho Dominguez, CA 90221
(310) 637-3427 FAX (310) 637-1198

Company	Brand name or Grade	Expires
Marco Group International, Inc 1044 S. Dittmer St. Davenport, IA 52802	Black Lightning 16/30 Black Lightning 8/20	8/31/02 8/31/02
Plant Nevada Slag, Inc. 55 North 4th Street, McGill, NV		
Matrix Surface Technologies Jade Fogg 3 Great Falls Avenue Rochester, New Hampshire 03867 (603) 335-7112 FAX (603) 335-6613	Matrix Fiber Media, ALOX-16 Matrix Fiber Media, ALOX-30	8/31/03 8/31/03
Plant 3 Great Falls Avenue, Rochester, NH		
Minerals Research & Recovery, Inc. Stephen F. Mehlman 4620 S. Coach Drive Tucson, AZ 85714 (520) 748-9362 FAX (520) 748-9364		
Plant 1/8 mi from fire station North side of Hwy. 85, South of Ajo, AZ	Sharpshot 12x30 Sharpshot 30x60 (cpff=#140) Sharpshot 16x40 Sharpshot 20x50	8/31/02 8/31/02 8/31/03 8/31/03
Plant 8600 Rheem Ave. Southgate, CA	Sharpshot XL 12x30	8/31/03
Nevada Slag, Inc. Paul Sonerholm P.O. Box 1314 McGill, NV 89318 (775) 235-7500 FAX (775) 235-7962		
Plant 55 North 4th Street, McGill, NV	Nevada Black 8/20 Nevada Black 16/30	8/31/02 8/31/02

Company	Brand name or Grade	Expires
Oglebay Norton Industrial Sands, Inc. Bill DiGiacomo Post Office Box 2320 Fernley, Nevada 89408 (775) 423-6747 FAX (775) 423-6725 Plant Exit 48 off I-80, Duffy (Frontage) Road, Fernley NV,	Nevada Black Natural Grit 8/20 Nevada Black Natural Grit 16/30	8/31/02 8/31/02
Oglebay Norton Industrial Sands, Inc. Michael S. Miclette P.O. Box 249 San Juan Capistrano, CA 92693 (949) 728-0171 FAX (949) 728-0321 Plant 31302 Ortega Hwy. San Juan Capistrano, CA	Dust Net #12 Dust Net #16 Dust Net #20 Dust Net #30	8/31/02 8/31/02 8/31/02 8/31/02
Oglebay Norton Minerals, Inc. Fred Licon P. O. Box 12642 El Paso, TX 79912 (915) 532-1611 FAX (915) 544-7011 Plant 34 San Marcos Dr. El Paso, TX	Rapid Blast 16-50 Rapid Blast 20-50	8/31/02 8/31/02
P.W. Gillibrand Co., Inc. Bennie A. Theising 5131 Tapo Canyon Road Simi Valley, CA 93063 (805) 526-2195 FAX (805) 522-4031 Plant 5810 Bennett Road Simi Valley, CA	Silver Sand #12 Silver Sand #16 Silver Sand #20 Silver Sand #30	8/31/02 8/31/02 8/31/02 8/31/02

Company	Brand name or Grade	Expires
Pittsburgh Abrasives & Minerals Company 230 Old Haymaker Road Monroeville, PA 15146 (412) 372-5150 FAX (412) 372-3106 Plant Universal Abrasives & Minerals (Pvt.) Ltd. No. A-83 Second Street SIPCOT Industrial Area Tuticorin, 628008 Tamilnadu, India	Panther-Garnet Star-Garnet	8/31/02 8/31/02
Poly - Pacific International, Incorporated Jerry Hurley 8918 – 18 Street Edmonton, Alberta T6P 1K6 Canada (780) 467-3612 FAX (780) 464-1852 Plant 8918 – 18 Street Edmonton, Alberta, Canada	MultiCut Plastic Abrasive Media Type II Urea MultiCut Plastic Abrasive Media Type V Acrylic	8/31/02 8/31/02
Pontchartrain Materials Corporation Arthur Geary P.O. Box 8005 New Orleans, LA 70182 (504) 949-7571 FAX (504) 944-3338 Plant 3819 France Road New Orleans, LA	PMC #2 PMC #3	8/31/03 8/31/03
RDM Multi-Enterprises, Inc. Dominic DiFrancesco 105 North Silver Street Anaconda, MT 59711 (406) 563-3433 FAX (406) 563-3435 Plant 1/2 mi. east of Anaconda, Montana on Hwy. #1	Best Grit #8/20 Best Grit #16/30 Best Grit #36 Ferro Blast-73 #8/20 Ferro Blast-73 #16/30	8/31/02 8/31/02 8/31/02 8/31/02 8/31/02

Company	Brand name or Grade	Expires
RMC Pacific Materials Bob Foley 4750 Norris Canyon Rd., Suite A San Ramon, CA 94583 (925) 866-2780 FAX (925) 866-2983	Lapis Lustre No. 0/30 Lapis Lustre No. 1/C Lapis Lustre No. 1/20 Lapis Lustre No. 2/12 Lapis Lustre No. 2/16 Lapis Lustre No. 3	8/31/02 8/31/02 8/31/02 8/31/02 8/31/02 8/31/02

Plant
Lapis Rd., ~ 2 mi N. of Marina, CA

Distributors
Gordon Industries
George E. Gordon III
(510) 632-6900 (800) 333-7930 FAX (310) 537-2483

Gordon Sand Company
Clint LeGrant
2201 S. Santa Fe Ave.
Compton, CA 90221
(323) 774-7930 800-333-7930 FAX (310) 537-2483

Prime Equipment Company
R. Al Williams
2177 Jerrold Avenue
San Francisco, CA 94124
(415) 282-7290 FAX (415) 920-0520

Reed Minerals, A Division of Harsco
Anthony J. Budzinski
5040 Louise Drive, Suite 106
Mechanicsburg, Pennsylvania 17055
(717) 506-7157 FAX (717) 506-7154

Plant 5950 Old 41A Hwy, Tampa, FL	Black Beauty 1240	8/31/02
Plant 600-800 Outer Drive LaCygne, KS	Black Beauty 1240 Black Beauty 2040	8/31/02 8/31/02
Plant 9001 State Rte 176 Drakesboro, KY	Black Beauty 1240 Black Beauty 2040	8/31/02 8/31/02
Plant 97 River Road #1 Bow, NH Black	Black Beauty 1243 Beauty 2043	8/31/02 8/31/02
Plant Rt 2 South of Mitchell Generating Station Moundsville, WV	Black Beauty 1240 Black Beauty 2040 Black Beauty 4490	8/31/03 8/31/03 8/31/03

Company	Brand name or Grade	Expires
Sermino S.A. de C.V. Michael C. Millar #2606-23 Hefferman Ave. Calexico, CA 92231 (604) 786-8995 (52) 65 600-389 FAX (52) 65 525-363		
Plant 8 km S of km 7.5 Tijuana-Mexicali Hwy Progresso, B.C. Mexico	Baja Garnet 12/20 Baja Garnet 20/50	8/31/02 8/31/02
Plant Km.38, Hwy 5 El Faro, B.C. Mexico	Red Mountain #36 Red Mountain #50	8/31/03 8/31/03
Silica Resources, Inc. Nicole Lindbom Post Office Box 167 Loomis, CA 95650 (916) 652-1704 FAX (916) 652-1710	SRI Supreme #12 SRI Supreme #20 SRI Supreme #30	8/31/02 8/31/02 8/31/02
Plant 4553 Hammonton Road Marysville, CA		
Sponge-Jet, Incorporated Bill McLaughlin Post Office Box 243 Eliot, Maine 03903 (207) 439-0211 FAX (207) 439-7389	Sponge-Jet Red Media #G40 Sponge-Jet Silver #16 Sponge-Jet Silver #30 Sponge-Jet Silver #80 Sponge-Jet Silver #320	8/31/03 8/31/03 8/31/03 8/31/03 8/31/03
Plant Box 6243, Rural Route 6 Montrose, PA		

Company	Brand name or Grade	Expires
Stan Blast Abrasives a division of Fairmount Minerals, Ltd Mike Jerome Sr. 3027 Marina Bay Drive, Suite 309 League City, TX 77573 (800) 783-9993 x 16 FAX (281) 334-5205		
Plant 400 Dunlap Drive Mobile AL	Black Magnum 12-40 Blast Blast	8/31/02 8/31/02
Plant 5712 Harbor Side Drive Galveston, TX	Black Magnum 12-40	8/31/02
Distributors for above products: Gordon Industries George E. Gordon III 975 66th Ave. Oakland, CA 94583 (510) 632-6900 (800) 333-7930 FAX (310) 537-2483	Gordon Sand Company Clint LeGrant 2201 So. Santa Fe Ave. Compton, CA 90221 (323) 774-7930 (800) 333-7930 FAX (310) 537-2483	
Strategic Materials, Inc. Tom E. Dudak 15990 North Barkers Landing Road, #150 Houston, TX 77079 (281) 966-5754 FAX (281) 966-5710		
Plant 7000 Bandini Commerce, CA	Strata – Blast 10x30 Strata – Blast 20x40	8/31/03 8/31/03
Plant 1035 Thompson Rd., Industrial Park Ashland City, TN	Strata - Blast 20x40 WhiteBlast 20x40	8/31/03 8/31/03
Tacna Sand & Gravel, L. L. C. Fred Alexander 2554 East 24th Street Yuma, AZ 85365 (520) 341-9401 FAX (520) 344-0037	K-2 Yuma Gold 16x50 K-4 Yuma Gold 8x20	8/31/02 8/31/02
Plant 38E & County 4th, Roll, AZ		

Company	Brand name or Grade	Expires
Tiwest Joint Venture John W. Thornett Locked Bag 381, Bentley Delivery Centre Bentley, Western Australia 6983 Australia (08) 9365 1346 FAX (08) 9365 1387	Staurolite	8/31/03
Plant Chandala Dry Separation Plant on the right had side heading north 7 km north of the Muchea townsite Western Australia		
Trans Agg, Incorporated Mr. Robert E. Gerbus Post Office Box 15396 Cincinnati, Ohio 45215 (513) 733-8088 FAX (513) 554-6147		
Plant 3500 E. 4th St. Monroe, MI	Blast Away	8/31/03
Plant 800 AEP Drive Lawrenceburg, IN	Blast Away	8/31/03
TriVitro Corporation Donald H. Freas 18420 – 68th Avenue South Kent, WA 98032 (425) 251-8340 FAX (425) 251-8301	Vitrogrit VG #16/30 Vitrogrit VG #30/50	8/31/03 8/31/03
Plant 18420 – 68th Avenue South, #101 Kent, WA		
Universal Ground Cullet, Inc. Robert F. VanBuskirk 6407 Wolf Road Brook Park, OH 44142 (216) 267-8057 FAX (216) 267-8067	UGC Abrasive 10x30 UGC Abrasive 20x40 UGC Abrasive 30x60	8/31/02 8/31/02 8/31/02
Plant 400 W. Cedar St. Gibsonburg, OH		

Company	Brand name or Grade	Expires
Universal Ice Blast, Incorporated Michael Neil 533 6th Street South Kirkland, WA 98033 (425) 893-8424 FAX (425) 893-9222	Crystalline Ice Media	8/31/03
Plant Produced at blasting site		
V. V. Mineral S. Chandresan Ittamozhi Road Keeraikaranthattu Tisaiyanvilai – 627 657 Tamilnadu – India 91 4637 571302 FAX 91 4637 571802		
Plant		
No. 1, M.L. Their Road Keeraikaranthattu Tisaiyanvilai, India	Sg. Super Garnet Abrasive Grit Grade–B (30-60 Mesh)	8/31/03
Vallanvilai Navaladi Post Near Tisaiyanvilai Tamil Nadu, India	Sg. Super Garnet Abrasive Grit Grade–C (20-40 Mesh)	8/31/03
Virginia Materials & Supplies, Inc. John W. Burns 3306 Peterson Street Norfolk, VA 23509-2415 (757) 855-0155 FAX (757) 857-5631		
Plant		
5360 Bainbridge Blvd. Chesapeake, VA	Black Blast	8/31/02
Plant		
3306 Peterson St. Norfolk, VA	Black Blast Crystalgrit	8/31/02 8/31/03

Company	Brand name or Grade	Expires
Western Garnet International, Limited Sankar Narayanan 1836 Northwest Boulevard, #200 Coeur d'Alene, ID 83814 (208) 666-6000 FAX (208) 666-4000		
Plant		
4 mi S of Fernwood, Hwy 3, Emerald Creek Rd.	Emerald Creek Garnet #8/12	8/31/03
Fernwood, ID	Emerald Creek Garnet #16	8/31/03
	Emerald Creek Garnet #25	8/31/03
	Emerald Creek Garnet #30/40	8/31/03
	Emerald Creek Garnet #36	8/31/03
Plant		
Palayamkottai High Road	Bengal Bay Garnet 12/40	8/31/03
(Opposite Tuticorin Airport)	Bengal Bay Garnet 20/40	8/31/03
Tuticorn, India	Bengal Bay Garnet 20/60	8/31/03
	Bengal Bay Garnet 30/60 WG	8/31/03

ATTACHMENT 4

DESIGN AND POSTING OF
DUST CONTROL PERMIT SIGNAGE

Protecting the air we share

Air Quality

POLICY ON DUST CONTROL PERMIT DESIGN AND POSTING OF SIGNAGE

Pursuant to Subsection 94.7.7 of the Air Quality Regulations, the Clark County Department of Air Quality Management (DAQM) has developed this policy to address questions related to the posting of informational signs on construction sites in Clark County, Nevada. Since this policy is referenced in the Regulations, non-compliance may result in a Notice of Violation pursuant to Section 94 of the Air Quality Regulations.

The following verbiage is excerpted from Section 94 for purposes of convenience:

94.7.7 Signage Requirements:

94.7.7.1 For each Dust Control Permit issued where the project site is lass than or equal to ten (10) acres, or for trenching projects between one hundred (100) feet and one (1) mile in length, or for demolition of a structure totaling 1000 square feet or more, the applicant shall install a sign on said property prior to commencing construction activity that is visible to the public and measures, at minimum, four (4) feet wide by four (4) feet high, conforming to DAQM policy on Dust Control Permit Design and Posting of Signage.

94.7.7.2 For each Dust Control Permit aggregating over 10 acres, or for trenching projects aggregating one (1) mile or greater in length, the applicant shall install a sign on said property prior to commencing construction activity that is visible to the public and measures, at minimum, eight (8) feet wide by four (4) feet high, conforming to DAQM policy on Dust Control Permit Design and Posting of Signage.

In addition to the requirements listed pursuant to subsection 94.7.7, the Dust Control Permit sign shall conform to the following requirements:

1. **The signboard shall be constructed with materials capable of withstanding the harsh environment (e.g., strong winds, intense sunlight) of Clark County.**

   (a) For 4'x4' signs, DAQM recommends the following materials:

   (i) ¾" A/C laminated plywood board;

   (ii) Two (2) 4"x4" posts;

   (iii) Posts should be attached to the edges of the plywood board with a minimum of two (2) carriage bolts on each post; and

   (iv) The front surface of the signboard should be painted in the contrasting colors of a white background with black lettering.

   (b) For 4'x8' signs, DAQM recommends the following materials:

   (i) 1" A/C laminated plywood board;

(ii) Two (2) 6”x6” posts;

(iii) Posts should be attached to the 4’ edges of the plywood board with at least 2 carriage bolts on each post; and

(iv) The front surface of the signboard should be painted in the contrasting color of a white background with black lettering.

2. **The sign board shall be installed and maintained in a condition such that members of the public can easily view, access, and read the sign at all times.**

For all signs, DAQM recommends the following measures:

(i) The lower edge of the sign board should be mounted a minimum of 2’ above the existing ground surface to facilitate ease of viewing;

(ii) Posts should be set in a hole a minimum of 3’ deep with concrete footings to prevent downing by high winds;

(iii) On the construction site, the sign should be positioned so that it is not obstructed from public view from the primary street access point;

(iv) For construction projects that are developed in phases, the sign should be relocated to the area that is under active construction; and

(v) In situations where all phases of the construction project are completed, a Certificate of Project Completion must be submitted to DAQM.

3. **The sign board shall contain the following information:**

(a) Project Name;

(b) Permittee Name;

(c) Phone Number of Person Responsible for Dust Control Matters;

(d) Clark County Department Air Quality Management Phone Number;

(e) Dust Control Permit Number;

(f) Project Acreage.

(g) Dust Control Permit Expiration Date.

4. **The signboard shall be designed to the following alpha and numeric text dimensions (sign boards written in longhand are unacceptable).**

(a) For a construction project subject to the 4'x4' signage requirement, DAQM provides the following example:

1" UPPERCASE Letters	PROJECT NAME: **(Proj. Name)**	**3 ½" Title Case[1] Bold Letters**
1" UPPERCASE Letters	PERMITTEE: **(Your Name)**	**3 ½" Title Case Bold Letters**
1" Title Case Letters	Dust Control Matters Phone Number: **(Your Number)**	**3" Bold Numbers**
1" Title Case Letters	Clark County -Dept. of Air Quality Management Phone Number: **385-DUST**	**3 ½" Bold Numbers**
1" Title Case Letters	DUST CONTROL Permit Number: **(Permit Number)**	**3" Bold Numbers**
1" Title Case Letters	PROJECT ACREAGE: **(≤10)** / EXPIRATION Date: **(Prmt.Exp)**	**3" Bold Numbers**

1/16" Thickness Underline

¼" Thickness Border

[1] "Title Case" means the first letter of a word is capitalized and subsequent letters are lowercase

(b) For a construction site subject to the 4'x8' signage requirement, DAQM provides the following example:

2" UPPERCASE Letters	PROJECT NAME: **(Name from Permit)**	**4" Title Case[1] Bold Letters**
2" UPPERCASE Letters	PERMITTEE: **(Applicants Name)**	**4" Title Case Bold Letters**
2" Title Case Letters	Dust Control Matters Phone Number: **(Your Phone Number)**	**4" Bold Numbers**
2" Title Case Letters	Clark County - Department of Air Quality Management Phone Number: **385-DUST**	**4 ½ " Bold Numbers**
2" Title Case Letters	Dust Control Permit Number: **(Your Permit Number)**	**4" Bold Numbers**
2" Title Case Letters	Project Acreage: **(>10)** Expiration Date: **(Permit Exp)**	**4" Bold Numbers**

1/16" Thickness Underline

¼" Thickness Border

ATTACHMENT 5

AIR QUALITY REGULATIONS PERTAINING TO DUST CONTROL

1.	Section 90	Fugitive Dust from Open Areas and Vacant Lots
2.	Section 91	Fugitive Dust from Unpaved Roads, Unpaved Alleys, and Unpaved Easements Roads
3.	Section 92	Fugitive Dust from Unpaved Parking Lots
4.	Section 93	Fugitive Dust from Paved Roads and Street Sweeping Equipment
5.	Section 94	Permitting and Dust Control for Construction Activities

Note: AQRs are available at the front of this document in Appendix C

Appendix E

Contracted Water Truck Policy

Contracted Water Truck Policy

Section 94 authorizes the Department to take remedial action for dust abatement on construction sites, when the property owner/permittee fails to do so on their own behalf:

94.7.4.4 The Control Officer, or his/her designee shall be further empowered to enter upon any said land where any loose soil or dust problem exists, and to take such remedial and corrective action as may be deemed appropriate to cope with and relieve, reduce, or remedy the loose soil, dust situation or condition, when the Owner and/or Operator fails to do so.

94.7.4.4.1 Any cost incurred in connection with any such remedial or corrective action by the Department of Air Quality and Environmental Management or any Person acting for the Department of Air Quality and Environmental Management shall be reimbursed by the land Owner and/or Operator. If these costs are not reimbursed the Control Officer may request a lien be placed on the subject lands that shall remain in full force and effect until any and all such costs have been collected.

In order to implement this portion of the regulations, the Department shall rely upon the following policy and procedures:

1. If an inspection reveals that a construction site has failed to stabilize their site as required by Section 94 and the Construction Activities Handbook, document the conditions on an inspection form and by taking photographs. Appropriate test methods may also be used to document the site conditions. Measure the unstabilized area by pacing or using a measuring tape or wheel.

2. Issue a Corrective Action Order to the responsible party using standard language explicitly requiring soil stabilization immediately. The CAO should state, "If all site soils are not stabilized within 24 hours, the Department may take corrective action to stabilize the soils at the expense of the owner, permittee, or contractor."

3. Conduct a follow-up inspection using the procedure described in step 1. If a follow-up inspection at least 24 hours subsequent to the prior inspection demonstrates that the soils are still unstabilized, call the responsible party and advise them that the site remains out of compliance, call them and advise them that we may be dispatching a contracted water truck. If they indicate that they can immediately remedy the situation and it appears plausible that they will do so (e.g. you observe that there is a water truck filling up or you are reasonable assured to your satisfaction that they will immediately take corrective action) you may exercise reasonable discretion to delay calling in a water truck.

4. Call the Compliance Supervisor to advise of the situation and obtain authorization for ordering a contracted water truck.

5. Call the water truck company and advise them of a need for their services, and schedule a water truck to stabilize the site. Advise them of your status as a Compliance Officer. The employee of the water truck company who answers the phone should be aware of our contract, but if not tell them to clear it with Perry, the owner.

6. If a confrontational attitude by the responsible party escalates to the point that the Compliance Officer deems it unsafe or unwise to continue, or if the responsible party demands that the Compliance Officer and/or water truck depart from the site, the Compliance Officer and the water truck shall depart from the site. Immediately advise the Compliance Supervisor of the situation.

7. The costs incurred in stabilization shall be documented on the economic benefit component of a Notice of Violation, so that the county's expenses for abatement can be recovered. This expense shall not be considered a part of the penalty per se, but shall be considered reimbursement to the county for the cost of abatement. Alternatively we may be able to arrange for direct billing from the water truck company to the violator, but this procedure has not yet been established.

The water truck company under contract to the county is:

Best Water Truck Service
651-1501

Appendix F

Example of a High-Wind Event Justification Package

October 29, 2003 High-Wind Event

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

RECEIVED
2004 JUL 27 A 11: 16

July 22, 2004

Ms. Christine Robinson, Director
Clark County Department of Air Quality
P.O. Box 551776
Las Vegas, NV 89155-1776

Re: October 29, 2003 High Wind PM10 Natural Event

Dear Ms. Robinson:

I have received and reviewed your agency's request, dated March 29, 2004, to flag five PM_{10} National Ambient Air Quality Standard (NAAQS) exceedances as high wind events. The exceedances all occurred on October 29, 2003 at the East Craig, Joe Neal, Microscale, and Green Valley PM_{10} monitoring sites.

The documentation you provided to support the flagging of these exceedances appears complete and comprehensive. We concur with your decision to flag these data as high wind natural events. I will instruct our AQS database manager, Jim Forrest, to add the appropriate flags to these exceedance days.

Please remember that Clark County Department of Air Quality will need to develop and implement a Natural Events Action Plan (NEAP) as required by EPA's Natural Events Policy ("Areas Affected by PM-10 Natural Events", Memorandum from Mary D. Nichols, Assistant Administrator for Air and Radiation to Regional Air Division Directors, May 30, 1996).

If you have any questions please contact Bob Pallarino of my staff at (415) 947-4128.

Sincerely,

Bob Pallarino for

Sean Hogan, Acting Manager
Technical Support Office
Air Division

cc: Amy Zimpfer, EPA Region 9
Steven Barhite, EPA Region 9
Colleen Cripps, Nevada Division of Environmental Protection

Department of Air Quality Management

500 S Grand Central Pky 1st Fl • PO Box 555210 • Las Vegas NV 89155-5210
(702) 455-5942 • Fax (702) 383-9994

Christine L. Robinson, Director
Catherine MacDougall, Assistant Director • Susan Selby, Assistant Director

March 29, 2004

Mr. John Kennedy, Chief
Technical Support Office (Air-7)
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

RE: October 29, 2003 High-Wind PM_{10} Exceedance Event

Dear Mr. Kennedy,

Pursuant to the requirements of the U. S. EPA Memorandum on *Areas Affected by PM_{10} Natural Events* dated May 30, 1996, the Clark County Department of Air Quality Management "flagged" October 29, 2003 PM_{10} data for four (4) separate monitoring sites in the Las Vegas Valley. These monitors recorded exceedances of the 24-hour PM_{10} NAAQS on this date. After reviewing the meteorological data, site conditions, and control measures in place at the time of the exceedance, Clark County concluded that these exceedances occurred due to high-wind conditions. Attached are the data sets and findings that support this conclusion.

Please confirm flagging of the high-wind natural event data and receipt of this documentation. If you have any questions or need additional information, please contact Russell S. Merle Jr., Senior Planner, our staff natural event coordinator at (702) 455-1662 or FAX (702) 383-9994.

Sincerely,

Catherine R MacDougall

Catherine R. MacDougall
Assistant Director
Clark County Department of Air Quality Management

Enclosure

cc: U. S. EPA, Technical Support Office: Bob Pallarino, Environmental Engineer
Nevada Division of Environmental Protection: Colleen Cripps, PhD, Bureau Chief

BOARD OF COUNTY COMMISSIONERS
MARY KINCAID-CHAUNCEY, Chair • CHIP MAXFIELD, Vice-Chairman
YVONNE ATKINSON GATES • MARK A. JAMES • RORY REID • MYRNA WILLIAMS • BRUCE L. WOODBURY
THOM REILLY, County Manager

Enclosure 1

EPA Required Documentation of Natural Event

Subject: October 29, 2003 High-Wind Event (W/Smoke) in Clark County, Nevada

Clark County Department of Air Quality Management (DAQM) reviewed the data and findings related to the measured exceedances of the 24-Hour PM_{10} NAAQS in the Las Vegas Valley, for October 29, 2003. Based on those data sets and findings, the DAQM determined that a high-wind natural event accompanied by influences from the Southern California wildland fires (smoke) caused this exceedance. Exceedances occurred at four (4) separate monitoring sites within the Las Vegas Valley on this date. In accordance with the U. S. EPA Natural Events Policy Memorandum on "Areas Affected by PM_{10} Natural Events" dated May 30, 1996 {Mary Nichols, Assistant Administrator for Air and Radiation (6101)}, states are responsible for establishing a clear causal relationship between the measured exceedances and the natural event. This document sets forth the relationship between the high-wind event and the exceedances that occurred on October 29, 2003.

The documentation supporting the high-wind natural event includes: meteorological data (e.g., wind speed and wind direction); hourly PM_{10} sampled mass compared to wind data to support a source receptor relationship; precipitation data; and photographs/maps of the area showing sources of emissions. Additional information includes local news accounts of the high-wind event published by the Las Vegas Sun, and the Las Vegas Review Journal newspapers.

In the case of high-wind events where contributing sources of dust are anthropogenic, the state must document the application of the required BACM to those sources. This document outlines the required BACM for these sources and the County's high-wind enforcement activities on the day of the high-wind event.

This documentation demonstrates that a high-wind natural event occurred on October 29, 2003. The high-wind natural event affected the specific monitoring site(s) that recorded exceedances on that day. Exceedances of the 24-hour PM_{10} NAAQS, because of elevated concentrations of PM_{10} recorded at the monitoring sites, were due to the emissions generated by the high-wind event.

During the month of January 2004, the DAQM sent the air quality data affected by the high-wind natural event, to the U. S. EPA, for inclusion into the AIRS database. Clark County requested flagging of this data to indicate that a natural event (High-Wind Event) was involved. The sites affected by the high-wind natural event were:

1) Joe Neal (JO) #320030075, 6651 W. Azure Ave., Las Vegas, Nevada
2) East Craig (BS) #320030020, 4701 Mitchell St., N. Las Vegas, Nevada
3) Microscale (MS) #320030560, 2801 E. Charleston Blvd., Las Vegas, Nevada
4) Green Valley (GV) #320030298, 248 Arroyo Grande, Henderson, Nevada

The BACM applicable to the four (4) exceedance sites include Sections 90, 91, 92, 93, and 94 of the Clark County Air Quality Regulations (AQRs). These regulations require stabilization of open areas and disturbed vacant lands; stabilization of unpaved roads; stabilization of unpaved parking lots; stabilization of paved road unpaved shoulders; and use of soil specific best management practices for construction activities. On October 29, 2003, fifteen (15) compliance officers were active in the field on nine-hour staggered shifts. In addition, three (3) management and administrative support staff supported the field enforcement efforts on this day. All 15 compliance officers continued enforcement activities until approximately 4:30 P.M., depending on the location. By 4:30, there were few construction sites reported as active. Inspectors made contact with 219 active construction sites. From 4:30 through 10:00 PM two standby officers were on duty.

Many sites had shut down based on the faxed advisory (see Attachment 3) or other considerations. Only a few sites were not in compliance. Most contractors were aware of the advisory and, based upon their Dust Control Class training, took the appropriate measures. There were, however, six Corrective Action Orders (CAO's) written for failure to employ BACM.

Compliance Section Staff conducted follow up inspections to assure compliance with Air Quality Regulations at those sites that received a CAO. A DAQM Compliance Officer issued a Notice of Violation (NOV) to Trademark Builders for failure to obtain a Dust Control Permit and failure to employ BACM on 10/29/03; failure to comply with final CAO on 10/30/03 and failure to comply with final CAO on 11/12/03. The hearing date is pending.

The DAQM is not aware of any other construction site operators that failed to curtail construction actives in accordance with the high-wind provisions of Section 94 of the Air Quality Regulations on this exceedance day.

Table 1 provides a summary of the Monitoring sites with data and wind speeds meeting the criteria to qualify as a high-wind event exceedance.

Table 1

High Wind Event 24-Hour PM_{10} NAAQS Exceedance Data

Monitoring Site Location & AIRS Code	Date of High Wind Event	Measured QA/QC Concentration ($\mu g/m^3$)	Wind Dir.	Max. Wind Gust (mph)
Joe Neal (JO) #320030075	10/29/03	**159**	SW	36
East Craig (BS) #320030020	10/29/03	**220**	SW	36
Microscale (MS) #320030560	10/29/03	**158**	SW	36
Green Valley (GV) #320030298	10/29/03	**156**	SW	36

Analysis of Data:

Data supplied as Attachment 1, include data sets for the day before the high-wind event; day of the high-wind event; and the day after the high-wind event for comparison. The data sheets clearly establish the high-wind event occurred on October 29, 2003 between the hours of approximately 6:00 AM and 12:00 midnight. The wind direction was predominantly from the southwest, with peak gusts of 36 mph, and sustained two-minute winds of 29 mph {National Oceanic Atmospheric Administration (NOAA), data sheet – Attachment 2}. The majority of the Monitoring Stations average hourly wind speeds shown in Attachment 1, ranged from 11.3 to 44.5 miles per hour throughout the high-wind event. Attachment 2 is the MET data sheet from the NOAA, Climatic Data Center.

Southern Nevada continues to experience extreme drought, as of October 29, 2003 the Las Vegas Valley, according to the National Weather Service records, received only 5.29 inches of measurable precipitation. The absence of moisture/precipitation increased the amount of fugitive dust generated from native desert during the high-wind event including the "lofting" dust effects of the Southern California wildland fires, occurring southwest of the Las Vegas Valley (see attachment 10). Attachments 4-6 show the monitoring sites and their surrounding environment subject to the exceedances on the high-wind event day. Wind gusts exceeding the 25-mile per hour threshold, as discussed in the June 2001 PM_{10} State Implementation Plan (SIP) for Clark County (Appendix B, Emissions Inventories, Page B-21) overwhelmed the native desert environment and stabilized vacant land areas. Attachments 8 and 9 are newspaper articles from the Las Vegas Sun newspaper and the Las Vegas Review Journal newspapers, which describe the high-wind effects, on the Las Vegas Valley within Clark County. Attachments 11-13 are photos of the effects of the high winds with blowing dust.

The Clark County Department of Air Quality Management requests, based on the evidence of a high-wind natural event enclosed in this documentation; that the U. S. EPA Region IX support the flagging of the exceedances in AIRS.

Attachments:
1 – DAQM Monitoring Data Sheet(s)
2 – NOAA Data Sheet(s)
3 – FAX Notice (2)
4 - Joe Neal (JO) Monitoring Site
5 – East Craig (BS) Monitoring Site
6 - Microscale (MS) Monitoring Site
7 - Green Valley (GV) Monitoring Site
8 - Las Vegas Sun newspaper articles
9 - Las Vegas Review Journal articles
10 – Satellite Photos of Smoke Influences (2)
11– Photograph of LV Valley
12 - Photograph of LV Valley
13 – Photograph of LV Valley

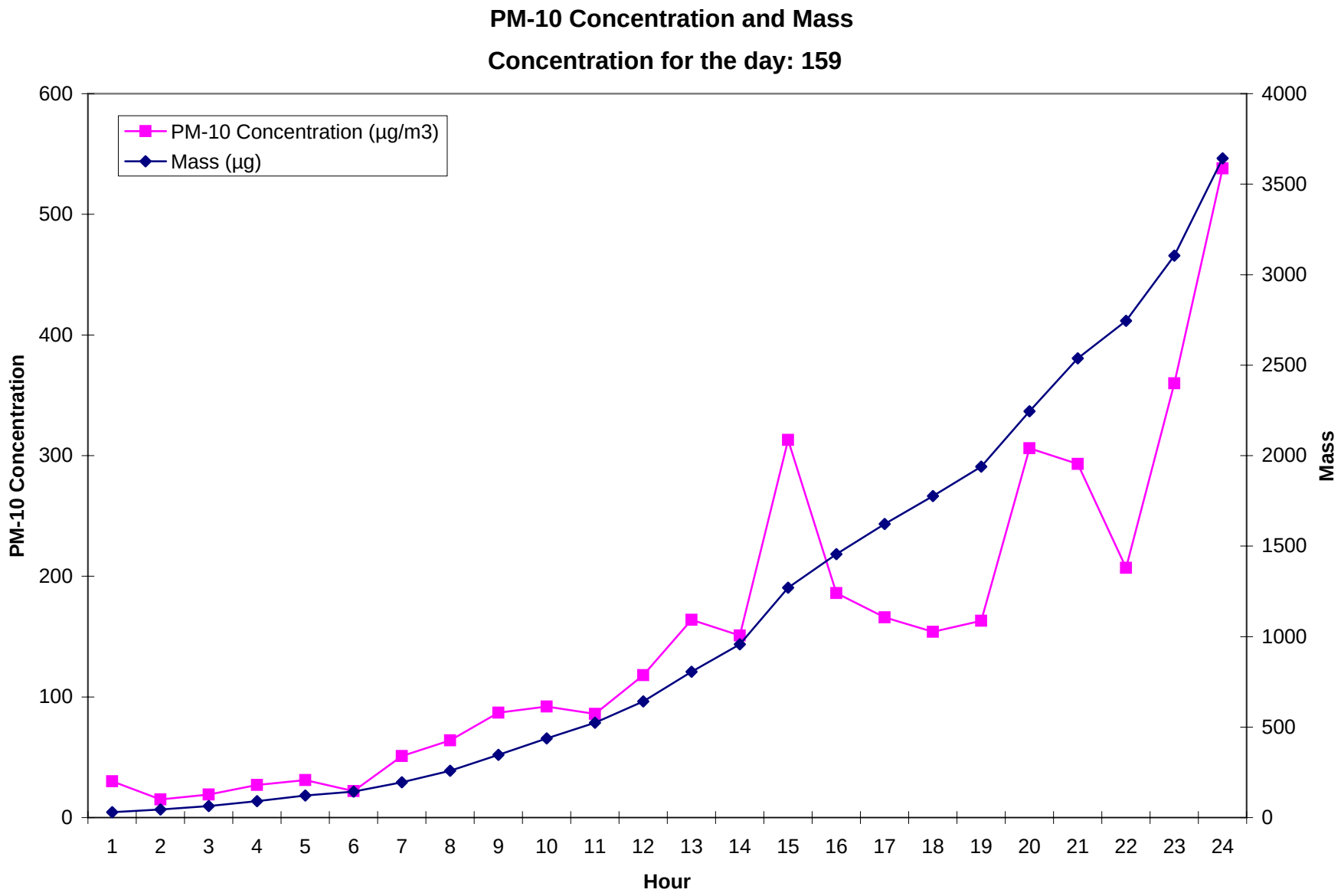
Clark County Air Quality Management

Joe Neal - 2003

Site	Month	Day	Hour	Wind Speed (MPH)	Wind Direction (0-360°)	PM-10 Concentration µg/M^3	PM-10 Mass µg
JO	10	28	1	9.1	324	11	22
JO	10	28	2	11.5	327	14	39
JO	10	28	3	10.8	329	11	45
JO	10	28	4	13.8	323	15	62
JO	10	28	5	13.5	327	28	88
JO	10	28	6	14.6	311	20	111
JO	10	28	7	12.3	315	27	140
JO	10	28	8	11.6	321	30	171
JO	10	28	9	11.9	255	38	210
JO	10	28	10	12.0	230	61	271
JO	10	28	11	10.3	195	55	286
JO	10	28	12	4.6	159	53	369
JO	10	28	13	8.8	246	32	401
JO	10	28	14	6.7	234	21	423
JO	10	28	15	5.5	159	15	440
JO	10	28	16	6.2	152	41	484
JO	10	28	17	3.3	156	51	536
JO	10	28	18	0.9	106	90	631
JO	10	28	19	2.5	321	130	761
JO	10	28	20	2.6	317	131	894
JO	10	28	21	3.6	331	121	1014
JO	10	28	22	3.3	305	75	1088
JO	10	28	23	1.5	218	49	1137
JO	10	28	24	2.9	200	41	1159
JO	10	29	1	4.5	239	30	31
JO	10	29	2	3.9	321	15	47
JO	10	29	3	2.5	185	19	69
JO	10	29	4	2.3	253	27	96
JO	10	29	5	2.3	217	31	127
JO	10	29	6	2.3	261	22	152
JO	10	29	7	1.7	169	51	204
JO	10	29	8	4.1	104	64	272
JO	10	29	9	4.9	120	87	360
JO	10	29	10	11.2	106	92	452
JO	10	29	11	9.0	89	86	540
JO	10	29	12	11.7	78	118	660
JO	10	29	13	9.4	94	164	826
JO	10	29	14	10.7	156	151	999
JO	10	29	15	15.3	185	313	1296
JO	10	29	16	13.2	171	186	1484
JO	10	29	17	10.1	152	166	1648
JO	10	29	18	7.6	139	154	1804
JO	10	29	19	10.3	158	163	1972
JO	10	29	20	14.5	162	306	1481
JO	10	29	21	12.6	171	293	237
JO	10	29	22	13.6	161	207	448
JO	10	29	23	17.3	193	360	831
JO	10	29	24	17.3	175	538	1315
JO	10	30	1	16.5	169	262	113
JO	10	30	2	19.1	151	441	554
JO	10	30	3	15.8	159	276	823
JO	10	30	4	18.4	150	220	1049
JO	10	30	5	18.5	167	322	1447
JO	10	30	6	29.0	199	1216	1079
JO	10	30	7	27.2	193	1131	1755
JO	10	30	8	29.4	193	1190	998
JO	10	30	9	30.0	202	712	1755
JO	10	30	10	15.8	219	690	1301
JO	10	30	11	20.6	223	236	151
JO	10	30	12	22.9	231	170	323
JO	10	30	13	20.0	227	134	454
JO	10	30	14	19.5	224	98	551
JO	10	30	15	15.1	227	73	623
JO	10	30	16	11.8	229	53	677
JO	10	30	17	11.4	206	53	732
JO	10	30	18	10.0	200	54	789
JO	10	30	19	13.4	225	57	846
JO	10	30	20	15.0	229	61	909
JO	10	30	21	18.6	224	70	979
JO	10	30	22	15.4	216	56	1037
JO	10	30	23	17.4	213	40	1077
JO	10	30	24	16.8	215	34	1084

Attachment1

Joe Neal (32-003-0075)
October 29, 2003



Mass accumulation data from concentration channel.

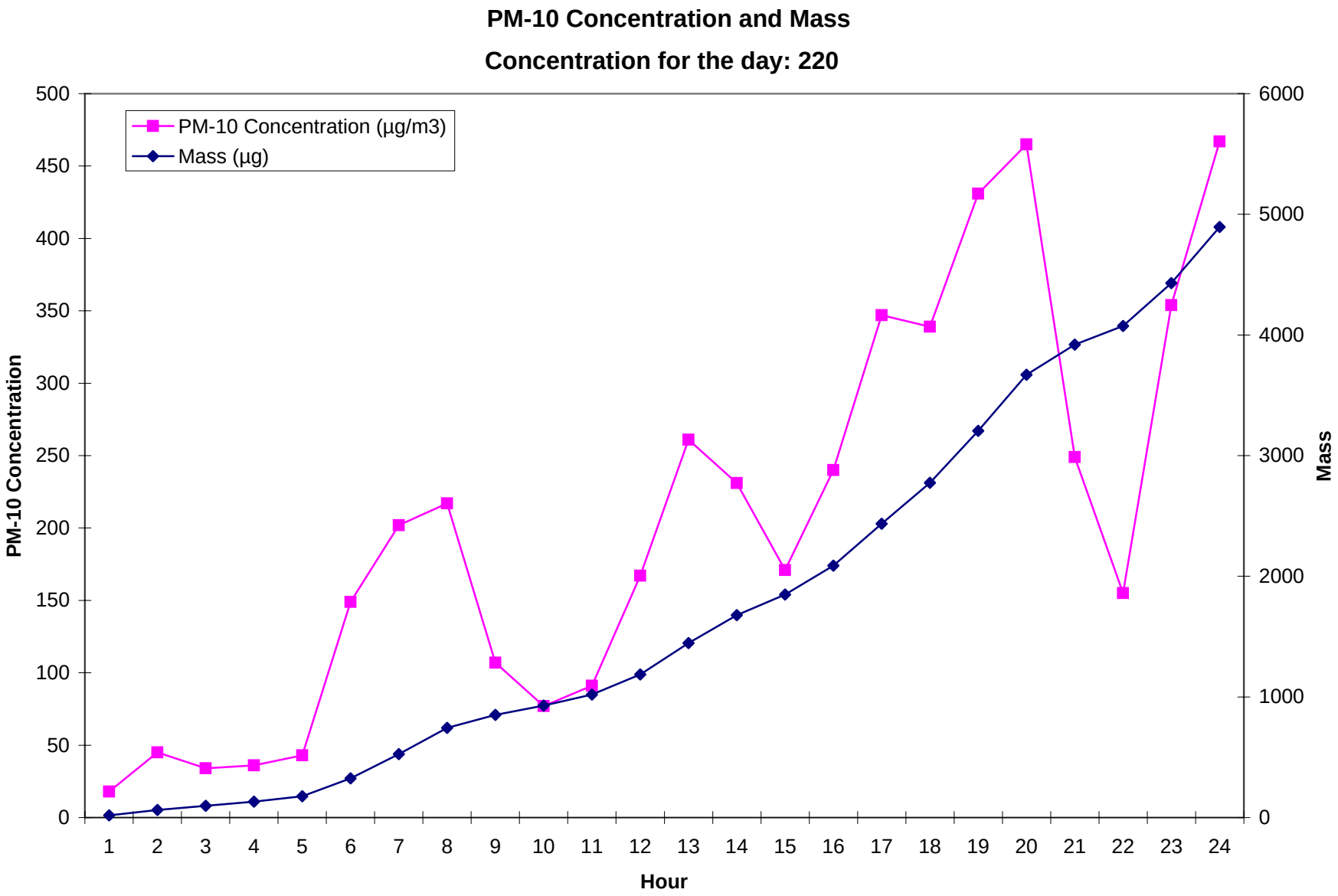
Clark County Air Quality Management

East Craig Road - 2003

Site	Month	Day	Hour	Wind Speed (MPH)	Wind Direction (0-360°)	PM-10 Concentration µg/M^3	PM-10 Mass µg
BS	10	28	1	5.4	23	41	70
BS	10	28	2	5.9	352	26	84
BS	10	28	3	5.8	33	44	132
BS	10	28	4	4.6	268	46	178
BS	10	28	5	5.2	1	47	231
BS	10	28	6	6.1	358	74	314
BS	10	28	7	4.1	338	155	468
BS	10	28	8	3.2	152	256	739
BS	10	28	9	4.2	84	278	1006
BS	10	28	10	5.9	157	90	1096
BS	10	28	11	5.8	174	64	1160
BS	10	28	12	6.5	141	42	1201
BS	10	28	13	5.5	116	23	1226
BS	10	28	14	6.6	137	36	1265
BS	10	28	15	8.7	173	34	1300
BS	10	28	16	7.8	183	30	1335
BS	10	28	17	5.1	184	23	1361
BS	10	28	18	3.8	323	69	1431
BS	10	28	19	4.7	10	81	1515
BS	10	28	20	5.8	326	80	1601
BS	10	28	21	4.5	331	70	1666
BS	10	28	22	4.8	317	47	1716
BS	10	28	23	4.9	341	52	1770
BS	10	28	24	4.5	329	44	1814
BS	10	29	1	4.4	334	18	48
BS	10	29	2	3.8	351	45	76
BS	10	29	3	5.0	330	34	112
BS	10	29	4	4.9	345	36	151
BS	10	29	5	4.2	49	43	202
BS	10	29	6	5.6	44	149	356
BS	10	29	7	6.8	63	202	559
BS	10	29	8	6.0	78	217	775
BS	10	29	9	6.6	88	107	884
BS	10	29	10	6.0	94	77	960
BS	10	29	11	9.7	141	91	1059
BS	10	29	12	12.7	151	167	1233
BS	10	29	13	14.2	189	261	1496
BS	10	29	14	16.1	179	231	1724
BS	10	29	15	12.2	175	171	1901
BS	10	29	16	15.3	157	240	2154
BS	10	29	17	15.3	169	347	323
BS	10	29	18	16.7	165	339	527
BS	10	29	19	20.4	163	431	952
BS	10	29	20	19.2	170	465	1410
BS	10	29	21	13.0	160	249	1653
BS	10	29	22	15.9	168	155	1829
BS	10	29	23	17.5	175	354	2064
BS	10	29	24	23.2	180	467	313
BS	10	30	1	16.3	172	368	103
BS	10	30	2	13.5	184	163	276
BS	10	30	3	24.9	218	442	725
BS	10	30	4	22.7	208	424	1146
BS	10	30	5	24.9	198	363	1515
BS	10	30	6	25.3	201	453	1972
BS	10	30	7	24.7	207	429	1156
BS	10	30	8	28.0	218	391	401
BS	10	30	9	26.1	207	520	918
BS	10	30	10	23.5	207	357	1263
BS	10	30	11	23.4	211	150	1420
BS	10	30	12	27.6	218	177	1603
BS	10	30	13	23.8	221	231	1830
BS	10	30	14	22.9	238	148	1979
BS	10	30	15	20.5	239	123	2101
BS	10	30	16	18.4	257	86	2190
BS	10	30	17	14.3	249	73	2263
BS	10	30	18	10.0	212	73	1698
BS	10	30	19	10.0	212	71	77
BS	10	30	20	12.2	204	87	166
BS	10	30	21	10.8	213	82	248
BS	10	30	22	11.7	220	65	315
BS	10	30	23	10.3	203	49	363
BS	10	30	24	11.8	224	27	392

Attachment 1

East Craig Road (32-003-0020)
October 29, 2003



Mass accumulation data from concentration channel.

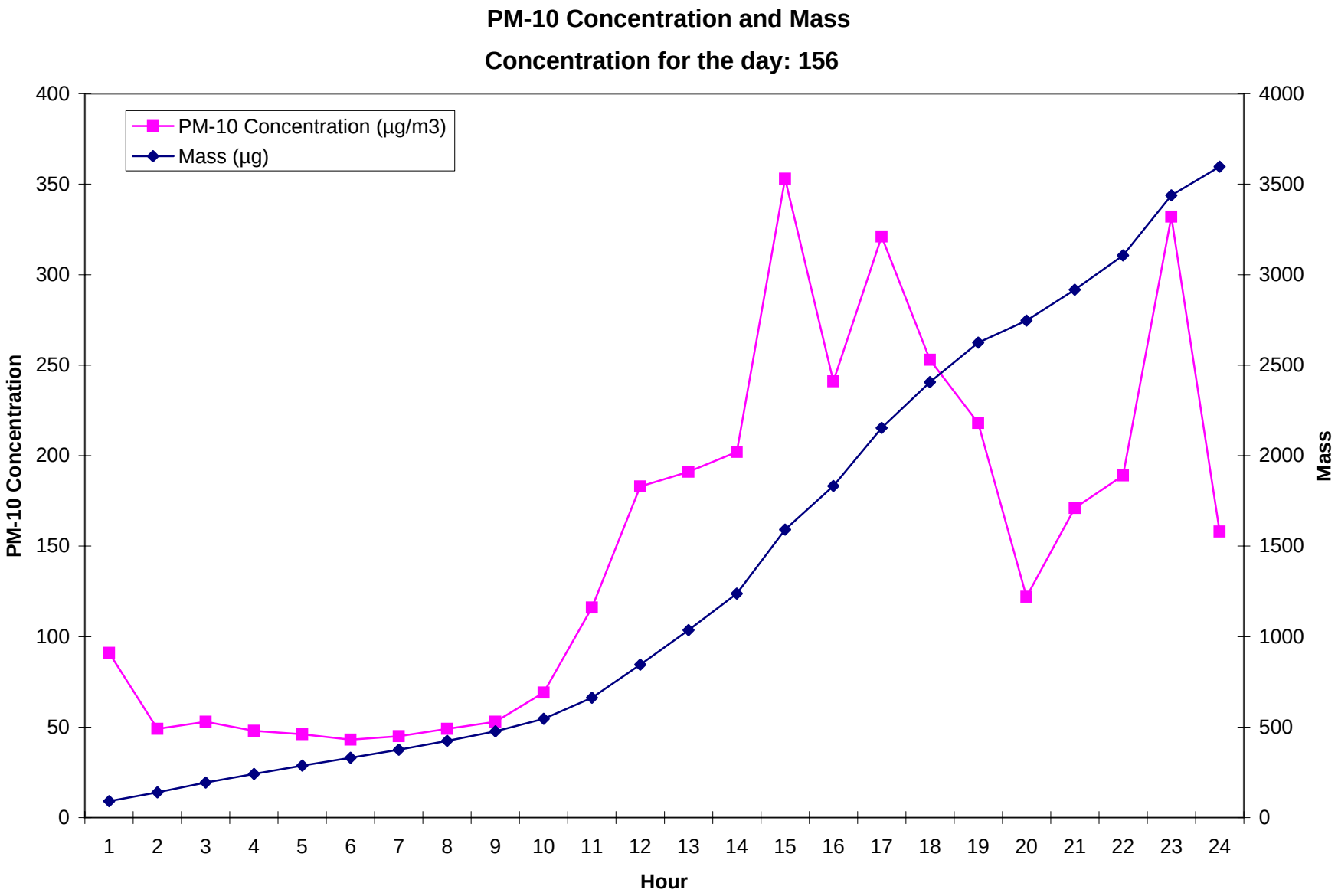
Clark County Air Quality Management

Green Valley - 2003

Site	Month	Day	Hour	Wind Speed (MPH)	Wind Direction (0-360°)	PM-10 Concentration µg/M^3	PM-10 Mass µg
GV	10	28	1	4.9	231	66	93
GV	10	28	2	3.6	225	41	130
GV	10	28	3	4.4	234	21	152
GV	10	28	4	3.7	229	18	171
GV	10	28	5	3.6	238	18	189
GV	10	28	6	4.8	236	8	198
GV	10	28	7	3.9	217	29	229
GV	10	28	8	4.5	215	86	311
GV	10	28	9	2.7	220	43	355
GV	10	28	10	2.7	214	46	400
GV	10	28	11	2.3	216	FLOW CHECK	
GV	10	28	12	2.4	216		
GV	10	28	13	2.3	158	55	565
GV	10	28	14	2.3	214	25	591
GV	10	28	15	2.7	183	33	623
GV	10	28	16	2.5	176	22	647
GV	10	28	17	2.4	99	33	680
GV	10	28	18	2.2	212	55	735
GV	10	28	19	3.7	262	71	806
GV	10	28	20	5.7	246	56	859
GV	10	28	21	3.5	226	44	904
GV	10	28	22	3.3	227	50	953
GV	10	28	23	3.6	224	42	996
GV	10	28	24	2.7	223	39	1032
GV	10	29	1	2.1	231	91	105
GV	10	29	2	2.4	202	49	152
GV	10	29	3	2.5	216	53	205
GV	10	29	4	2.9	210	48	250
GV	10	29	5	2.2	229	46	295
GV	10	29	6	3.3	222	43	339
GV	10	29	7	3.2	220	45	385
GV	10	29	8	2.3	221	49	434
GV	10	29	9	2.5	214	53	486
GV	10	29	10	3.6	165	69	555
GV	10	29	11	7.5	169	116	672
GV	10	29	12	11.0	202	183	852
GV	10	29	13	15.3	218	191	1034
GV	10	29	14	15.6	200	202	1245
GV	10	29	15	14.1	200	353	1572
GV	10	29	16	18.8	153	241	1814
GV	10	29	17	16.3	169	321	2116
GV	10	29	18	16.1	185	253	819
GV	10	29	19	12.0	185	218	302
GV	10	29	20	11.5	180	122	424
GV	10	29	21	12.4	173	171	586
GV	10	29	22	10.3	194	189	785
GV	10	29	23	13.5	203	332	1092
GV	10	29	24	14.2	190	158	1250
GV	10	30	1	19.4	205	227	212
GV	10	30	2	19.9	203	405	576
GV	10	30	3	17.3	206	231	792
GV	10	30	4	15.6	188	146	930
GV	10	30	5	15.1	171	102	1031
GV	10	30	6	11.2	186	96	1127
GV	10	30	7	11.0	199	112	1236
GV	10	30	8	16.1	199	108	1345
GV	10	30	9	18.6	196	126	1467
GV	10	30	10	26.9	199	743	1211
GV	10	30	11	25.2	207	974	919
GV	10	30	12	20.5	211	251	1155
GV	10	30	13	19.7	213	160	1313
GV	10	30	14	18.8	210	149	1456
GV	10	30	15	17.4	211	114	1566
GV	10	30	16	17.8	217	99	1665
GV	10	30	17	15.0	233	103	1763
GV	10	30	18	9.6	229	93	1851
GV	10	30	19	6.2	201	75	1925
GV	10	30	20	9.9	213	76	2000
GV	10	30	21	10.6	231	73	2071
GV	10	30	22	10.6	217	50	2119
GV	10	30	23	10.6	218	35	2154
GV	10	30	24	11.3	216	34	2188

Attachment 1

Green Valley (32-003-0298)
October 29, 2003



Mass accumulation data from concentration channel.

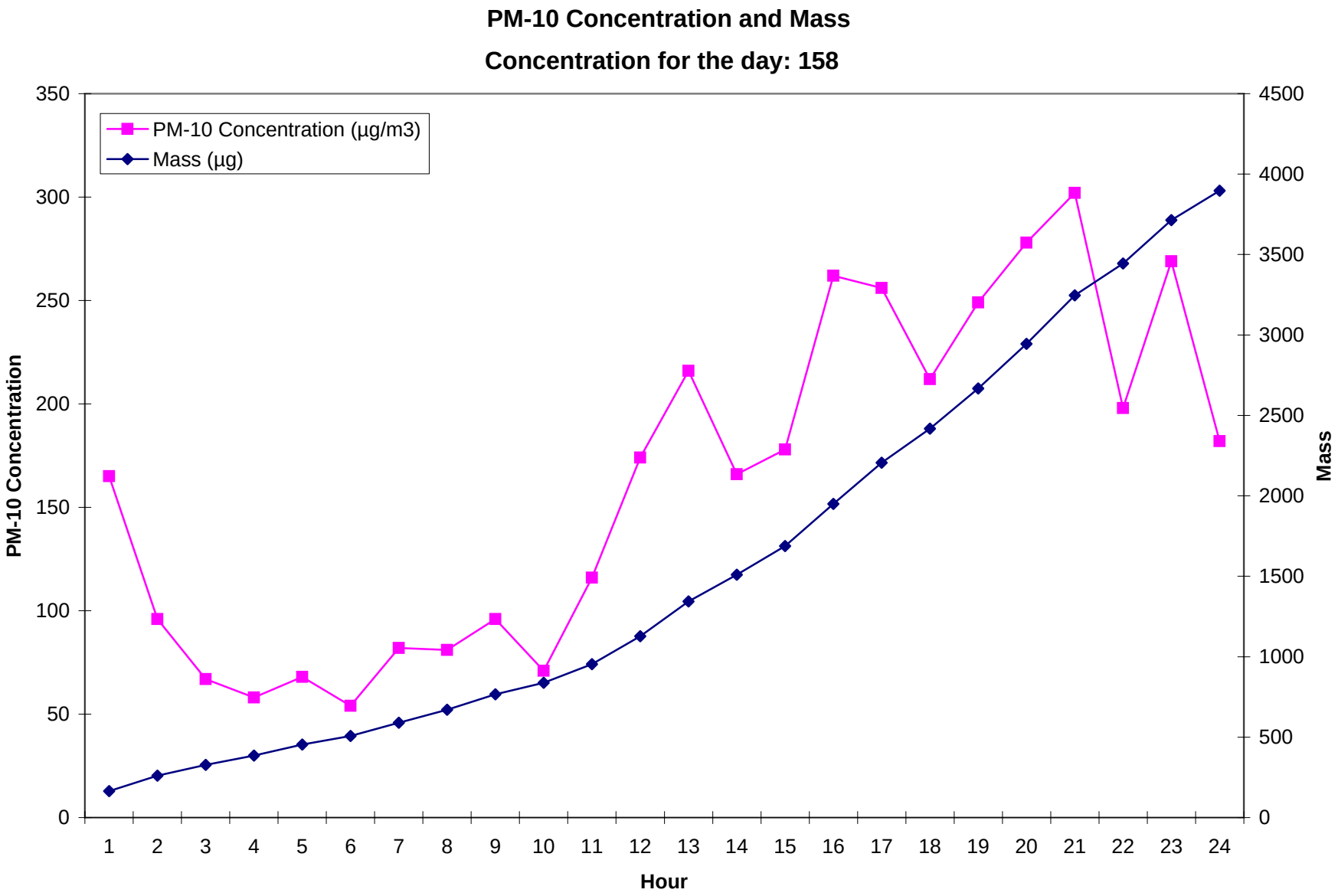
Clark County Air Quality Management

Microscale - 2003

Site	Month	Day	Hour	Wind Speed (MPH)	Wind Direction (0-360°)	PM-10 Concentration µg/M^3	PM-10 Mass µg
MS	10	28	1	1.3	160	101	103
MS	10	28	2	1.7	191	69	174
MS	10	28	3	2.2	182	81	248
MS	10	28	4	2.0	145	59	304
MS	10	28	5	2.2	166	60	363
MS	10	28	6	2.0	191	49	411
MS	10	28	7	1.8	167	68	476
MS	10	28	8	2.6	164	73	548
MS	10	28	9	2.3	120	115	657
MS	10	28	10	2.0	140	94	748
MS	10	28	11	2.6	139	73	814
MS	10	28	12	3.4	112	32	844
MS	10	28	13	3.1	165	17	861
MS	10	28	14	4.0	182	26	887
MS	10	28	15	4.3	181	29	916
MS	10	28	16	4.5	186	23	939
MS	10	28	17	2.8	175	41	981
MS	10	28	18	1.6	234	66	1044
MS	10	28	19	2.3	203	89	1130
MS	10	28	20	1.4	251	108	1236
MS	10	28	21	1.6	246	130	1358
MS	10	28	22	1.6	236	108	1460
MS	10	28	23	1.5	130	87	1543
MS	10	28	24	1.5	248	111	1631
MS	10	29	1	1.7	255	165	115
MS	10	29	2	1.3	213	96	206
MS	10	29	3	1.3	243	67	270
MS	10	29	4	1.2	244	58	326
MS	10	29	5	1.4	233	68	391
MS	10	29	6	1.6	233	54	443
MS	10	29	7	1.6	217	82	522
MS	10	29	8	1.4	164	81	601
MS	10	29	9	1.7	172	96	690
MS	10	29	10	5.2	137	71	763
MS	10	29	11	9.5	130	116	877
MS	10	29	12	13.1	194	174	1046
MS	10	29	13	12.7	191	216	1249
MS	10	29	14	10.8	192	166	1404
MS	10	29	15	14.5	213	178	1577
MS	10	29	16	17.8	212	262	1832
MS	10	29	17	16.2	212	256	2067
MS	10	29	18	17.5	213	212	2192
MS	10	29	19	15.5	208	249	169
MS	10	29	20	13.3	189	278	435
MS	10	29	21	11.3	163	302	711
MS	10	29	22	12.6	181	198	908
MS	10	29	23	17.1	199	269	1157
MS	10	29	24	10.6	177	182	1314
MS	10	30	1	19.1	220	206	148
MS	10	30	2	23.4	225	355	472
MS	10	30	3	20.1	215	207	676
MS	10	30	4	18.7	199	241	909
MS	10	30	5	18.2	161	259	1153
MS	10	30	6	15.4	182	204	1348
MS	10	30	7	17.6	197	192	1526
MS	10	30	8	20.2	212	149	1675
MS	10	30	9	16.6	199	193	1860
MS	10	30	10	19.9	210	194	2040
MS	10	30	11	20.2	214	140	2173
MS	10	30	12	22.2	212	119	2285
MS	10	30	13	20.3	213	164	351
MS	10	30	14	20.0	235	140	221
MS	10	30	15	15.0	231	89	306
MS	10	30	16	13.2	231	82	383
MS	10	30	17	16.6	222	104	483
MS	10	30	18	15.4	227	114	594
MS	10	30	19	13.8	222	112	702
MS	10	30	20	10.8	205	103	801
MS	10	30	21	11.5	216	77	874
MS	10	30	22	12.2	228	62	932
MS	10	30	23	11.5	219	46	976
MS	10	30	24	14.0	237	30	994

Attachment 1

Microscale (32-003-0560)
October 29, 2003



Attachment 2 - OCTOBER 2003

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

LAS VEGAS, NV

MCCARRAN INTERNATIONAL APT (LAS)

Lat: 36°04' N Long:115°09' W Elev (Ground): 2127 Feet

Time Zone: PACIFIC WBAN: 23169 ISSN #:0198–3318

DATE	TEMPERATURE °F MAXIMUM	MINIMUM	AVERAGE	DEP FROM NORMAL	AVERAGE DEW PT	AVERAGE WET BULB	DEG DAYS BASE 65° HEATING	COOLING	WEATHER	SNOW/ICE ON GND(IN) 0400 LST DEPTH	1000 LST WATER EQUIV	PRECIPITATION (INCHES) 2400 LST SNOW–FALL	2400 LST WATER EQUIV	PRESSURE (INCHES OF HG) AVERAGE STATION	AVERAGE SEA LEVEL	WIND SPEED = MPH DIR = TENS OF DEGREES RESULTANT SPEED	RES DIR	AVERAGE SPEED	MAXIMUM 5–SEC SPEED	DIR	MAXIMUM 2–MIN SPEED	DIR	DATE
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01	98*	75	87*	12	47	63	0	22					0.00	27.64	29.84	5.0	22	7.0	25	22	18	19	01
02	94	72	83	8	36	58	0	18					0.00	27.47	29.67	6.6	21	7.5	24	23	18	24	02
03	86	72	79	4	46	60	0	14					0.00	27.51	29.71	7.4	03	8.8	29	04	24	02	03
04	85	67	76	1	48	60	0	11					0.00	27.61	29.83	0.6	28	2.5	14	07	10	06	04
05	88	67	78	4	45	59	0	13					0.00	27.63	29.84	2.1	26	3.9	13	05	10	04	05
06	90	68	79	5	43	59	0	14					0.00	27.59	29.80	1.4	22	4.1	17	04	10	05	06
07	91	66	79	5	42	58	0	14					0.00	27.53	29.74	1.8	20	4.1	12	26	10	26	07
08	89	66	78	4	40	57	0	13					0.00	27.56	29.78	1.2	26	3.9	10	25	9	28	08
09	96	65	81	8	38	57	0	16					0.00	27.48	29.69	3.5	17	5.9	17	08	14	20	09
10	89	73	81	9	39	58	0	16					0.00	27.46	29.66	4.1	21	9.3	24	20	21	19	10
11	83	63	73	1	26	51	0	8					0.00	27.71	29.94	2.1	03	5.3	15	05	14	05	11
12	89	61	75	4	40	56	0	10					0.00	27.69	29.92	1.2	23	4.0	12	24	9	24	12
13	86	64	75	5	33	54	0	10					0.00	27.76	29.99	4.8	05	6.8	22	01	17	06	13
14	83	57	70	1	20	48	0	5					0.00	27.71	29.95	0.5	21	3.9	12	06	9	08	14
15	91	62	77	8	40	56	0	12					0.00	27.65	29.88	3.3	22	5.9	23	21	18	21	15
16	88	61	75	7	40	57	0	10					0.00	27.79	30.03	0.2	23	4.9	14	07	13	07	16
17	90	62	76	8	32	53	0	11					0.00	27.84	30.08	1.0	20	3.5	10	25	9	25	17
18	91	62	77	10	38	56	0	12					0.00	27.80	30.04	1.0	15	4.2	14	09	10	09	18
19	90	64	77	10	43	58	0	12					0.00	27.80	30.03	1.6	26	3.6	8	26	8	26	19
20	92	64	78	12	42	58	0	13					0.00	27.84	30.08	2.2	23	3.6	10	25	9	25	20
21	94	64	79	13	39	57	0	14					0.00	27.83	30.06	2.7	24	4.0	10	29	9	26	21
22	92	64	78	12	34	55	0	13					0.00	27.77	30.00	1.3	22	4.2	12	25	10	25	22
23	89	63	76	11	36	55	0	11					0.00	27.69	29.92	0.6	20	4.4	12	19	10	19	23
24	87	66	77	12	29	53	0	12					0.00	27.76	29.99	5.6	01	9.0	29	01	23	01	24
25	81	58	70	6	24	50	0	5					0.00	27.94	30.19	7.7	02	10.0	32	34	25	03	25
26	80	55	68	4	21	47	0	3					0.00	28.01	30.28	0.4	27	5.5	16	05	14	06	26
27	84	56	70	7	33	52	0	5					0.00	27.84	30.09	2.5	23	4.1	14	34	12	34	27
28	88	62	75	12	35	54	0	10					0.00	27.60	29.83	2.5	25	3.8	16	32	14	02	28
29	84	62	73	10	37	54	0	8	FU				0.00	27.34	29.54	7.9	20	10.0	36	20	29	20	29
30	71	57	64	2	33	50	1	0	HZ FU BLDU				0.00	27.30	29.51	18.6	20	19.2	45*	20	36*	20	30
31	63	50*	57*	-4	30	45	8	0					0.00	27.52	29.76	11.9	21	12.7	29	23	23	23	31
	87.2	63.5	75.4		36.4	55.1	0.3	10.8	< MONTHLY AVERAGES	TOTALS–>			0.00	27.67	29.89	1.7	22	6.1	<– MONTHLY AVERAGES				
	6.4	7.0	6.7		<–––––––––––DEPARTURE FROM NORMAL––––––––––––>								-.24	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3									

DEGREE DAYS

	MONTHLY TOTAL	MONTHLY DEPARTURE	SEASON TO DATE TOTAL	SEASON TO DATE DEPARTURE
HEATING:	9	-48	9	-49
COOLING:	335	178	3838	628

GREATEST 24–HR PRECIPITATION: 0.00 DATE :
GREATEST 24–HR SNOWFALL: DATE :
GREATEST SNOW DEPTH: DATE :

	SEA LEVEL PRESSURE	DATE	TIME
MAXIMUM :	30.37	26	0756
MINIMUM :	29.38	30	0356

NUMBER OF DAYS WITH →

MAXIMUM TEMP ≥ 90: 12
MAXIMUM TEMP ≤ 32 : 0
THUNDERSTORMS : 0

MINIMUM TEMP ≤ 32 : 0
MINIMUM TEMP ≤ 0 : 0
HEAVY FOG : 0

PRECIPITATION ≥ 0.01 INCH : 0
PRECIPITATION ≥ 0.10 INCH : 0
SNOWFALL ≥ 1.0 INCH :

Attachment 2

HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

LAS VEGAS, NV

OCTOBER 2003 LAS WBAN # 23169

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note)	2400 LST Water Equiv.
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23	24			
01													01													01		0.00
02													02													02		0.00
03													03													03		0.00
04													04													04		0.00
05													05													05		0.00
06													06													06		0.00
07													07													07		0.00
08													08													08		0.00
09													09													09		0.00
10													10													10		0.00
11													11													11		0.00
12													12													12		0.00
13													13													13		0.00
14													14													14		0.00
15													15													15		0.00
16													16													16		0.00
17													17													17		0.00
18													18													18		0.00
19													19													19		0.00
20													20													20		0.00
21													21													21		0.00
22													22													22		0.00
23													23													23		0.00
24													24													24		0.00
25													25													25		0.00
26													26													26		0.00
27													27													27		0.00
28													28													28		0.00
29													29													29		0.00
30													30													30		0.00
31													31													31		0.00

MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)												
Ending Date												
Ending Time (Hour/Min)												

Date and time are not entered for TRACE amounts.

Note : The sum of the hourly totals is given when it differs from the daily total. NWS does not edit ASOS hourly values but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

Attachment 2

REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

* = Extreme for the month (last occurence if more than one)
T = Trace precipitation amount
+ = also occurs on earlier date
FG+ = Heavy fog, visibility .25 miles or less
BLANK entries denote missing or unreported data

Resultant wind is the vector sum of the wind speeds and directions divided by the number of observations.

Wind direction is recorded in tens of degrees (2 digits) clockwise from true north. '00' = calm, 'VR' = variable.

Precipitation is for the 24−hour period ending at the time indicated in the column heading.

Water Equivalent of snow on the ground is reported only when the depth is 2 or more inches.

NORMALS ARE FOR THE YEARS 1971−2000

WEATHER NOTATIONS

QUALIFIER	WEATHER PHENOMENA		
DESCRIPTOR	PRECIPITATION	OBSCURATION	OTHER
BC Patches	DZ Drizzle	BR Mist	DS Duststorm
BL Blowing	GR Hail	DU Widespread Dust	FC Funnel Cloud
DR Low Drifting	GS Small Hail and/or Snow Pellets	FG Fog	+FC Tornado Waterspout
FZ Freezing	IC Ice Crystals	FU Smoke	PO Well−Developed Dust/Sand Whirls
MI Shallow	PL Ice Pellets	HZ Haze	SQ Squalls
PR Partial	RA Rain	PY Spray	SS Sandstorm
SH Shower(s)	SG Snow Grains	SA Sand	GL Glaze
TS Thunderstorm	SN Snow	VA Volcanic Ash	
VC In the Vicinity	UP Unknown Precipitation		

Intensity (as indicated on pages 4 to 6):
'+' = Heavy ' ' = Moderate '−' = Light

LAS VEGAS, NV
OCTOBER 2003

Ceilometer (30−second) data are used to derive cloudiness at or below 12,000 feet. This cloudiness is the mean cloud cover detected during sunrise to sunset (SR−SS), or midnight to midnight (MN−MN).

Satellite data are used to derive cloudiness above 12,000 feet. Effective Cloud Amount is based on the cloud cover and the transparency of the clouds within the satellite field of view (approx. 31x31 miles).

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet. Both ceilometer and satellite data must be present to compute Sky Condition. Clear = 0−2 oktas, Partly Cloudy = 3−6 oktas, Cloudy = 7−8 oktas.

A Heating (Cooling) Degree Day is the difference between the average daily temperature and 65 degrees F. The HDD season begins July 1, the CDD season begins January 1.

Dew Point is the temperature to which the air must be cooled to achieve 100% relative humidity.
Wet Bulb is the temperature the air would have if cooled to saturation at constant pressure by evaporation of water into it.

Snow Depth, Snowfall, and Sunshine data may come from nearby sites that the National Weather Service deems Climatologically representative of this site.

ADDITIONAL NOTES:

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
			SR−SS		MN−MN				
	TOTAL MINUTES	PERCENT POSSIBLE	CEILOMETER	SATELLITE	CEILOMETER	SATELLITE	MINIMUM	MAXIMUM	
01							10.00	10.00	
02							10.00	10.00	
03							10.00	10.00	
04							10.00	10.00	
05							10.00	10.00	
06							10.00	10.00	
07							10.00	10.00	
08							10.00	10.00	
09							10.00	10.00	
10							10.00	10.00	
11							10.00	10.00	
12							10.00	10.00	
13							10.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							10.00	10.00	
17							9.00	10.00	
18							10.00	10.00	
19							10.00	10.00	
20							10.00	10.00	
21							10.00	10.00	
22							10.00	10.00	
23							10.00	10.00	
24							10.00	10.00	
25							10.00	10.00	
26							10.00	10.00	
27							10.00	10.00	
28							10.00	10.00	
29							1.75	10.00	
30							3.00	8.00	
31							10.00	10.00	
MONTHLY AVGS							9.48	9.94	

SUNSHINE (MINUTES)

Total: Possible:
Percent Possible:

NUMBER OF DAYS WITH:

SKY CONDITION

CLR	PTLY CLDY	CLOUDY	MISSING
			31

MINIMUM VISIBILITY (MILES)

<=0.25	<=3.0	>=7.0
0	2	29

Attachment 2

OBSERVATIONS AT 3–HOURLY INTERVALS

LAS VEGAS, NV

OCTOBER 2003 LAS WBAN # 23169

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE OBSERVATION TIME (LST)	SATELLITE EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	WIND SPEED (MPH)	DIRECTION TENS OF DEG	PRESSURE (INCHES,HG) STATION	SEA LEVEL
					SUNRISE: 0535	**OCT 01**			**SUNSET: 1726**					
01	CLR	NC			10.00		80	47	61	31	6	17	27.68	29.88
04	SCT	NC			10.00		76	44	58	32	3	18	27.68	29.89
07	FEW	NC			10.00		80	48	61	33	3	24	27.72	29.93
10	FEW	NC			10.00		90	52	66	27	10	08	27.72	29.92
13	BKN	250			10.00		96	50	67	21	14	19	27.63	29.83
16	BKN	230			10.00		94	49	66	22	14	24	27.58	29.78
19	BKN	200			10.00		88	48	64	25	6	25	27.57	29.78
22	BKN	230			10.00		85	40	60	20	7	21	27.59	29.78
					SUNRISE: 0536	**OCT 02**			**SUNSET: 1724**					
01	SCT	NC			10.00		80	38	57	22	6	20	27.56	29.75
04	FEW	NC			10.00		77	35	55	22	9	20	27.52	29.72
07	SCT	NC			10.00		77	32	54	19	5	25	27.54	29.74
10	SCT	NC			10.00		85	37	59	18	0	00	27.52	29.72
13	SCT	NC			10.00		91	40	62	17	13	20	27.45	29.63
16	BKN	250			10.00		89	37	60	16	18	24	27.40	29.59
19	BKN	250			10.00		84	35	58	17	8	21	27.41	29.61
22	BKN	250			10.00		81	35	57	19	5	19	27.42	29.61
					SUNRISE: 0537	**OCT 03**			**SUNSET: 1723**					
01	BKN	250			10.00		77	36	55	23	0	00	27.43	29.62
04	BKN	200			10.00		76	36	55	23	5	01	27.45	29.64
07	SCT	NC			10.00		76	45	58	33	5	03	27.49	29.70
10	FEW	NC			10.00		82	51	63	34	17	03	27.53	29.73
13	FEW	NC			10.00		85	52	65	32	12	03	27.50	29.70
16	SCT	NC			10.00		85	51	64	31	7	08	27.49	29.68
19	SCT	NC			10.00		79	48	61	34	9	02	27.53	29.74
22	FEW	NC			10.00		76	47	59	36	12	02	27.57	29.78
					SUNRISE: 0538	**OCT 04**			**SUNSET: 1721**					
01	CLR	NC			10.00		73	48	59	41	5	33	27.58	29.80
04	CLR	NC			10.00		68	46	56	45	0	00	27.60	29.82
07	SCT	NC			10.00		70	47	57	44	0	00	27.64	29.87
10	SCT	NC			10.00		77	49	61	37	0	00	27.66	29.89
13	BKN	250			10.00		83	48	62	30	0	00	27.61	29.82
16	BKN	250			10.00		84	48	63	29	0	00	27.58	29.80
19	BKN	200			10.00		82	49	62	32	0	00	27.60	29.82
22	BKN	200			10.00		75	47	59	37	0	00	27.62	29.84
					SUNRISE: 0539	**OCT 05**			**SUNSET: 1720**					
01	BKN	250			10.00		71	46	57	41	7	25	27.63	29.85
04	BKN	250			10.00		68	44	55	42	3	23	27.63	29.85
07	FEW	NC			10.00		72	47	58	41	0	00	27.67	29.89
10	FEW	NC			10.00		81	48	62	32	7	04	27.67	29.90
13	FEW	NC			10.00		87	49	64	27	5	07	27.62	29.83
16	FEW	NC			10.00		87	45	62	23	3	23	27.59	29.80
19	FEW	NC			10.00		84	43	61	24	3	27	27.59	29.80
22	FEW	NC			10.00		76	43	58	31	5	24	27.61	29.83
					SUNRISE: 0539	**OCT 06**			**SUNSET: 1719**					
01	BKN	250			10.00		73	42	56	33	5	25	27.61	29.82
04	BKN	250			10.00		69	40	54	35	3	20	27.61	29.83
07	BKN	200			10.00		71	42	55	35	3	20	27.64	29.86
10	BKN	200			10.00		82	45	61	27	3	VR	27.64	29.86
13	BKN	200			10.00		87	48	64	26	3	VR	27.58	29.79
16	BKN	200			10.00		89	46	63	23	6	08	27.54	29.75
19	BKN	250			10.00		84	41	60	22	5	19	27.55	29.76
22	BKN	250			10.00		76	41	57	29	3	26	27.55	29.77

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE OBSERVATION TIME (LST)	SATELLITE EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	WIND SPEED (MPH)	DIRECTION TENS OF DEG	PRESSURE (INCHES,HG) STATION	SEA LEVEL
					SUNRISE: 0540	**OCT 07**			**SUNSET: 1717**					
01	FEW	NC			10.00		73	40	55	30	3	27	27.55	29.76
04	SCT	NC			10.00		70	39	54	32	0	00	27.55	29.76
07	FEW	NC			10.00		70	40	54	34	3	26	27.58	29.80
10	FEW	NC			10.00		82	42	60	24	3	01	27.59	29.80
13	FEW	NC			10.00		89	46	63	23	5	VR	27.50	29.71
16	FEW	NC			10.00		90	46	64	22	6	10	27.46	29.66
19	CLR	NC			10.00		84	41	60	22	3	20	27.48	29.68
22	CLR	NC			10.00		77	38	56	25	5	25	27.50	29.71
					SUNRISE: 0541	**OCT 08**			**SUNSET: 1716**					
01	CLR	NC			10.00		72	41	55	33	6	25	27.52	29.73
04	CLR	NC			10.00		69	39	53	33	7	25	27.56	29.77
07	CLR	NC			10.00		71	40	54	32	0	00	27.61	29.82
10	CLR	NC			10.00		81	43	59	26	5	VR	27.64	29.85
13	CLR	NC			10.00		88	41	61	19	0	00	27.57	29.78
16	CLR	NC			10.00		85	44	61	24	0	00	27.52	29.73
19	CLR	NC			10.00		83	37	58	19	5	24	27.53	29.75
22	CLR	NC			10.00		77	38	56	25	3	25	27.55	29.76
					SUNRISE: 0542	**OCT 09**			**SUNSET: 1714**					
01	CLR	NC			10.00		71	39	54	31	6	21	27.55	29.76
04	CLR	NC			10.00		66	37	51	34	6	20	27.53	29.75
07	CLR	NC			10.00		68	42	54	39	0	00	27.57	29.79
10	CLR	NC			10.00		78	37	56	23	3	09	27.57	29.78
13	CLR	NC			10.00		91	38	61	15	10	09	27.47	29.67
16	FEW	NC			10.00		96	36	62	12	10	21	27.40	29.59
19	CLR	NC			10.00		87	34	58	15	6	19	27.39	29.59
22	CLR	NC			10.00		83	38	58	20	8	18	27.41	29.61
					SUNRISE: 0543	**OCT 10**			**SUNSET: 1713**					
01	CLR	NC			10.00		81	36	57	20	9	22	27.40	29.58
04	CLR	NC			10.00		78	39	57	25	15	19	27.39	29.57
07	FEW	NC			10.00		77	40	57	26	15	16	27.42	29.62
10	SCT	NC			10.00		85	36	58	17	13	21	27.47	29.66
13	FEW	NC			10.00		88	39	60	18	9	26	27.44	29.63
16	FEW	NC			10.00		88	39	60	18	3	VR	27.44	29.63
19	FEW	NC			10.00		82	40	59	22	6	23	27.49	29.69
22	FEW	NC			10.00		78	50	61	37	13	02	27.56	29.77
					SUNRISE: 0544	**OCT 11**			**SUNSET: 1712**					
01	CLR	NC			10.00		73	19	49	13	9	05	27.64	29.85
04	CLR	NC			10.00		68	21	47	17	8	06	27.67	29.89
07	CLR	NC			10.00		66	24	47	20	0	00	27.73	29.96
10	CLR	NC			10.00		74	24	51	15	8	05	27.76	30.00
13	CLR	NC			10.00		80	24	53	13	6	07	27.71	29.94
16	CLR	NC			10.00		83	32	56	16	0	00	27.68	29.91
19	CLR	NC			10.00		77	33	54	20	6	24	27.69	29.93
22	CLR	NC			10.00		69	31	50	24	5	22	27.74	29.97
					SUNRISE: 0544	**OCT 12**			**SUNSET: 1710**					
01	CLR	NC			10.00		67	31	50	26	3	24	27.73	29.97
04	CLR	NC			10.00		64	33	49	32	0	00	27.72	29.95
07	CLR	NC			10.00		65	35	50	33	3	27	27.76	30.00
10	CLR	NC			10.00		78	33	55	19	3	VR	27.76	29.99
13	CLR	NC			10.00		86	39	60	19	0	00	27.67	29.90
16	CLR	NC			10.00		88	48	64	25	5	02	27.64	29.86
19	CLR	NC			10.00		82	49	62	32	6	20	27.64	29.86
22	CLR	NC			10.00		77	49	61	37	6	23	27.64	29.86

Attachment 2

OBSERVATIONS AT 3–HOURLY INTERVALS

LAS VEGAS, NV

OCTOBER 2003 LAS WBAN # 23169

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE OBSERVATION TIME (LST)	SATELLITE EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	WIND SPEED (MPH)	DIRECTION TENS OF DEG	PRESSURE (INCHES,HG) STATION	SEA LEVEL
					SUNRISE: 0545	**OCT 13**			**SUNSET: 1709**					
01	CLR	NC			10.00		71	39	54	31	0	00	27.66	29.88
04	CLR	NC			10.00		68	38	52	33	8	29	27.69	29.92
07	CLR	NC			10.00		73	26	51	17	9	04	27.79	30.01
10	CLR	NC			10.00		81	29	55	15	10	05	27.82	30.06
13	CLR	NC			10.00		85	35	58	17	15	05	27.77	30.00
16	CLR	NC			10.00		84	35	58	17	12	07	27.76	29.99
19	CLR	NC			10.00		77	35	55	22	5	02	27.78	30.01
22	CLR	NC			10.00		67	32	50	27	6	20	27.79	30.02
					SUNRISE: 0546	**OCT 14**			**SUNSET: 1708**					
01	CLR	NC			10.00		62	14	43	15	3	25	27.77	30.00
04	CLR	NC			10.00		59	13	41	16	0	00	27.76	30.00
07	CLR	NC			10.00		61	12	42	14	3	20	27.79	30.04
10	FEW	NC			10.00		73	20	49	13	5	10	27.79	30.03
13	FEW	NC			10.00		80	20	52	11	6	06	27.69	29.92
16	FEW	NC			10.00		83	24	54	11	5	05	27.63	29.86
19	CLR	NC			10.00		75	27	52	17	5	26	27.64	29.88
22	CLR	NC			10.00		68	26	48	21	0	00	27.64	29.88
					SUNRISE: 0547	**OCT 15**			**SUNSET: 1706**					
01	CLR	NC			10.00		64	29	48	27	5	29	27.64	29.88
04	CLR	NC			10.00		62	25	45	24	6	28	27.64	29.88
07	CLR	NC			10.00		65	27	47	24	0	00	27.68	29.92
10	CLR	NC			10.00		76	35	55	23	3	07	27.70	29.94
13	CLR	NC			10.00		87	44	62	22	5	34	27.63	29.85
16	CLR	NC			10.00		89	55	67	32	13	22	27.60	29.82
19	CLR	NC			10.00		79	54	64	42	6	18	27.63	29.85
22	CLR	NC			10.00		74	55	62	52	6	21	27.64	29.86
					SUNRISE: 0548	**OCT 16**			**SUNSET: 1705**					
01	CLR	NC			10.00		71	30	51	22	6	18	27.70	29.93
04	CLR	NC			10.00		64	29	48	27	0	00	27.74	29.96
07	FEW	NC			10.00		65	31	49	28	0	00	27.81	30.06
10	CLR	NC			10.00		79	34	56	20	0	00	27.84	30.08
13	CLR	NC			10.00		85	42	61	22	9	08	27.79	30.03
16	CLR	NC			10.00		88	48	64	25	9	06	27.77	30.01
19	CLR	NC			10.00		78	58	65	50	7	26	27.80	30.05
22	CLR	NC			10.00		73	62	66	69	6	24	27.83	30.08
					SUNRISE: 0549	**OCT 17**			**SUNSET: 1704**					
01	CLR	NC			10.00		66	29	49	25	5	20	27.84	30.08
04	CLR	NC			10.00		62	30	47	30	6	21	27.85	30.09
07	FEW	NC			9.00		67	32	50	27	0	00	27.89	30.14
10	CLR	NC			10.00		76	34	54	22	0	00	27.91	30.15
13	CLR	NC			10.00		87	27	57	11	5	08	27.83	30.07
16	CLR	NC			10.00		90	34	60	14	0	00	27.79	30.03
19	CLR	NC			10.00		79	38	57	23	7	27	27.79	30.03
22	CLR	NC			10.00		71	32	52	24	5	22	27.82	30.07
					SUNRISE: 0550	**OCT 18**			**SUNSET: 1702**					
01	CLR	NC			10.00		69	34	52	27	3	22	27.82	30.06
04	CLR	NC			10.00		63	34	49	34	3	21	27.81	30.05
07	CLR	NC			10.00		66	35	51	32	3	26	27.86	30.11
10	SCT	NC			10.00		80	36	57	20	5	08	27.87	30.11
13	BKN	200			10.00		88	37	60	16	7	10	27.79	30.01
16	BKN	200			10.00		89	42	62	19	8	06	27.74	29.97
19	BKN	200			10.00		80	43	59	27	3	20	27.76	29.99
22	BKN	200			10.00		77	37	56	24	5	23	27.78	30.01

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE OBSERVATION TIME (LST)	SATELLITE EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	WIND SPEED (MPH)	DIRECTION TENS OF DEG	PRESSURE (INCHES,HG) STATION	SEA LEVEL
					SUNRISE: 0551	**OCT 19**			**SUNSET: 1701**					
01	FEW	NC			10.00		70	38	53	31	3	22	27.79	30.02
04	CLR	NC			10.00		67	39	52	36	3	19	27.79	30.03
07	BKN	200			10.00		67	39	52	36	5	26	27.83	30.08
10	BKN	200			10.00		80	40	58	24	0	00	27.85	30.09
13	BKN	200			10.00		88	44	62	22	5	VR	27.77	30.00
16	BKN	200			10.00		89	49	65	25	5	04	27.73	29.96
19	BKN	200			10.00		81	51	63	35	5	25	27.77	30.01
22	SCT	NC			10.00		73	39	55	29	7	26	27.80	30.04
					SUNRISE: 0552	**OCT 20**			**SUNSET: 1660**					
01	SCT	NC			10.00		69	37	53	31	8	21	27.81	30.04
04	CLR	NC			10.00		65	37	51	36	5	26	27.83	30.07
07	FEW	NC			10.00		68	37	52	32	3	21	27.89	30.13
10	FEW	NC			10.00		81	42	59	25	3	VR	27.90	30.14
13	FEW	NC			10.00		90	46	64	22	3	36	27.83	30.06
16	SCT	NC			10.00		91	48	65	23	0	00	27.79	30.03
19	FEW	NC			10.00		79	49	61	35	8	25	27.80	30.05
22	CLR	NC			10.00		72	36	53	27	3	23	27.83	30.07
					SUNRISE: 0552	**OCT 21**			**SUNSET: 1659**					
01	CLR	NC			10.00		69	33	51	26	6	20	27.84	30.07
04	CLR	NC			10.00		69	33	51	26	6	24	27.85	30.09
07	CLR	NC			10.00		69	34	52	27	5	25	27.89	30.14
10	CLR	NC			10.00		81	38	58	21	0	00	27.90	30.14
13	CLR	NC			10.00		91	41	62	17	6	32	27.81	30.05
16	CLR	NC			10.00		92	47	65	21	0	00	27.77	29.99
19	CLR	NC			10.00		80	49	62	34	7	25	27.77	30.00
22	CLR	NC			10.00		74	30	52	20	5	23	27.78	30.01
					SUNRISE: 0553	**OCT 22**			**SUNSET: 1657**					
01	CLR	NC			10.00		70	33	52	26	3	24	27.79	30.01
04	CLR	NC			10.00		67	29	49	24	0	00	27.79	30.02
07	CLR	NC			10.00		68	30	50	24	0	00	27.83	30.08
10	CLR	NC			10.00		81	33	56	18	0	00	27.83	30.07
13	CLR	NC			10.00		89	37	60	16	5	07	27.76	29.99
16	CLR	NC			10.00		91	41	62	17	8	07	27.71	29.93
19	CLR	NC			10.00		79	42	58	27	8	26	27.72	29.95
22	CLR	NC			10.00		73	31	52	21	7	20	27.73	29.96
					SUNRISE: 0554	**OCT 23**			**SUNSET: 1656**					
01	CLR	NC			10.00		69	27	49	21	7	19	27.73	29.95
04	CLR	NC			10.00		64	28	47	26	5	18	27.72	29.94
07	FEW	NC			10.00		66	33	50	29	5	25	27.75	29.98
10	SCT	NC			10.00		79	38	57	23	5	08	27.74	29.97
13	SCT	NC			10.00		87	40	61	19	5	06	27.66	29.88
16	BKN	250			10.00		87	45	62	23	5	10	27.63	29.85
19	BKN	250			10.00		76	39	56	27	6	25	27.64	29.88
22	BKN	250			10.00		71	33	52	25	5	19	27.67	29.90
					SUNRISE: 0555	**OCT 24**			**SUNSET: 1655**					
01	SCT	NC			10.00		68	29	49	23	3	20	27.71	29.94
04	SCT	NC			10.00		75	28	52	18	15	01	27.76	29.98
07	FEW	NC			10.00		74	30	52	20	14	34	27.79	30.03
10	CLR	NC			10.00		79	31	55	17	22	01	27.79	30.03
13	CLR	NC			10.00		84	31	57	15	3	VR	27.74	29.97
16	BKN	250			10.00		86	31	57	14	3	11	27.70	29.92
19	SCT	NC			10.00		74	28	52	18	7	26	27.74	29.97
22	SCT	NC			10.00		69	23	48	17	6	23	27.79	30.03

Attachment 2

OBSERVATIONS AT 3−HOURLY INTERVALS

LAS VEGAS, NV

OCTOBER 2003 LAS WBAN # 23169

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE OBSERVATION TIME (LST)	SATELLITE EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F DRY BULB	TEMPERATURE °F DEW POINT	TEMPERATURE °F WET BULB	RELATIVE HUMIDITY (PCT)	WIND SPEED (MPH)	WIND DIRECTION TENS OF DEG	PRESSURE (INCHES,HG) STATION	PRESSURE (INCHES,HG) SEA LEVEL
SUNRISE: 0556 OCT 25 SUNSET: 1654														
01	FEW	NC			10.00		70	26	49	19	10	03	27.84	30.09
04	FEW	NC			10.00		66	17	45	15	6	09	27.89	30.13
07	BKN	250			10.00		62	19	44	19	5	20	27.97	30.23
10	SCT	NC			10.00		76	24	51	14	15	35	27.97	30.23
13	BKN	250			10.00		81	33	56	18	17	03	27.93	30.18
16	BKN	250			10.00		80	35	56	20	17	02	27.91	30.15
19	BKN	250			10.00		72	27	51	19	13	03	27.94	30.21
22	SCT	NC			10.00		67	11	45	11	0	00	28.00	30.26
SUNRISE: 0557 OCT 26 SUNSET: 1653														
01	SCT	NC			10.00		62	9	42	12	3	VR	28.03	30.29
04	FEW	NC			10.00		57	9	39	15	6	19	28.06	30.32
07	SCT	NC			10.00		60	13	42	16	0	00	28.09	30.37
10	BKN	250			10.00		72	15	48	11	7	VR	28.08	30.35
13	BKN	250			10.00		77	25	52	14	10	36	28.01	30.27
16	FEW	NC			10.00		79	33	55	19	5	11	27.94	30.21
19	CLR	NC			10.00		70	29	50	22	6	27	27.94	30.22
22	CLR	NC			10.00		63	25	46	24	6	28	27.94	30.21
SUNRISE: 0558 OCT 27 SUNSET: 1651														
01	CLR	NC			10.00		60	23	44	24	6	21	27.96	30.22
04	FEW	NC			10.00		59	28	45	31	9	25	27.94	30.21
07	SCT	NC			10.00		60	28	46	30	5	19	27.95	30.22
10	BKN	250			10.00		73	34	53	24	0	00	27.94	30.19
13	BKN	250			10.00		80	38	57	22	3	11	27.82	30.07
16	BKN	250			10.00		83	40	59	22	5	17	27.75	29.99
19	BKN	250			10.00		74	38	55	27	6	24	27.73	29.98
22	BKN	250			10.00		71	31	51	23	5	VR	27.73	29.96
SUNRISE: 0559 OCT 28 SUNSET: 1650														
01	BKN	250			10.00		70	31	51	24	0	00	27.70	29.93
04	BKN	250			10.00		63	30	47	29	6	29	27.67	29.90
07	BKN	250			10.00		62	28	46	28	6	27	27.69	29.94
10	SCT	NC			10.00		78	31	54	18	0	00	27.68	29.91
13	FEW	NC			10.00		86	39	60	19	0	00	27.59	29.80
16	FEW	NC			10.00		87	44	62	22	5	11	27.53	29.75
19	CLR	NC			10.00		76	43	58	31	6	25	27.52	29.75
22	CLR	NC			10.00		70	30	51	23	0	00	27.49	29.71
SUNRISE: 0600 OCT 29 SUNSET: 1649														
01	CLR	NC			10.00		68	31	50	25	0	00	27.47	29.68
04	CLR	NC			10.00		64	34	49	33	3	29	27.43	29.63
07	SCT	NC			10.00		64	34	49	33	6	27	27.41	29.62
10	OVC	015			5.00	FU	73	38	54	28	0	00	27.38	29.59
13	VV	005			1.75	FU	82	35	57	18	15	21	27.32	29.51
16	VV	010			2.50	FU	80	39	58	23	9	16	27.27	29.47
19	SCT	NC			4.00	FU	77	41	57	28	15	19	27.26	29.47
22	SCT	NC			6.00	FU	73	37	54	27	20	19	27.24	29.44
SUNRISE: 0601 OCT 30 SUNSET: 1648														
01	SCT	NC			7.00		70	34	52	27	15	19	27.23	29.43
04	SCT	NC			6.00	HZ FU	67	33	50	29	16	18	27.19	29.38
07	FEW	NC			6.00	HZ FU	67	34	50	30	22	19	27.23	29.43
10	FEW	NC			6.00	HZ FU	69	33	51	26	24	20	27.26	29.46
13	FEW	NC			8.00		70	27	50	20	20	20	27.30	29.50
16	FEW	NC			8.00		69	30	50	23	22	22	27.33	29.54
19	FEW	NC			8.00		64	36	50	35	13	23	27.37	29.59
22	FEW	NC			8.00		59	35	47	41	10	20	27.44	29.67

HOUR (LST)	SKY COVER	CEILING 100'S OF FT	SATELLITE OBSERVATION TIME (LST)	SATELLITE EFF CLD AMT Oktas	VISIBILITY (MILES)	WEATHER	TEMPERATURE °F DRY BULB	TEMPERATURE °F DEW POINT	TEMPERATURE °F WET BULB	RELATIVE HUMIDITY (PCT)	WIND SPEED (MPH)	WIND DIRECTION TENS OF DEG	PRESSURE (INCHES,HG) STATION	PRESSURE (INCHES,HG) SEA LEVEL
SUNRISE: 0602 OCT 31 SUNSET: 1647														
01	CLR	NC			10.00		57	33	46	41	5	23	27.45	29.68
04	FEW	NC			10.00		53	33	44	47	14	19	27.46	29.70
07	FEW	NC			10.00		52	33	43	49	13	19	27.50	29.75
10	FEW	NC			10.00		59	30	46	33	18	22	27.52	29.78
13	SCT	NC			10.00		62	31	47	31	21	24	27.50	29.75
16	SCT	NC			10.00		61	26	45	26	16	23	27.50	29.75
19	SCT	NC			10.00		57	28	44	33	5	21	27.55	29.81
22	FEW	NC			10.00		54	30	43	40	3	16	27.58	29.84

3−HOURLY OBSERVATION NOTES

Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8−2/8, SCT = 3/8−4/8, BKN = 5/8−7/8, OVC = 8/8, VV = Vertical Visibilty = 8/8.
Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet. NC= No ceiling detected.
& = Original observation contained additional weather elements.
See page 3 for additional notes.

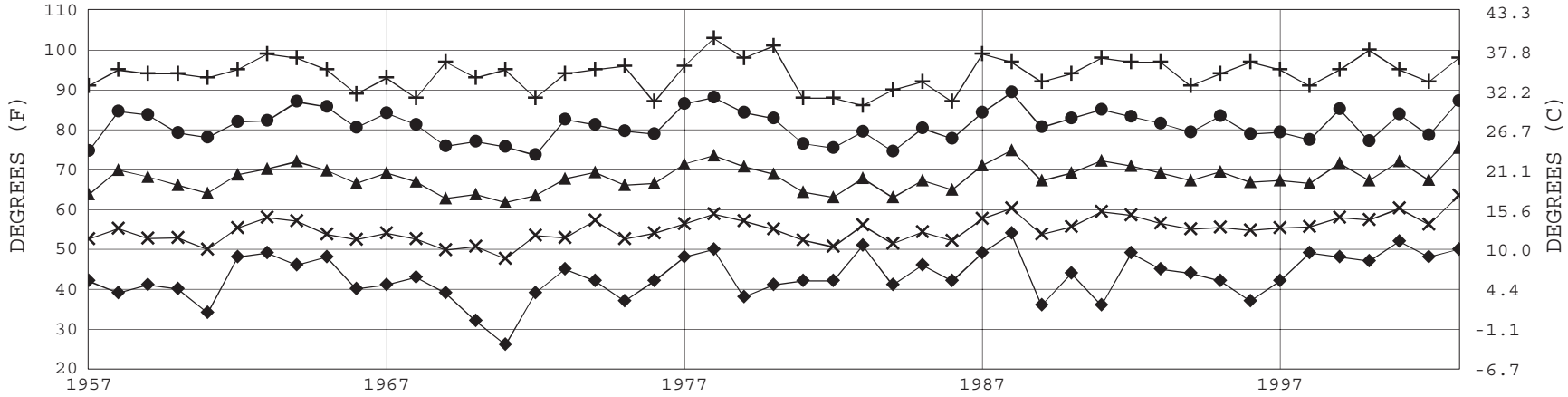
SUMMARY BY HOUR

HOUR (LST)	AVERAGES CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (INCHES,HG) STATION	PRESSURE (INCHES,HG) SEA LEVEL	VISIBILITY (MILES)	WIND SPEED (MPH)	RESULTANT WIND (MPH) SPEED	RESULTANT WIND (MPH) DIRECTION
01			70	33	52	26	27.67	29.89	9.90	5	3	22
02			68	32	51	28	27.66	29.89	9.90	6	4	22
03			67	32	50	28	27.66	29.89	9.90	6	3	23
04			67	32	50	29	27.67	29.89	9.87	6	3	22
05			66	32	50	30	27.68	29.91	9.77	6	4	23
06			65	33	50	31	27.69	29.92	9.77	6	3	22
07			68	33	51	29	27.71	29.94	9.84	5	2	22
08			72	35	53	27	27.72	29.96	9.87	4	0	0
09			75	35	55	24	27.73	29.96	9.74	6	2	7
10			78	36	56	22	27.72	29.95	9.71	5	1	5
11			81	36	57	21	27.71	29.93	9.64	6	1	5
12			83	37	58	20	27.68	29.91	9.64	6	1	11
13			85	38	59	20	27.65	29.88	9.67	7	1	9
14			86	40	60	20	27.64	29.86	9.68	8	2	7
15			86	40	61	20	27.63	29.84	9.68	6	1	12
16			86	41	60	21	27.62	29.84	9.69	7	1	16
17			84	40	59	22	27.62	29.84	9.74	6	1	25
18			81	41	59	24	27.63	29.85	9.74	6	2	22
19			78	40	58	27	27.63	29.86	9.74	6	4	24
20			76	40	57	29	27.64	29.87	9.71	7	5	23
21			74	40	56	31	27.65	29.88	9.81	6	5	22
22			73	37	54	29	27.65	29.88	9.81	5	3	22
23			71	34	52	26	27.66	29.88	9.81	5	2	21
24			70	33	52	26	27.66	29.88	9.81	6	4	23

Attachment 2

Published By: National Climatic Data Center

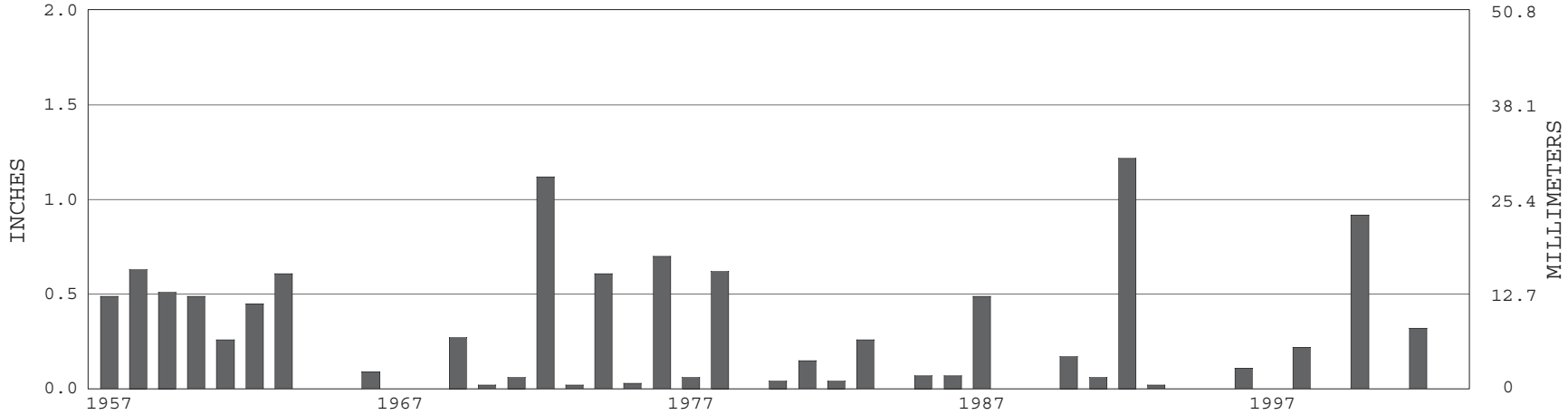
LAS VEGAS, NV OCTOBER TEMPERATURES



+ Extreme Max. ● Mean Max. ▲ Mean Mean Min. ◆ Extreme Min.

Long-Term (1957-2003) Mean: 68.0 1961-1990 Normal: 68.7

LAS VEGAS, NV OCTOBER PRECIPITATION



Long-Term (1957-2003) Mean Monthly Total: 0.24 1961-1990 Normal: 0.24

Attachment 2

OCTOBER 2003

LAS VEGAS, NV

LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

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Attachment 3

Protecting the air we share

Air Quality

HIGH WIND AND WILDFIRE SMOKE NOTICE

Attention Dust Control Permit Holders Contractors and Stationary Sources

The National Weather Service has forecast strong sustained winds at 20-30 mph with higher gusts in excess of 40 mph for Wednesday (October 29, 2003) and Thursday (October 30, 2003).

The Department of Air Quality Management (DAQM) directs each permittee to immediately inspect their site and employ Best Available Control Measures to stabilize all disturbed soils to reduce blowing dust. Permittees with multiple sites should contact each site Superintendent to ensure compliance with the DAQM Air Quality Regulations.

DAQM Compliance Officers will inspect construction and stationary source sites during the wind episode to ensure Best Available Control Measures are being applied. Any observed air quality violation may receive a Notice of Violation.

Please direct questions about this Wind Advisory to a DAQM Compliance Supervisor at 702-455-5942.

Revised October 28, 2003

Attachment 3

News Release

Public Communications ■ 500 S. Grand Central Parkway, 6th Fl., Las Vegas, NV 89155-1111 ■ Fax: (702) 455-3558

Contact: **Stacey Welling** Phone: **(702) 455-3201**
Sr. Public Information Officer Cell: **(702) 249-3823**
E-mail: stac@co.clark.nv.us

For Immediate Release **Tuesday, Oct. 28, 2003**

Advisory Issued For Wednesday, Thursday

Local Air Quality May Be Poor Due To Dust, Wildfire Smoke

Clark County Department of Air Quality Management officials say residents should brace for the possibility of poor air quality on Wednesday and Thursday due to strong winds, blowing dust and smoke from Southern California's raging wildfires.

The National Weather Service expects winds from the southwest of 20 to 30 miles per hour to blow into Southern Nevada by noon Wednesday, with gusts up to 40 miles per hour. A similar forecast is predicted for Thursday. Air Quality officials say the strong winds are likely to carry smoke into the valley from the wildfires and stir up dust on construction sites and vacant lots. The forecasts prompted air quality officials this afternoon to issue notices to local construction sites asking them to take steps to check and stabilize their property for blowing dirt and debris. The notices are part of a program to help reduce possible health effects from dust storms.

In addition, officials continue to monitor the valley's air for pollution from California's wildfires. They expect more impact on local air quality from the wildfires if Wednesday and Thursday's forecasts hold true.

Under advisory conditions involving smoke and dust, air quality officials say most people should limit outdoor exercise and consider staying indoors as much as possible. Children, seniors and people with chronic respiratory problems, in particular, should exercise caution outdoors.

The Las Vegas Valley currently does not meet the federal 24-hour air quality standard for PM-10, which stands for particulate matter measuring 10 microns or less. It's a type of inhalable air pollution that aggravates respiratory diseases such as bronchitis or asthma. It's primarily made up of dust, but small particles from smoke also can be an ingredient.

The smell of smoke in the air can be an indication of poor air quality. Residents who have questions or concerns about air quality, can call the department at 455-5942 or visit the monitoring section of Air Quality's website via www.accessclarkcounty.com.

Symptoms of exposure to wildfire smoke include coughing, breathing difficulties, tightness of the chest and eye, nose, mouth or throat irritation.###

Clark County Board of Commissioners
Mary Kincaid-Chauncey, Chairwoman ■ Chip Maxfield, Vice Chairman ■ Yvonne Atkinson Gates ■ Mark A. James ■ Rory Reid ■ Myrna Williams ■ Bruce L. Woodbury / Thom Reilly, County Manager

Attachment 4

Joe Neal (JO) Monitoring Site

Attachment 4

Joe Neal (JO) Monitoring Site #320030075

Attachment 4

Joe Neal (JO) Monitoring Site #320030075

Attachment 5

East Craig Road (BS) Monitoring Site

Attachment 5

East Craig Road (BS) Monitoring Site #320030020

Attachment 5

East Craig Road (BS) Monitoring Site #320030020

Attachment 6

Microscale (MS) Monitoring Site

Attachment 6

Microscale (MS) Monitoring Site #320030560

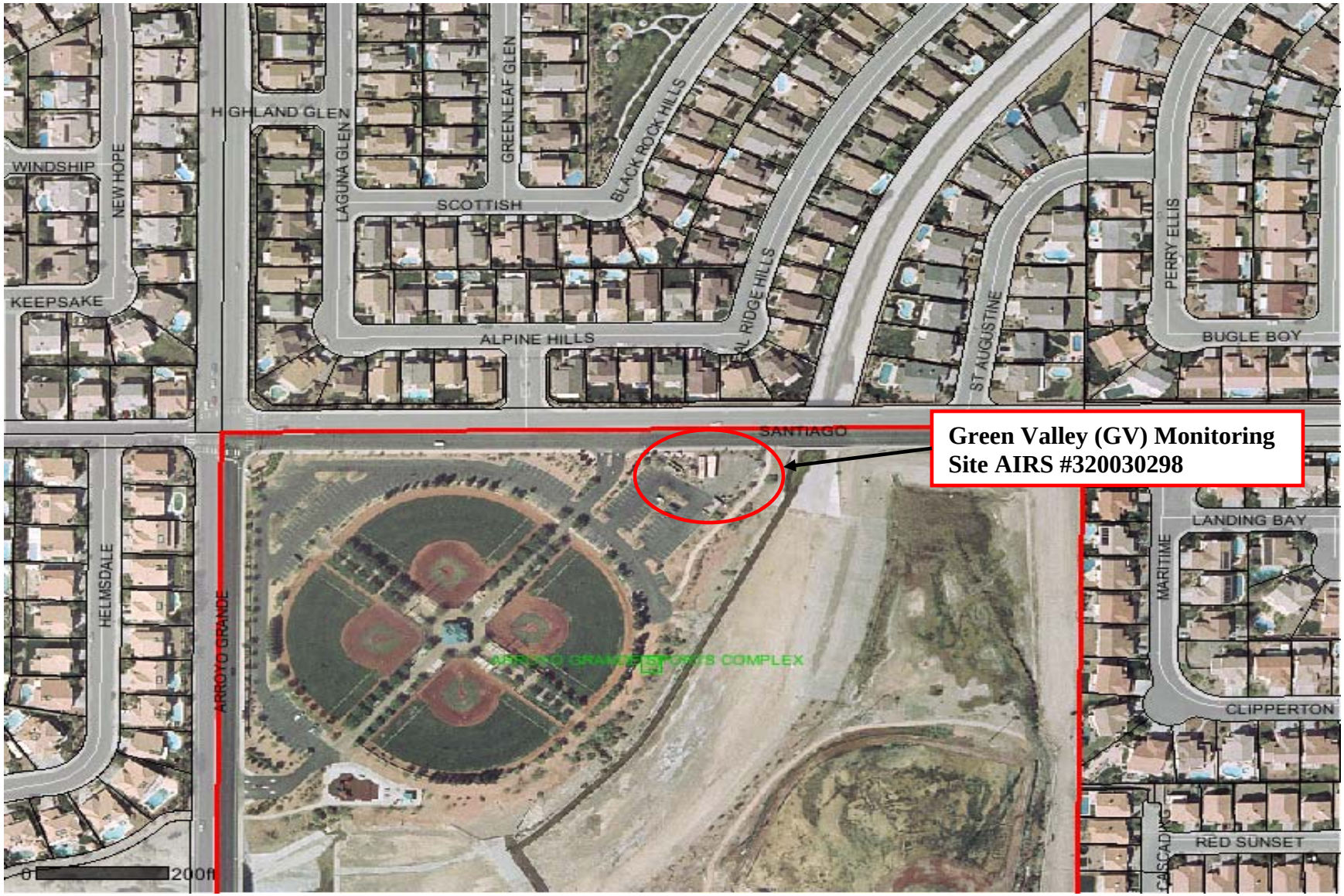
Attachment 6

Microscale (MS) Monitoring Site #320030560

Attachment 7

Green Valley (GV) Monitoring Site

Attachment 7



Green Valley (GV) Monitoring Site #320030298

Attachment 7

Green Valley (GV) Monitoring Site #320030298

Attachment 8

Photo: A haze envelopes the I-215 Beltway

Las Vegas SUN

October 29, 2003

LV Valley air advisory issued due to fires' smoke

By Christina Littlefield and Ed Koch
<koch@lasvegassun.com>
LAS VEGAS SUN

Winds blowing east from the Pacific Ocean brought the smoke from the California fires to the Las Vegas Valley today causing respiratory problems and severely limiting visibility.

The valley was enveloped in an ashen shroud. Views that normally stretch from one end of the valley to the other were reduced to a few blocks at best.

Clark County air quality officials issued a health advisory this morning, urging people to try to stay indoors.

The Clark County Fire Department sent a rescue team to Primm at 10:30 this morning to aid drivers complaining of respiratory problems. Ten motorists had stopped for help at Jean as of this morning, department spokesman Bob Leinbach said.

Leinbach did not know if drivers were heading toward or away from California. He recommended that valley drivers use their air conditioning systems at full blast to filter the air entering their cars and remove possible pollutants or irritants.

As of this morning, Stacey Welling of the Clark County Health District said her department had not detected any significant levels of pollutants they measure for, but that may change if the winds pick up.

People are sensitive to smoke in different ways, Welling said, and it is "not unusual to be able to smell it." Children, the elderly, asthmatics or anyone with breathing difficulties or sensitivity to smoke are being urged to stay indoors as much as possible. Those who experience any breathing difficulties, tightness of chest, coughing, eyes, nose, mouth or throat irritation should consult their doctor and remain indoors.

Only one UMC Quick Care in the valley reported that it had seen a patient complaining of smoke-related respiratory problems, but doctors expect the complaints to increase over the next couple of days.

Attachment 8

"We'll see a few today, but over the next three to four days it will really spike," said Dr. Mike Hutchins who works at the Quick Care at 2202 W. Craig Road. "As people are exposed to it, they will deal with it at first but then over the course of a few days there will be an ongoing cycle of continuing irritation, and then we will see more people in the clinics."

Sue Branske, clinical manager for the Quick Care at 1769 Russell Road, said, "We do (expect to see cases), unless people are doing what the news tells them to do -- which is stay inside. All the nurses are prepared for breathing problems from people with chronic respiratory diseases."

Las Vegans had been spared from the smoke billowing up from the 13 Southern California fires since the first started on Oct. 25 because prevailing winds headed westward toward the ocean, weather service forecaster Mark Moede of San Diego said Tuesday night.

As a mass of cold air plunges south from Canada, however, the winds are reversing, driving smoke and ash inland to Las Vegas, he said.

"One good thing about the wind pattern is it brings cooler and more humid air into Southern California," Moede said. Those conditions could help control the fire, but he noted that "strong winds combined with wildland fires can cause all kinds of chaos."

As of this morning, the haze was not affecting visibility for planes at McCarran International Airport, spokewoman Debbie Millett said. The flight schedule indicated that all planes were arriving and departing on time, with only one cancellation from San Diego.

"If you remember when we had that fire out on Boulder Highway, that major apartment fire, it did not affect the planes," Millett said. "They just flew right through it. We are not expecting it to impact us."

In the Las Vegas Valley the winds could bring smoke and ash particles from the wildland fires, weather service meteorologist Andy Bailey said.

Windy conditions from 20 mph to 30 mph are expected with gusts over 40 mph this afternoon and could continue through Thursday.

Pat Jones who lives in the Santiago Mobile Home Park on Carey Avenue near Lamb Boulevard and is a former Los Angeles resident, said the smell of smoky air does not bother her, but she is concerned for her 5-year-old asthmatic grandson.

"The last time this happened last year (from the big fire in Arizona) Robbie had to be rushed to the University Medical Center," Jones said. "He has asthma real bad. Richard (her husband) and I have been waiting for a call to come pick him up early from kindergarten."

Attachment 8

Mary Stanley Larsen, spokeswoman for the Clark County School District said precautions have been taken for children with sensitive health issues.

She said that while schools are on the alert regarding children with "sensitive health issues," there have been no reports of children being sent home or to hospitals because of breathing problems.

Some people working outdoors today noticed little more than hazy skies and smoky air.

"It's a little foggy out, but we're working," said Jesus Lozoya of Lozoya Enterprises, a small lawn care company that is comprised of Lozoya and two employees in one truck. "I've had no complaints from my workers, but then again, I'm usually the one that does most of the complaining.

"It has been business as usual. We're doing mostly new landscaping. Usually the only time we are affected (to the point of work stoppage) is when we are next to a construction site and they kick up dust real bad. But as I look at the skies now, it does look pretty bad."

Las Vegas residents may call the department at 455-5942 or visit the Air Quality website, accessclarkcounty.com/Air]Quality for more information.

Sun reporter

Mary Manning contributed to this story.

Photo: A haze envelopes the I-215 Beltway
Las Vegas SUN main page

Questions or problems? Click here.

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Attachment 8

Las Vegas SUN

October 29, 2003

Air quality advisory issued

LAS VEGAS SUN

As the firefighters pulled out of a truck stop at Blue Diamond Road and Interstate 15 on Tuesday, the Clark County Department of Air Quality issued an advisory to Southern Nevada residents, who could begin smelling the smoke from the massive California fires today and Thursday.

The National Weather Service predicted winds of up to 30 to 40 mph today.

Those forecasts prompted air quality officials to issue notices to local construction sites to keep down dust on their properties.

"The notices are part of a program to help reduce possible health effects from dust storms," Clark County spokeswoman Stacey Welling said. "They expect more impact on local air quality from the wildfires if today's and Thursday's forecasts hold true."

The advisory warns most people to limit outdoor exercise and consider staying indoors as much as possible.

Residents concerned about air quality may call the department at 455-5942 or visit the monitoring section of Air Quality's website at www.accessclarkcounty.com.

Las Vegas SUN main page

Questions or problems? Click here.

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Attachment 9

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Find a Job
Find a Car
Find a Home

Wednesday, October 29, 2003
Copyright © Las Vegas Review-Journal

Nevada firefighters itching to help neighbors

By FRANK CURRERI and ADRIENNE PACKER
REVIEW-JOURNAL

A caravan of fire engines departs Tuesday morning from Las Vegas. More than 40 firefighters from Las Vegas, Clark County and Henderson are headed to Southern California to help crews fight raging wildfires. Photo by Clint Karlsen.

Local fire officials say it's a rare day when Californians, long admired for their wealth of firefighting resources, lean on outsiders to help tame their wildfires. But since that day has come, Las Vegas Valley firefighters are all too eager to cross state lines and battle the historic infernos that have besieged the Golden State.

More than 40 firefighters from Las Vegas, Clark County and Henderson loaded up their fire engines on Tuesday and headed to Southern California, where roughly 900 square miles and more than 1,600 homes have been scorched.

Related Story:

Unnecessary trips discouraged

Advertisement

Attachment 9

"This is probably a once-in-a-lifetime career chance for a lot of these guys," Dean Fletcher, head of Las Vegas Firefighters Local 1285, said as volunteer crews departed downtown Las Vegas. "These guys in California, they haven't asked for help outside of the state in a decade. So this is pretty special."

Meanwhile, Las Vegas businesses and charities began offering support to their beleaguered neighbors to the west, even if the effectiveness of the gestures was uncertain.

A lively drive for bottled water got under way at the Palms, and those behind it could only hope the supplies would get through to firefighters. The local Salvation Army, typically an organization that gets in the thick of relief efforts, has been limited for the time being to providing financial support.

"It's frustrating because we can't go there and do something," Salvation Army spokesman Charles Desiderio said, noting road closures in the area. "God willing when the fire is over we can do something like (provide clothing). Right now our urgency is to support the emergency personnel who are out there doing a monumental job."

When word of the volunteer search for firefighters first hit the valley about 6 p.m. Monday, there was little hesitation or soul-searching. Within 90 minutes of the invitation, 120 Las Vegas firefighters -- roughly a third of the department's rank-and-file -- had offered their services.

Attachment 9

"If you could lock all these guys in a room and have them duke it out to see who could go, you'd have the best fights in Las Vegas," said Henderson Fire Logistics Division Chief Bruce Giles.

Those firefighters chosen to go will try and control what has become arguably the most destructive wildfire ever in California.

The scene has been likened to a war zone, where the enemies are fast-moving flames that have caused 17 deaths, created chaos at Los Angeles International Airport, and cloaked Southern California skies with poisonous gases and heavy clouds of smoke.

Area firefighters, who will temporarily be under the command of the federal government, expect to encounter the most unruly flames when they get to Santee, which is northeast of San Diego.

In the Las Vegas Valley, there have been plenty of major construction fires, but the desert climate means fewer things for a fire to feed on. In places like tree-rich San Diego, that is far from the case.

"They're going into unusual, unfamiliar territory," said Tim McAndrew, emergency coordinator for the Las Vegas Fire Department. "They're not accustomed to this type of situation ... where the urban and wildland fires come together."

The 44 firefighters who were sent will do battle for three 12-

Attachment 9

hour shifts over three days, and then be relieved by fresher bodies, said Las Vegas Fire spokesman Tim Szymanski.

Fire officials expect the experience will be as unforgettable as it is exhausting.

"It's something that is out of our element," said Henderson Fire Capt. Scott Pettingill. "We don't have a lot of experience fighting wildland fires ... We have an opportunity to see more fire in two weeks than most of us see in a career."

The Salvation Army's priority is assisting emergency crews who have spent sleepless hours beating down the flames sweeping through rugged ravines.

Desiderio said the California fires pose a different challenge than other disasters to which the organization has responded. The Salvation Army can only collect money and wire it to Southern California where it will be used to replenish food supplies and provide additional cots for emergency personnel.

At this point, he said, it's pointless to collect clothing for displaced families because road closures are preventing delivery.

Dozens of Las Vegas residents meanwhile joined a charitable effort started by the Palms. Resort owner George Maloof contributed 1,000 cases of bottled water to firefighters and urged other residents to pitch in as well.

Las Vegas residents are

Attachment 9

expected to feel the effects of the fires today if the winds shift east.

Christine Robinson, director of the county's Air Quality Management Department, said reports from the National Weather Service indicate that smoke from California will drift into the Las Vegas Valley today.

The wind in Las Vegas is also expected to increase today, compounding air quality problems.

The fires didn't appear to be affecting traffic at McCarran International Airport, a spokeswoman said.

Review-Journal writer Richard Lake contributed to this report.

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Attachment 10

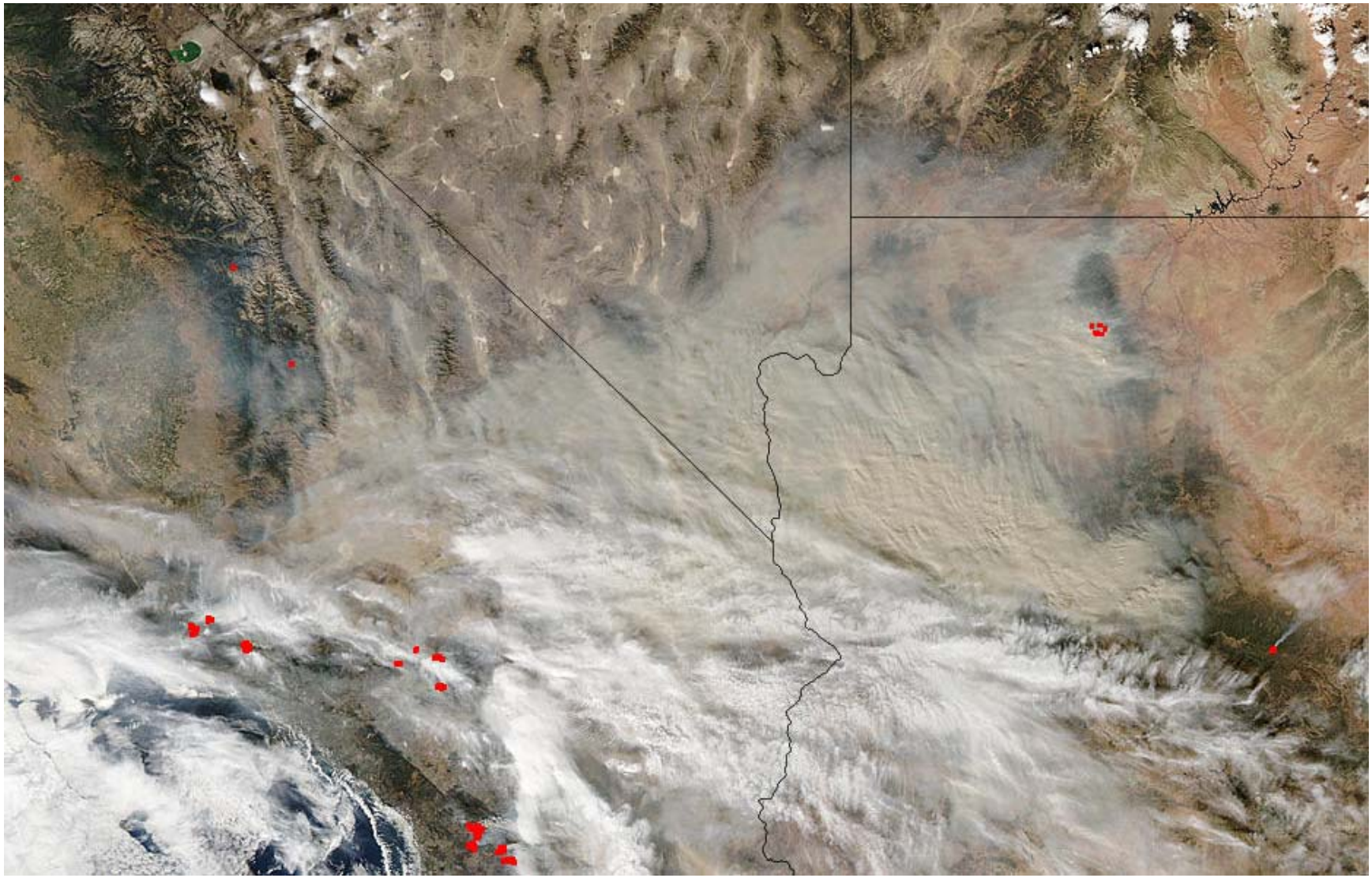


Photo Sattelite Image of the Smoke Affects from the California Wildland Fires on Neighboring States on October 29, 2003

Attachment 10

Shifting smoke

A satellite photo taken Monday, left, shows smoke blowing off-shore from the Southern California wildfires. In a similar photo, right, taken Wednesday, smoke pushed by winds from the southwest is shown blowing inland from the fires toward the Las Vegas Valley.

SOURCE: National Aeronautics and Space Administration

MIKE JOHNSON/REVIEW-JOURNAL

National Aeronautics and Space Administration Satellite Photo - Las Vegas Review Journal – October 29, 2003

Attachment 11

Photo of the Las Vegas Valley: I-215 Beltway near Pecos Road on October 29, 2003

Attachment 12

Photo of Las Vegas Valley: View of Downtown Las Vegas south from the Stratosphere Tower, on October 29, 2003

Attachment 13

Photo taken south of Las Vegas looking north towards downtown from Henderson, Nevada on October 29, 2003

Appendix G

Documentation of Public Notice and Review

1. **NEAP Public Workshops**
2. **Public Notices**
3. **News Releases**

Documentation of Public Notice and Review

1. NEAP Public Workshops

The Clark County Department of Air Quality and Environmental Management (DAQEM) will conduct a Public Workshop on the ***Natural Events Action Plan*** ***for High-Wind Events (NEAP) in Clark County, Nevada***, to introduce the plan, solicit public comments, and answer questions. The public workshop will be held at the Clark County Government Center, Board of County Commission Chambers, located at 500 S. Grand Central Parkway, on January 25, 2005 from 5:00 to 8:00 PM. DAQEM in partnership with public health officials developed the NEAP to protect public health. The plan addresses airborne particulate matter (PM) or dust, caused by windy weather conditions. Dust can cause negative health impacts. Not all sources of dust are caused by humans and can be controlled. When high winds occur, all citizens of Clark County need awareness of the potential health impacts and how to avoid exposure. The public may review the NEAP document (main document) on the departmental website at: http://www.co.clark.nv.us/Air_Quality/NEAP.html The Appendices (Technical Support Documentation – TSD) will not be posted on the departmental website. Upon request, you may obtain electronic copies of the Appendices available **only** in Adobe PDF format. Hard copies will be available for review at the workshop. For further information, please contact: Russ Merle Jr., Senior Air Quality Planner at telephone number (702) 455-5942.

PUBLIC WORKSHOP

Clark County

Board of County Commission Chambers (BCC)

5:00 PM – 8:00 PM

NATURAL EVENTS ACTION PLAN
FOR HIGH-WIND EVENTS, (NEAP)
(LAS VEGAS & APEX VALLEYS)

Agenda

1. Welcome to the Clark County Government Center –
    a. Russ Merle Jr., Senior Air Quality Planner, NEAP Coordinator
    b. Ron Smolinski, Management Analyst II, DAQEM Public Outreach Coordinator
    c. John Koswan, Assistant Planning Manager, Air Quality Planning & Technical Programs
    d. Karen Hodges, Senior Office Specialist, Air Quality Planning & Technical Programs

2. NEAP Presentation –
    a. What is a NEAP
    b. Why is the NEAP important to Clark County?

3. NEAP - Questions & Answer Session

4. Wrap-up

Protecting the air we share

Air Quality

Clark County
Natural Events Action Plan (NEAP)
(Las Vegas & Apex Valleys)

What is a Natural Event Action Plan (NEAP)?

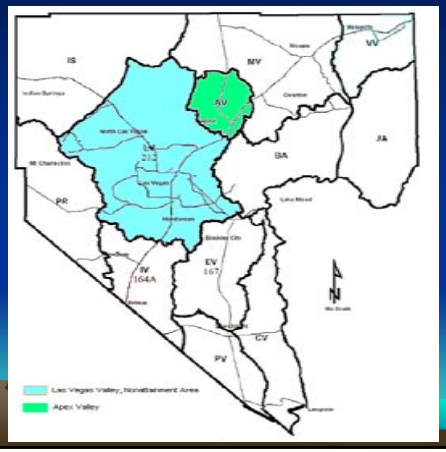
Action and strategies to protect public health from dust generated by Natural Events (in Clark County - High Winds) through:

- Education
- Outreach
- Pre-Event Proactive Enforcement/Compliance

U.S. Environmental Protection Agency Natural Events Policy

- Natural Events Policy (NEP) - U. S. EPA Memorandum dated May 30, 1996, for "Areas Affected by PM_{10} Natural Events"
- Protecting public health when PM_{10} standards are violated due to Natural Events
- Natural Events:
  - Volcanic and Seismic Activity
  - Wildland Fires
  - High-Wind Events

Map of the NEAP Area



Map of the NEAP Area (cont'd)

- Only the Las Vegas Valley (Blue) and the Apex Valley (Green) are subject to the NEAP
- Both areas require BACT/BACM
- Section 90 series AQRs (Dust Regulations) are applicable
- NEAP addresses events which may occur, and standardizes methodology how events are handled – *"Protection of the Public Health."*

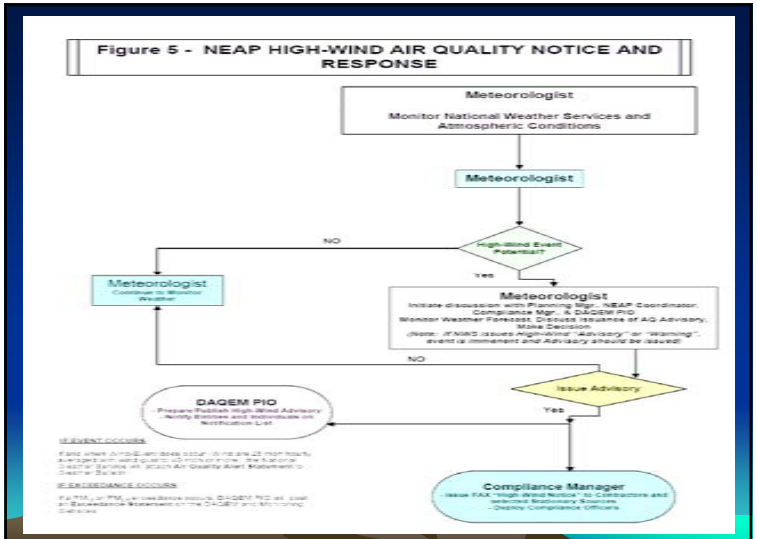
Essential Elements of the Plan

- Public Outreach and Education
  - High-wind event notification system - Imminent or occurring
  - Education and outreach programs
- Air Quality Advisory Notice
  - To Media (Radio, TV, Newspapers)
  - To Public (Schools, Care Centers)
  - FAX to Stationary Sources, Dust Permit holders

Public Notification and Health Advisory Program

Natural Events Policy states:

"Advisories should inform the public that a dust episode is imminent, currently taking place, or likely to occur."



High-Wind Air Quality Notification

- **ADVISORY – National Weather Service confirms forecast of sustained winds of 25 miles per hour or more and/or frequent wind gusts of 40 miles per hour or more.**
- **ALERT – Meteorological and ambient monitoring data confirm the high-wind event is occurring or in progress.**

Media Advisory

CLARK COUNTY NEVADA

Contact: Stacey Welling
Sr. Public Information Analyst

Phone: (702) 455-3201
Cell: (702) 249-3823
E-mail: stac@co.clark.nv.us

For Immediate Release **Wednesday, March 26, 2003**

Air Quality Officials Issue Wind Advisory

Wednesday Forecast Calls for 45-Mile-Per-Hour Gusts

With strong winds expected in Southern Nevada this afternoon and tonight, Clark County Air Quality officials are advising residents and operators of local construction sites to brace for blowing dust and higher levels of PM-10.

The Las Vegas office of the National Weather Service predicts sustained winds of 25 to 35 miles an hour by Wednesday evening in Southern Nevada, with some gusts reaching 45 miles an hour. Under those conditions, Air Quality officials say people with asthma, emphysema and other respiratory diseases should consider staying indoors. As part of this advisory, officials also encourage construction site operators to take steps to check and stabilize their property for blowing dust and debris as required by local air quality regulations.

High winds in excess of 25 miles per hour tend to make the valley's PM-10 problems worse. PM-10 stands for particulate matter, primarily dust, 10 microns or less, which is smaller than the diameter of a human hair. It's a type of inhalable air pollution that aggravates respiratory diseases such as bronchitis or asthma. **During windy conditions, children, seniors and people with chronic respiratory problems are urged to stay indoors; Air Quality officials also advise all residents to limit outdoor exercise.**

The Las Vegas Valley currently does not meet the federal 24-hour air quality standard for PM-10. The U.S. Environmental Protection Agency, however is reviewing a plan that meets those standards. An important component of the plan is for the county's Air Quality Department to step up efforts to educate the public about the health hazards of dust and the possible economic consequences of not meeting federal air quality standards.

"The Las Vegas Valley faces the loss of millions of dollars in federal highway funding and other sanctions if we as a community don't do a better job controlling dust," said Christine Robinson, director of the Air Quality Management Dept. "We may not be able to control Mother Nature, but we certainly can work with residents and local industry to cut down on man-made sources of dust contributing to the problem."

Residents are encouraged to call Air Quality's dust-complaint hotline at 385-DUST to report excessive amounts of blowing dust. To find out more about local air quality issues, visit the department's website at www.accessclarkcounty.com.

###

Protecting the air we share

Air Quality

HIGH WIND NOTICE
Attention Dust Control Permit Holders
Contractors and Stationary Sources

The National Weather Service has forecast strong sustained winds in excess of 25 mph with higher gust for Tuesday April, 2003.

The Department of Air Quality Management (DAQM) directs each permittee to immediately their site and employ Best Available Control Measures (BACM) to stabilize all disturbed soils to reduce wind blowing dust. Permittees with multiple sites should contact each site Superintendent to ensure compliance with the DAQM Air Quality Regulations.

DAQM Compliance Officers will inspect construction and stationary source sites during the wind episode and any observed air quality violation will receive a Notice of Violation (NOV).

Please direct questions about this Wind Advisory to a DAQM Compliance Supervisor at 702-455-5942.

Essential Elements of the Plan (cont'd)

- **Best Available Control Measures (BACM)**
  - **Dust suppressants, stabilizers, surfactants, blocking access, construction controls, etc.**
- **Pre-Event Compliance/Enforcement Actions – Enforcement program to reduce emissions**

"Burden of Proof" Components of the Plan

NEP Recommended Documentation for Justification Submittals –

- Photo documentation (video, still photography)
- Newspapers / Media coverage of the event
- Monitoring data analysis
- Site / Area analysis
- Meteorological Analysis - National Weather Service
- Verification of application of BACM
  - ✓Compliance activities before/during the event
  - ✓Compliance follow-up after event (CAO vs. NOV)

Justification Submittals for Year 2002

High-Wind Events in the Las Vegas/Apex Valleys in 2002:

1. March 1, 2002
2. March 13, 2002
3. April 15, 2002
4. April 17, 2002

All Events Received U.S. EPA Concurrence

Justification Submittals for Year 2003

High-Wind Events in the Las Vegas/Apex Valleys in 2003:

1. October 29, 2003
2. October 30, 2003

Both Events Received U.S. EPA Concurrence

Justification Submittals for Year 2004

High-Wind Events in the Las Vegas/Apex Valleys in 2004:

1. April 28, 2004
2. May 11, 2004

Both Events Received U.S. EPA Concurrence

Necessary U. S. EPA Concurrence

EPA Concurrence

- **Data are flagged in the National Ambient Air Quality Database (AIRS)**
- **May exclude these data when determining compliance with NAAQS for PM_{10}**
- **To date, Clark County has not excluded any data**

Proactive Compliance Successes

- **Dates in the Year 2003 where proactive compliance and enforcement action made the difference:**
  - ✓**April 24, 2003**
  - ✓**May 7, 2003**
  - ✓**October 28, 2003**
  - ✓**November 21, 2003**
- ***No exceedances of the 24-hour PM_{10} NAAQS***

Plan Improvements during 2004

- **Working with the Health Community to enhance the advisories and response procedures (established the Medical Advisory Committee – MAC)**
- **Working with the stakeholders to address outstanding concerns**
- **Numerous changes to the plan incorporated**
- **Conversion of Outreach and Educational Literature to Spanish**

Plan Improvements during 2004 (cont'd)

Medical Advisory Committee (MAC)

- **MAC Membership**
  - ✓**Clark County physicians from the fields of pulmonology, family and general medicine, geriatrics, pediatrics, and industrial health**
- **MAC Purpose**
  - ✓**Provides timely public health air quality health-related information to the public, including members of the media, local schools and government entities (No specific or general diagnosis)**
- **MAC Coordination**
  - ✓**MAC inquires are directed to the DAQEM Outreach Coordinator and/or the Clark County Public Information Office, which will contact the member physicians and coordinate/facilitate the response or interview**

The Next Steps

- Public Workshop (1/25/05)
- Thirty-day comment period commences 2/1/05 (BCC)
- BCC - Public Meeting (3/15/05)
- Submit Plan to U.S. EPA for Review & Comment

Public Education – English ver.

Public Education – English ver. (inside)

Public Education – Spanish ver.

Public Education – Spanish ver. (inside)

Improvements to Mailers

Mail-Out Education Campaign
(English Version)

Mail-Out Education Campaign
(Spanish Version)

Questions?

Please Contact:

Russ Merle Jr.
Department of Air Quality & Environmental Management
(DAQEM) 702-455-5942

Community Planning and Development
Committee Meeting

Thursday, February 24, 2005
8:30 a.m.

Southern Nevada Home Builders Association
Conference Room

A G E N D A

Call to Order and Introductions	Harry Shull
Clark County Sunrise Manor and Winchester/Paradise Land Use Plans	Kevin Smedley
Department of Air Quality & Environmental Management Natural Events Action Plan (NEAP-Presentation)	Russell Merle
New Business	Harry Shull
Adjournment	Harry Shull

- 10 Minute Break -

Internal CP&D Working Group Meeting

NEXT MEETING MARCH 24, 2005 8:30 A.M.
SNHBA CONFERENCE ROOM

Protecting the air we share

Air Quality

Clark County

Natural Events Action Plan (NEAP)

(Las Vegas & Apex Valleys)

SNHBA Community Planning & Development Committee Meeting

February 24, 2005

What is a Natural Event Action Plan (NEAP)?

Action and strategies to protect the public health from bad air quality caused by Natural Events through:

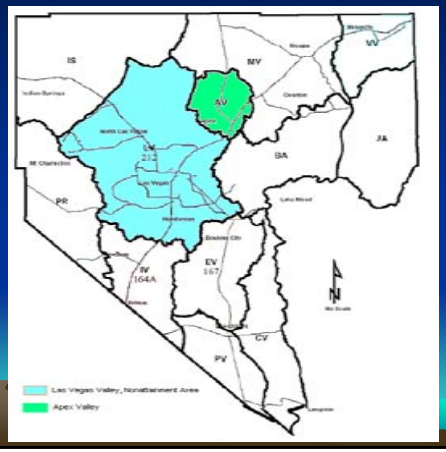
- **Education**
- **Outreach**
- **Pre-Event Proactive Compliance**

Note: Clark County NEAP – High-Wind Events

U.S. Environmental Protection Agency Natural Events Policy

- **Protecting public health when PM_{10} standards are violated due to Natural Events**
- **Natural Events Covered by the Policy:**
  - **Volcanic and Seismic Activity**
  - **Wildland Fires**
  - **High-Wind Events**

Map of the NEAP Area



Map of the NEAP Area (cont'd)

- Only the Las Vegas Valley (Blue) and the Apex Valley (Green) are subject to the NEAP
- Both areas require BACT/BACM
- Section 90 series AQRs (Dust Regulations) are applicable

Required Elements of the Plan

- Public Outreach and Education
- Air Quality Advisory Notice
  - High-wind event notification system - Imminent or occurring
  - To Media (Radio, TV, Newspapers)
  - To Public (Schools, Care Centers)
  - FAX to Stationary Sources, Dust Permit holders

Public Notification and Health Advisory Program

Natural Events Policy states:

"Advisories should inform the public that a dust episode is imminent, currently taking place, or likely to occur."

High-Wind Air Quality Notification

- ADVISORY – National Weather Service confirms forecast of sustained winds of 25 miles per hour or more and/or frequent wind gusts of 40 miles per hour or more.
- ALERT – Meteorological and ambient monitoring data confirm the high-wind event is occurring or in progress.

Protecting the air we share

Air Quality

HIGH WIND NOTICE
Attention Dust Control Permit Holders
Contractors and Stationary Sources

The National Weather Service has forecast strong sustained winds in excess of 25 mph with higher gust for Tuesday April, 2003.

The Department of Air Quality Management (DAQM) directs each permittee to immediately their site and employ Best Available Control Measures (BACM) to stabilize all disturbed soils to reduce wind blowing dust. Permittees with multiple sites should contact each site Superintendent to ensure compliance with the DAQM Air Quality Regulations.

DAQM Compliance Officers will inspect construction and stationary source sites during the wind episode and any observed air quality violation will receive a Notice of Violation (NOV).

Please direct questions about this Wind Advisory to a DAQM Compliance Supervisor at 702-455-5942.

Required Elements of the Plan (cont'd)

- **Best Available Control Measures (BACM)**
  - **Dust suppressants, stabilizers, surfactants, blocking access, construction controls, etc.**
- **Pre-Event Compliance/Enforcement Actions – Proactive Enforcement program to reduce emissions**

"Burden of Proof"

NEP Recommended Documentation for Justification Submittals –

- **Photo documentation (video, still photography)**
- **Newspapers / Media coverage of the event**
- **Monitoring data analysis**
- **Site / Area analysis**
- **Meteorological Analysis - National Weather Service**
- **Verification of application of BACM**
  - ✓**Compliance activities before/during the event**
  - ✓**Compliance follow-up after event (CAO vs. NOV)**

Justification Submittals for Year 2004

High-Wind Events in the Las Vegas/Apex Valleys in 2004:

1. **April 28, 2004**
2. **May 11, 2004**

Both Events Received U.S. EPA Concurrence

Required U. S. EPA Concurrence

EPA Concurrence

- Data are flagged in the National Ambient Air Quality Database (AIRS)
- May exclude these data when determining compliance with NAAQS for PM_{10}

Plan Improvements during 2004

- Working with the Health Community to enhance the advisories and response procedures (established the Medical Advisory Committee – MAC)
- Working with the stakeholders to address outstanding concerns
- Numerous changes to the plan incorporated
- Conversion of Outreach and Educational Literature to Spanish

Plan Improvements during 2004 (cont'd)

Medical Advisory Committee (MAC)

- MAC Membership – Clark County physicians from various medical fields
- MAC purpose is to provide timely public health air quality health-related information to the public
- MAC Coordination - MAC inquires are directed to the DAQEM Outreach Coordinator

Plan Submittal Timeline

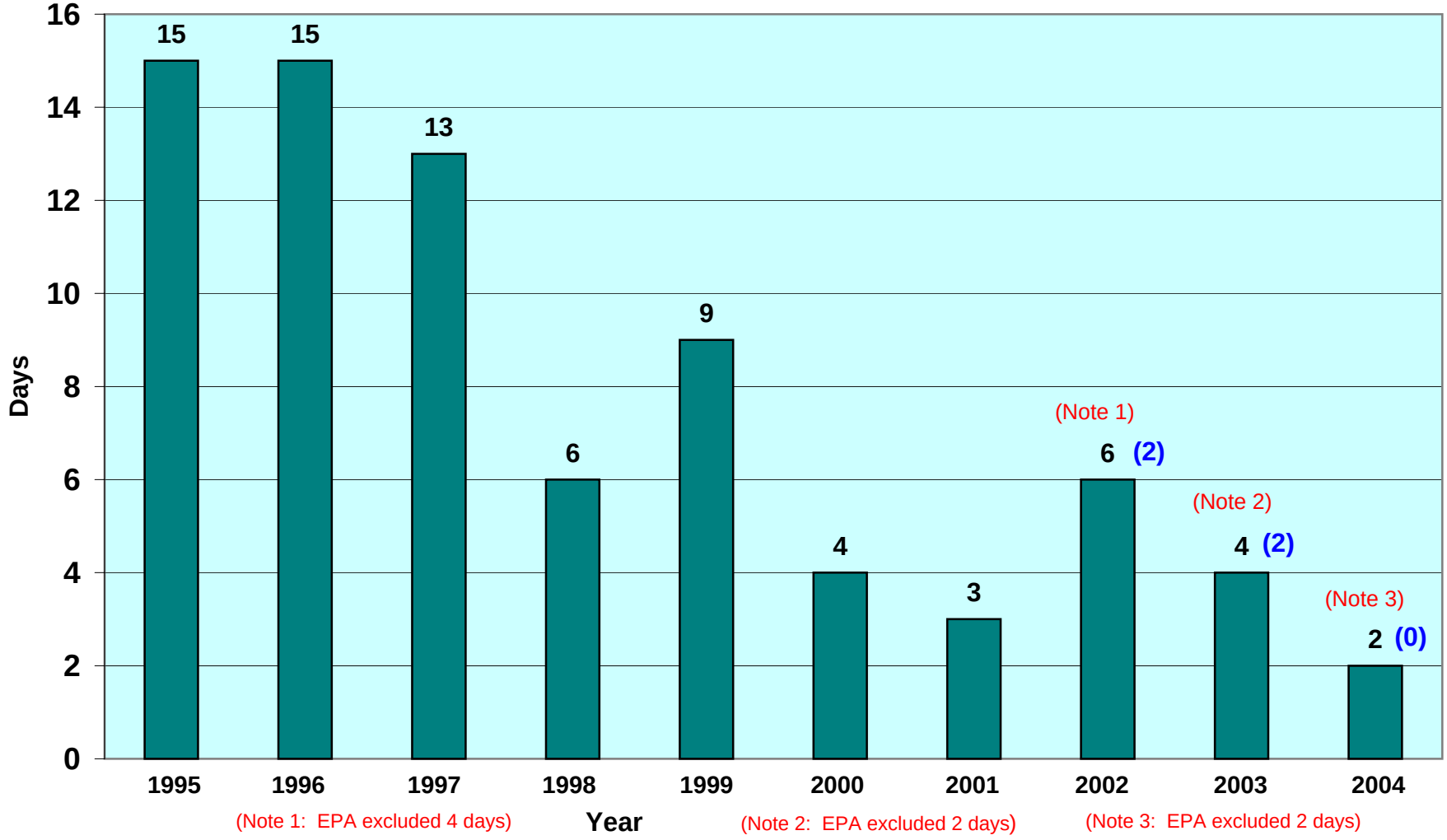
- Public Workshop (1/25/05 Completed)
- Thirty-day comment period commences 2/1/05 through end of public hearing
- BCC - Public Meeting (3/15/05)
- Submit Plan to U.S. EPA for Review & Concurrence

Questions?

Please Contact:

Russ Merle Jr.
Department of Air Quality & Environmental Management
(DAQEM) 702-455-5942

Number of Days One or More PM_{10} Continous Monitors Exceeded the 24-Hr. U.S. EPA National Ambient Air Quality Standard in Clark County, Nevada



Technical Advisory Committee (TAC) Brief – October 22, 2002

Subject: <u>Justification of a (High Wind) PM_{10} Natural Event</u>

Reference: *U. S. EPA Natural Events Policy on "Areas Affected by PM_{10} Natural Events" Memorandum from Mary D. Nichols, Assistant Administrator for Air and Radiation to Regional Air Division Directors dated May 30, 1996.*

Background: In accordance with the reference above, Clark County DAQM has submitted four (4) High-Wind Natural Event exceedance justification packages to U. S. EPA for the March 1, March 13, April 15 and April 17, 2002 High-Wind Natural Events.

There are many steps and requirements for a justification package submission. The following steps listed below are in basic chronology order.

1. A Quality Assurance/Quality Control (QA/QC) review of the preliminary "Raw" Monitoring Data is performed to validate there was an actual exceedance of the 24-hour NAAQS, prior to any submission of a justification package to U. S. EPA.

2. The DAQM Monitoring Section will then submit all <u>valid ambient air quality data</u> to the U. S. EPA Aerometric Information Retrieval System (AIRS), requesting that a flag be placed on the data concerning a high wind exceedance event and be made available for public access.

3. The DAQM Planning Section has 6 months (180 days) from the exceedance event to assemble a report, with a variety of information and data to justify that the *"flag"* remain on the data excluding the high wind event from calculations regarding the attainment of the 24-hour NAAQS[1] and the annual NAAQS[2].

4. What makes up a justification submission?

   "States are required to establish a clear causal relationship between the high winds and the natural event."

   a. Meteorological (MET) Data – Wind Speeds and Wind Direction and Moisture/Precipitation Data is required as a significant part of the submitted report (National Weather Service and Local Monitoring Site MET data). *<u>Wind Gust exceeding the 25-mph threshold {June 2001 Clark County, Las Vegas Valley PM_{10} State Implementation Plan (PM_{10} SIP)} overwhelms the native desert environment and stabilized vacant land areas</u>. For the most part, the high wind events that Clark County has experienced have had peak gusts exceeding 45 mph.*

[1] 24-hour PM_{10} NAAQS is exceeded when the average 24-hour PM_{10} concentration exceeds 150 µg/m^3
[2] Annual PM_{10} NAAQS is violated when the average arithmetic mean concentration for the past 3 calendar years is greater than 50 µg/m^3

b. The hourly PM_{10} sampled mass will be compared to wind data, to support source receptor relationship (Comparison and Contrast Data— e.g. Day before event, Day of Event and Day after the Event Analysis).

c. Photographs/Video and Maps of the area showing sources of emissions are required {Aerial, GIS-Open Door, and real-time photographs of the actual event while in progress (if possible) or after the event}.

d. Local newspaper articles documenting the event (Las Vegas Review Journal, Las Vegas Sun and Henderson Home News, etc.) will be part of the submission.

e. A BACM (Best Available Control Measures) analysis – An analysis on what actions and activities were applied to the event to minimize the impact of the event on the health of the human population and the effects on the natural environment (Anthropogenic Sources). What was done, and what was required as BACM - 1. Extra Water Trucks, Cease Operations, DAQM Compliance/Enforcement activities in the field on the day of the event.

5. Clark County DAQM standard operating procedures for High-Wind Natural Events is to send planning staff into the field (as available) to document as much of the event as possible and observe that BACM is in place during the event. In the absence of this procedure, the day after the event is used for investigative purposes, by the planning staff concerning the high wind event.

6. Clark County now has 18 months (due to U. S. EPA by September 1, 2003) from the first exceedance event (March 1, 2002), to submit a formal plan on how to address future High-Wind Natural Events called a "Natural Events Action Plan" (NEAP).

"The type and amount of documentation provided for each event should be sufficient to demonstrate that the natural event occurred, and that it impacted a particular monitoring site in such a way as to cause the PM_{10} concentrations measured[3]."

(Any Further Questions, Please Contact: Russ Merle Jr., DAQM Air Quality Planner at 455-1662)

[3] U. S. EPA ' Natural Events Policy on "Areas Affected by PM_{10} Natural Events", Memorandum from Mary D. Nichols, Assistant Administrator for Air and Radiation to Regional Air Division Directors dated May 30, 1996, pg. 11, Para. 3.

AGENDA
DEPARTMENT OF AIR QUALITY & ENVIRONMENTAL MANAGEMENT
Air Quality Technical Advisory Committee

COUNTY OF CLARK, STATE OF NEVADA

NOTICE IS HEREBY GIVEN that a meeting of the Clark County Technical Advisory Committee has been called and will be held on Tuesday, March 22, 2005 at 9 a.m., in the 4th floor Gold Room, of the Clark County Government Center, 500 South Grand Central Pkwy, Las Vegas, Nevada, 89155. Below is an agenda of all items scheduled to be considered. Unless otherwise stated, items may be taken out of the order presented at the discretion of the chairperson.

I. **Call To Order**
II. **Approval of Minutes of the October 26, 2004 and February 22, 2005 Meeting**
III. **Monthly Air Quality Executive Summary Report for February 2005 (*report, discussion*)**
IV. **Revisions to Air Quality Regulation Section 58 (*update*) (Michael Uhl)**
V. **Revisions to Air Quality Regulation Section 2 (*update*) (Richard Ansson)**
VI. **Natural Events Action Plan (*status report*) (Russ Merle)**
VII. **Air Quality Modeling and Inventory Contracts (*update*) (Dennis Ransel)**
VIII. **Agenda Items for Next Meeting**
IX. **Next Meeting Date and Time – April 26, 2005**
X. **Public Comment**
No action may be taken upon a matter raised under this item of the agenda until the matter itself has been specifically included on an agenda as an item upon which action will be taken.
XI. **Adjourn**

Reasonable efforts will be made to assist and accommodate physically handicapped persons desiring to attend the meeting. Please contact Elonda Potter at (702) 455-1606 in advance so that arrangements may be conveniently made.

Dated, March 16, 2005

Lewis Wallenmeyer
Department of Air Quality & Environmental Management

AFFADAVIT OF POSTING

The above notice/agenda of a meeting of the Clark County Department of Air Quality and Environmental Management Air Quality Technical Advisory Committee scheduled for Tuesday, March 22, 2005 at 9:00 a.m. was posted on or before the third working day before the meeting per Open Meeting Law requirements at the following locations:

Clark County Government Center Lobby
Paradise Community Center
Spring Valley Library
Winchester Community Center
Clark County Courthouse Annex

Air Quality
Protecting the air we share

Clark County Natural Events Action Plan (Las Vegas & Apex Valleys)

Technical Advisory Committee

March 22, 2005

What is a Natural Event Action Plan (NEAP)?

Refresher & Update

Action and strategies to protect public health from dust generated by Natural Events (in Clark County - High Winds) through:

- **Education**
- **Outreach**
- **Enhanced Enforcement Activity**

Elements of the Plan

- **Public Outreach and Education**
  - ✓ **High-wind event notification system - Imminent or occurring**
  - ✓ **Education and outreach programs**
  - ✓ **Medical Advisory Committee (MAC)**
- **Air Quality Advisory Notice**
  - ✓ **To Media (Radio, TV, Newspapers)**
  - ✓ **To Public (Schools, Care Centers)**
  - ✓ **FAX to Stationary Sources, Dust Permit holders**

Elements of the Plan (cont'd)

The Medical Advisory Committee (MAC)

- **MAC Membership**
  - ✓ **Clark County physicians from the fields of pulmonology, family and general medicine, geriatrics, pediatrics, and industrial health**
- **MAC Purpose**
  - ✓ **Provides timely public health air quality health-related information to the public, including members of the media, local schools and government entities (No specific or general diagnosis)**
- **MAC Coordination**
  - ✓ **MAC inquires are directed to the DAQEM Outreach Coordinator and/or the Clark County Public Information Office, which will contact the member physicians and coordinate/facilitate the response or interview**

Elements of the Plan (cont'd)

Conversion of Outreach and Educational Literature to Spanish

- NEAP Briefing Document Handout available in English and Spanish versions
- NEAP Outreach Brochures available in English and Spanish versions
- NEAP Postcard Mailers available in English and Spanish versions

Steps Completed

Public Meeting – March 15, 2005

- Hear comments and answer questions from the public
- BCC Authorizes AQ Director to finalize Plan/authorize staff to respond/address comments
- Submit Plan to U.S. EPA for review and concurrence determination – April 2005 timeframe

Questions?

Please Contact: Russ Merle Jr.
DAQEM NEAP Coordinator at:
702-455-5942

Documentation of Public Notice and Review

2. Public Notices

On February 1, 2005 the Clark County Board of County Commissioners (BCC) at a regular meeting of the commission, opened the thirty-day public comment period for the ***Natural Events Action Plan*** (NEAP) for High-Wind Events in Clark County, Nevada.

The Clark County Department of Air Quality and Environmental Management (DAQEM) will accept written comments on the NEAP until close of the Public Hearing by the BCC, scheduled for Tuesday, March 15, 2005. The public may review the NEAP document on the departmental website at: http://www.co.clark.nv.us/Air_Quality/NEAP.html.

A printed copy of the NEAP is available for review at the DAQEM offices, at the Clark County Government Center, 500 South Grand Central Parkway, 1st floor, Las Vegas, Nevada.

The Public Hearing will be held by the Clark County Board of Commissioners in the Clark County Commission Chambers, 500 South Grand Central Parkway, Las Vegas, Nevada, on Tuesday, March 15, 2005 at 10:00 am. The purpose of this hearing is to hear public comments on the NEAP, and to consider the plan for adoption, and submission to U.S. Environmental Protection Agency.

For additional information please contact: Russell S. Merle Jr., Senior Air Quality Planner, at (702) 455-5942.

PUBLIC NOTICE

Notice is hereby given that a Public Hearing will be held by the Clark County Board of Commissioners in the Clark County Commission Chambers, 500 South Grand Central Parkway, Las Vegas, Nevada, on Tuesday, March 15, 2005 at 10:00 am. The purpose of this hearing is to consider the January 2005 Draft Natural Events Action Plan for High-Wind Events (NEAP) in Clark County, Nevada for adoption and submission to U.S. Environmental Protection Agency. The NEAP will be available for inspection at Clark County's Department of Air Quality and Environmental Management, 500 South Grand Central Parkway, 1st Floor, Las Vegas, Nevada.

Christine Robinson, Director
Clark County Department of Air Quality and Environmental Management.

CLARK COUNTY BOARD OF COMMISSIONERS
AGENDA ITEM

Issue:	**Draft Natural Event Action Plan for High-Wind Events for Clark County, Hydrographic Areas 212, 216 & 217**	**Back-up:**
Petitioner:	**Christine Robinson, Director, Air Quality and Environmental Management**	**Clerk Ref. #**

Recommendation:

That the Board of County Commissioners receive and authorize the release of the draft Natural Events Action Plan for High-Wind Events in Clark County, Hydrographic Areas 212, 216 & 217; authorize a 30-day public comment period beginning February 1, 2005, set a public hearing on March 15, 2005, at 10:00 a.m., to receive comments on the plan; and direct staff accordingly.

FISCAL IMPACT:

None.

BACKGROUND:

To address health risks associated with high winds, the U.S. Environmental Protection Agency issued a Natural Events Policy (Policy) on May 30, 1996. The Policy establishes criteria for the development of a Natural Events Action Plan (Plan) for protecting public health in areas where the PM_{10} standard may be violated due to these uncontrollable natural events.

The Policy further requires written justification submittals for exceedances of the National Ambient Air Quality Standard due to high wind events. It is the responsibility of the agency to demonstrate a clear causal relationship between the PM_{10} exceedances and the high-wind event. This allows these exceedances to be discounted from the overall calculations showing conformity with the National Ambient Air Quality Standard. The plan provides for analysis and documentation of the exceedances attributable to uncontrollable natural events due to unusually high winds. In addition, the Plan is designed to protect public health, educate the public about high wind events; mitigate health impacts on the community during future events; and, identify and implement Best Available Control Measures for anthropogenic sources of windblown dust.

Respectfully submitted,

THOM REILLY
County Manager

Cleared for Agenda

2/1/05 DU

Agenda Item # 103

CLARK COUNTY BOARD OF COMMISSIONERS
AGENDA ITEM

Issue:	**Public Hearing On The Proposed Natural Event Action Plan for High-Wind Events**	**Back-up:**
Petitioner:	Christine Robinson, Director, Air Quality and Environmental Management	**Clerk Ref. #**

Recommendation:

That the Board of County Commissioners conduct a public hearing on the proposed Natural Events Action Plan for High-Wind Events in Clark County, Hydrographic Areas 212, 216 & 217; receive comments on the Plan; and authorize the Director of the Department of Air Quality and Environmental Management or her designee to finalize the Plan to submit to EPA; or take other action as necessary. ***(Available in the Clerks Office, Commission Division)***

FISCAL IMPACT:

No significant impact by this action.

BACKGROUND:

To address health risks associated with high winds, the U.S. Environmental Protection Agency issued a Natural Events Policy (Policy) on May 30, 1996. The Policy establishes criteria for the development of a Natural Events Action Plan (Plan) for protecting public health in areas where the PM_{10} standard may be violated due to uncontrollable natural events.

The Policy further requires written justification submittals for exceedances of the National Ambient Air Quality Standard due to high wind events. It is the responsibility of the agency to demonstrate a clear causal relationship between the PM_{10} exceedances and the high-wind event. This allows these exceedances to be discounted from the overall calculations showing conformity with the National Ambient Air Quality Standard. The attached proposed Plan provides for the analysis and documentation of the exceedances attributable to uncontrollable natural events due to unusually high winds. In addition, the Plan is designed to protect public health, educate the public about high wind events; mitigate health impacts on the community during future events; and, identify and implement Best Available Control Measures for anthropogenic sources of windblown dust.

Finalizing the Plan will consist of addressing comments from the public, making any changes to the Plan based on those comments, and completing the supporting appendices, as appropriate. All comments, whether the responses to those comments result in changes to the Plan, will be forwarded with the final Plan to the U.S. EPA, Region IX, San Francisco, California for review, comment and concurrence determination.

Respectfully submitted,

THOM REILLY
County Manager

Cleared for Agenda

3/15/05

Agenda Item # 121

Department of Air Quality Management

500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	DESERT BREEZE COMMUNITY CENTER
CONTACT NAME:	
FAX NUMBER:	367-1918
VOICE NUMBER:	455-8334

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report - Memory Send

Time : Jan-05-05 02:54pm
Tel line :
Name :

Job number	:	798
Date	:	Jan-05 02:52pm
To	:	3671918
Document pages	:	02
Start time	:	Jan-05 02:52pm
End time	:	Jan-05 02:54pm
Pages sent	:	02
Status	:	OK

Job number : 798 *** SEND SUCCESSFUL ***

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FAX COVER SHEET

COMPANY NAME:	DESERT BREEZE COMMUNITY CENTER
CONTACT NAME:	
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Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

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2005 JAN -5 P 3:04

Department of Air Quality Management

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FAX COVER SHEET

COMPANY NAME:	CLARK COUNTY - CENTRAL SERVICES
CONTACT NAME:	LORI MORRIS
FAX NUMBER:	455-4357
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report - Memory Send

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Name :

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Start time	:	Jan-05 01:33pm
End time	:	Jan-05 01:34pm
Pages sent	:	02
Status	:	OK

Job number : 783 *** SEND SUCCESSFUL ***

Department of Air Quality Management
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FAX COVER SHEET

COMPANY NAME:	CLARK COUNTY - CENTRAL SERVICES
CONTACT NAME:	LORI MORRIS
FAX NUMBER:	455-4357
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Department of Air Quality Management

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FAX COVER SHEET

COMPANY NAME:	City of N. Las Vegas - City Clerk Office
CONTACT NAME:	
FAX NUMBER:	649-3846
VOICE NUMBER:	633-1030

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report - Memory Send

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Name :

Job number	:	788
Date	:	Jan-05 01:35pm
To	:	6493846
Document pages	:	02
Start time	:	Jan-05 01:40pm
End time	:	Jan-05 01:41pm
Pages sent	:	02
Status	:	OK

Job number : 788 *** SEND SUCCESSFUL ***

Department of Air Quality Management
500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	City of N. Las Vegas - City Clerk Office
CONTACT NAME:	
FAX NUMBER:	649-3846
VOICE NUMBER:	633-1030

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Department of Air Quality Management

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FAX COVER SHEET

COMPANY NAME:	City of Mesquite
CONTACT NAME:	Sherre
FAX NUMBER:	1-702-346-2908
VOICE NUMBER:	1-702-346-5295 x235

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report - Memory Send

Time : Jan-05-05 01:39pm
Tel line :
Name :

Job number	:	787
Date	:	Jan-05 01:35pm
To	:	17023462908
Document pages	:	02
Start time	:	Jan-05 01:38pm
End time	:	Jan-05 01:39pm
Pages sent	:	02
Status	:	OK

Job number : 787 *** SEND SUCCESSFUL ***

Department of Air Quality Management
500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	City of Mesquite
CONTACT NAME:	Sherrs
FAX NUMBER:	1-702-346-2908
VOICE NUMBER:	1-702-346-5295 x235

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Department of Air Quality Management

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FAX COVER SHEET

COMPANY NAME:	City of Las Vegas - Clerk's Office
CONTACT NAME:	Beverly
FAX NUMBER:	382-4883
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report - Memory Send

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Tel line :
Name :

Job number : 786

Date : Jan-05 01:34pm

To : 3824803

Document pages : 02

Start time : Jan-05 01:36pm

End time : Jan-05 01:37pm

Pages sent : 02

Status : OK

Job number : 786 *** SEND SUCCESSFUL ***

Department of Air Quality Management
500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	City of Las Vegas - Clerk's Office
CONTACT NAME:	Beverly
FAX NUMBER:	382-4883
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Department of Air Quality Management

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FAX COVER SHEET

COMPANY NAME:	City of Henderson - Clerk's Office
CONTACT NAME:	
FAX NUMBER:	566-3273
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report — Memory Send

Time : Jan-05-05 01:35pm
Tel line :
Name :

Job number	:	784
Date	:	Jan-05 01:33pm
To	:	2939245
Document pages	:	02
Start time	:	Jan-05 01:34pm
End time	:	Jan-05 01:35pm
Pages sent	:	02
Status	:	OK

Job number : 784 *** SEND SUCCESSFUL ***

Department of Air Quality Management
500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	City of Henderson – Clerk's Office
CONTACT NAME:	
FAX NUMBER:	566-3273
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Department of Air Quality Management

500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	CLARK COUNTY HEALTH DISTRICT
CONTACT NAME:	MONTARA GARCIA
FAX NUMBER:	383-6341
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report - Memory Send

Time : Jan-05-05 01:49pm
Tel line :
Name :

Job number	:	790
Date	:	Jan-05 01:36pm
To	:	3836341
Document pages	:	02
Start time	:	Jan-05 01:48pm
End time	:	Jan-05 01:49pm
Pages sent	:	02
Status	:	OK

Job number : 790 *** SEND SUCCESSFUL ***

Department of Air Quality Management
500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	CLARK COUNTY HEALTH DISTRICT
CONTACT NAME:	MONTARA GARCIA
FAX NUMBER:	383-6341
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

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2005 JAN -5 P 1:54

Department of Air Quality Management

500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	Winchester Community Center
CONTACT NAME:	
FAX NUMBER:	455-7344
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report -- Memory Send

Time : Jan-05-05 01:56pm
Tel line :
Name :

Job number	:	794
Date	:	Jan-05 01:37pm
To	:	4557344
Document pages	:	02
Start time	:	Jan-05 01:55pm
End time	:	Jan-05 01:56pm
Pages sent	:	02
Status	:	OK

Job number : 794 *** SEND SUCCESSFUL ***

Department of Air Quality Management
500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	Winchester Community Center
CONTACT NAME:	
FAX NUMBER:	455-7344
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Department of Air Quality Management

500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	District Court
CONTACT NAME:	Leslie Kirby
FAX NUMBER:	386-9104
VOICE NUMBER:	455-2261

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/05/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report - Memory Send

Time : Jan-05-05 01:51pm
Tel line :
Name :

Job number	:	791
Date	:	Jan-05 01:36pm
To	:	3869104
Document pages	:	02
Start time	:	Jan-05 01:49pm
End time	:	Jan-05 01:51pm
Pages sent	:	02
Status	:	OK

Job number : 791 *** SEND SUCCESSFUL ***

Department of Air Quality Management
500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	District Court
CONTACT NAME:	Leslie Kirby
FAX NUMBER:	386-9104
VOICE NUMBER:	455-2261

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/05/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

RECEIVED
CC-DAQM
2005 JAN -5 P 1:57

Department of Air Quality Management

500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	PARADISE COMMUNITY CENTER
CONTACT NAME:	
FAX NUMBER:	455-7582
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

Confirmation Report - Memory Send

Time : Jan-05-05 01:53pm
Tel line :
Name :

Job number	:	792
Date	:	Jan-05 01:37pm
To	:	4557582
Document pages	:	02
Start time	:	Jan-05 01:52pm
End time	:	Jan-05 01:53pm
Pages sent	:	02
Status	:	OK

Job number : 792 *** SEND SUCCESSFUL ***

Department of Air Quality Management
500 S. Grand Central Parkway · Las Vegas NV · 89155
(702) 455-5942 · Fax (702) 383-9994

FAX COVER SHEET

COMPANY NAME:	Paradise Community Center
CONTACT NAME:	
FAX NUMBER:	455-7582
VOICE NUMBER:	

SENDER:	Karen Hodges Sr. Office Specialist
DESCRIPTION:	Following notice of the Public Meeting on the Natural Events Action Plan for High Wind Events in Clark County.

Number of pages, including cover:	2
Date sent:	1/5/05

If there are any problems with this transmission, please call: (702) 455-1612 during the hours of 8:00 AM TO 4:30 PM Monday through Friday.

AGENDA

JOINT MEETING OF THE
CLARK COUNTY BOARD OF COMMISSIONERS
CLARK COUNTY WATER RECLAMATION DISTRICT BOARD OF TRUSTEES
AND THE
UNIVERSITY MEDICAL CENTER OF SOUTHERN NEVADA BOARD OF TRUSTEES

9:15 A.M. MARCH 15, 2005

CLARK COUNTY COMMISSION CHAMBERS, GOVERNMENT CENTER

500 SOUTH GRAND CENTRAL PARKWAY, LAS VEGAS, NEVADA

This meeting has been properly noticed and posted in the following locations:

CC Government Center 500 S. Grand Central Pkwy. Las Vegas, NV (Principal Office)	CC Courthouse 200 S. 3rd Street Las Vegas, NV
Third Street Building 309 S. Third St. Las Vegas, NV	Paradise Park Pool & Center 4775 McLeod Dr. Las Vegas, NV
Winchester Park & Center 3130 S. McLeod Dr Las Vegas, NV	Desert Breeze Park & Community Ctr 8275 Spring Mtn. Rd Las Vegas, NV

Agenda Also Available At:

City of Las Vegas 400 E. Stewart Ave. Las Vegas, NV	City of No. Las Vegas 2200 Civic Center Dr. No. Las Vegas, NV
City of Henderson 200 Water St. Henderson, NV	City of Boulder City 400 California Ave. Boulder City, NV
City of Mesquite 10 E. Mesquite Blvd. Mesquite, NV	Clark County Reg. Govt. Center 101 Civic Way Laughlin, NV

Tune in to the County's news magazine "Chronicles" Tuesday, March 15, 2005, at 6:30 p.m.
The main agenda is available on Clark County's Internet Web Site, http://www.accessclarkcounty.com.
This meeting will be broadcast live on Clark County Television, Channel 4 (CCTV 4) and over the Internet, http://www.accessclarkcounty.com. It will be replayed over CCTV 4 on Tuesday, March 15, 2005, at 7:30 p.m.
For more programming information, call the Public Communications Office at 455-6888.

SEC. 1 OPENING CEREMONIES

CALL TO ORDER

INVOCATION

PLEDGE OF ALLEGIANCE

Item No.

Approval of Agenda with the Inclusion of Any Emergency Items and Deletion of Any Items. **1**

CLARK COUNTY BOARD OF COMMISSIONERS
AGENDA ITEM

Issue:	**Public Hearing On The Proposed Natural Event Action Plan for High-Wind Events**	**Back-up:**
Petitioner:	Christine Robinson, Director, Air Quality and Environmental Management	**Clerk Ref. #**

Recommendation:

That the Board of County Commissioners conduct a public hearing on the proposed Natural Events Action Plan for High-Wind Events in Clark County, Hydrographic Areas 212, 216 & 217; receive comments on the Plan; and authorize the Director of the Department of Air Quality and Environmental Management or her designee to finalize the Plan to submit to EPA; or take other action as necessary. ***(Available in the Clerks Office, Commission Division)***

FISCAL IMPACT:

No significant impact by this action.

BACKGROUND:

To address health risks associated with high winds, the U.S. Environmental Protection Agency issued a Natural Events Policy (Policy) on May 30, 1996. The Policy establishes criteria for the development of a Natural Events Action Plan (Plan) for protecting public health in areas where the PM_{10} standard may be violated due to uncontrollable natural events.

The Policy further requires written justification submittals for exceedances of the National Ambient Air Quality Standard due to high wind events. It is the responsibility of the agency to demonstrate a clear causal relationship between the PM_{10} exceedances and the high-wind event. This allows these exceedances to be discounted from the overall calculations showing conformity with the National Ambient Air Quality Standard. The attached proposed Plan provides for the analysis and documentation of the exceedances attributable to uncontrollable natural events due to unusually high winds. In addition, the Plan is designed to protect public health, educate the public about high wind events; mitigate health impacts on the community during future events; and, identify and implement Best Available Control Measures for anthropogenic sources of windblown dust.

Finalizing the Plan will consist of addressing comments from the public, making any changes to the Plan based on those comments, and completing the supporting appendices, as appropriate. All comments, whether the responses to those comments result in changes to the Plan, will be forwarded with the final Plan to the U.S. EPA, Region IX, San Francisco, California for review, comment and concurrence determination.

Respectfully submitted,

THOM REILLY
County Manager

Cleared for Agenda

3/15/05

Agenda Item # 121

z. Ratify the grant application submitted by the Eighth Judicial District Court to the Nevada Office of the Attorney General for Fiscal Year 2004 Subgrant Funds under the Violence Against Women Act of 2000 in the amount of $25,000 for the expansion of the Donna's House Program at the Family Mediation Center effective October 1, 2004, through June 30, 2005; and accept funds awarded. **115**

aa. Approve, adopt, and authorize the Chairman to sign the amendment to the resolution adopting the cooperative agreement between Clark County and the National Park Service for the purpose of funding boating safety programs for Fiscal Year 2004/05. **116**

bb. Approve and adopt the revised Clark County Strategic Plan; and direct staff accordingly. **117**

END OF CONSENT AGENDA

SEC. 3. COMMISSIONERS'/COUNTY MANAGER'S RECOGNITION

a. Discuss good news in Clark County. **118**

b. Receive an update from staff on the 2005 Legislative Session; and direct staff accordingly. **119**

SEC. 4. ITEMS TAKEN SEPARATELY FROM CONSENT AGENDA

SEC. 5. PUBLIC HEARINGS – 10 A.M.

a. Conduct a public hearing; and approve, adopt, and authorize the Chairman to sign the Resolution of Reconveyance to offer to reconvey to the prior owner(s) the County-owned surplus parcel identified as Assessor's Parcel Number 125-20-401-014, located at Fort Apache and Darling Road, for the appraised value of $775,000; and authorize the Director of Real Property Management or her designee to execute a quitclaim deed, upon receipt of the proceeds, if the prior owner(s) accept the offer of reconveyance and agree to the appraised value of the property, and any other documents necessary to complete the sale transaction. **120**

b. Conduct a public hearing on the proposed Natural Events Action Plan for High-Wind Events in Clark County, Hydrographic Areas 212, 216 & 217; receive comments on the Plan; and authorize the Director or her designee to finalize the Plan to submit to EPA; or take other action as necessary. (On file in the Clerks Office, Commission Division) **121**

c. Pursuant to NRS 277.050, conduct a public hearing concerning the intent to enter into an interlocal agency agreement (Agreement) with Las Vegas Metropolitan Police Department (Metro) to lease hangar space and office space at North Las Vegas Airport; approve the agreement; and authorize the Director of Aviation to sign the agreement between Clark County and Metro, as referenced herein. **122**

d. Conduct a public hearing relative to the issuance of up to $350,000,000 of Clark County, Nevada Airport Revenue Refunding Bonds. **123**

END OF PUBLIC HEARINGS

Documentation of Public Notice and Review

3. News Releases

AFFIDAVIT OF PUBLICATION

STATE OF NEVADA)
)ss.
COUNTY OF CLARK)

DOREEN REYNOLDS, being first duly sworn, deposes and says: That she is CLERK of the Henderson Home News, a weekly newspaper of general circulation,

printed in Las Vegas, Nevada, and published in Henderson, Nevada in the County of Clark, State of Nevada, and that the attached was continuously
published in said newspaper for a period of 2 time(s).

From 01/13/05 to 01/20/05 inclusive, being the issues of said newspaper for the following date(s) to wit:

01/13/2005,01/20/2005

That said newspaper was regularly issued and circulated on each of the dates above named.

Signed Doreen Reynolds

Sworn to and subscribed before me this
20th day of January, 2005

Notary Public in and for
Clark County, Nevada

Karen M Fabian

KAREN FABIAN

My commission expires August 05, 2007

KAREN M. FABIAN
Notary Public, State of Nevada
Appointment No. 99573021
My Appt. Expires Aug. 5, 2007

natural events action plan
LEGAL NOTICE
The Clark County Department of Air Quality and Environmental Management (DAQEM) will conduct a Public Workshop on the Natural Events Action Plan for High-Wind Events (NEAP) in Clark County, Nevada, to introduce the plan, solicit public comments, and answer questions. The public workshop will be held at the Clark County Government Center, Board of County Commission Chambers, located at 500 S. Grand Central Parkway, on January 25, 2005 from 5:00 to 8:00 PM. DAQEM in partnership with public health officials developed the NEAP to protect public health. The plan addresses airborne particulate matter (PM) or dust, caused by windy weather conditions. Dust can cause negative health impacts. Not all sources of dust are caused by humans and can be controlled. When high winds occur, all citizens of Clark County need awareness of the potential health impacts and how to avoid exposure. The public may review the NAEP document (main document) on the departmental website at: http://www.co.clark.nv.us/Air_Quality/NEAP.html The Appendices (Technical Support Documentation -- TSD) will not be posted on the departmental website. Upon request, you may obtain electronic copies of the Appendices available only in Adobe PDF format. Hard copies will be available for review at the workshop. For further information, please contact: Russ Merle Jr., Senior Air Quality Planner at telephone number (702) 455-5942.
H-Jan. 13, 20, 2005

01101891-000
01509590

LEGAL LEGAL LEGAL LEGAL L

The following Legal Notices are being published in the Henderson Home News, Green Valley News and South Valley News.

LEGAL NOTICE

The Clark County Department of Air Quality and Environmental Management (DAQEM) will conduct a Public Workshop on the Natural Events Action Plan for High-Wind Events (NEAP) in Clark County, Nevada, to introduce the plan, solicit public comments, and answer questions. The public workshop will be held at the Clark County Government Center, Board of County Commission Chambers, located at 500 S. Grand Central Parkway, on January 25, 2005 from 5:00 to 8:00 PM. DAQEM in partnership with public health officials developed the NEAP to protect public health. The plan addresses airborne particulate matter (PM) or dust, caused by windy weather conditions. Dust can cause negative health impacts. Not all sources of dust are caused by humans and can be controlled. When high winds occur, all citizens of Clark County need awareness of the potential health impacts and how to avoid exposure. The public may review the NAEP document (main document) on the departmental website at:

http://www.co.clark.nv.us/Air_Quality/NEAP.html

The Appendices (Technical Support Documentation — TSD) will not be posted on the departmental website. Upon request, you may obtain electronic copies of the Appendices available only in Adobe PDF format. Hard copies will be available for review at the workshop. For further information, please contact: Russ Merle Jr., Senior Air Quality Planner at telephone nnmber (702) 455-5942.

H-Jan. 13, 20, 2005

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Petition of NEVADA POWER COMPANY for authority to delay the implementation of the Deferred Energy Accounting Adjustment rate changes previously approved in Docket No. 03-11019.

Docket No. 04-10024

Application of NEVADA POWER COMPANY to collect deferred energy expenses and to reset the Base Tariff Energy Rate for collection of projected future energy costs.

Docket No. 04-11028

Application of NEVADA POWER COMPANY for approval of proposed rates to recover the expenses of developing its Resource Plan.

Docket No. 04-11029

NOTICE OF HEARING

Nevada Power Company ("NPC") filed with the Public Utilities Commission of Nevada ("Commission") a Petition, designated as Docket No. 04-10024, to delay the implementation of the Deferred Energy Accounting Adjustment ("DEAA") rate changes previously approved in Docket No. 03-11019 (NPC's last deferred energy application).

A Stipulation was reached between NPC, the Regulatory Operations Staff of the Commission, and the Attorney General's Bureau of Consumer Protection in Docket No. 04-10024, recommending that the Petition's request that DEAA1 be collected through March 31, 2005, and that collection of DEAA3 be delayed until April 1, 2005, then amortized over 24 months, be granted. The Stipulation's recommendation was approved by the Commission. All other issues not resolved in the Stipulation will be Docket No. 03-11019; the propriety of NPC's request to modify in May of 2006, its electric energy rates for fuel and purchased power expense; and NPC's request to adjust its general rates (BTGR) to recover the expenses of developing its Resource Plan. The Commission may consider other issues related to the provisions of Chapters 703 and 704 of the NRS and NAC, as well as make decisions on procedural issues raised at the hearing.

By the Commission,
CRYSTAL JACKSON, Commission Secretary
Dated: Carson City, Nevada
01-13-05
(SEAL)
H-Jan. 20, 2005

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Application of NEVADA POWER COMPANY for approval of the fourth amendment to the Action Plan of its 2003-2022 Integrated Resource Plan and the Demand Side Management Plan Update.

Docket No. 04-11009

NOTICE OF HEARING

Nevada Power Company ("NPC") filed with the Public Utilities Commission of Nevada ("Commission") an Application, designated as Docket No. 04-11009, for approval of the fourth amendment to the Action Plan of its 2003-2022 Integrated Resource Plan and the Demand Side Management Plan Update.

NPC requests Commission approval of revisions to its Demand Side programs in order to reduce peak demand and energy consumption as well as encouraging conservation. NPC proposes to revise the High Efficiency Air Conditioning Rebate Program, increase the number of Air Conditioning Load Management participants, help commercial entities design and build more efficient buildings, and increase funding for specific programs and training. NPC also seeks approval for Clark County School District's New and Retrofit program and a program to cover the installation of photovoltaic systems on company-owned facilities.

This Application is filed pursuant to the Nevada Revised Statutes ("NRS") and the Nevada Administrative Code ("NAC"), Chapters 703 and 704, including but not limited to NRS 704.736 et seq. and NAC 704.9005 et seq.

This Application is on file and available for public viewing at the offices of the Commission: 1150 East William Street, Carson City, Nevada 89701 and 101 Convention Center Drive, Suite 250, Las Vegas, Nevada 89109.

NOTICE IS HEREBY GIVEN that, pursuant to NRS 704.7465, the Commission has scheduled a HEARING in this docket to be held as follows:

WEDNESDAY, FEBRUARY 16, 2005
10:00 a.m.
Hearing Room B
Public Utilities Commission of Nevada
1150 East William Street
Carson City, Nevada 89701

This hearing may be continued from day to day as necessary. At this time the Commission has reserved February 16-17, 2005, for this matter.

At the hearing, the Commission may hear testimony and consider evidence pertaining to the adequacy of NPC's fourth amendment to the Action Plan of its 2003-2022 Integrated Resource Plan and the Demand Side Management Plan Update. The Commission may consider other issues related to the provisions of Chapters 703 and 704 of the NRS and NAC, as well as make decisions on procedural issues raised at the hearing.

By the Commission,
CRYSTAL JACKSON, Commission Secretary
Dated: Carson City, Nevada
01-13-05
(SEAL)
H-Jan. 20, 2005

BEFORE THE PUBLIC UTILITIES

RECEIVED
CC-DAQM

2005 JAN 28 A 11: 18

AFFP DISTRICT COURT
Clark County, Nevada

AFFIDAVIT OF PUBLICATION

STATE OF NEVADA)
COUNTY OF CLARK) SS:

Donna Stark, being 1st duly sworn, deposes and says:

That she is the Legal Clerk for the Las Vegas Review-Journal and the Las Vegas Sun, daily newspapers regularly issued, published and circulated in the City of Las Vegas, County of Clark, State of Nevada, and that the advertisement, a true copy attached for,

CC AIR QUAL MANG 3868527CC
3810351

was continuously published in said Las Vegas Review Journal and/or Las Vegas Sun in 3 edition(s) of said newspaper issued from 01/22/2005 to 01/24/2005, on the following days: JAN. 22, 23, 24, 2005

Signed: Donna Stark

SUBSCRIBED AND SWORN BEFORE ME THIS THE 26

day of January 2005

Mary B. Sheffield

Notary Public

MARY B. SHEFFIELD
Notary Public State of Nevada
No. 99-53968-1
My appt. exp. Mar. 8, 2007

Protecting the air we share

AIR QUALITY

The Clark County Department of Air Quality and Environmental Management (DAQEM) will conduct a

Public Workshop

on the

Natural Events Action Plan or High-Wind Events (NEAP) in Clark County, Nevada,

to introduce the plan, solicit public comments, and answer questions. The public workshop will be held at the Clark County Government Center, Board of County Commission Chambers, located at 500 S. Grand Central Parkway, on January 26, 2005 from 5:00 to 8:00 PM. DAQEM in partnership with public health officials developed the NEAP to protect public health. The plan addresses airborne particulate matter (PM) or dust, caused by windy weather conditions. Dust can cause negative health impacts. Not all sources of dust are caused by humans and can be controlled. When high winds occur, all citizens of Clark County need awareness of the potential health impacts and how to avoid exposure. The public may review the NEAP document (main document) on the departmental website at: https://www.co.clark.nv.us/Air_Quality/NEAP.html The Appendices (Technical Support Documentation - TSD) will not be posted on the departmental website. Upon request, you may obtain electronic copies of the Appendices available only in Adobe PDF format. Hard copies will be available for review at the workshop. For further information, please contact: Russ Merle Jr., Senior Air Quality Planner at telephone number (702) 455-5942.

PUB: Jan. 22,23,24 ,2005
LV Review-Journal&Sun

LAS VEGAS REVIEW-JOURNAL & SUN
1111 West Bonanza Road
Las Vegas, NV 89106

Maggie Wimmer
Legal Advertising
Ph. 702-383-0320
Fax. 702-383-4641
legals@reviewjournal.com

01/21/2005

TO: Karen Hodges / Russell Merle 383-9994

LEGAL ADVERTISING
PHONE: 702-383-0320 or 383-0417
FAX: 702-383-4641

RE: Here is a suggested ad sample with cost for your workshop notice.

Let me know if ok.

Thank you for your legal advertising inquiries.

Yours truly
Maggie W.
Legal Advertising
LV Review-Journal & Sun

NOTE TO LEGAL ADVERTISERS
Don't forget we publish on holidays!
For affidavits call Donna at 702-383-0252

Protecting the air we share

AIR QUALITY

The **Clark County Department of Air Quality and Environmental Management (DAQEM)** will conduct a

Public Workshop

on the

Natural Events Action Plan

or

High-Wind Events (NEAP) in Clark County, Nevada,

to introduce the plan, solicit public comments, and answer questions. The public workshop will be held at the Clark County Government Center, Board of County Commission Chambers, located at 500 S. Grand Central Parkway, on **January 25, 2005 from 5:00 to 8:00 PM.** DAQEM in partnership with public health officials developed the NEAP to protect public health. The plan addresses airborne particulate matter (PM) or dust, caused by windy weather conditions. Dust can cause negative health impacts. Not all sources of dust are caused by humans and can be controlled. When high winds occur, all citizens of Clark County need awareness of the potential health impacts and how to avoid exposure. The public may review the NEAP document (main document) on the departmental website at: **http://www.co.clark.nv.us/Air_Quality/NEAP.html** The Appendices (Technical Support Documentation - TSD) will not be posted on the departmental website. Upon request, you may obtain electronic copies of the Appendices available **only** in Adobe PDF format. Hard copies will be available for review at the workshop. **For further information, please contact: Russ Merle Jr., Senior Air Quality Planner at telephone number (702) 455-5942.**

PUB: Jan. 22,23,24 ,2005
LV Review-Journal&Sun

Las Vegas Review-Journal/Sun Proof

Customer: CC AIR QUAL MANG Contact: Phone: 7023868527

Ad Number: 3810351 CJ Account No: 3868527CC

Insert Dates: Start: 01/22/2005 End: 01/24/2005 Times: 3

Jan.21. 2005 10:12AM

Price: 550.60

Section: CL Class: 00; LEGAL NOTICES Size: 1 x 97.00

Printed By: C78 Date: 01/21/2005

Signature of Approval: _____ Date: _____

Appendix H

Public Comments and Responses

1. **Chemical Lime Company (CLC) – Mr. Ed Berry Comments with DAQEM Responses**
2. **Sierra Club, Southern Nevada Group – Ms. Jennifer Anderson Comments with DAQEM Responses**
3. **Nevada Environmental Coalition (NEC) – Mr. Robert Hall Comments with DAQEM Responses**

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Public Comments and Responses

1. **Chemical Lime Company (CLC) – Mr. Ed Berry Comments with DAQEM Responses**

- Page left blank intentionally -

Note: DAQEM Responses to Ed Berry, Chemical Lime Company Comments are incorporated within this document.

From: <Ed.Barry@chemicallime.com>
To: <merle@Co.Clark.NV.US>
Date: 3/14/2005 10:29:47 AM
Subject: Public Comments - NEAP

Russell,

CLC appreciates the opportunity to comment on the NEAP and your consideration on this matter. Attached is our comments, should you have any questions, please let me know.

(See attached file: 105707.NEAP.Comments.doc)

Sincerely,

Ed Barry
Western Environmental Manager
Chemical Lime Company, Scottsdale, AZ.
Direct: (480) 368-4239
Fax: (480) 368-4220
Cell: (602) 321-6752

CC: Ed.Banfield@chemicallime.com
Rex.Simpson@chemicallime.com
Dennis.Gaddy@chemicallime.com

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CHEMICAL LIME COMPANY

COMMENTS ON NATURAL EVENTS ACTION PLAN FOR HIGH-WIND EVENTS

CLARK COUNTY, NEVADA
(January 2005 Draft)

Pursuant to the Notice of Public Hearing issued by the Clark County Department of Air Quality and Environmental Management (DAQEM), Chemical Lime Company (CLC) hereby submits its written comments on the Natural Events Action Plan for High-Wind Events, Clark County, Nevada (January 2005 Draft) (NEAP). CLC owns and operates the Apex Lime Plant, which is located in the Apex Valley. The Apex Valley is one of the areas that would be subject to the provisions of the NEAP.

1. NEAP (pp. 3-4). DAQEM states at page 3 that "protection of the public health is the highest priority and the foundation of this document." Yet, at page 4 of the NEAP, DAQEM states that "[t]he main purpose of this dust control is to protect the health of the workers within [the Apex Valley] area and to ensure that the Apex Valley does not contribute to regional haze transport to the Grand Canyon." It appears to CLC that the statements given at pages 3 and 4, when read together, create confusion. Specifically, while it seems clear that protection of the public health is the underlying policy of the Clean Air Act, the protection of workers, while certainly an appropriate goal in itself, is one which is the focus of other federal programs, including those administered by the Occupational Safety & Health Administration and the Mine Safety & Health Administration. Also, to state that the "main purpose" of dust control is to prevent regional haze transport to the Grand Canyon undermines the characterization of the protection of the public health as being the "highest priority." Regional haze is a public welfare issue, not a public health issue. Consequently, characterizing the need to prevent dust from the Apex Valley to contribute to regional haze as the "main purpose" of dust control misstates what actually is the "highest priority" of the NEAP – the public health. The statement at page 4 should be modified in order that there is no confusion as to the "main purpose" of the NEAP.

<u>DAQEM Response 1:</u> Protection of the public health is the foundation of the NEAP. Whether it is the Las Vegas Valley or the Apex Valley, the highest priority of the NEAP is to protect public health. It does not matter that people do not live, as in residences, in the Apex Valley; there are workers at the industrial facilities that need protection. Regional Haze (consisting of fine particulate matter, precursors to Ozone formation and other constituents) is not only a "public welfare issue," it is a public health issue. Clark County feels that the statement at page 4 of the NEAP main document is appropriate as written, with respect to the "main purpose," of the NEAP. The NEAP does contain a statement about the purpose of Air Quality Regulations (AQR's). The reader may have confused the specific purpose of the AQR's with the purpose of the NEAP, however; both the NEAP and the AQR's are designed to protect pubic health.

2. NEAP (p. 10). The NEAP identifies different degrees of advisories that may be issued in the event of a dust event. These include, but may not necessarily be limited to, an event which is "imminent, currently taking place, or has reached hazardous levels." The NEAP does not address the expectations or recommendations of DAQEM relative to steps to be taken by affected parties, including the regulated community, in response to the specific type of advisory being issued. If this is because the NEAP in not intended to create new requirements, the NEAP should make that clear. Moreover, under AQR Section 70 and provisions of many air quality permits, a permittee is required to implement an emergency plan or standby plan in the event that an "emergency episode" is declared. The NEAP does not address the relationship between an "emergency episode" and a dust event advisory. To avoid confusion, the NEAP should describe the relationship between an emergency episode and advisories issued under the NEAP.

<u>DAQEM Response 2:</u> The NEAP document is not an added/extra requirement for stationary sources with respect to their existing operating permits. The NEAP clearly explains in the Dust Advisories, or Alerts what is required with respect to dust control, in the event of a high-wind event. There is no connection between an "Emergency Episode," Emergency Plan or Standby Plan as required in Clark County AQR Section 70 permit requirements with respect to the DAQEM Air Quality Advisories. The advisories let active dust permit holders and stationary sources know that there is a potential for High-Winds which may raise/re-entrain dust on their properties 12-24 hours prior to an event. This enables stationary sources to take any action consistent with their Permits.

3. NEAP (p. 25). Section 4 of the NEAP states that during a dust event, compliance officers will be dispatched to the field to survey for violating sites. In addition, violations observed by such compliance officers may result in a Corrective Action Order, which may lead to a Notice of Violation. Because the NEAP is dealing with natural events, not man-made events, it should provide that where a source has implemented its emergency plan when required to do so, that source would have an affirmative defense in the event a fugitive dust violation is observed.

<u>DAQEM Response 3:</u> DAQEM believes that the Clark County NEAP enforcement/compliance activities are justified concerning any Correction Action Order which could result in a Notice of Violation issuance as a result of dust violations. The facilities must adhere to their permits and shut down if necessary, if dust as a result of their process or operation becomes uncontrollable. All cases are handled individually, with respect to adherence to permit conditions and the air quality dust regulations (AQR's).

4. NEAP (p. 29). As stated in the NEAP at pages 2-3, a NEAP should be developed in conjunction with stakeholders affected by the plan. Stakeholders who were given the opportunity to participate in the development of the Clark County NEAP are listed at pages v and 29 of the NEAP. It is striking that representatives of regulated industry do not appear on either list. The lack of having regulated industry participate in the development of the NEAP is a significant shortcoming. Regulated industry clearly is affected by the provisions of the NEAP, and the opportunity to offer input only after the document has been prepared renders its

participation much less effective than it otherwise would have been.

<u>DAQEM Response 4:</u> The Clark County Natural Events Action Plan (NEAP) External Stakeholder Committee who assisted in the development of the NEAP, consisted of three municipalities (Las Vegas, North Las Vegas, and Henderson), Environmental Group membership, the Clark County Health District , the Clark County School District and the Southern Nevada Home Builders Association (SNHBA). Clark County used a broad based coalition as recommended in the Natural Events Policy guidance to develop this NEAP.

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Public Comments and Responses

2. Sierra Club, Southern Nevada Group – Ms. Jennifer Anderson Comments with DAQEM Responses

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Note: DAQEM Responses to Sierra Club Comments are incorporated within this document.

Southern Nevada Group PO 19777 Las Vegas NV 89132

March 15, 2005

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RE: Natural Events Action Plan for High-Wind Events, Clark County, Nevada, January 2005 Draft

Dear Mr. Merle:

Thank you for the opportunity to review and comment on the January 2005 Draft of the Natural Events Action Plan for High-Wind Events, Clark County, Nevada (NEAP). In brief, the Sierra Club fully supports Sections 2 and 3 of the NEAP providing for public education and outreach activities, public notification of high-wind events, and an air quality advisory program. DAQEM should be commended for taking these measures to address a significant public health problem in the Las Vegas and Apex Valleys.

The Sierra Club strongly disagrees, however, that the U.S. Environmental Protection Agency (EPA) can or should excuse exceedances of the national ambient air quality standards (NAAQS) for PM-10 when those exceedances are caused by emissions from human-disturbed soil in the presence of high winds. Exceedances of the PM-10 NAAQS during high winds are in no sense "natural events." While the high winds may be natural events, the presence of dust is certainly not a natural event: it is caused by human activity.

We remain convinced that the Clark County Department of Air Quality & Environmental Management (DAQEM) should focus on its public education, outreach, and notification goals; on strict enforcement of existing air quality regulations; and on enhancing the strength and effectiveness of control measures, rather than on trying to avoid responsibility for PM-10 exceedances that are due to human activity. In this manner, DAQEM would best protect public health, which should remain the highest priority according to the U.S. EPA Natural Events Policy (1996) (Natural Events Policy or NEP). NEP at 3. Our specific comments are set forth in more detail below.

<u>Introduction to Clark County's Responses to Sierra Club Comments</u>

The Clark County NEAP document focuses on public education, outreach, and notification; strict enforcement of existing air quality regulations; and enhancing the effectiveness of control measures through the programs set forth in the plan. The BACM, which make up the foundation for the plan are innovative, proactive, site specific, soil specific, activity specific, and based on scientific studies. Clark County implemented the most effective air regulatory program for controlling dust driven PM_{10} emissions of anywhere to date.

Many studies conducted around the world document high winds can and do overwhelm undisturbed native desert to generate PM_{10} emissions. The wind speed threshold, at which winds will overwhelm native desert areas to generate massive PM_{10} emissions, varies, depending upon the type of condition and type of native desert soils. In order to correctly calculate PM_{10} emissions from native soils, soils disturbed by anthropogenic activities, and soils stabilized with BACM, Clark County contracted with UNLV to conduct a series of wind tunnel test to establish the correct

emission factors and wind speed thresholds for the Las Vegas Valley (*Estimation of Valley-Wide PM_{10} emissions using UNLV 1995 wind tunnel-derived emission factors, 1998-1999 emission factors, revised vacant land classifications, and GIS-based mapping of vacant lands,* **– Draft Final Report, David James, et al., Civil and Environmental Engineering Department, University of Nevada Las Vegas, dated September 12, 2000). Summary tables and specific methodology applied to the UNLV data to determine emission rates for native, disturbed, and stabilized soils are set forth in Appendix B on Pages B-49 through B-57. The UNLV work also demonstrated that high winds can and do overwhelm even the most effective BACM and cause emissions from controlled anthropogenic sources. Scientific studies demonstrate that the wind speeds required to overwhelm BACM are higher than the wind speeds required to overwhelm native desert. This is fortunate since anthropogenic activities typically occur in close proximity to human receptors.**

EXECUTIVE SUMMARY and Section 1: INTRODUCTION

Purpose of NEAP

While the Sierra Club does not agree that EPA may discount exceedances, the NEAP should at least make clear to the public up front that one of the main purposes of the document is to allow the discounting of exceedances for purposes of demonstrating attainment of the 24-hour PM-10 NAAQS. This purpose is not clearly mentioned, however, in either the Executive Summary or the Introduction. The only hint is a vague statement in the Introduction that "[t]he advisory and education program is the major element of the NEAP that enables DAQEM to *justify an exceedance*, which overwhelmed BACM." NEAP at 3 (emphasis added). If DAQEM believes it may legitimately seek to discount exceedances of health-based pollution standards, it should be candid with the public about what it is attempting to accomplish.

<u>DAQEM Response 1</u>: The main purpose of the Clark County NEAP is to protect public health. In order to justify exceedances of the NAAQS for PM attributed to Natural Events (e.g. High Winds); the department must put in place a health protective program. As part of this health protective program, DAQEM gives advisories to the public that a high-wind event is imminent or occurring so that individuals may make well-informed decisions concerning their health. DAQEM developed the NEAP consistent with protecting the public health and with the requirements of the U.S. EPA Natural Events Policy (NEP).

SIP Revision

The public education and notification portions of the NEAP should be adopted as revisions to the PM-10 SIP rather than as a stand-alone document. This will give them legal status and ensure they are enforceable. While the Sierra Club has every confidence that the current DAQEM administration is committed to the programs set forth in the NEAP, in the absence of a SIP revision, there are no guarantees that later administrations will demonstrate the same level of commitment.

<u>DAQEM Response 2</u>: Using *"The living document approach,"* **the DAQEM will improve the NEAP as technologies become available or methodologies improve. Making any changes to the document as a SIP revision is a very long and drawn out process. The U.S. EPA Natural Event Policy (NEP) does not mandate that air agencies who adopt programs for public education and notification as part of a NEAP to process these improvements as SIP revisions. DAQEM remains committed to educating and protecting the public health as stated in the NEAP. If DAQEM does not remain committed to carrying out the policies, procedures and requirements of the NEAP, the U.S. EPA will reject the NEAP justification submittal packages.**

Failure to Include Mitigating Measures and Pilot Tests

Based on the dangerously high 24-hour PM-10 levels documented in Appendix F, there can be no question that much more is needed to control PM-10 emissions at the affected monitoring sites, and to protect public health. Nevertheless, the NEAP contains no commitments to "identify, study, and implement practical mitigating measures," nor does it "include commitments to conduct pilot tests of

new emission reduction techniques" as called for under the Natural Events Policy. NEP at 8. More must be done to bring this serious threat to public health under control.

<u>DAQEM Response 3</u>: The federally approved Clark County PM_{10} State Implementation Plan (SIP) contains commitments to improve BACM as new technologies and methodologies become available. The PM_{10} SIP forms the basis of NEAP BACM analysis contained in Section 4 of the NEAP. Specifically, the PM_{10} SIP states at Page 4-61:

> *"In order to facilitate rule implementation and encourage development of improved methods of dust control for construction activities, the AQD has committed to reviewing and, as appropriate, updating the Section 94 Handbook every six months."*

Specific examples of Clark County's ongoing evolution and improvement of Clark County's BACM include new requirements for soil testing, wind fencing for small lots, and prohibitions on the use of earthen curb ramps. These enhancements went beyond specific commitments contained in the federally approved Clark County PM_{10} SIP. DAQEM will continue to pursue additional enhancements as appropriate.

Section 2: PUBLIC EDUCATION AND OUTREACH PROGRAM

Micrometers v. Microns

The alternative references to "micrometers" and "microns" would be confusing to the average person. The NEAP should adopt one term for the unit of measure, define it, and use it consistently.

<u>DAQEM Response 4</u>: DAQEM removed all references to "micrometer" throughout the document. The NEAP contains the definition of "*micron" and* **uses that unit of measure throughout the document consistently.**

Recommended Actions to Reduce Exposure

Public education and outreach materials should clarify that the recommendation to keep windows and doors closed and air conditioners running on recirculate applies to both homes and vehicles. These materials should also recommend that during high wind events, people should consider wearing a painter's or surgical mask if they must be outdoors, and avoid activities that will add to pollutants and irritants in the air, both indoors and out, such as vacuuming, burning anything indoors, mowing lawns, and using outdoor barbecues.

<u>DAQEM Response 5</u>: Comments noted.

Public Education Materials (Appendix C)

Generally applicable comments to public education materials:

- Premature death should be listed as one of the potential hazards of high PM-10 concentrations in any literature developed by DAQEM regarding the health effects of PM-10 pollution.

<u>DAQEM Response 6</u>: DAQEM finds that the reference to "Premature Death" is inappropriate. The NEAP presents general Information to the public, and does not provide specific diagnosis to any individual for any case.

- As discussed more fully elsewhere in these comments, there is no evidence that fugitive dust from native, undisturbed desert contributes in any significant way to exceedances of the 24-hour PM-10 standard in the Las Vegas or Apex Valleys. It is therefore misleading to suggest to

the public that exceedances of the standard are "natural" and that nothing can be done to avoid them.

<u>DAQEM Response 7</u>: Based on several peer-reviewed scientific studies and current studies in progress, native desert and disturbed vacant land stabilized with BACM, high winds exceeding twenty-five (25) miles-per-hour (PM_{10} SIP) overwhelm BACM. See *Estimation of Valley-Wide PM_{10} emissions using UNLV 1995 wind tunnel-derived emission factors, 1998-1999 emission factors, revised vacant land classifications, and GIS-based mapping of vacant lands,* **– Draft Final Report, David James, et al., Civil and Environmental Engineering Department, University of Nevada Las Vegas, dated September 12, 2000 and Appendix B, Pages B-49 through B-57. Note that the emission rates for stabilized soils are compiled from UNLV data from wind tunnel test on soils stabilized with various dust suppressants and water.**

Specific comment regarding the "Air Quality Questions and Answers – Particulate Matter Fact Sheet":

- The Fact Sheet inaccurately states that "Clark County complies with current EPA ozone standards."

<u>DAQEM Response 8</u>: DAQEM updated the fact sheet with the current status of Clark County areas designated as "Basic Non-attainment for Ozone."

Direct Link to Information from DAQEM Web Site

The main page of the DAQEM web site should contain a direct link to information about high-wind events (including air quality alerts), associated high PM-10 levels, health effects, and actions to reduce or mitigate exposure, at least during the months that high wind events may be expected.

<u>DAQEM Response 9</u>: DAQEM updated the website to include an advisory and forecast element applicable to each pollutant of concern.

Section 3: PUBLIC NOTIFICATION AND AIR QUALITY ADVISORY PROGRAM

Medical Advisory Committee

It is unclear from the NEAP how MAC members are chosen, by whom, and based on what criteria.

<u>DAQEM Response 10</u>: DAQEM includes information about the MAC in the main document on page 10, and in more detail in Appendix C.

The Public Notification Process

The NEAP needs to more fully explain how the "notification system to contact at-risk populations" works. The NEAP should contain information about how notifications are to be sent; who is responsible for issuing the notifications and maintaining the contact list; and how the members of the contact list are identified. Based on the description given, DAQEM apparently needs to reach out more to seniors with its notification system. For example, DAQEM should send notifications to senior community centers, assisted living facilities, and other places that serve seniors. In addition, DAQEM should allow individuals, companies, and organizations to request to be notified via fax or e-mail any time DAQEM issues a High-Wind Air Quality Notification.

<u>DAQEM Response 11</u>: The NEAP provides for early warning to the community of high-wind events that may cause increased amounts of dust pollution in the air. The NEAP program also provides early warning to and also directs permitted sources (construction sites) to restrict or curtail activities during high-wind events. Construction site operators and Stationary Sources receive

notice via Fax and email to inspect their sites and employ the Best Available Control Measures (BACM) to stabilize all disturbed soils on their site to reduce blowing dust. The DAQEM Compliance Manager is designated to initiate the fax, in his absence, the DAQEM Compliance Supervisor initiates the issuance of the Fax.

The DAQEM Public Information and Education Coordinator (PIEC), or designee, issues a high-wind air quality Advisory, or high-wind air quality Alert. The Clark County PIEC also issues a prepared public health advisory or public health alert to the media. DAQEM's notification system contacts at-risk populations at locations including, but not limited to the Clark County School District, Clark County Health District, Clark County Parks and Recreation, Local Municipalities (cities of Henderson, Las Vegas, North Las Vegas) and the local media.

DAQEM recently established the air quality forecasting service on the departmental website in which interested members of the public can view present and future air quality forecast information. This webpage enables informed decisions to be made, with respect to any outside activity that made be planned in the near future (5-day window). The website address is: http://www.co.clark.nv.us/air_quality/full_forecast.htm . Lastly, local residents also can receive air quality advisories via pagers or e-mail via Clark County's free Direct Connect service (http://www.accessclarkcounty.com/Public_communications/Listserv/Direct_Connect_signup.htm).

The Public Notification Process contained in the NEAP is comprehensive. DAQEM remains committed to improving the process as new technologies are available and as better information are available. DAQEM will participate with any municipality, organization or team member to improve their individual notification process.

Section 4: BEST AVAILABLE CONTROL MEASURES (BACM)
Sources of Windblown Dust

The NEAP states that "dust is common in undisturbed areas throughout the west," but provides no support for this statement. The NEAP also lists as a "major source" of PM-10 in Clark County "[u]ndisturbed desert areas overwhelmed by high winds." On the contrary, however, it is widely understood that mature, undisturbed desert does *not* produce elevated dust concentrations, even in high winds. In the absence of human-disturbed soil, the Las Vegas Valley likely would not experience exceedances of the 24-hour PM-10 standard except in rare circumstances. As DAQEM has previously stated in newspaper advertisements, "[c]ontrary to popular belief, desert air is not naturally dusty. In fact, it can be some of the cleanest, healthiest air on earth." Moreover, the PM-10 emissions inventories in the PM-10 State Implementation Plan for Clark County clearly indicate that native desert fugitive dust does not contribute significantly to exceedances of the 24-hour PM-10 standard in Clark County.

DAQEM Response 12: See response number 7 above.

Enhancing the Effectiveness of BACM

DAQEM needs to look more closely and comprehensively at the factors that are causing the Las Vegas and Apex Valleys to violate the 24-hour PM-10 NAAQS during high-wind events, particularly in light of the findings of the Clark County Growth Task Force. More specifically, DAQEM and Clark County need to consider whether too much acreage is being developed all at once, and whether growth can be guided in a manner that is consistent with maintaining air quality. In addition, DAQEM should evaluate whether other measures beyond the BACM incorporated into current air quality regulations would provide greater emission control. At a minimum, all earth moving should cease during high-wind events.

DAQEM Response 13: Growth control, as evaluated by the Clark County Growth Task Force, falls outside the purview of the Clean Air Act. Clark County BACM requires that earthmoving operations

cease during high wind conditions. Limiting the amount of land under grading operations on project-by-project bases was evaluated as a potential control measure in the PM_{10} SIP and rejected as infeasible. See the Clark County PM_{10} SIP Chapter 4, Page 4-31 and Appendix P responses to comments for details. The control measures selected and incorporated into the PM_{10} SIP not only represent BACM, but Most Stringent Measures (MSM).

Enforcement and Compliance

Compliance officers should be required to issue a Corrective Action Order, and Notice of Violation if appropriate action is not taken, in response to violations associated with high wind events. Fines for violations during high wind events should be enhanced.

DAQEM Response 14: DAQEM Compliance Officers proactively perform enhanced enforcement activity both prior to a forecasted high-wind event and during the event consistent with department standard operating procedures and the Clark County Air Quality Regulations (AQR's) Section 90 series dust regulations. Clark County agrees that a violator should receive an NOV when they do not comply with a CAO. See Response 21 below for additional information on Clark County standard operating procedures.

Section 5: CONTENTS OF JUSTIFICATION PACKAGES FOR EXEMPTION
Legality of Policy

The Sierra Club does not agree that EPA may legally discount the 24-hour PM-10 NAAQS exceedances recorded on October 29, 2003; October 30, 2003; April 28, 2004; and May 11, 2004. The authorities upon which the EPA relies to justify its Natural Events Policy do not support its position in this regard. Appendix K to 40 C.F.R. Pt. 50 § 2.4 provides that EPA may discount air quality data that are attributable to an "exceptional event." An "exceptional event" is defined as "an uncontrollable event caused by natural sources of particulate matter or an event that is not expected to recur at a given location." *Id*. Section 188(f) of the Clean Air Act (42 U.S.C. § 7513(f)) states that EPA "may, on a case-by-case basis, waive any requirement applicable to any Serious Area under this subpart where the [EPA] Administrator determines that anthropogenic sources of PM-10 do not contribute significantly to the violation of the PM-10 standard in the area."

DAQEM Response 15: DAQEM developed the Clark County NEAP in accordance with guidelines set forth in the May 30, 1996, U.S. EPA Natural Events Policy (NEP). The justification submittal packages, as concurred with by U.S. EPA, Region IX, adequately demonstrate that exceedances experienced on the dates submitted are due to high-winds, and meet the requirements of a Natural Event as defined in the policy.

Neither provision authorizes EPA to discount exceedances caused by emissions from human-disturbed soil, even where those emissions are amplified by high winds. In particular, the EPA would have no legal basis on which to redesignate the Las Vegas Valley to "attainment," or the fail to designate the Apex Valley to "nonattainment," based on the discounting of exceedances that are associated with anthropogenic activity.

DAQEM Response 16: Comment noted.

Evidence of Significant Contribution from Undisturbed Native Desert

The justification packages made available to the Sierra Club for the October 29, 2003; October 30, 2003; April 28, 2004; and May 11, 2004 exceedances make reference to the recent drought in Southern Nevada and state that "[w]ind gusts exceeding the 25-mile per hour threshold . . . overwhelmed the native desert environment and stabilized vacant lands." There is no evidence, however, that dust entrained from undisturbed desert surfaces significantly contributed to these exceedances. In fact, all evidence is to the contrary. The events documented are regional events of sustained high winds. Despite the regional nature of the wind events, the PM-10 concentrations are

highly non-uniform across the area. At any given time, PM-10 readings from different monitoring sites often vary significantly. This spatial heterogeneity of PM-10 concentrations makes it very unlikely that the main dust source is the undisturbed desert around Las Vegas. Such a source would be unlikely in any event for the reasons discussed above, *i.e.*, because of the presence of an armoring crust and state of particle deflation of undisturbed desert surfaces.

<u>DAQEM Response 17</u>: As noted in the introduction to Clark County responses above, UNLV empirically derived wind speed thresholds utilized in the NEAP. . See *Estimation of Valley-Wide PM_{10} emissions using UNLV 1995 wind tunnel-derived emission factors, 1998-1999 emission factors, revised vacant land classifications, and GIS-based mapping of vacant lands,* **– Draft Final Report, David James, et al., Civil and Environmental Engineering Department, University of Nevada Las Vegas, dated September 12, 2000 and Appendix B, Pages B-49 through B-57. Note that the emission rates for stabilized soils are compiled from UNLV data from wind tunnel tests on soils stabilized with various dust suppressants and water.**

Moreover, reliance on the drought as a factor in the PM-10 exceedances is a red herring. Low soil moisture will not affect emissions from mature, undisturbed desert surfaces. However, low soil moisture will certainly affect emissions from surfaces disturbed by human activities. The references in the justification packages to high winds "overwhelm[ing] the native desert environment" are unsupported and should be removed.

<u>DAQEM Response 18</u>: See comment number 7 above.

Failure to Demonstrate BACM Compliance

The Natural Events Policy provides that "BACM must be implemented at contributing anthropogenic sources of dust in order for PM-10 NAAQS exceedances to be treated as due to uncontrollable natural events under this policy." NEP at 5. In its justification submittal packages, DAQEM "must document that BACM were required for . . . [contributing anthropogenic dust] sources, and the sources were in compliance at the time of the high-wind event." NEP at 9. DAQEM has failed to comply with this requirement in a number of ways.

First, the initial step, to identify the localized areas of anthropogenically disturbed surface areas contributing to the exceedances, has not even been taken. The justification packages for all four events indicate that the BACM applicable to the exceedance sites "require stabilization of open areas and disturbed vacant lands; stabilization of unpaved roads; stabilization of unpaved parking lots; stabilization of paved road unpaved shoulders; and use of soil specific best management practices for construction activities." The packages fail to identify, however, what open areas, disturbed vacant lands, unpaved roads, unpaved parking lots, paved road unpaved shoulders, and construction activities exist in the area of the exceedance site(s). DAQEM cannot possibly demonstrate compliance with BACM during a high wind event if it does not identify the sources contributing to the exceedance.

<u>DAQEM Response 19</u>: Clark County systematically identifies and inspects all areas and potential areas of anthropogenically-disturbed surfaces throughout the year. In 2004, DAQEM compliance staff conducted 1,414 inspections of vacant land, 5,126 inspections of construction sites, and 1,486 inspections of other sources. The department issued 2,878 corrective action orders (CAO) and 415 notices of violation (NOV). These NOV resulted in the assessment of $1,300,000.00 in fines. Over time, violators in the community realized failure to comply with Clark County dust control regulations is not a good business decision. As set forth in the NEAP, in the hours leading up to a high-wind event, DAQEM staff conducts extensive inspections to ensure the employment of BACM. In addition, during the event, DAQEM staff document that uncontrolled anthropogenic sources are not significantly affecting monitoring sites that are measuring high PM_{10} concentrations. Submittal of formal microscale emissions inventories are not required documentation under the NEP. In the rare instance where an uncontrolled anthropogenic source causes an exceedance during an high-wind event, Clark County does not request the U.S. EPA to

flag the data as a natural event. Such an event occurred on January 10, 2002; the Joe Neil monitoring site recorded a PM_{10} exceedance. DAQEM staff determined that an uncontrolled soil remediation site caused of the recorded high concentrations and did not request the U.S. EPA to flag the data as a natural event

Second, the packages fail to demonstrate that all known sources were in compliance with BACM at the time of the high wind events. Numerous construction sites failed to receive the faxed advisory. There is no evidence that areas other than active construction sites were inspected. The NEAP contains no description of the specific BACM in place at known source areas surrounding the exceedance sites, or of the inspection and compliance histories of these areas.

<u>DAQEM Response 20</u>: The fax advisory advises stationary sources and construction sites of an imminent high-wind event. The fax advisory also serves as a strong reminder that inspection of their sites will occur in the next few hours. As noted in Response 19, DAQEM systematically inspects all sources to ensure employment of BACM. The natural event justification submittal packages contain documentation that inspections of other sources, such as vacant lots, occurred at the time of the event. The specific BACM applicable to each source type are set forth in the Clark County PM_{10} SIP (Appendix F, Air Quality Regulations and Section 94 Handbook) and are referenced in the NEAP {Appendix D, Clark County Department of Air Quality and Environmental Management – Air Quality Regulations (AQRs)}.

In fact, by DAQEM's own admission, a number of construction sites were *not* in compliance during the four high-wind events. Specifically, DAQEM issued six corrective action orders (CAO) and one notice of violation (NOV) in response to the October 29, 2003 event; nine CAO's and three NOV's in response to the October 30, 2003 event; fifteen CAO's and three NOV's in response to the April 28, 2004 event; and fifteen CAO's and three NOV's in response to the May 11, 2004 event. It is difficult to understand how DAQEM can claim that all contributing anthropogenic dust sources were in compliance with BACM in view of these acknowledged violations.

<u>DAQEM Response 21</u>: The intent of the CAO is to bring a site into compliance with BACM for high-wind conditions. If sites do not comply, or if DAQEM staff observes a violation of the performance standards set forth in the Clark County Air Quality Regulations, DAQEM issues an NOV. It is widely recognized and accepted that it is impossible to achieve 100 percent compliance with a regulation. The U.S. EPA uses the term "rule effectiveness" to describe the rate of compliance with a rule. When calculating the emission reductions achieved by a rule, the U.S. EPA uses a default "rule effectiveness" value of 80 percent unless an agency can justify using a higher percentage. Clark County believes the U.S. EPA did not intend that an agency achieve 100 percent rule effectiveness in order to implement a NEAP. Rather, the NEP requires the effective implementation of BACM. Clark County accepts the U.S.EPA's 80 percent default rule effectiveness value for development of PM_{10} SIP emissions inventories, but strives to achieve 100 percent control during high wind conditions. In order to achieve the highest possible compliance rate under adverse wind conditions, Clark County issues advisory notices to permit holders in advance of the event and inspects 100 percent of all permitted sources. Although the issuance of some CAOs and NOVs in the hours leading up to and during a natural event show that 100 percent compliance is not achieved, the small numbers of violations issued demonstrate that Clark County's compliance program achieves a rule effectiveness rate that exceeds the U.S. EPA default assumptions during a natural event.

Finally, the NEAP indicates that DAQEM received dust complaints during the high-wind events, and that these complaints were "addressed," but fails to indicate what the nature of the complaints were, whether they were substantiated, and how they were "addressed." In sum, the justification submittal packages fall far short of demonstrating that contributing anthropogenic sources were in compliance with BACM at the time of the high-wind events in question.

DAQEM Response 22: The DAQEM compliance staff systematically investigates complaints during high-wind events. In many instances, DAQEM cannot trace a complaint or high ambient concentrations to any particular source. In those instances that DAQEM does find a violation of the air quality regulations or traces high ambient concentrations to any particular source, DAQEM issues an NOV. In addition, DAQEM enforcement staff will use the contracted water truck service to abate a violating site (See Appendix E for greater detail).

Failure to Make Documentation of Natural Events Available to Public for Review

The Policy provides that DAQEM "should . . . make the documentation of natural events and their impact on measured air quality available to the public for review." NEP at 9. Presumably, this is to occur prior to forwarding the documentation to EPA for concurrence that a natural event was involved. That was not done with respect to the four submittals. While the monitoring data were apparently available to the public, supporting documentation was not. Moreover, only the October 29, 2003 justification submittal package was attached to the NEAP currently under review.

DAQEM Response 23: See page number 28, Section 5 (CONTENTS OF JUSTIFICATION PACKAGES FOR EXEMPTION) of the main document for the procedure for public review of justification submittal packages. The justification submittal packages adequately demonstrate that high-winds cause the exceedances experienced on the dates submitted (Newspaper documentation and photos included in submittal) and meet the requirements of a Natural Event as defined in the policy. To satisfy the request of the Sierra Club, on March 1, 2005, DAQEM posted on the departmental website (www.accessclarkcounty.com) the four High-Wind Event Justification Submittal Packages (October 29, 2003, October 30, 2003, April 28, 2004 and May 11, 2004). DAQEM also provided the packages to the stakeholder committee for review in the October 2004 draft version of the NEAP document.

Section 6: STAKEHOLDER AGREEMENTS

The NEAP should clarify that the Sierra Club's support for the NEAP is qualified as explained in these comments.

DAQEM Response 24: DAQEM amended Section 6 Stakeholder Agreements to reflect the Sierra Club position, with respect to its limited support of the NEAP.

Section 7: PUBLIC REVIEW AND COMMENTS
Public Review

The statement that "DAQEM incorporated the comments and suggestions from the stakeholder committee" is not strictly accurate, since the Sierra Club made numerous comments and suggestions regarding an earlier draft of the NEAP that are not included in the current draft.

DAQEM Response 25: Based on stakeholder committee member comments, DAQEM made many changes to the document early on and throughout the development process.

Appendix H to the NEAP, which describes the public review process for high-wind event justification submittal packages, was not made available to the public for the entire thirty-day public comment period. The Sierra Club did not receive a copy of Appendix H until March 2, 2005. As of March 15, 2005, the date of the public hearing, Appendix H still had not been posted to the DAQEM web site.

DAQEM Response 26: DAQEM will comply with the procedure set forth in Section 5 (CONTENTS OF JUSTIFICATION PACKAGES FOR EXEMPTION) of the main document for public review of the justification submittal packages.

Regarding this public review process, DAQEM should make clear that it will accept *and consider* written comments on justification submittal packages. In addition, DAQEM should respond to any comments in writing before forwarding the packages to EPA.

DAQEM Response 27: See page 28, Section 5 (CONTENTS OF JUSTIFICATION PACKAGES FOR EXEMPTION) of the main document for the procedure for public review of justification submittal packages.

Thank you for your consideration of these comments. Should you have any questions, please feel free to contact me at (702) 496-6655 or jennifer.anderson@ccmail.nevada.edu .

Sincerely,

Jennifer B. Anderson
Air Quality Chair - Sierra Club
Southern Nevada Group

Public Comments and Responses

3. Nevada Environmental Coalition (NEC) – Mr. Robert Hall Comments with DAQEM Responses

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Note: DAQEM Responses to the Nevada Environmental Coalition (NEC) comments are incorporated within this document and start on page 3 after "COMMENTS AND OBJECTIONS"

c/o Robert W. Hall, President
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702-360-3118
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Nevada Environmental Coalition, Inc.

March 15, 2005

Clark County Board of Commissioners
Clark County Commission Chambers
500 South Grand Central Parkway
Las Vegas, Nevada

Adverse Comments regarding the March 15, 2005 Clark County Board of Commissioners Public Hearing re: the proposed adoption of the Clark County, January 2005 Draft Natural Events Action Plan for High-Wind Events ("NEAP" or "Plan").

To the Commission:

The petitioners request that this comment/objection letter be made a part of the minutes of the above named hearing and that the record shall include petitioners' instant comment/objection document and not simply a summary. The Nevada Environmental Coalition, Inc. and Robert W. Hall as an individual comment and object as follows:

ANALYSIS

The January 2005 Draft Natural Events Action Plan for High-Wind Events ("NEAP") is misleading, legally insufficient and unreasonable for the citizens of the Las Vegas Valley. The plan is legally, morally and ethically indefensible. The plan if adopted would set aside the language, spirit and intent of Congress in adopting the National Environmental Policy Act ("NEPA") and the dean Air Act ("CAA").

The proposed Plan relies in part on a May 30, 1996 "US EPA Natural Events Policy Memo." According to fn. 1, p. 1 of the memorandum, "This document contains EPA policy and, therefore, does not establish or affect legal rights or obligations. It does not establish a binding norm and it is not finally determinative of the issues addressed. In applying this policy in any particular case, the EPA will consider its applicability to the specific facts of that case, the underlying validity of the interpretations set forth in this memorandum, and any other relevant considerations, including any that may be required under applicable law and regulations." Well said since the statement makes it clear that the memorandum is not legally sufficient justification for any lawful purpose herein. The memo is the opinion of one or more persons employed by the EPA. Memos do not set aside or lawfully substitute for acts of Congress.

The memorandum does cite CAA §§ 107(d)(3), 188(f) and 40 C.F.R. Part 50, Appendix K, Section 2.4. Id. 2. CAA §§ 107(d)(3) provides that the EPA Administrator ("Administrator") with authority

to redesignate a nonattainment area under the stringent requirements if the sections requirements at (E). CAA § 188(f) provides the EPA Administrator ("Administrator") with authority to waive any "requirement applicable to any Serious Area under this where the Administrator determines that anthropogenic[1] sources of PMIO do not contribute significantly to the violation of the PM-10 standard in the area. The Administrator may also waive a specific date for attainment of the standard where the Administrator determines that nonanthropogenic sources of PM-10 contribute significantly to the violation of the PM-10 standard in the area." The memorandum dismisses 40 C.F.R. Part 50, Appendix K with the statement that "the data exclusion policy contained in Appendix K and the procedures described in the exceptional events guideline no longer apply" despite the fact that the policy is still a part of the Code of Federal Regulations. Section 2.4 of 40 C.F.R. Part 50, Appendix K provides in part provides the definition that "an exceptional event is an uncontrollable event caused by natural sources of particulate matter or an event that is not expected to recur at a given location." Id. 2-3. The memorandum Description of Policy includes the phrase "natural events" in connection with CAA § 107(d)(3) and "uncontrollable natural events" from Section 2.4 of 40 C.F.R. Part 50, Appendix K despite the statement that "the data exclusion policy contained in Appendix K and the procedures described in the exceptional events guideline no longer apply." Id. 3.

"The guiding principles followed in developing this policy" are in part "1. Protection of public health is the highest priority of Federal, State, and local air pollution control agencies." Id. 3. The memorandum includes volcanic and seismic activities which are not at issue herein. Wildfires including those that are "unwanted fires, not designated or managed as prescribed fires, and requiring appropriate suppression action by the wildlands manager." More clarification regarding wildfires was left unsettled. Id. 4-5.

The memorandum's definition of "High Winds" includes "Ambient PM-10 concentrations due to dust raised by unusually high winds will be treated as due to uncontrollable natural events under the following conditions: (1) the dust originated from nonanthropogenic sources, or (2) the dust originated from anthropogenic sources controlled with best available control measures (BACM)." The memorandum states in part that "[t]he EPA anticipates that FMP will achieve an acceptable balance between forest health and public health concerns." One of the means that the EPA suggests be used is that of "publicly announcing forecasts of likely smoke conditions in communities impacted by ongoing fires. Since FMP will treat fire as a natural ecological process, the impact of wildland fires on air quality and regional haze is expected to increase in the future." Id. 7.

References to the Department of Air Quality and Environmental Management ("DAQEM") may include its predecessor agency, the Clark County Health District depending upon the time frame. Petitioners' objections to the NEAP are taken on the basis of(l) the NEAP documentation, (2) the June 30, 2002 audit of the Audit Department, Department of Air Quality and Environmental Management Local Road Paving Credit Program, (2) the 2001 Environ Report commissioned by the Nevada Legislature, (4) the thirty-three pounds of comments and documentation filed by the Petitioners with DAQEM, its predecessor agency, the State of Nevada and the Ninth Circuit Court of Appeals regarding the latest PM-10 SIP judicial review and (5) the data and documentation available on the www.necnev.org Web site. All of this information is relevant regarding Clark County and DAQEM's credibility.

[1]Caused or produced by humans.
[2] Fire management plans.

COMMENTS AND OBJECTIONS

1. It is a fact that despite its best efforts, Clark County has not had a finally approved, PM-10 State Implementation Plan ("SIP") since the EPA approved 1979/81 SIP. The pending, preliminarily approved PM-10 SIP submittal is in effect but it is also subject to pending Ninth Circuit Court of Appeals judicial review.

DAQEM Response 1: **The U.S. Environmental Protection Agency (U.S. EPA) approved the June 2001 PM_{10} State Implementation Plan (SIP) for Clark County on May 3, 2004 and published the Federal Register on June 9, 2004 (Volume 69, Number 111).**

2. It is a fact that until its most recent 2001 PM-10 SIP submittal, the Clark County Commission '"withdrew" all of its prior SIP submittals as a means of evading dilatory Clean Air Act ("CAA") sanctions.

DAQEM Response 2: **The County withdrew all previous PM_{10} SIP's and addenda (November 5, 1991 PM_{10} SIP, Revised PM_{10} SIP December 6, 1994, January 1995 Addendum to 1991 PM_{10} SIP, August 1997 PM_{10} SIP) prior to the submission of the June 2001 PM_{10} State Implementation Plan (SIP) for Clark County (Federally approved, see DAQEM Response 1 above). All other PM_{10} plans and addenda submitted prior to the June 2001 SIP failed to demonstrate attainment of the National Ambient Air Quality Standards for PM_{10}.**

3. Regarding NEAP, the County may lawfully rely only on applicable statutes and lawfully approved federal regulations ("CFRs"), not EPA memoranda, if it is to avoid considerable administrative and financial risk.

DAQEM Response 3: **The DAQEM developed the NEAP based on the May 30, 1996, U.S. EPA Natural Events Policy (NEP).**

4. Admissions of anthropogenic events turned by EPA memorandum into bureaucratic claims of nonanthropogenic actions are not a sound legal or administrative basis for reaching clean air quality attainment much less enforcement.

DAQEM Response 4: **DAQEM appreciates the comments from the NEC; however, the comments do not contain sufficient detail or information to enable the DAQEM to respond appropriately.**

5. High winds are nonanthropogenic events in the Southern Nevada desert and have been so since the beginning of time.

DAQEM Response 5: **DAQEM concurs with this comment and agree that high-wind events are nonanthropogenic in Southern Nevada.**

6. Bulldozing twenty, thirty and more thousands of acres of desert land in the Las Vegas Valley at one time are controllable anthropogenic events by any reasonable, rational definition.

DAQEM Response 6: **Clark County BACM requires that earthmoving operations cease during high wind conditions. Operators of construction sites are required to employ Best Available Control Measures (BACM) to limit PM_{10} emissions. Limiting the amount of land under grading operations on project-by-project bases was evaluated as a potential control measure in the PM_{10} SIP and rejected as infeasible. See the Clark County PM_{10} SIP Chapter 4, Page 4-31 and Appendix P responses to comments for details. The control measures selected and incorporated into the PM_{10} SIP not only represent BACM, but Most Stringent Measures (MSM).**

7. The basis for BACM (best available control measures) in the Las Vegas Valley is dust control by the application of water. Clark County is in a drought of the century. There is no guarantee that the basis for

water dust control BACM in dark County actually exists. Draft at 15.

<u>DAQEM Response 7</u>: Reference to Page 15 of the NEAP main document: Water has long been used for the control of dust in arid regions. For construction activities during active soil disturbance, water is the primary means of dust control. *"…water required for dust control is only a portion of the water required for construction activities."* Water use restrictions imposed by the 2002 Southern Nevada Water Authority (SNWA) *Drought Plan* and the Las Vegas Valley Water District Service Rules (August 2003) do not apply to construction activities and dust suppression (Section 12 Conservation and Drought, Subsection 12.2 Drought Conditions and 14.4 Water Waste Prohibited Section B. Exemptions – Public Health and Welfare – any activity where the use of water is the most appropriate and practical method to abate a health and safety hazard…Las Vegas Valley Water District Service Rules 8-03).

8. The County does not yet know whether BACM or LAER (lowest achievable emission rate) applies pending judicial review and final approval of the 2001-2006 PM-10 plan and requested extension of time to comply despite the fact that four of the six year extension of time requested have passed. The reason is that the more stringent 1979/82 SIP may still apply since DAQEM does not yet know the result of Ninth Circuit Court of Appeals judicial review.

<u>DAQEM Response 8</u>: The U.S. Environmental Protection Agency (U.S. EPA) approved the June 2001 PM_{10} State Implementation Plan (SIP) for Clark County on May 3, 2004 and published the Federal Register on June 9, 2004 (Volume 69, Number 111). The SIP addresses BACM, which is a requirement for existing sources and does not address LAER, which is a new source review requirement (NSR). Furthermore, the SIP does not address what standard applies during new source review.

9. Low desert humidity reduces the effect of water dust control to minutes. There is no night and weekend water dust control worthy of the name in the Las Vegas Valley.

<u>DAQEM Response 9</u>: DAQEM BACM requirements include stabilizing soils so that controls are in place during periods of inactivity, including weekends, holidays and at night.

10. DAQEM has not and does not now have monitoring stations in the Las Vegas Valley areas where the highest levels of PM-10 air pollution exist particularly regarding bulldozing and grading.

<u>DAQEM Response 10</u>: DAQEM's monitoring network is comprehensive and meets the requirements of U.S. EPA siting criteria. Clark County Department of Air Quality Management Technical Systems Audit, U.S. EPA Region 9 dated February 2002, states - *"With so much development activity in the Las Vegas valley, it is not possible or reasonable for an agency to operate a monitoring site near all PM_{10} producing activities."* DAQEM contracted with Technical & Business Systems, Environmental Research Associates to evaluate the existing monitoring network and make recommendations for improvements to the network and to accommodate future growth. DAQEM expects completion of the study and recommendations by the 1st Quarter of year 2006. DAQEM will implement monitoring network improvements in accordance with U.S. EPA guidance and the study recommendations.

11. The June 30, 2002 audit of the Audit Department, Department of Air Quality and Environmental Management Local Road Paving Credit Program and the 2001 Environ Report commissioned by the Nevada Legislature provide ample evidence that the public, the County, the State and the EPA should reject any Department of Air Quality and Environmental Management proposal, plan or program pending evidence of a full investigation and administrative action regarding one or more who are responsible for the serious lapses of judgment described in both documents who still work for the County in key supervisory positions at DAQEM. Clark County has a proven inability to deal with administrative malfeasance.

<u>DAQEM Response 11</u>: The program mentioned is not part of, or related to, the Natural Events Action Plan.

12. Violations of the National Ambient Air Quality Standards (NAAQS) are largely due to the development bulldozing and grading of Las Vegas Valley serious nonattainment area lands. Draft at vii.

<u>DAQEM Response 12</u>: DAQEM accounted for emissions from bulldozing and grading in the construction source category in the June 2001 PM_{10} State Implementation Plan (SIP). Construction sites constitute a significant source category. Chapter 4 of the PM_{10} SIP contains the approved and adopted BACM.

13. Despite statements to the contrary, there are no "stringent control measures" regarding the development bulldozing and grading of Las Vegas Valley serious nonattainment area lands. Id. at vii. There is only runaway land development.

<u>DAQEM Response 13</u>: The U.S. EPA reviewed the Most Stringent Measure (MSM) analysis contained in the June 2001 PM_{10} State Implementation Plan, and deemed the Air Quality Regulations (AQR's) and BACM requirements as among the most stringent in the country. Clark County's BACM for construction activities are proactive, site specific, soil specific and activity specific. Clark County's regulatory program contains *Best Management Practices* (BMPs) for twenty-two specific construction activities. Section 94 of the AQR's contains stringent performance standards for both continuous and intermittent emissions from construction activities.

14. The current air pollution DAQEM monitoring system is a tightly controlled misleading system that is not now and never has been transparent to the public.

<u>DAQEM Response 14</u>: See DAQEM Response number 10 above.

15. The data produced by DAQEM's air quality monitoring system is "audited" by DAQEM without public involvement or oversight.

<u>DAQEM Response 15</u>: DAQEM follows U.S. EPA requirements with respect to monitoring system audit procedures. It is common practice for large Air Quality agencies to have audit staff assigned to the Environmental Department separate from the monitoring sections for the purpose of independent audit procedures and requirements.

16. DAQEM has never placed public health as its highest priority.
<u>DAQEM Response 16</u>: DAQEM appreciates the comments from the NEC; however, the comments do not contain sufficient detail or information to enable the DAQEM to respond appropriately.

17. DAQEM uses its education and outreach programs as cover for Clark County's runaway growth policies.

<u>DAQEM Response 17</u>: Growth control falls outside the purview of the Clean Air Act.

18. DAQEM is administratively very close to the personnel from sources of air pollution. Draft at 29. DAQEM admits that "the Department of Air Quality and Environmental Management (DAQEM) developed this NEAP with the assistance of a stakeholder committee (NEAP Technical Committee/Working Group)." Sources of air pollution had an inside track from the outset. The public was not noticed until the draft was complete. Draft at 29-31

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<u>DAQEM Response 18</u>: The Clark County Natural Events Action Plan (NEAP) External Stakeholder Committee who assisted in the development of the NEAP, consisted of three municipalities (Las Vegas, North Las Vegas, and Henderson), Environmental Group membership, the Clark County Health District , the Clark County School District and the Southern Nevada Home Builders Association (SNHBA). Clark County used a broad based coalition as recommended in the Natural Events Policy guidance to develop this NEAP.

19. DAQEM is administratively less close to those who question DAQEM's policies. Knowledgeable

members of the environmental community were not present when the "stakeholders" and DAQEM developed NEAP.

<u>DAQEM Response 19</u>: See DAQEM Response number 18 above.

20. DAQEM has long been known for its policy of weeding out employees who are not in lock step with policies some in the community consider to be corrupt.

<u>DAQEM Response 20</u>: This comment does not address issues related to or contained in the Natural Events Action Plan.

21. Clark County has approved or will likely soon approve some thirty or so high rise condominiums along the Las Vegas strip despite the fact that the area is collectively and cumulatively one the worst air pollution areas in the Las Vegas Valley.

<u>DAQEM Response 21</u>: DAQEM appreciates the comments from the NEC; however, the comments do not contain sufficient detail or information to enable the DAQEM to respond appropriately.

22. Statements such as "[t]he public must be informed whenever the air quality in the area is unhealthy" are absurd when the air quality in the Las Vegas Valley is pollutant collectively and cumulatively unhealthy. Valley air quality is not healthy and one number and unhealthy at that number plus one. The effects are pollutant collective and cumulative. Draft at 1.

<u>DAQEM Response 22</u>: DAQEM appreciates the comments from the NEC; however, the comments do not contain sufficient detail or information to enable the DAQEM to respond appropriately.

23. The NEAP is a means of claiming cleaner air attainment by a bureaucratic redefining of air pollution as nonanthropogenic versus anthropogenic. Disclaimers notwithstanding, the actual air pollution does not change. Only the propaganda to the public changes. NEAP is a misleading bureaucratic process by which what was once true is no longer true. NEPA fits hand in glove with the travesty of Clark County's offset credit program.

<u>DAQEM Response 23</u>: DAQEM developed the Clark County NEAP in accordance with guidelines set forth in the May 30, 1996, U.S. EPA Natural Events Policy (NEP).

24. Issues such as quantifiable data, credibility, public involvement, public oversight and public confidence are dealt with in the NEAP.

<u>DAQEM Response 24</u>: DAQEM appreciates the comments from the NEC; however, the comments do not contain sufficient detail or information to enable the DAQEM to respond appropriately.

25. The goal with NEAP is clean air attainment without actual attainment.

<u>DAQEM Response 25</u>: The main purpose of the Clark County NEAP is to protect public health. The goal and primary objective of the program is to minimize the public's exposure to elevated PM_{10} levels caused by high-wind natural events.

Very truly yours,

Robert W. Hall, President, Nevada
Environmental Coalition, Inc.
and as an individual.
NEC